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MALIGNANT HYPERTENSION

REPORT OF CASE TREATED BY BILATERAL SECTION
OF ANTERIOR SPINAL NERVE ROOTS FROM
THE SIXTH THORACIC TO THE SEC-
OND LUMBAR, INCLUSIVE

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The maintained vasodilatation¹ produced by sympathectomy in the treatment of certain types of peripheral vascular diseases has stimulated us to investigate surgical procedures on the sympathetic and central nervous systems with the hope that severe forms of hypertension of young people might be controlled.

REASONS FOR TRYING SURGICAL MEASURES

In 1923 Bruning² suggested sympathectomy for the possible control of hypertension.

In the treatment of vasospastic lesions of arteries of the extremities, by sympathetic ganglionectomy and trunk resection, we have observed that the blood flow has been increased as measured in degrees of increased elimination of heat. The measurement of retinal arteries and veins by an ophthalmoscopic micrometer before and after cervicothoracic ganglionectomy shows that the caliber of these vessels has been increased by the sympathectomy³ from a third to a half the pre-operative size. Therefore we dared to postulate that it might be possible to interrupt sufficient vasoconstrictor fibers to alter the arterial tension and to prevent the sudden and paroxysmal rises, which may produce arterial rupture in the advanced stages of the disease.

We were aware that many factors are involved in the production of hypertension, but since medical measures had not offered the solution to the problem we believed that we were justified in proceeding with our surgical investigations. Whether or not our hypothesis might prove true, we also had to take into consideration the effects of sympathectomy on the function of organs deprived of their innervation in our attempt to paralyze the vasomotor control over a large vascular bed.

From the Section on Neurologic Surgery and the Division of Medicine, the Mayo Clinic.

1. Brown G. E. and Adson A. W. Calorimetric Studies of the Extremities Following Lumbar Sympathetic Ramisection and Ganglionectomy. *Am. J. M. Sc.* 170: 232-240 (Aug.) 1925.

2. Bruning Fritz. Die operative Behandlung der Angina Pectoris durch Exstirpation des Halsbrustsympathicus und Bemerkungen über die operative Behandlung der abnormen Blutdrucksteigerung. *Klin. Wchnschr.* 2: 777-780 (April 23) 1923.

3. Craig W. McK. and Brown G. E. Resection of the Sympathetic Nerves in Cases of Hypertension. *Proc. Staff Meet. Mayo Clin.* 8: 373-376 (June 14) 1933.

On interrupting the nerves that are involved in vasomotor control we had hoped that hypertonus of the sympathectomized arteries might be reduced and also that additional vasodilatation might take place in the same group of arteries. That is, we hoped to prepare a vascular reservoir for emergency and to avoid the sudden high rises of arterial tension.

We chose to alter the vasomotor control of arteries below the diaphragm, believing that injurious effects would not result and that the celiac and mesenteric arteries would lend themselves best to vasodilatation. It was apparent that periarterial sympathectomy would not be practical, and therefore we directed our first attack on the sympathetic rami communicantes, ganglia and trunks but later sectioned the anterior spinal roots bilaterally, from the sixth thoracic to the second lumbar inclusive, in order (1) to include all sympathetic fibers leaving by or returning through the anterior roots, thus interrupting the thoracolumbar sympathetic outflow below the fifth thoracic segment and (2) to paralyze the abdominal muscles.

By the latter procedure we hoped (1) to sympathectomize sufficient arteries to modify arterial responses (2) thoroughly to sympathectomize the suprarenal glands and (3) to remove the effects of intra-abdominal tension.

SURGICAL MEASURES TRIED

In 1925 Rowntree and one of us⁴ reported a case of malignant hypertension in which treatment was by bilateral sympathetic lumbar ganglionectomy and trunk resection, which included the second, third and fourth lumbar sympathetic ganglia and the intervening trunks. The results on the blood pressure and ultimate outcome were not significant. It was apparent that the operation did not denervate sufficient arteries to change the systemic arterial pressure and that a more extensive operation was needed. One of us (Adson) suggested and performed an extensive rhizotomy in order to include all sympathetic innervation below the diaphragm and to include the motor innervation of the abdominal muscles.

Aug. 6, 1930 a patient with malignant hypertension was subjected to bilateral section of the anterior and posterior nerve roots from the sixth thoracic to the second lumbar, inclusive, through an approach afforded by laminectomy. The reasons for suggesting this procedure were that (1) the blood pressure always dropped and the vasopressor reactions were inhibited following spinal anesthesia, (2) the patient under consideration presented vasodilatation of the arteries of the hand and fingers following block anesthesia by procaine of the cervicothoracic ganglia, in spite of organic hyper-

4. Rowntree L. G. and Adson A. W. Bilateral Lumbar Sympathetic Neurectomy in the Treatment of Malignant Hypertension. *Report of Case J. A. M. A.* 85: 959-961 (Sept. 26) 1925.

trophy of the medial coats of the arterioles and (3) this patient exhibited sharp hypertensive crises, with subjective symptoms and with inordinate increases in the blood pressure, which should theoretically be inhibited by denervating the splanchnic circulation

In view of the progressive character of the hypertension and the short expectancy of life, the patient elected the operation even though informed that the muscles of the abdomen and lower costal muscles would be inactive, and that it would be necessary for him to wear an abdominal support. These facts previously had been learned from a case in which extensive rhizotomy had been performed by one of us (Adson) for gastric crisis of tabes. In the case in which operation was performed Aug 6, 1930, ether anesthesia was used. During the early part of the operation the systolic blood pressure often rose higher than 200 mm of mercury, but at the close of the operation it had dropped to 100 mm. The diastolic pressure dropped from 120 to 90 mm. The

completely sympathectomized. The results were variable, and in the severe type of hypertension not as much was accomplished as was hoped for.

The reduction and inhibition of the crises of blood pressure effected in the initial case in which rhizotomy was performed encouraged us to employ extensive rhizotomy again, with the view of controlling the severe form of hypertension.

REPORT OF CASE

A woman, aged 29, was first seen at the clinic in 1923, at which time she complained of headaches and high blood pressure of eighteen months' known duration. On admission the blood pressure, in millimeters of mercury, was 228 systolic and 156 diastolic. There was no evidence of renal disease. The retinal arterioles were constricted. The hourly readings of blood pressures taken under resting conditions varied from 150 to 200 systolic, and from 100 to 150 diastolic. The patient's diet was restricted, following which the headaches were relieved.

The patient returned to the clinic in 1933 because of marked fatigue, headaches, palpitation and dyspnea. The headaches usually were of the frontal type, but at times they were occipital on her arising in the morning. The blood pressure on admission was 240 systolic and 165 diastolic, the pulse rate was 120 beats per minute, and the heart was enlarged to grade 3. There was a soft systolic murmur in the mitral area. The retinal arteries were sclerosed, graded 2, with angiospasm, new and absorbing hemorrhages, and a few cotton-wool exudates were present in each eye, these are the features of retinitis of severe hypertension of group 3, the borderline malignant form of hypertension.⁷ Hourly readings disclosed a variation in systolic blood pressure of from 180 to 230 mm of mercury and in diastolic pressure of from 110 to 160 mm. With the cold pressor test the blood pressure was increased to 280 systolic and 180 diastolic. The value for urea was 28 mg per hundred cubic centimeters of blood. The value for sulphates was 5 mg per hundred cubic centimeters of serum. Albumin was not present in the urine, but there were occasional casts. The electrocardiogram disclosed a diphasic T wave in derivation III. The basal metabolic rate was +23. The diagnosis was essential, early malignant type of hypertension without renal insufficiency.

Operation was performed Oct 10, 1933, under ether anesthesia and was not attended with any unusual incident. It included bilateral section of anterior nerve roots from the sixth thoracic to the second lumbar, inclusive. The posterior roots were not sectioned, and the second lumbar anterior root on the right was found to be incompletely sectioned. The purpose of the operation in this case was to interrupt all thoracicolumbar sympathetic fibers below the sixth thoracic segment thus paralyzing vasoconstrictor nerves below that level, including the sympathetic supply to the suprarenal glands and in addition, paralyzing the abdominal muscles further to reduce intra-abdominal tension. This was accomplished with the possible exception of the right second lumbar root. During the early part of the operation the blood pressure rose to 250 mm systolic and 178 diastolic. Ether anesthesia undoubtedly was responsible for the rise, but the subsequent marked fall to 80 systolic and 50 diastolic could scarcely be accounted for by the effects of shock for there was practically no loss of blood during the laminectomy. From our previous experience, extreme care was taken to avoid injury to the small arteries and veins on the roots during the dissection and resection of the anterior roots, and to insure hemostasis. Postoperative convalescence was uneventful. The wound healed by primary union and no complications arose. The patient had no disturbance of micturition or of defecation. The motor powers and sensation of the extremities remained normal. The muscles of the abdomen were relaxed, but since the patient was of asthenic type there was no sagging or bulging. The patient did complain of a slight drawing sensation

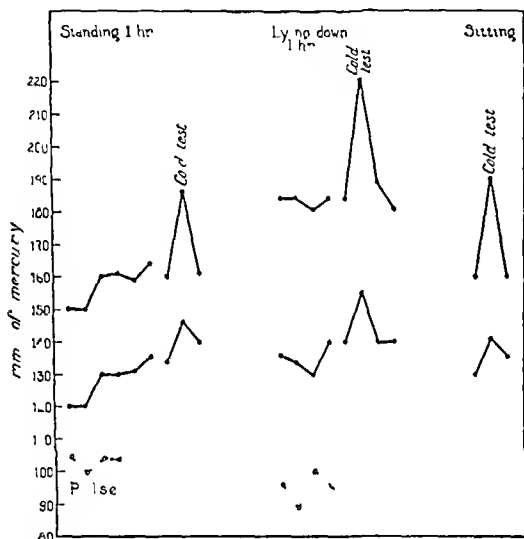


Fig 1—Blood pressure and response to the cold test with changes in posture

operation otherwise was uneventful except that it required considerable time to complete, as every precaution was employed to insure hemostasis, in spite of this, postoperative bleeding developed and necessitated opening of the wound. The blood pressure one month after operation varied from 140 to 160 systolic and from 80 to 110 diastolic. The headaches and crises of paroxysmal hypertension had disappeared. One year later this control was still effective. Changes in the spinal cord developed following the hemorrhage, and it has been difficult to continue with controlled physiologic studies which explains the absence of previous reports.

Subsequently Pieri⁵ and later Craig,⁶ developed a procedure that permitted resection of the major and minor splanchnic nerves and the first lumbar ganglion. This procedure was divided into two stages. In the first stage the nerves on the one side were resected and in the second stage those on the opposite side. The procedure did not include the ramus to the second lumbar ganglions, therefore the suprarenal glands were not

5 Pieri Gino. La resezione dei nervi splanchnici. *Ann ital de chir* 6: 678-684 (July) 1927.

6 Hines E A Jr and Brown G E. A Standard Test for Measuring the Variability of Blood Pressure. Its Significance as an Index of the Prehypertensive State. *Ann Int Med* 7: 209-217 (Aug) 1933.

7 Wagener H P, Barker N W and Burke C F. Acute Angiopathic Retinitis. Occurrence in Cases of Severe Hypertensive and Renal Disease. *Am J M Sc* 185: 517-528 (April) 1933.

in the region of the left loin the first three or four days when she was up in a chair, but this disappeared when an abdominal support was applied. The patient was dismissed from the hospital at the end of four weeks but remained under observation for another week in order that physiologic studies might be made.

SUBSEQUENT OBSERVATIONS

Hourly readings of the blood pressures were made the day following operation. The mean levels were 100 mm of mercury systolic and 70 mm diastolic. The second day the blood pressure had increased to 170 systolic and 130 diastolic. It remained at approximately this level when the patient was recumbent. Thirty-one days after operation the mean levels of blood pressure, with the patient recumbent, were 180 systolic and 125 diastolic. The range was from 155 to 195 systolic and from 100 to 150 diastolic. The response to cold when the patient was recumbent raised the blood pressure to 220 systolic and to 155 diastolic. At this time the patient had resumed her normal activity.

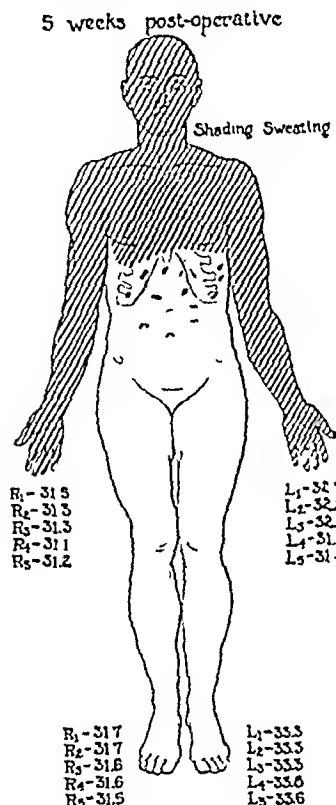


Fig. 2—Sweating and surface temperatures of fingers and toes thirty-five days after operation.

remained at approximately 130 (fig. 1). The response to cold with the patient sitting gave a maximal value of 190 systolic and 142 diastolic. With the patient standing, the blood pressure varied from 150 to 162 systolic and from 120 to 135 diastolic. The response to cold when the patient was standing, gave a maximal increase to 186 systolic and 145 diastolic. With the sharp drop in the systolic blood pressure, when the patient was standing, the patient did not experience any subjective symptoms. The pulse rate increased twenty beats per minute.

Passive changes of posture on an adjustable table gave the following readings: recumbent, 190 systolic, 140 diastolic; head down at an angle of 90 degrees, 200 systolic, 142 diastolic; head up at an angle of 90 degrees, 168 systolic, 120 diastolic.

Sweating—Thirty-five days after operation, demarcation of the sweating zone was determined by placing the patient in a sweating cabinet. Cobalt blue test papers were used to detect the nonvisible degrees of perspiration. No visible sweating was found below the level of the epigastric notch in front or of the angle of the scapulae in the back. Faint degrees of sweating were found in isolated areas on the skin of the upper part of the abdomen (fig. 2).

Surface Temperatures of Lower Extremities—The temperature of the skin of the right and left toes was significantly different. The average for all digits of the right foot was 31.7 C., and that for the digits of the left foot, 33.7 C. The difference in surface temperature was noted both objectively and subjectively and is probably explained by the incomplete division of the second right lumbar anterior root.

Renal Function—The patient was given 200 cc of water and the bladder was emptied at the end of one hour. Excretion of water was 60 per cent when the patient was recumbent and 10 per cent when the patient was standing. There was no difference in the amount of phenolsulphonphthalein excreted whether the patient was standing or recumbent.

Retinal Arteries—The retinal arteries were still definitely narrowed. Sclerosis was present in most of the vessels. There was one definite cotton-wool exudate in the left retina. Retinitis was much less active than when the patient was admitted.

Untoward Effects Following Operation—Some weakness of the abdominal muscles was noticed by the patient when she stood. She had some difficulty in assuming the sitting position. There was no objective bulging of the rectus abdominis muscles. It was found that the drop in the blood pressure when the patient stood was less marked after a snug abdominal support had been applied (fig. 3).

COMMENT

The patient whose case is here reported in detail had a severe, progressive form of essential hypertension. Organic changes in the retinal arterioles, and active retinitis were present. The length of life in this type of case after such changes have been noted, as has been shown by Keith,⁸ is usually less than three years. One month following resection of the anterior spinal

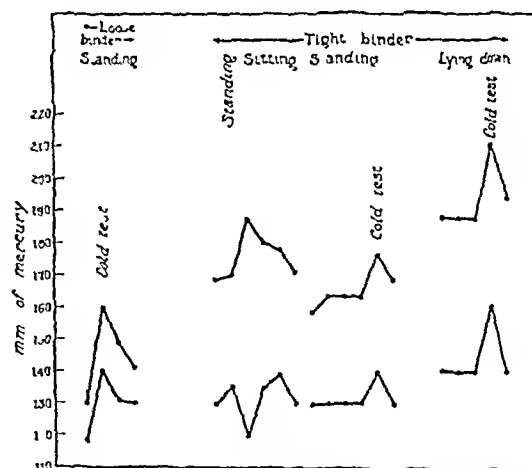


Fig. 3—Drop in blood pressure less with abdominal support. The pressor reaction to cold is increased.

nerve roots there was a definite drop in blood pressure more marked in the systolic than the diastolic when the patient was recumbent, but this lowering of pressure was accentuated by the upright posture. In this position there was, for this patient, relative hypotension. It is obvious that restoration of this patient's diastolic blood pressure to normal levels would be impossible.

⁸ Keith, N. M., Barker, N. W., and Kernohan, J. W. Histologic Studies of the Arterioles in Various Types of Hypertension. *Tr. A. Am. Physicians* 46: 66-68, 1931.

because of the structural hypertrophy of the arterioles. While this patient is active and up and about, the range and variation of her blood pressure are those of a moderate degree of hypertension, and during this active period the overload on the heart and other organs is materially diminished. It is probable that this decrease in the pressures during a larger portion of the period of twenty-four hours should be of great benefit. The argument often advanced, that high levels of blood pressure of patients with hypertension should be maintained for the kidneys to function adequately, is not demonstrated in this case. The activity of the heart and kidneys is well maintained, with a drop of 80 mm of mercury in systolic pressure. The excretion of water was not materially modified but was merely delayed, and this was only an exaggeration of what occurs among normal subjects when they are recumbent. A change in the size of the arterioles of the retina could not be demonstrated in this short period, but decrease in the activity of the retinitis was noted. The effects of the operation on the pressor reactions to cold were of interest. It has been shown that this pressor response is comparable to the effects of psychic and emotional stimulation on the blood pressure. It constitutes an accurate measuring rod to determine effects of treatment on variability of blood pressure. Following operation there was a significant decrease in the maximal rise in blood pressure. This was more marked when the patient was upright, namely, there was a decrease of 100 mm of mercury in the response of the systolic pressure. This effect was further confirmed by the postoperative hourly readings of blood pressure taken under various forms of mental and physical activity. Denervation of the vessels below the diaphragm of the patient did not completely inhibit the pressor responses to cold, this may be the effect of the vasoconstrictor response of the arteries of the upper part of the body. The effects of the operation on the sweat and vasomotor fibers indicated that almost complete degeneration of the sweat fibers had taken place below the level of the episternal notch. It is probable that the depressor effects of this operation were the result of two factors: (1) loss of vasomotor control of the splanchnic and peripheral arteries below the diaphragm, and (2) lowering of intra-abdominal pressure by paralyzing the abdominal muscles.

The favorable results of this operation in so severe a form of hypertension are most encouraging, and its further use for younger patients with severe progressive forms of essential hypertension seems justified.

Wheals—We know that an urticarial wheal can be produced in normal persons by the injection of histamine, morphine and innumerable other substances and also by localized mechanical, thermal or electrical injury. We also know that in patients with serum sickness hay fever, asthma and eczema the intradermal injection of the substances to which they are sensitized produces a wheal although these substances have no such effect on normal skin. The serum of allergic subjects will often locally sensitize the skin of normal persons so that it in turn will react to subsequent injection of the allergen or, in some instances, to absorption of the allergen after it is swallowed. The investigations of Philippon, Lewis, Blackley, Frausnitz and Küstner, Walzer and others have established these facts and added greatly to our knowledge of the pathogenesis of wheals. There remains, however, a gap between our understanding of the mechanism of wheal formation and our information as to the causes of the general eruptions of wheals which we refer to as urticaria. Urticaria is a symptom of many diseases.—Hopkins, J. G., and Kesten, B. M. Urticaria—Etiologic Observations. *Arch. Dermat. & Syph.* 29: 358 (March) 1934.

SUBTOTAL BILATERAL SUPRARENALECTOMY FOR HYPERSUPRARENALISM

(ESSENTIAL HYPERTENSION)

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CINCINNATI

Down to the present time, a study of the vaso-regulatory mechanism would indicate the futility of an attempt to pick out and burden one single link of the chain and place the responsibility on this for alterations of the whole system. This does not mean, however, that a better understanding of the whole problem could not be arrived at if one of these links was studied with particular care.

The heart and the peripheral vessel system must decide the issue. Both are under the regulation of nervous influences, which either act directly on the cardiac and vascular musculature and on the contractile elements of the capillary walls or are brought to bear on them indirectly through the mediation of hormones. The part played by the blood electrolytes in determining the effect of the hormone concentration is also a deciding factor.

In our studies, this being a preliminary report, an attempt is made to cut down the suprarenal hormone concentration of the blood, confining our observations at present to the so-called essential hypertension group. The treatment of essential hypertension, associated with little or no arteriosclerosis and no kidney destruction, has presented apparently insuperable difficulties to the internist. Little of permanent value has been accomplished in these cases, and they usually go on to a fatal termination. We have felt for some time that the picture is one of an endocrine dyscrasia and that the responsible glands are the suprarenals. We know that the secretion of the medulla of the normal suprarenal raises the blood pressure, and it is reasonable to assume that the increased secretion contingent on an abnormal suprarenal might give the symptom of so-called essential hypertension.

Assuming that essential hypertension is due to excessive secretion of epinephrine by hyperplastic suprarenals, comparable to the excessive secretion of thyroxine in hyperplastic thyroids, we have attempted to reduce the secretion by subtotal suprarenalectomy in a number of cases, the results of which will be shown in this paper.

Of all the endocrine glands, the one about which the most is known is the thyroid. This is, in fact, due to its accessible position. While we would not imply that the last word has been said regarding the thyroid, it is well known that in certain pathologic states there is an increased secretion of its normal thyroxine, and it is known that the resulting symptomatology, with its tachycardia, tremor, vasodilatation, loss of weight, increased basal metabolic rate and the like is due to the increased secretion circulating in the blood stream. It is also known that the disturbance of the thyroid gland itself which causes the hypersecretion is one of hyperplasia. What causes the hyperplasia of the thyroid is as yet only a matter of conjecture, but there is evidence

supporting the view that the vegetative nervous system plays an important role in it.

The suprarenal, because of the large network of nerve fibers connected with its capsule, has been called the brain of the vegetative nervous system. It seems logical, therefore, to find an analogy between the overactivity of the thyroid, due to sympathetic stimulation causing hyperthyroidism, and the overactivity of the suprarenals, due to sympathetic stimulation causing hypersuprarenalism. If this analogy is valid, partial suprarenalectomy should give results in hypertension comparable to those obtained from thyroidectomy for hyperthyroidism.

In all our cases of hyperthyroidism in which an operation has been performed and which later exhibited recurrent symptoms of hyperthyroidism we have been able to show an increase in the remaining hyperplastic tissues and have accordingly relieved our patient by again lessening the amount of the remaining tissue. In one case, partial thyroidectomy was performed no less than five times with eventual complete relief of symptoms and restoration of a normal basal metabolic rate.

Crile¹ has felt that even in these cases the suprarenal has been the activating influence and reports relief of symptoms through severing of the afferent nerves of the suprarenal gland. We ourselves performed suprarenal denervation in six cases of neurocirculatory asthenia with very indifferent results. In this disease there is almost always a normal or slightly lowered blood pressure, both systolic and diastolic. We believe, however, that in cases of hyperthyroidism the attack should be made on the thyroid itself, whenever possible. But even in pure hypersuprarenalism, denervation as performed by Crile does not seem to us to be sufficient, probably because a hyperplasia of the gland already exists, just as cervical sympathectomy was unsatisfactory in hyperthyroidism, and for the same reason.

Pende's² experimental denervation of a suprarenal gland in a kitten from which the other suprarenal had been removed two months previously resulted, six months later in a well maintained cortex and a completely atrophied medulla, but here there was no question of an existent hyperplasia, the organ being practically normal when denervation was done.

REPORTS OF SUPRARENALECTOMY IN THE LITERATURE

A glance over the literature reveals but few cases in which the attempt has been made to reduce essential hypertension by partial suprarenalectomy.

Galata³ and Antonucci in 1929 removed one entire suprarenal from a woman in a desperate condition with a systolic blood pressure of 300 mm of mercury, after all attempts at relief by medicinal measures had failed. The blood pressure fell in the first three days after operation to 210 and then remained more or less stable around 200, with disappearance of most of the associated symptoms. Another report six months later showed that this improvement had been maintained.

Monier-Vinard and Desmarest⁴ in 1930 reported the removal of the right suprarenal from a woman who had

suffered for ten years with intolerable hypertensive symptoms, from the time of the menopause. In this case recourse was had successively to spinal anesthesia, suprarenalectomy, radiotherapy and lumbar puncture. The removal of one suprarenal reduced a blood pressure of 320 systolic, 140 diastolic to 220 systolic, 110 diastolic, where it became stabilized for three months, after which it returned to the former figures.

Pieri⁵ in 1932, after trying the effects of resection of the right or left splanchnic nerves in five cases of essential hypertension, tried suprarenalectomy in two cases, removing in each case one entire gland. In the case of a man, aged 63 with a systolic pressure of 230 mm (Pachon), there was a very slight postoperative drop followed by a rapid rise soon afterward although the clinical symptoms were almost totally relieved, tachycardia on effort and a sense of thoracic pressure disappearing completely. At the end of twenty-two months the blood pressure exceeded 280 mm (Pachon). In the second case no improvement at all was observed, a blood pressure of 225 (Riva-Rocci) being exactly the same five months later.

On the other hand the experience of a larger number of writers in connection with the surgical removal of pheochromic tumors of the suprarenal, revealed clinically by attacks of paroxysmal hypertension, throws a different light on the subject. Eisenberg and Wallerstein⁶ found fifty-three cases of these tumors in the literature, one half of which were accompanied by hypertension, before the tumors were removed. After removal, the hypertensive attacks and all their associated symptomatology—omitting, tachycardia, dyspnea, and the like—ceased abruptly.

Cases of this kind have been reported, notably by Oberling and Jung,⁷ C. H. Mayo,⁸ Pincoffs,⁹ Shipley,¹⁰ Wilder,¹¹ Rabin,¹² and Labbe, Tinel and Doumer.¹³ Wilder¹¹ regards this as without doubt the most important evidence thus far obtained in support of the view that certain forms of hypertension may be due to the secretion of excessive amounts of epinephrine. Rabin¹² found thirty more or less similar cases in the literature, the most suggestive being those in which the hypertension produced by the tumors was paroxysmal.

The completeness with which all symptoms disappeared in these cases when the hyperplastic tissue responsible for hyperfunction of the gland was removed supports my view that the most rational method of treatment of essential hypertension is the surgical excision of sufficient amounts of glandular tissue to relieve the excessive functioning of the gland itself.

PROCEDURE

The operation of partial suprarenalectomy as performed by us consists of removal of about two thirds of each suprarenal and is done in two stages. The por-

5 Pieri G. Tentativi di cura chirurgica dell'ipertensione arteriosa essenziale. *Riforma med* 48 1173 (July 30) 1932.

6 Eisenberg A. A. and Wallerstein Harry. Pheochromocytoma of the Suprarenal Medulla. *Arch Path* 14 818 (Dec) 1932.

7 Oberling C. and Jung G. Paragangliome de la surrenale avec hypertension. *Bull et mem Soc med d hop de Paris* 51 366 (March 24) 1927.

8 Mayo C. H. Paroxysmal Hypertension with Tumor of Retroperitoneal Nerve. *J A M A* 89 1049 (Sept 24) 1927.

9 Pincoffs M. C. A Case of Paroxysmal Hypertension Associated with Suprarenal Tumor. *Tr A Am Physicians* 44 295 1929.

10 Shipley A. M. Paroxysmal Hypertension Associated with Tumor of Suprarenal. *Ann Surg* 90 742 (Oct) 1929.

11 Wilder R. M. Recently Discovered Endocrine Diseases. Hyper epinephrinism. Hyperinsulinism and Hyperparathyroidism. *Internat Clin* 1 293 (March) 1930.

12 Rabin C. B. Chromaffin Cell Tumor of the Suprarenal Medulla, *Arch Path* 7 228 (Feb) 1929.

13 Labbe Tinel and Doumer. Crises solaires et hypertension paroxystique en rapport avec une tumeur surrenale. *Bull et mem Soc med d hop de Paris* 46 982 (June 23) 1922.

1 Crile G. W. Recurrent Hyperthyroidism. Neurocirculatory Asthenia and Peptic Ulcer. Treatment by Operations on Suprarenal Sympathetic System. *J A M A* 97 1616 (Nov 28) 1931.

2 Pende N. Has Adrenalin Any Physiological Value in the Organism? *New York M J* 118 469 (Oct 17) 1923.

3 Galata G. Di un caso di ipertensione climaterica colla surrenectomia unilaterale. *Riforma med* 45 1449 (Oct 26) 1929. 46 538 (April 14) 1930.

4 Monier-Vinard and Desmarest. Hypertension arterielle permanente et primitive avec paroxysmes hypertensifs demesures. Influence de la rachianesthésie de la surrenactomie de la radiotherapie et de la ponction lombaire. *Bull et mem Soc med d hop de Paris* 54 1084 (June 23) 1930.

tion removed includes both medulla and cortex and is taken from the part of the organ remote from the entrance of the blood vessels

The approach is made from the back through a kidney incision, the kidney being held down with a special retractor. The suprarenal must be recognized and stripped clean of all fat and overlying structures. The portion to be removed is then clamped and excised, the raw surface being covered with a continuous lock-stitch chromic suture.

Spinal anesthesia is employed, and the blood pressure is watched closely throughout the entire operation. If the fall is more than anticipated, ephedrine is promptly given and intravenous saline solution with epinephrine administered in case of collapse. These patients, however, seem to tolerate spinal anesthesia very well, and to date we have not observed any alarming symptoms.

The operation is not severe and, aside from accidents, we consider it a safe surgical procedure.

REPORT OF CASES

CASE 1—Mrs E. M., a woman, aged 27, married a nullipara, admitted to the clinic, Oct 7 1933, complained of frequent vomiting spells with fullness of the head and dizziness. She said she had been confined to bed for two months previous to observation.

The family history was negative for goiter, carcinoma and tuberculosis. The mother and father were living and well. The patient started to menstruate at 13 years, the periods being irregular, often from six to eight months apart. She had had the ordinary diseases of childhood. There had been no operations.

On examination the patient was well developed and appeared acutely ill, severely nauseated and weak. There were no gross abnormalities of the skin; the mucous membrane was pale and the skin was hot and dry. The pupils were equal, reacting to light and in accommodation. The

sclerae and conjunctivae were negative. The ears and nose were normal on external examination. The lips were dry, the tongue was moderately coated. The breath was slightly fetid, its odor suggestive of acetone. The pharynx was red. The upper teeth were artificial, the remaining lower ones in fair condition. The neck was symmetrical. The thyroid was normal to inspection and palpation. Adenopathy could not be found.

The chest was symmetrical. Respiratory excursions were full and equal, negative to percussion and auscultation. The first sound at the apex, bounding and forceful in the fifth interspace, was slightly outside the nipple line. The rate was rapid and the sound not clear but replaced by a slight systolic murmur that was transmitted to the axilla. The second sound at the aortic area was tympanic in quality. The breasts were normal. The abdomen was symmetrical. No masses or tenderness could be felt. The liver and spleen could not be pal-

pated. No hernia was present. Reflexes were equal and sluggish. There was no edema of the extremities. The blood pressure was 245 systolic, 150 diastolic. Urinalysis in the morning showed specific gravity, 1006; albumin, negative; sugar, negative. In the afternoon specific gravity, 1022; albumin, negative; sugar, negative.

Microscopic examination was negative.

The basal metabolic rate was plus 24. The kidney function showed normal dilution and concentration. The Wassermann reaction of the blood was negative. The red blood cells numbered 4,800,000. The differential count was normal. Urea nitrogen was 15 mg. The blood sugar was 120 mg two hours after a meal.

We have given a rather comprehensive history to show that we were dealing with so-called essential hypertension. It should also be borne in mind that the patient had been confined to bed at her home 25 miles from Cincinnati for two months previous to the examination.

On admission she was given dextrose to overcome the acidosis. October 17, ten days later, the first operation was performed, which consisted of the removal of three-fourths of the left suprarenal under spinal anesthesia.

Before the spinal anesthesia was given the blood pressure was 260 systolic, 150 diastolic.

The systolic blood pressure readings during the operation were (starting operation) 9 17 a.m., 220, 9 23 230, 9 30 180, 9 32 140, (end) 9 47 220.

October 18, the day following the blood pressure was 176 systolic, 130 diastolic, October 19 174 systolic, 115 diastolic, October 20, 170 systolic, 130 diastolic, October 22, 164 systolic, 114 diastolic.

The second operation was performed, October 23, at which time three-fourths of the right suprarenal was removed.

October 25 the blood pressure was 172 systolic, 110 diastolic. October 26, three days after operation, the blood pressure was 165 systolic, 108 diastolic.

It is interesting to note that the patient's diastolic blood pressure did not go below 140 during her long period of bed rest (over two months) previous to operation but dropped to 108 three days after the second operation and has continued to fall to the time of writing.

CASE 2—Miss A. C. aged 55, single, a nurse, complained of headaches and dizziness. The father had died at 60 of pneumonia, the mother died at 72 of senility.

Five years previous to entrance to the hospital, the patient was refused life insurance because of high blood pressure, although at that time she was feeling well. About one year later she began having severe, persistent headaches with dizziness. Later these attacks were accompanied by hot and cold flashes. Cardiac action became forceful, accompanied with shortness of breath.

The menopause occurred at 52. The blood pressure on the patient's entrance to the hospital was 230 systolic, 140 diastolic. The patient was rather obese. The basal metabolic rate was plus 28.

Urinalysis in the morning showed specific gravity, 1008; albumin, negative; sugar, negative. In the afternoon it showed specific gravity, 1017; albumin, negative; sugar, negative.

The Wassermann reaction of the blood was negative. Nitrogen was 14.6 mg. Nonprotein nitrogen was 31.26 mg.

Left suprarenalectomy was performed Nov 21, 1933; right suprarenalectomy was performed December 1.

A pheochromocytoma of the size of a marble was found in the left suprarenal. Slides of both suprarenals showed lipoidosis of the cortex with medullary hyperplasia.

Immediately following the first suprarenalectomy the diastolic pressure dropped to below 100 mm of mercury and has remained there to date. At the last reading, December 17, the pressure was 150 systolic, 82 diastolic.

In six cases in which we have operated to date, exploring twelve glands, cortical tumors were present twice.

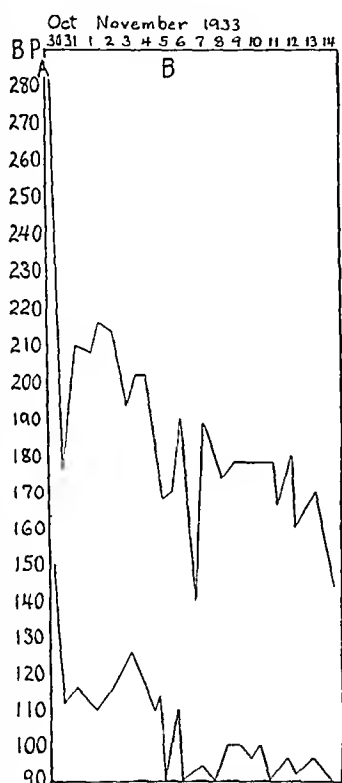


Chart 1—Drop of blood pressure following bilateral subtotal suprarenal ectomy. The spinal anesthesia had entirely worn off before these drops occurred. A, right suprarenalectomy; B, left suprarenalectomy.

COMMENT

According to Goldzieher,¹⁴ who has conducted experimental studies on the suprarenals for more than twenty years, the removal of an entire gland followed later by partial resection of the second gland, does not interfere in the least with the well being of the animal operated on. He found that not more than a fourth of one gland is needed to keep an animal alive indefinitely, and the Christians¹⁵ insist that life can be maintained on even less than this.

It has been our own experience that patients tolerate perfectly the removal of from two thirds to three fourths of each gland, a suitable period for recovery being allowed to elapse between the respective procedures on the two individual organs.

The view that hypertension is the result of pathologic changes in the suprarenals was first suggested by Josue¹⁶ and by Vaquez,¹⁷ both of the French school, in 1904. Vaquez dared on the basis of a case that he had studied anatomically, in which a patient with hypertension was found to have a hyperplastic suprarenal on one side, to formulate the hypothesis that "hypertension is caused by substances capable of provoking excessive vasoconstrictor phenomena, and that these can be discovered only in certain products elaborated by the glands of internal secretion and, in particular, by the suprarenal capsules."

Schur and Wiesel¹⁸ in 1907, expressed the view that there is a close connection between the problem of epinephrine formation and an associated hypertrophy of the suprarenal gland in all states attended with increased blood pressure, and that this is revealed not only by a chemically demonstrable increased epinephrine content but also morphologically by an increase of chromaffin substance, by the appearance of extensive cell connections in the suprarenal medulla and by multiplication of immature medullary cells.

In 1909, Philpot,¹⁹ after a study of twenty-seven cases of hypertension, reported that the suprarenal medulla was enlarged in nearly every case.

In the last decade, however, the view that pathologic changes of the suprarenals had any connection with hypertension was generally discounted by laboratory workers. Dietrich and Siegmund,²⁰ after a survey of the literature, considered the existence of a true medullary hypertrophy as still a debated question. Although admitting that there had been isolated cases of this phenomenon, they regarded these as exceptional and concluded that, whereas hyperplasia of the cortex is common enough, the medulla is very little subject to hyperplasia and that no relationship can be discovered between the development of medullary substance and any bodily condition or constitutional disease.

Recently, however, on the basis of new and comprehensive studies, Goldzieher²¹ has summarized, as follows, the accumulating evidence pointing to changes in

the medulla that serve as the forerunners of hypertension: (1) increased epinephrine content of the glands in states of hypertension, as demonstrated by Ingier and Schmorl²² and by Goldzieher,²¹ (2) hypertrophy of the musculature of the suprarenal veins demonstrated by Goldzieher and Sherman²³ and by Allen,²⁴ (3) morphologic changes of the suprarenal cortex²⁵ and diffuse hyperplasia of the suprarenal medulla.²⁶

Thus, Allen²⁴ observed in cases of hypertension that there was hypertrophy of the muscles of the suprarenal veins, which he thought in all probability indicated increased functional activity, the result of sympathetic overactivity. He found that the veins of the gland have in cases of hypertension, a ratio of muscle to lumen twice as great as that in cases of normal blood pressure, which theoretically would indicate (1) increased function of the suprarenal glands (2) over

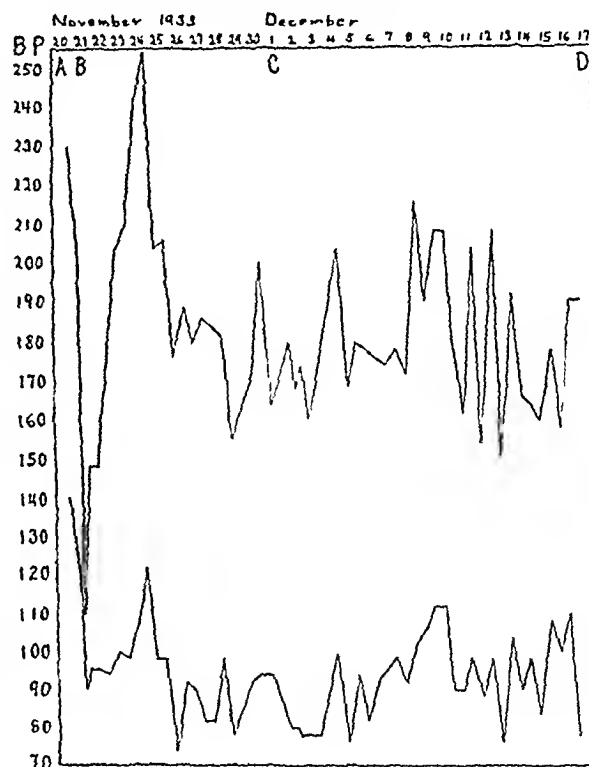


Chart 2 (case 2)—Initial drop secondary rise and maintenance of low diastolic pressure A date of admission B left subtotal suprarenalectomy, spinal anesthesia C right subtotal suprarenalectomy spinal anesthesia D date of dismissal

activity of the sympathetic nervous system, and (3) the effect of noxious substances in the blood stream. The fact that the total area of the lumens of all the suprarenal veins is greater in cases of hypertension than in those with normal blood pressure shows that there is a higher degree of vascularization in the former, which, according to Allen, probably indicates a higher level of functional activity. In his opinion, these observations are distinct evidence of a close relationship between increased functional activity of the suprarenal glands and a state of hypertension.

22 Ingier A and Schmorl G. Ueber den Adrenalinhalt der Nebennieren. *Deutsches Arch f klin Med* 104: 125 1911.

23 Goldzieher M A and Sherman Irving. Hypertrophy of Muscle in Suprarenal Vein in Hypertension. *Arch Path* 5: 1 (Jan) 1928.

24 Allen E V. The Suprarenal Glands and Hypertension. A Study of the Veins Within the Suprarenal Glands. *Ann Int Med* 3: 153 (Aug) 1929.

25 Landau M. Die Nebennierenrinde. Jena 1915.

26 Wiesel J. Zur Entwicklung der menschlichen Nebenniere. *Zentralbl f Physiol* 15: 614 1902. Goldzieher²¹.

14 Goldzieher, M A. *The Adrenals*. New York: Macmillan Company 1929. p. 30.

15 Christians H and Christians A. Recherches sur les capsules surrenales. *J physiol et path gen* 4: 838 1902.

16 Josue Otto. Capsules surrenales hypertension atherome. *Bull et mem Soc med d hop de Paris* 21: 139 1904.

17 Vaquez Henri. Hypertension. *Bull et mem Soc med d hop de Paris* 21: 120 1904.

18 Schur and Wiesel. *Physiologie und Pathologie des chromaffinen Gewebes*. Wien: Klin Med 20: 699 1907.

19 Philpot A. An Investigation of the Histological Conditions of the Suprarenal Glands in Conditions Associated with High Blood Pressure. *Quart J Med* 3: 34 1909 1910.

20 Dietrich A and Siegmund H. Die Nebenniere und das chromaffine System in Henke F and Lubarsch O. *Handbuch der speziellen pathologischen Anatomie und Histologie*. Berlin, Julius Springer S 985.

21 Goldzieher M A. Nodular Hyperplasia of Adrenal Medulla. *Endocrinology* 16: 20 (Jan Feb) 1932.

Similar studies conducted by Goldzieher and Sherman²³ showed that both the muscle of the central vein and the single muscle bundles of the small venules participate in the hypertrophy. Injection of the suprarenals through the central veins in patients with hypertension revealed a different distribution of the injected dye from that observed in the controls.

The fact that it was not possible to demonstrate by laboratory methods the presence of epinephrine in the arterial blood has been used as a clinching argument by the opponents of this view of a relationship between medullary pathologic changes and phenomena of hypertension. "No one," admitted Shipley¹⁰ in 1929, "has proven up to the present that an increase of epinephrine is found in the blood in patients with hypertension. Many clinical observations in patients with chromaffin cell tumors indicate that this is true, but the proof has not been forthcoming."

Very recently, however, Kure²⁷ and his co-workers have found a new method by which this demonstration has at last been accomplished. By strictly excluding oxygen, which destroys epinephrine, from the blood during the taking of the measurements, they succeeded in demonstrating the presence of the vasoconstrictor substance in the arterial blood. They found that the substance cannot be measured until it is present in amounts in excess of 1/2,500,000 in the whole blood, that oxygen destroys it, that addition of hydrochloric acid increases it, and that it is present in larger amounts in the arterial blood of hypertonic than in that of normal individuals. The substance was always present in the arterial blood in rather high degree, but not in standing blood nor in venous blood. Reasoning that, if hypertension in essential hypertonia is produced by hypersuprarenalinemia, this excess must inevitably be decreased by administration of atropine, which inhibits its liberation into the blood, these workers were able to demonstrate by actual measurements that this decrease occurs after such administration of atropine.

It is therefore finally established in the laboratory that human arterial blood contains epinephrine and that this epinephrine is found in increased quantities in the blood of hypertensive subjects.

Goldzieher²¹ has lately drawn attention to the occasional finding of hyperplastic nodules in the pheochromine tissue of the suprarenal. He reports four such cases, in all of which there was either a present state of hypertension or indications of an earlier condition of this kind. The nodules were quite comparable to the nodular growths characteristic of hyperplastic processes in other glandular organs. The appearance of this nodular hyperplasia in addition to diffuse hyperplasia in subjects with hypertension or a history of past hypertension again raises the question whether their occurrence is only incidental here or might be expected with some degree of regularity. Since hyperplasia of other glandular organs has been regarded ordinarily as adequate morphologic evidence of their increased function, it seems unnecessary to look for further proof that the same relations hold true for the suprarenals.

Taking all the evidence into account, we feel, therefore, that the establishment of a clear relationship between essential hypertension and overproduction of epinephrine, comparable to that existing between hyperthyroidism and oversecretion of thyroxine, justifies our contention that the most logical way to reduce essential

hypertension is to reduce the amount of superfluous secreting tissue in the suprarenal gland itself.

The case studies of partial suprarenalectomy that we have carried out have been so uniformly satisfactory that we feel that we are now relieving patients who previously were doomed to die, and we are accordingly publishing this report with the hope that the work will be carried on by others in carefully selected cases.

CONCLUSIONS

1 An analogy exists between the overactivity of the suprarenals, due to hypersuprarenalism, and the overactivity of the thyroid, due to hyperthyroidism.

2 Partial suprarenalectomy gives results in hypertension comparable to the results of thyroidectomy in hyperthyroidism.

3 In some of our cases, partial suprarenalectomy relieved all symptoms of hypertension.

4 There is a relation between hypersuprarenalism and hypertension, in states of essential hypertension it is always possible to demonstrate hyperplasia of the suprarenal medulla.

210 West Ninth Street

NEGATIVE EFFECT OF PROLONGED ADMINISTRATION OF OVARIAN SUBSTANCES IN HEMOPHILIA

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The attempt to treat hemophilia by ovarian extract is not new. As early as 1904, Grant¹ recorded clinical improvement in a patient with hemophilia following the administration of small amounts of an ovarian extract. Wright² in 1909, mentioning possible means of combating this inherited defect, skeptically commented on the possibility of administering ovarian extract to male bleeders "with a view of endowing them with the mysterious physiological advantage which, in bleeder families, attach to the female sex." In 1923 Hynes³ suggested that the production of antithrombin was controlled by the internal secretions of the sex glands. He reported normal clotting of hemophilic blood following injection of corpus luteum. B and M Gonzalez-Alvarez⁴ in 1925 and Samson-Himmelstjerna⁵ in 1926 discussed the theoretical possibilities of treating hemophilia by ovarian extract. Neihans⁶ in 1930 treated two hemophilic patients with ovarian implant and observed improvement following the implantation of ovary without corpus luteum, whereas no benefit followed the implantation of whole ovary.

Recent interest in the treatment of hemophilia with estrogenic substance has been stimulated by the reports

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¹ Grant L. On Hemophilia and Its Treatment. *Lancet* 2: 1279 (Nov. 5) 1904.

² Wright A. E. Hemophilia in Allbutt's System of Medicine. London 5: 918, 1909.

³ Hynes K. Nouvelles considerations sur l'hémophilie. *Ann. de med.* 14: 122 (Aug.) 1923.

⁴ Gonzalez Alvarez B. and Gonzalez Alvarez M. Hemophilia. *Siglo med.* 75: 7 (Jan. 3) 1925.

⁵ Samson-Himmelstjerna H. v. The Nature of Hemophilia and Its Etiological Treatment. *M. J. & Rec.* 124: 329 (Sept. 15) 1926.

⁶ Neihans Paul. Treatment of Hemophilia. *Schweiz. med. Wchnschr.* 60: 18 (Jan. 4) 1930.

27 Kure K., Nakaya T., Murakami S. and Okinaka S. Hyperadrenalinämie bei essentieller Hypertonie und ihre Behandlung durch Atropin. *Klin. Wchnschr.* 12: 454 (March 25) 1933.

of Birch.⁷ She has reported nineteen cases of hemophilia in which from 15 to 80 grains (1 to 5 Gm) daily of ovarian preparations was given subcutaneously, intramuscularly and orally over long periods of time.^{7c} In nine of these patients she observed a good response to ovarian therapy, in nine others a definite but less marked improvement and in one no obvious response. In these cases the effect was both general, as shown by an increase in weight, vitality and hemoglobin, and specific, as shown by a decrease in the number and severity of the hemorrhages and a lowered blood coagulation time. Foord and Dysart,⁸ Kimm and Van Allen,⁹ and White¹⁰ have reported immediate cessation of hemorrhage and diminution of coagulation time following the intramuscular injection of ovarian extract or estrogenic substance. Kugelmass¹¹ has observed that while therapy with the female sex hormone preparation "produces no change in the concentration of the clotting substances from the levels characteristic of hemophilic subjects" and has not diminished the tendency to bruising, it has decreased the tendency to bleeding following natural trauma and has diminished periodic effusions. Key,¹² without presenting specific data, felt that the condition of two cases of hemophilia he studied was not influenced by the administration of ovarian extract. Bernstein¹³ reported symptomatic relief in two hemophilic patients after the intramuscular injection of small amounts of whole blood from menstruating women. He states that ovarian extract had been given previously to these patients without change in their joint disorders. Blaylock,¹⁴ in reporting the amputation of an arm of a patient with hemophilia, mentioned the daily subcutaneous administration of an ovarian preparation obtained from the fetal fluid of cattle. One week later, the coagulation time of the blood was slightly longer than before ovarian therapy was instituted.

More recently, Brown and Albright¹⁵ have reported the treatment of a 42-year old hemophilic patient with injections of two preparations of estrogenic substance over a period of three days without significant change in the coagulation time. Estrogenic substance was demonstrated in the urine of this patient before treatment and in greatly increased amounts during the administration of the hormone.

The theory that has prompted these repeated attempts to control hemophilic bleeding and blood-clotting mechanisms by the administration of ovarian extracts and the estrogenic factor is not without a certain speculative attraction. The generally accepted belief, substantiated by studies of cytologists and geneticists, is that the character of inherited traits depends on the character and behavior of the chromosomes. Inherited traits may be sex linked, sex limited or independent of

sex. The work of Wilson, Morgan, and other students¹⁶ of the subject has shown that in human beings the male has only one X-chromosome, whereas the female has two. Certain traits including such conditions as hereditary optic atrophy, color blindness and hemophilia are believed to be transmitted in the X-chromosomes. These conditions are called sex-linked defects in distinction to cases of simple heredity, in which the determiners are located in other chromosomes. Certain traits such as the growth of facial hair, are also independent of the X-chromosomes but are termed sex-limited characteristics, owing to the influence exerted on them by hormones from the sex glands. It is improbable that the administration of potent ovarian substance or of estrogenic substance could exert a fundamental influence on the existence of hemophilia. It is logical to speculate whether or not the bleeding manifestations of the disease might be inhibited temporarily by providing the hemophilic male with substances that can be demonstrated in females and normal males but lacking in males with hemophilia. Such a substance, if effective at all conceivably might act either on the circulating blood to produce an immediate and transient effect or on the faulty elements of the blood of hemophilic patients at their site of formation, thus to produce a delayed and probably more prolonged effect.

Birch^{7b} has reported the production of estrus in rats injected with extracts of the urine of normal men, whereas no estrus was produced in rats injected with extracts of the urines of seven hemophilic males and of two transmitters (females) of hemophilia. From these observations she concluded that the urine of hemophiliacs is lacking in estrogenic substance. To be of undoubted significance these results must be confirmed in every case of proved and active hemophilia so tested. The demonstration of estrogenic principle in an undoubted case of hemophilia would tend to disprove the responsibility of that substance for the immunity to hemophilic manifestations possessed by females. Contrary to Birch's observations the estrogenic factor has been demonstrated consistently in the urines of five of our patients (no estrogenic factor determinations were carried out in cases 4 and 7) in amounts usually greater than those contained in the urines of normal males.¹⁷ Brown and Albright¹⁵ also found estrogenic substance in the urines of their hemophilic patient before treatment.

The present communication reports the results observed in seven hemophilic patients either fed large quantities of ovarian tissue or given by mouth or parenterally various extracts of ovary and estrogenic substance for from four to eleven weeks.

These patients exhibited classic manifestations of hemophilia dating from infancy or early childhood, and in each instance there were other male members in the family who were affected similarly. Their ages varied from 14 to 36 years. All had suffered repeated hemorrhages into their joints with resulting deformities and limitation of motion of one or more joints. Morphologic examination of the blood in no case revealed significant abnormalities except a slight degree of hypochromic anemia. Blood platelets in each case were normal or increased in number. Three of the seven patients (patients 1, 2 and 5) had been treated in 1931

7 (a) Birch, Carroll L. Hemophilia. *Proc Soc Exper Biol & Med* 28: 752 (April) 1931. (b) Hemophilia and the Female Sex Hormone. *J A M A* 97: 244 (July 25) 1931. (c) Hemophilia. *ibid* 99: 1566 (Nov 5) 1932.

8 Foord A G and Dysart B R. Treatment of Hemophilia by an Ovarian Extract by Birch's Method. *J A M A* 98: 1444 (April 23) 1932.

9 Kimm H T and Van Allen C M. Hemophilia. Prevention and Treatment of Bleeding with Ovarian Extract. *J A M A* 99: 991 (Sept 17) 1932.

10 White C E. Treatment of Hemophilia with Theelin. *J Okla homa M A* 25: 304 (July) 1932.

11 Kugelmass I N. The Management of Hemorrhagic Problems in Infancy and Childhood. *J A M A* 99: 895 (Sept 10) 1932.

12 Key J A. Hemophilic Arthritis. *Ann Surg* 95: 198 (Feb) 1932.

13 Bernstein M A. The Treatment of Joint Lesions in Hemophilia by Means of Whole Blood from Menstruating Women. *J Bone & Joint Surg* 14: 659 (July) 1932.

14 Blaylock Alfred. Amputation of Arm of Patient with Hemophilia. *J A M A* 99: 1777 (Nov 19) 1932.

15 Brown R L and Albright Fuller. Estrin Therapy in a Case of Hemophilia. *New England J Med* 209: 630 (Sept 28) 1933.

16 Castle W F. *Genetics and Eugenics* ed 4. Cambridge Mass. Harvard University Press 1930.

17 The content of estrogenic substance of the urine was determined by Drs G V and O W Smith in the Fearing Research Laboratory of the Free Hospital for Women Brookline Mass. These results will be reported subsequently.

with large amounts of liver without objective benefit, as reported by Marlow¹⁸

METHODS AND MATERIALS USED

In determining the blood coagulation time, both venous blood and capillary blood were used. All determinations were carried out at room temperature. A modification of the method of Lee and White¹⁹ was used for the venous blood. Five cubic centimeters of

of capillary blood obtained from puncture of an ear lobe was determined by means of a capillary tube in the same manner as for venous blood.

The coagulation times of the venous and capillary blood from our patients were determined at frequent intervals during the administration of the following preparations of ovarian substance or estrogenic substance, which were given for various periods of time as indicated, and as recorded in the charts:

- 1 Theelin, orally to patients 1 and 2
- 2 Soluble ovarian substance intramuscularly to patient 4
- 3 Ovarian substance-desiccated whole ovary, orally to patient 3
- 4 Fresh ground raw whole beef ovary (a small residue of connective tissue was discarded) orally to patients 1 and 4
- 5 Aqueous extract from fresh whole beef ovary, orally to patient 2. This extract was prepared by adding from 200 to 400 cc of water to ground ovaries and shaking in a mechanical shaker for two hours at room temperature. After straining the juice expressed in the grinding was added to the aqueous extract for administration.
- 6 The solid residue of ovarian tissue after water extraction, orally to patient 1
- 7 Ovarian substance, orally to patients 1, 5 and 6
- 8 Theelin subcutaneously to patients 3 and 7

RESULTS OF TREATMENT

It is evident from a study of the accompanying charts that no significant changes occurred in the coagulation time of either the venous or the capillary blood of these patients which could be attributed to any one of the various forms of ovarian substance or estrogenic substance administered. Six of the patients received large amounts (quantities are shown in the charts) of one or another form of ovarian substance for from twenty-eight to eighty-one days. Patient 7 received theelin subcutaneously while in a severe bleeding phase, which terminated fatally in three days.

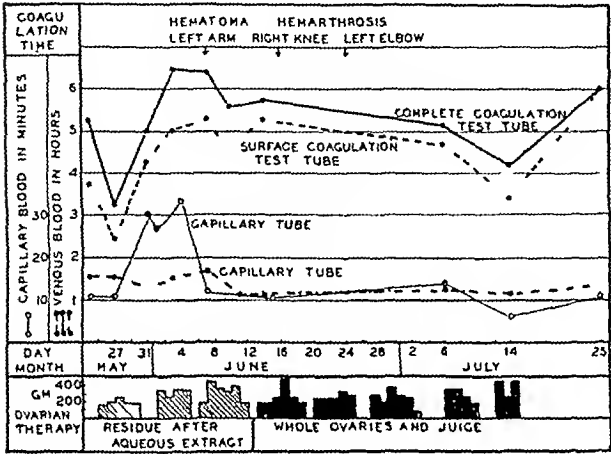


Chart 1—Observations on the blood coagulation time in case 1 while ovarian therapy was being given

blood was drawn from an arm vein into a syringe that had been rinsed previously with physiologic solution of sodium chloride, care being taken to cause as little admixture of tissue juice as possible. One cubic centimeter of this blood was dropped into each of five test tubes 8 mm in diameter, which also had been rinsed with physiologic solution of sodium chloride. The first tube was tilted at intervals of fifteen minutes until it could be inverted without its surface contour being disturbed. This procedure was then carried out on each succeeding tube until all could be inverted without having fluid run at the surface. This end point was recorded as the time of surface coagulation. At this time the blood cells, which had settled to the bottom of the tube, still continued to flow when the tube was tilted. The period of observation was continued until the sediment of cells showed no motion when the tube was tilted. This was recorded as the time of complete coagulation. These two end points are very close together normally and widely separated only when delayed coagulation of the blood is present or when the cells have settled before the first solid clot forms. They can be distinguished readily in normal blood if it is centrifugated rapidly for two or three minutes before clotting occurs.

The coagulation time of venous blood in a capillary tube was determined also. For this determination a tube 10 cm long and approximately 1 mm in diameter was nearly filled by capillary attraction with venous blood immediately after withdrawal. At intervals of five minutes the capillary tube was tilted and the movement of the column of blood was observed. When the movement became sluggish, pieces were broken from the end of the capillary tube at intervals. The time at which a fibrin thread could be drawn out of the tube was considered the end point. The coagulation time

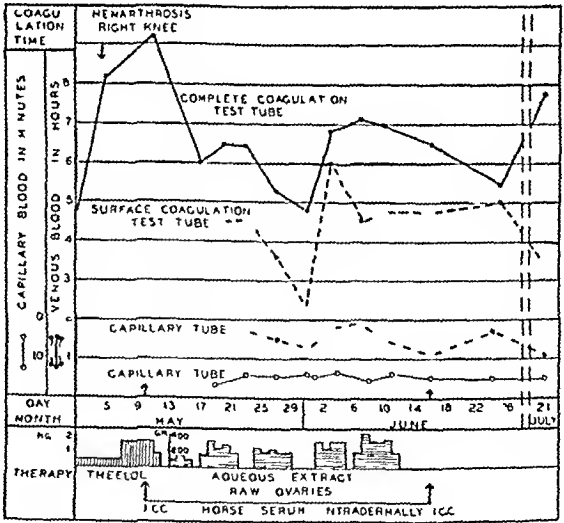


Chart 2—Observations on the blood coagulation time in case 2

Patient 1 received 0.4 mg (200 rat units) of theelin by mouth daily for a period of nine days, and then 0.8 mg (400 rat units) daily for eighteen days, with no significant reduction in the coagulation time of his venous blood. Chart 1 shows the variations in the coagulation time of his blood immediately following this twenty-seven day period when, over a period of eighteen days, he was given the residue after aqueous extraction of 3,980 Gm of ovary, a daily average of residue derived from 221 Gm of whole ovary. This

18 Marlow A. The Negative Effect of the Administration of Liver in Hemophilia. Bull. Johns Hopkins Hosp. 49:49 (July) 1931.
19 Lee R. I. and White P. D. A Clinical Study of the Coagulation Time of Blood. Am. J. M. Sc. 143:495 (April) 1913.

was followed by the administration of a total of 5,989 Gm of fresh, raw ground, whole ovary over a period of thirty-two days an average of 187 Gm a day. These combined periods covered eighty-one days during which not only did his coagulation time fail to diminish but he suffered one spontaneous hematoma and two hemarthroses.

Patient 2 (chart 2) received a total of 4,800 rat units of theelin by mouth over an eleven day period after

average of 193 Gm. The coagulation time was unchanged.

Chart 5 shows the complete coagulation times of the venous blood observed in cases 1, 5 and 6 during the administration of ovarian substance by mouth over periods of forty-four, seventy, and forty-one days respectively. The usual daily dose of 8 Gm of this substance is reported by the manufacturer to be the approximate equivalent of 48 Gm of the fresh glandular substance. These periods of observation started eleven weeks after patient 1 had received the treatment shown in chart 1 and ten weeks after patient 5 had received anterior pituitary-like principle from the urine of pregnancy for seven days. Patient 6 had received no ovarian therapy previously.

In case 6 the coagulation times of one hour and on the following day of four hours observed eighteen weeks after therapy was stopped, were shorter than any observed during or immediately following treatment. Coagulation times of five hours and four hours and thirty-six minutes were observed six months after treatment. Six days after the last observation of the coagulation time in case 1 recorded in chart 5 it rose to seven hours and forty-five minutes to fall a week later to three hours and fifty-five minutes a level identical with that observed on the thirty-fifth day of treatment.

During these periods of observation all three patients were excreting estrogenic substance in amounts varying from less than 2 rat units to 12 rat units per forty-eight hour quantity of urine. In no case was there any demonstrable correlation between the amount of estrogenic substance excreted and the coagulation time of the blood.

An additional patient (patient 7) who was bleeding severely was given a total of 5 cc (250 rat units) of theelin in three intramuscular injections over a three-day period. This resulted in no apparent effect on his bleeding. In spite of repeated blood transfusions and injections and local applications of a thromboplastic substance and hemostatic serum, he continued to bleed and died from hemorrhage.²¹

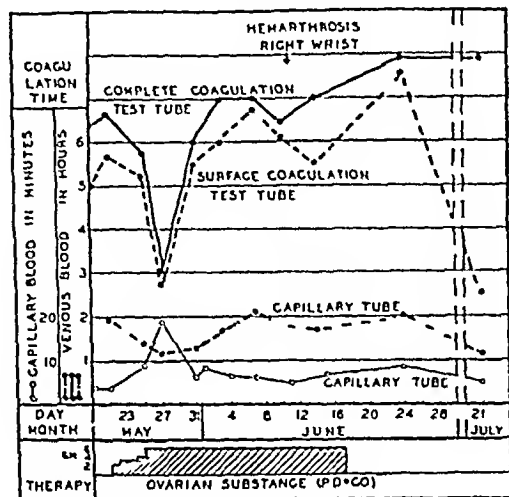


Chart 3—Observations on the blood coagulation time in case 3

which he was given the aqueous extract derived from 5,521 Gm of ovaries over a period of thirty days, a daily average of extract derived from 184 Gm of whole ovaries. In view of the occurrence of a hemarthrosis, it did not seem justifiable to deter the administration of horse serum to which he had been sensitized previously. As shown by Eley and Clifford²⁰ and also by Marlow,¹⁸ this procedure has little or no effect on the coagulation time of venous blood but shortens the clotting time of capillary blood, and it was thus not a probable factor in the shorter coagulation time of the venous blood observed after its administration.

Patient 3 (chart 3) was given desiccated ovarian substance orally, 2 Gm for one day, 3 Gm on the second and third days, 4 Gm on the fourth day, and thereafter 6 Gm daily for twenty-four days. This total amount, given over a period of twenty-eight days, is reported by the manufacturer to be derived from 936 Gm of whole ovary, making a daily average derived from 33.4 Gm of the gland. Six months after the period shown in chart 3, the patient was given 1 cc (50 rat units) of theelin subcutaneously daily for seven days. During the latter period the coagulation time of the venous blood dropped from ten hours to seven hours and thirty-four minutes. One week after the treatment was discontinued, the coagulation time was six hours. Although this is a 40 per cent decrease in the coagulation time, it is no greater a drop than is seen frequently without therapy and does not seem attributable to therapy with estrogenic principle in view of the continued drop after theelin was omitted.

Patient 4 (chart 4), after the daily intramuscular injection of 1 cc of soluble extract of ovarian substance for eighteen days and 2 cc daily for the subsequent four days, received orally 6,189 Gm of whole raw ground ovary over a thirty-two day period, a daily

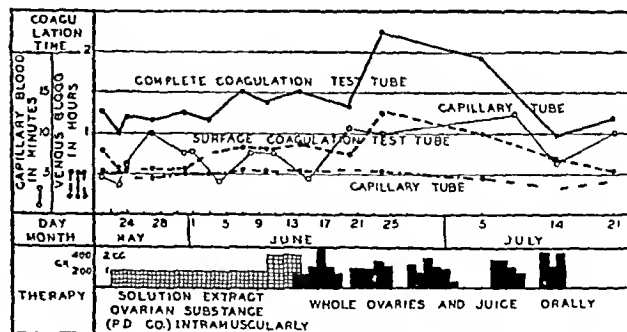


Chart 4—Observations on the blood coagulation time in case 4

COMMENT

The amount of ovarian substance given in six of these cases of hemophilia was greater than any recorded in the literature given in similar cases. The periods of observation would seem long enough to demonstrate any change in coagulation time that such therapy might effect. The fluctuations of blood coagulation time observed are of a magnitude encountered frequently in hemophilic patients under no specific form

²⁰ Eley R. C. and Clifford S. H. Hemophilia. Treatment by Protein Sensitization. Am J Dis Child 42: 1331 (Dec) 1931.

²¹ Acknowledgment for permission to include this case is gratefully made to the Third Medical Service (Tufts) of the Boston City Hospital.

of therapy, as was demonstrated in these cases during control periods. Case 1 has been observed for twenty-four years, cases 4 and 5 have been observed for six years. During these years when various forms of treatment were given or when no particular treatment was given, the fluctuations of the blood coagulation time have been fully as great as has been recorded during the present series of observations. In no case in which ovarian therapy was given did the coagulation time of the venous blood approximate a normal figure.

In two instances (cases 3 and 7) the subcutaneous injection of estrogenic substance (theelin) for from three to seven days failed to produce any immediate effect on the coagulation time in either case or on the severe bleeding in case 7.

Three of our patients felt that they were subjectively improved by treatment. Patient 5 gained 29 pounds (13.2 Kg) while in the hospital. However, none of our patients showed objective evidence of improvement other than could be expected to result from rest, an adequate diet, physical therapy and general measures of hygiene. In four of the patients (1, 3, 4 and 5) hemarthroses developed late in the course of ovarian treatment and in only one instance (case 5, chart 5) was there any demonstrable infection that might be

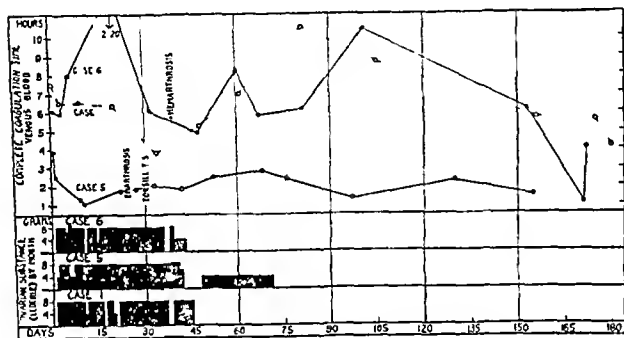


Chart 5—Observations on the complete coagulation time of the venous blood in cases 1, 5 and 6 during and after the oral administration of ovarian substance

considered a precipitating factor. In no instance could we obtain a history of unusual trauma, which might have caused these hemarthroses.

SUMMARY

The coagulation time of the blood of seven patients with hemophilia was observed repeatedly during treatment with ovarian substance or estrogenic substance. Large amounts of one or another of eight different preparations were given over periods of from twenty-eight to eighty-one days. In no instance was the coagulation time of the venous blood found to be depressed as the result of such therapy. Theelin (estrogenic substance) administered subcutaneously to two patients for from three to seven days neither stopped bleeding nor reduced the clotting time.

Estrogenic substance was demonstrated consistently in the urines of our patients both under ovarian therapy and during control periods. No correlation could be established between the quantity of estrogenic substance excreted in the urine and the fluctuations of the blood coagulation time.

No clinical improvement was noted which could be attributed to ovarian therapy. In four of the patients hemarthroses developed without obvious trauma or infection late in the course of treatment.

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BLOOD GROUPS AND THERAPEUTIC MALARIA

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Since malarial therapy for syphilis of the central nervous system has come into vogue, several problems of practical importance have arisen which have interested the physician employing this mode of therapy. For therapeutic as well as for economic reasons, it is highly desirable that the course of malarial treatment be as short as possible. Usually such a course, if successfully carried out, consumes from eight to ten days, with an incubation period of four days or less. Wide variations in the incubation period, however, have often prolonged the course of treatment, making it unsatisfactory from an economic point of view. In fact, frequently the patient has to be kept in the hospital for weeks because the malarial fever cannot be induced in spite of repeated injections of blood containing virulent parasites. This has been ascribed to the following causes: individual factors,¹ the manner of inoculation, i. e., subcutaneously or intravenously,^{2a} the stage of development of the parasite in the donor's blood,² the amount of blood injected,³ the strain of the organism, the temperature of the environment,⁴ and the compatibility between the donor's red blood cells and the recipient's serum. In 1927, Wendtberger,⁵ from a study of the blood groups of donors and recipients in fifty cases in which malarial therapy was used, found that in some instances in which the donor's cells were incompatible with the recipient's serum malarial fever could not be induced at all, while in others it was induced only after a prolonged incubation time. The success or failure in the attempt to induce malaria in these cases was found to depend on the agglutinin titer of the recipient's serum.⁶ Following Wendtberger's work, a number of similar investigations were carried out by Wethmar,⁷ Pilcz,⁸ Arzt and Fuhs,⁹ Herrmann and Hlshnikowski,¹⁰ and Walter.¹¹ With the exception of Walter's studies, the observations of Wendtberger have been almost unanimously confirmed.

An interesting phenomenon that has come to light in the therapeutic application of induced malaria, which

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1 (a) Gertsman, Josef. Die Malariaabhandlung der progressiven Paralyse. Vienna. Julino Springer, 1925. (b) Kohn, Berthold. Die Behandlung der quartanen Syphilis mit akuten Infektionen. Munich. J. F. Bergmann, 1927. (c) O'Leary, P. A. and Welsh, A. L. The Treatment of Neurosyphilis with Malaria. J. A. M. A. 101: 498 (Aug. 12), 1933.

2 von Wagner, Jauregg, Julius. Einige Bemerkungen über Impf Malaria. Wien. klin. Wchnschr. 40: 26 (Jan. 6), 1121 (Sept. 8), 1927. Hopf, G. Die Bedeutung von Blutgruppenkonstellation und Entwicklungsstadium der Plasmodien für Malaria- und Inkubationszeit. München. med. Wchnschr. 75: 1755 (Oct. 12), 1928. Horn, L. Studie über die Malaria-Parasiten im vertragenen und unvertragenen Serum. Wien. klin. Wchnschr. 42: 995 (July 25), 1929. Knights, E. M. The Influence of Blood Groups in Malarial Transfusions. J. Lab. & Clin. Med. 15: 980 (July), 1930.

3 Doerr, R. and Kirschner, L. Zur Malariaabhandlung der progressiven Paralyse. Ztschr. f. Hyg. u. Infektionskr. 92: 279, 1921.

4 Hecht, Elada, M. Zur Impfmalaria der Syphilis. Arch. f. Dermat. u. Syph. 156: 377, 1928.

5 Wendtberger, J. Blutgruppen und Impfmalaria. Wien. klin. Wchnschr. 40: 345 (March 17), 1927. 43: 932 (July 24), 1930.

6 Obermayer, M. and Wendtberger, J. Blutgruppen und Impfmalaria. Wien. klin. Wchnschr. 41: 1304 (Sept. 13), 1928.

7 Wethmar, R. Blutgruppen und Impfmalaria. Klin. Wchnschr. 6: 1947 (Oct. 8), 1927.

8 Pilcz, A. Sur Frage der Blutgruppen und Impfmalaria. Wien. klin. Wchnschr. 40: 653 (May 19), 1927.

9 Arzt, L. and Fuhs, H. Zur Malariaabhandlung der Syphilis. Arch. f. Dermat. u. Syph. 153: 464, 1927.

10 Herrmann, G. and Hlshnikowski, H. Blutgruppen und Verlauf der Impfmalaria. Med. Klin. 24: 1700 (Nov. 2), 1928.

11 Walter, F. Ueber den Einfluss der Neosalvarsaninfektionen auf die Inkubationsdauer der Impfmalaria bei Fröhlsyphilitikern. Dermat. Wchnschr. 88: 19 (Jan. 5), 1929.

was first described by Korteweg¹² and later by Wethmar,¹³ is that of so called primary fever. This is a remittent fever without chills appearing about the fourth day after inoculation of the malarial blood and lasting until one or two days before or merging with the actual malarial chills. Although previously unrecognized as such, primary fever is now believed by some to occur in naturally acquired as well as in artificially induced malaria.¹⁴ Wethmar¹⁴ has shown that in induced malaria the occurrence and course of the fever are greatly influenced by the blood group of the donor and of the recipient. Thus he found that when the incubation time was short primary fever occurred in 100 per cent of the cases and lasted on an average of 3.7 days, while in the cases in which the incubation time was prolonged only 42 per cent presented primary fever, with an average duration of only slightly more than one day. Since the incubation time is influenced by the compatibility between the donor's cells and the recipient's serum it follows that the blood groups indirectly affect the frequency of occurrence and duration of the primary fever as well.

The importance of this phenomenon resides in the fact that patients who are too weak to be subjected to a high primary fever may be spared this additional strain by receiving incompatible malarial blood, which would greatly lessen the intensity as well as the possibility of the occurrence of primary fever.

Still another practical problem that has arisen as a result of the widespread use of malarial therapy is the possible danger of emboli, which might result from the injection of incompatible blood. It is conceivable in fact probable, that incompatible donor's cells, small though the quantity may be, might be agglutinated by the recipient's serum and result in emboli, which may produce infarcts in the lungs. In the presence of a patent foramen ovale this may even result in cerebral embolism. Wendtberger, Wethmar and others have recognized a definite reaction that follows the injection of incompatible malarial blood. This appears soon after the injection and consists of a rise in temperature with chills, nausea and dyspnea. It is significant that these reactions have been observed mainly in cases in which the incompatible blood was injected intravenously.

The American literature, with the exception of a study of twelve cases reported by Knights in 1930, has no information on any of these problems. However, since these problems appeared to be of sufficient importance to warrant further investigation, the present study was undertaken.

One hundred and twenty-seven cases of dementia paralytica were observed. Each patient received 5 cc of malarial blood intravenously a few minutes after the blood was withdrawn from the donor. The blood groups of donor and recipient were determined according to the method described by Landsteiner.¹⁵ From the time the patient received the blood the clinical course was carefully observed with regard to the following: (A) incubation period, (B) immediate or delayed incompatibility reactions (rise in temperature, embolic phenomena, dyspnea, gastric distress, chill, sup-

pression of urine, hematuria and the like) and (C) occurrence and duration of primary fever.

A Incubation Period—The data can be studied best from the accompanying table and chart. In the table the cases have been classified into two groups, namely, those receiving compatible and those receiving incompatible blood, with a record of the incubation period in each. It will be observed that in the former group¹⁶ the average incubation period is 4.30 days, while in the latter it is 8.18 days. That the difference between the average incubation periods of the two groups is not merely apparent but actually significant has been proved mathematically by Dr. A. S. Wiener.¹⁷ The accompanying chart is plotted from the figures in the table and shows more vividly the influence of blood compatibility on the incubation period.

A study of the table further discloses that in addition to the difference in the incubation periods noted in the two groups there is also a wide variation of the incubation period within each group, as evidenced by the large standard deviation. (The standard deviation was calculated to be 3.04 ± 0.24 days in the series receiving

Incubation Period of Injection Malaria in Patients Receiving Compatible and Incompatible Blood

Incubation Period Days	Patients Receiving Compatible Blood		Patients Receiving Incompatible Blood	
	No. of Cases	Per Cent of Cases	No. of Cases	Per Cent of Cases
1	6	0.5	2	4.4
2	7	8.0	0	0
3	22	26.8	2	4.4
4	17	18.3	3	6.7
5	17	15.9	4	8.9
6	5	6.1	5	11.1
7	4	4.9	7	15.5
8	0	0	5	11.1
9	1	1.2	3	6.7
10	0	0	2	4.4
11	0	0	1	2.2
12	1	1.2	2	4.4
13	1	1.2	2	4.4
14	0	0	1	2.2
15	1	1.2	0	0
16	0	0	0	0
17	0	0	1	2.2
18-19	0	0	0	0
20	1	1.2	0	0
21-22	0	0	0	0
23	0	0	2	4.4
Total	79	100	42	100

compatible blood and 4.76 ± 0.51 days in the series receiving incompatible blood. This variation may be attributed to other factors already enumerated which influence the incubation period. One of the most important of these is individual resistance to malarial infection. Thus O'Leary and Welsh,¹⁸ in a recent report on a study of malarial therapy in 984 cases of neurosyphilis, found it impossible to induce chills and fever in 10 per cent of the patients inoculated, because of their immunity to malaria. In our series there were

16 This group could be subdivided into two groups, namely those receiving homologous blood (O → O, A → A, B → B and AB → AB) and those receiving heterologous blood (such as O → A, O → B, O → AB, A → AB, B → AB). In the former subgroup (forty-six cases) the mean incubation period was 4.64 days and in the latter (thirty-three cases) 3.85 days, so that there was no significant difference between the two types of cases. This is rather to be expected since it is the donor's erythrocytes and not the serum which contain the malarial parasite.

17 That the difference between the means of the two groups is significant may be proved by calculating the probable error of this difference. The probable error of a mean is given by the formula $P.E. = \frac{\sigma}{\sqrt{N}}$.

18 In which σ represents the standard deviation of the data and N the number of individuals examined. In the group receiving compatible blood, the probable error is 0.22 day, and in the group receiving incompatible blood 0.48 day. The probable error of the difference between the means is equal to $\sqrt{0.22^2 + 0.48^2} = 0.52$ day. Therefore the difference between the two means is more than seven times as great as its probable error. Since a difference of such a magnitude could occur by chance only in more than 1,000,000 trials it is unquestionably significant.

12 Korteweg, P. C. First Onset of Malaria. Nederl. Tijdschr. v. Geneesk. 1, 1622 (April 12) 1924.

13 Manson, Patrick. Experimental Proof of the Mosquito Malaria Theory. Lancet 2, 923 1900. James, S. P. Rapport sur les premiers résultats obtenus par les travaux de laboratoire sur la paludisme en Angleterre. Soc. des Nations. Geneva 1926.

14 Wethmar, R. Ueber Anfangsfehler und Inkubation bei der Impf malaria und der spontanen Malaria. Deutsche med. Wchnschr. 54, 826 (May 18) 1928.

15 Landsteiner, Karl. The Newer Knowledge of Bacteriology and Immunology. Chicago: Jordan & Falk, 1928.

six cases (three in each group) in which malaria could not be induced, in spite of repeated inoculations with malarial blood. These failures were also probably due to the individual resistance to the parasite. It may be added that these cases were not included in the calculations in order to avoid masking the effect of the use of compatible and incompatible bloods.

B "Incompatibility" Reactions—Untoward reactions consisting of the symptoms already described occurred in eleven cases following inoculation of the malarial blood. In no instance, however, could it be determined with any degree of certainty that these reactions were

during the incubation period was frequently too irregular to conform rigidly to the definition of primary fever as stated by its authors.

SUMMARY AND CONCLUSIONS

A series of 127 cases of dementia paralytica treated with malarial blood was studied in order to determine (a) the effect of the injection of compatible or incompatible blood on the incubation period, (b) the occurrence of immediate or delayed reactions to incompatible malarial blood, and (c) the frequency of occurrence of so-called primary fever. The following conclusions may be drawn:

1 The average incubation period is 4.30 days when the malarial blood injected is compatible and 8.18 days when it is incompatible with the recipient's serum. That this difference is significant was proved by statistical analysis.

Wide variations of the incubation periods were noted in the group of patients receiving compatible as well as in those receiving incompatible blood. These differences may be ascribed to factors other than compatibility or incompatibility of blood.

2 With regard to untoward postinoculation reactions, it was not possible to determine with any degree of certainty that they were due to incompatibility between the donor's and the recipient's blood. Other possible factors may be responsible for these reactions.

3 Primary fever occurred in only 15 per cent of the patients receiving compatible malarial blood. These figures are much smaller than those found by previous investigators. The difference is perhaps due to the fact that it is difficult to recognize this phenomenon because the postinoculation temperature curve is frequently too irregular to conform rigidly to the definition of primary fever.

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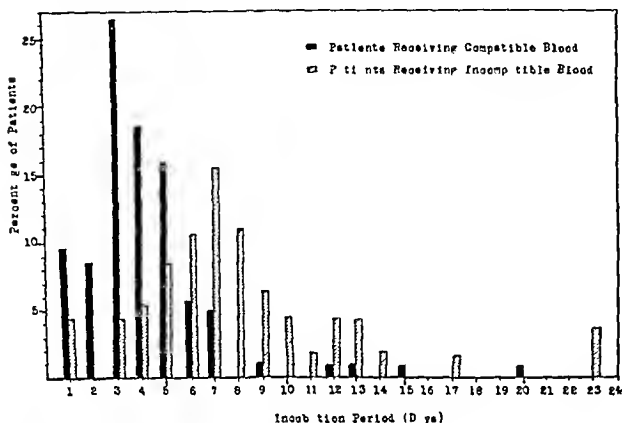
NECESSITY FOR REVISING THE COMMON CONCEPTION OF FOCAL INFECTION

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A focus of infection has been defined as a circumscribed area of tissue infected with pathogenic organisms.¹ General recognition that it can cause systemic or general disease makes its elimination an important part of the treatment of such disease.

COMMON MISCONCEPTION OF FOCAL INFECTION

In the common conception of focal infection, attention seems to be concentrated on the infected tissue rather than on the infecting bacteria. When a physician speaks of eliminating the focus of infection, what he really means is the removal of infected tissue such as tonsils and teeth or the opening and draining, or the cleaning out of an infected cavity, such as a nasal accessory sinus. He apparently fails to realize that, in the upper air passages, at least, infecting bacteria seldom are confined to a circumscribed area of diseased tissue but are present also on adjacent tissues. The germs infecting the tonsil, for instance, may be found on the adjacent mucous membrane of the throat and



Influence of blood compatibility on incubation period of infection malaria

due to incompatibility between the donor's and the recipient's blood. The donor's and the recipient's blood were compatible in the five instances in which chills and rise in temperature followed within one or two hours after inoculation. One of the severest of these reactions occurred in a case in which both donor and recipient belonged to group A (the subgroup was not determined). In seven cases, hemoglobinuria or hematuria followed the inoculation, but in four of these instances the bloods of donor and of recipient were compatible. Hence the observations of Wendtberger, Wethmar and others regarding blood incompatibility reactions were not confirmed in this study. It is possible that the various other factors that are known to produce untoward symptoms following intravenous injection of blood might have caused the reactions noted by the previous authors as well as by us. Among these causes may be mentioned foreign proteins (in the malarial cells as well as in the blood of the donor), incipient coagulative changes, and chemical contamination of the donor's blood.¹⁸

C Primary Fever—We have found it quite difficult to determine with certainty the occurrence of primary fever. The temperature curves after inoculation (during the period of incubation) in most cases failed to correspond with those described by Wethmar and the others who have described the phenomenon. In the group of forty-two patients receiving incompatible blood, primary fever developed in only five (or about 12 per cent) while in the group of seventy-nine patients receiving compatible blood, it developed in twelve (15 per cent). These figures are strikingly smaller than those given by Wethmar. The difference may be due to our failure to recognize the phenomenon. In our cases it was found that the temperature curve

18 Polaves S. H. and Lederer Max. Reactions to Blood Transfusions. J. Lab. & Clin. Med. 17: 1029 (July) 1932.

Read before the College of Physicians of Philadelphia Nov. 2, 1933.
1 Billings Frank. Focal Infection. New York: D. Appleton & Co. 1916. p. 2.

nasopharynx and in the infratonsillar lymphoid tissue. Similarly the microorganisms infecting a sinus find their way to the nasal and nasopharyngeal mucous membrane. These microbes are not removed by tonsillectomy and simple treatment or operation but continue to live and multiply elaborating toxins and infecting distant tissues.

FOCUS OF INFECTION IN TONSILS NOT ERADICATED BY TONSILLECTOMY

Why should so many physicians, including otolaryngologists, state that the focus of infection has been eradicated after tonsillectomy? It is known that the surgeon frequently fails to remove all the tonsillar tissue leaving behind tonsillar stumps,² which constitute as great a focus of infection as did the whole tonsil. Indeed Rhoads and Dick³ believe that in many instances the condition resulting from incomplete tonsillectomy is worse than that existing before the operation. Even when a perfect tonsillectomy has been performed it often is followed by a recurrence of tonsillar tissue which may be just as serious a focus of infection as the original tonsil.⁴ The lymphoid masses commonly spoken of as recurrent tonsils⁴ but really nothing more than infratonsillar lymphoid tissue that has worked its way upward into the empty tonsillar fossa⁵ are regarded by French⁴ as quite as potent a factor of systemic infection as infected faucial tonsils, the same microorganisms being recovered from the two. Normal appearing tonsillar fossae also may harbor infecting organisms as I have repeatedly demonstrated⁶ and thus act as foci of infection. I made seventy-four pathogen-selective cultures of apparently clear tonsillar fossae and found infecting bacteria in seventy-three (97 per cent).

FOCAL INFECTION IN THE NASOPHARYNX NOT REMOVED BY OPERATION

When adenoid vegetations in the nasopharynx constitute the focus of infection adenoidectomy is supposed to eradicate it. Yet tags and remnants after adenoidectomy by skilled physicians were found by Hill⁷ in 25 per cent of 409 students over 16 years of age and in 50 per cent of 186 younger children.

2 Clark J P. Results in a Series of Cases of Tonsillectomy at the Massachusetts General Hospital Three to Four Years After Operation. *Tr Am Laryngol A* 1913 pp 43-52. Rhoads P S and Dick G F. Efficacy of Tonsillectomy for the Removal of Focal Infection. *J A M A* 91: 1149-1154 (Oct 20) 1928.

3 Leskin Norman and Pearlman S J. Are Tonsillar Recurrences Entirely Due to Faulty Operative Technique? *Arch Otolaryng* 13: 37-46 (Jan.) 1931.

4 French T R. Tonsillectomy and Its Recent Revelations. *The Nose Throat Ear and Throat Diseases* (edited by Chevalier Jackson and George Morrison Coates). Philadelphia W B Saunders Company 1929 p 250.

5 Leskin and Pearlman.³ French.⁴ Grichtel B B and Pearlman S J. Lymphoid Tissue in the Tonsillar Fossae Following Tonsillectomy. *Ann Otol Rhinol & Laryng* 32: 860-863 (Sept.) 1923. Spake I B. The Recurring Tonsil. *J Kansas M Soc* 22: 321-323 (Nov.) 1922. Baum H L. Complications and Sequelae of Tonsil and Adenoid Operations. Their Prevention and Management. *Ann Otol Rhinol & Laryng* 28: 37-49 (March) 1919. McMurray J B. A Study of the Superficial and Deep Lymphoid Tissues of the Hypopharynx. *Atlantic M J* 30: 63-66 (Nov.) 1926. Long C H. Recurrence of Tonsils After Tonsillectomy. *Illinois M J* 45: 266-268 (April) 1924. Roberts E R. The Tonsil Problem Working Hypothesis for General Guidance. *Arch Otolaryng* 6: 565-568 (Dec.) 1927. Pierce N H. Discussion on the Tonsil Question to Date. *Tr Am Laryng Rhin & Otol Soc* 1921 p 267.

6 Solis Cohen Myer and Heist G D. A Method of Distinguishing from Among Various Microorganisms Present in a Patient Those that Are and Those that Are Not Acted upon by That Patient's Whole Coagulable Blood. *Pennsylvania M J* 25: 27-34 (Oct.) 1921. Solis Cohen Myer. Visceral Disease Due to Bacterial Infection of an Apparently Normal Upper Respiratory Tract. *J A M A* 83: 824-829 (Sept 13) 1924. Boerner Fred and Solis Cohen Myer. A Study of Pathogen-Selective Cultures in Relation to Vaccine Therapy. *Am J Clin Path* 3: 125-131 (March) 1933.

7 Hill F T. Observations Following Adenoidectomy. *Arch Otol* 14: 775-779 (Dec.) 1931.

The apparently normal nasopharynx frequently becomes the habitat of infecting germs and thus serves as a focus of infection, as I pointed out some years ago.⁸ I made 147 pathogen-selective cultures of the nasopharynx in suspected infections of the upper respiratory tract and found infecting organisms in 140 (95 per cent).

Frequently the same infecting bacteria that are present in diseased tonsils are living also in the nasopharynx. I made seventy-eight simultaneous pathogen-selective cultures of diseased tonsils and the nasopharynx, finding the same infecting organism in both cultures in forty-two (54 per cent). The nasopharynx on the other hand may contain infecting bacteria that are not present in the tonsils. In eighteen of the seventy-eight cultures (23 per cent) none of the infecting organisms present in the nasopharynx were found in the tonsils. Similarly the tonsils may contain infecting germs that are absent from the nasopharynx. In eighteen (23 per cent) of the cultures the tonsils contained infecting organism not present in the nasopharynx. The nasopharynx may also contain the same infecting organisms that are present in the tonsillar fossae, as occurred in thirty-eight (47 per cent) of eighty-one pathogen-selective cultures which I made simultaneously of each of these areas. In twenty-one (26 per cent) of these cultures no infecting microbe present in the tonsillar fossae was found in the rhinopharynx while in twenty-two (27 per cent) no infecting organism present in the nasopharynx was found in the tonsillar spaces. It has been my practice in recent years when searching for foci of infection, to make pathogen-selective cultures in the same tube of the tonsillar spaces and nasopharynx. I made 305 such cultures in 283 (93 per cent) of which infecting organisms grew up.

FOCI OF INFECTION IN NASAL ACCESSORY SINUSES NOT ELIMINATED BY TREATMENT OR OPERATION

A similar situation exists in regard to infection in the nasal accessory sinuses. When the rhinologist has opened and drained a sinus or has done a conservative or radical operation on it, he believes and reports that he has eradicated the focus of infection. The infecting organisms, however, frequently still remain in or about the treated sinus. I made 230 pathogen-selective cultures of the nares and thirty-five such cultures of the sinuses of patients who had received expert treatment for sinusitis and found infecting organisms in 180 (78 per cent) of the nasal cultures and in twenty (57 per cent) of the sinus cultures. Seventy-five simultaneous pathogen-selective cultures of the nares and the nasopharynx showed the same infecting germ in thirty (40 per cent). In twenty-one (28 per cent) none of the infecting germs present in the nares were found in the nasopharynx and in twenty-four (32 per cent) no infecting organism present in the nasopharynx was found in the nares. Nine simultaneous pathogen-selective cultures were made of the sinuses and the nasopharynx in one third of which the same infecting organisms were found in the two areas in another third the infecting organisms in the sinuses were absent from the nasopharynx, and in one third none of the infecting germs in the nasopharynx were found in the sinuses.

But not only is the rhinologist unable to eliminate a bacterial focus of infection in the sinuses, frequently

8 Solis Cohen Myer. The Rhinopharynx as a Site of Focal Infection. *Ann Otol Rhin & Laryng* 33: 935-950 (Sept.) 1924.

according to Skillern,⁹ Proetz,¹⁰ Carter¹¹ and Pond,¹² he fails to cure the sinusitis

FOCAL INFECTION IN THE ORAL CAVITY NOT
ALWAYS REMOVED BY THE EXODONTIST

Focal infection in the oral cavity as a rule can be eradicated by surgery, but it is not always removed when infected teeth are extracted. According to Post,¹³ a residual pathologic condition is a most important and often overlooked source of focal infection

SHOULD THE EXPRESSION "ELIMINATION OF THE
FOCUS OF INFECTION" BE APPLIED TO
MERE REMOVAL OF INFECTED
TISSUE?

In the interest of accuracy should not such expressions as "removal" or "elimination" or "eradication" of the focus of infection be avoided when tonsillectomy or sinus treatment or operation is being described? The physician then would not be influenced by this incorrect and misleading information to abandon his investigation of the upper air passages and in his search elsewhere for the elusive focus even to order sometimes the unnecessary extraction of healthy and useful teeth on the chance that the focus of infection might be there. Realization that the focus of infection had not really been eliminated might minimize his disappointment when no improvement in the systemic disease follows the operative procedure. A result helpful to science would be a lessening of the skepticism as to the etiologic importance of focal infection and of the tendency to assign a greater rôle to factors that may be unimportant or only of secondary significance

A REVISED CONCEPTION OF FOCAL INFECTION

If the conception of focal infection stressed the bacterial element and regarded the causal germ as the chief infecting agent, the problems involved in its eradication would be better appreciated. It then would not be so difficult, in the absence of recognizably diseased tissue, to conceive of a bacterial focus of infection, produced solely by infecting organisms living on an apparently normal mucous membrane where they multiply and elaborate their toxins. One would realize that surgery alone cannot possibly remove all the infecting organisms, which can be overcome only by the patient's defensive forces

MEASURES REQUIRED FOR ELIMINATING
FOCAL INFECTION

The elimination of a focus of infection requires the production of bactericidins and other antibodies to destroy the infecting bacteria and render their toxins harmless. In most cases it will be necessary at one or more foci to extirpate accessible and removable diseased tissue that has become a favorable soil for the growth of the infecting germs. Sometimes following such removal a patient regains his lost or lowered resistance and recovers from the systemic disease without further medical assistance. Such a striking cure following operation strongly impresses the physician, despite bitter disappointments in other cases, and

doubtless has helped to preserve the oft wavering belief in the focal origin of disease. It probably is one reason for the impression that the surgeon can remove a focus of infection. In my experience, however, such favorable results are not the rule.

In most cases the physician must come to nature's aid. Billings¹⁴ recognized this when he recommended not only removal of all primary and, if necessary, all secondary foci of infection but also the building up of the natural defenses of the body.

Before making a diagnosis of focal infection, however, one of course must be certain that the condition is not one of allergy, lack of proper vitamins or endocrine dysfunction.

Among the patients whose condition has been unaffected by operative procedures, a number will improve when their resistance has been raised by hygienic measures. Others will require, in addition, artificial stimulation of specific antibody production by means of vaccine, which must contain the proper specific antigens obtained from the infecting bacteria.

DETERMINING THE INFECTING BACTERIA

The chief objection to vaccine therapy in systemic disease is the difficulty or even impossibility of deter-

Action of Patient's Fresh Whole, Coagulable Blood on the
Organism Predominating in the Culture in
Rosenow's Brain Broth

Organism	Predominating in Brain Broth Number	Growing in Patient's Blood		Failing to Grow in Patient's Blood	
		Number	Per Cent	Number	Per Cent
Bacillus proteus	2	2	100	0	0
Diphtheroids	1	1	100	0	0
Streptococcus haemolyticus	17	16	94	1	6
Streptococcus viridans	33	26	79	7	21
Staphylococcus (unclassified)	4	3	75	1	25
Staphylococcus aureus	81	67	70	24	30
Friedlander's bacillus	3	2	67	1	33
Streptococcus nonhaemolyticus	7	49	65	26	35
Pneumococcus	2	1	50	1	50
Staphylococcus albus	161	54	36	97	64
Staphylococcus pharyngis	3	1	33	2	67
Streptococcus (unclassified)	3	1	33	2	67
Micrococcus pharyngis leucis	4	1	25	3	75
Bacillus coli	5	1	20	4	80
Total	384	215	56	169	44

mining what germ is the cause of the disease and which, if any, of the bacteria at a supposed primary focus is the etiologic factor.

In a subacute or chronic infection the mere presence of microbes on or in infected tissue or in the secretion or excretion from it is no indication of any etiologic relationship between them and that infection. Indeed, such germs may not even be pathogenic for the patient, as I have repeatedly shown. Yet many autogenous vaccines are made up from just such organisms. Nor is the predominating germ necessarily the causal one in subacute and chronic infections, although many physicians and even some bacteriologists make their vaccine chiefly from it. Of 384 cultures made in Rosenow's brain broth, the predominating organism was capable of infecting the host in only 215 (56 per cent) and was nonpathogenic in 169 (44 per cent). The accompanying table shows the percentages for the different organisms. Moreover, in over 10 per cent of all the cultures in Rosenow's brain broth the infecting organisms failed to grow up.¹⁵ This I have attributed to their being

14 Billings Frank Focal Infection p 145

15 Solis Cohen Myer and Rubenstein A I The Technic of the Pathogen Selective Method of Culture J Lab & Clin Med 11 881 886 (June) 1926

9 Skillern R H Tempus fugit Ann Otol Rhin & Laryng 39 663 669 (Sept) 1930
10 Proetz A W The Sinus in Perspective Ann Otol Rhin & Laryng 38 682 684 (Sept) 1929
11 Carter W W A Plea for More Conservatism in the Treatment of Nasal Accessory Sinus Infections Ann Otol Rhin & Laryng 39 578 583 (June) 1930
12 Pond C W A Discussion of Some of the Clinical Problems of Chronic Sinusitis Ann Otol Rhin & Laryng 37 677 690 (June) 1928
13 Post J W Focal Infection of Alveolar Origin from the Standpoint of the Roentgenologist Hahnemann Monthly 65 167 171 (March) 1930

overgrown by the more numerous organisms that are nonpathogenic to the patient¹⁶. Is it to be wondered if therefore that vaccines so prepared often have little or no therapeutic effect?

For determining the causal organism in a subacute or chronic infection a number of methods have been devised utilizing improved technique, differentiating mediums, animal passage, the bactericidal power of whole blood tests for hypersensitiveness and serologic tests, including agglutination, precipitation, hemolysis, absorption, complement fixation tests and the like. The pathogen-selective method is based on the assumption that organisms capable of growing in the fresh, whole, coagulable blood of the patient are those which are most pathogenic for that individual.¹⁷ One of its advantages is that it furnishes a means for selecting the etiologically important organisms from a mixed culture. It is the only selective method described in Kolmer and Boerner's *Approved Laboratory Technique*¹⁸. Its simplicity makes it easily available for clinical use.

ERADICATING THE BACTERIAL FOCUS OF INFECTION BY MEANS OF VACCINE

In order to eradicate a bacterial focus of infection by stimulating resistance to the infecting bacteria and their toxins the vaccine must contain all the infecting organisms. This necessitates taking proper cultures of all possible foci, including the nasopharynx, which, as has been shown, may contain infecting organisms not present in the tonsils or in the tonsillar fossae. The vaccine in my opinion should contain as many antigens as possible, the soluble exotoxins as well as the endotoxins. Such a vaccine, however, is extremely potent and must be employed with great caution.

When the required specific antibodies have been produced in sufficient quantities to overcome the infecting organisms and their toxins, the focus of infection can truly be said to be eradicated at both the primary and the secondary foci.

CONCLUSIONS

1 The common conception of focal infection concentrates attention on the infected tissue rather than on the infecting bacteria.

2 When the physician speaks of eradicating a focus of infection, what he really means is removing infected tissue, such as tonsils or teeth, or draining and cleaning out an infected cavity, such as a nasal accessory sinus.

3 Infecting bacteria seldom are confined to a circumscribed area of diseased tissue but are present also on adjacent tissues, which may be apparently free from disease.

4 Enucleation of diseased tonsils does not necessarily remove the focus of infection, because the infecting organisms may still remain in tonsillar stumps, in recurring tonsillar tissue, in infratonsillar lymphoid tissue, and on the apparently normal mucous membrane of the tonsillar fossae and the nasopharynx.

5 A focus of infection in a nasal accessory sinus is not necessarily eliminated by treatment or operation, because infecting bacteria may still persist there.

6 Such expressions as "removal" or "elimination" or "eradication" of the focus of infection should be

avoided when one is describing tonsillectomy or sinus treatment or operation.

7 The conception of focal infection should stress the bacterial element and regard the causal germ as the chief infecting agent.

8 Surgery alone cannot possibly remove all the infecting organisms, which can be overcome only by the patient's defensive forces.

9 The elimination of a focus of infection requires the production of bactericidins and other antibodies to destroy the infecting bacteria and render their toxins harmless, which can be aided by hygienic measures but in many cases needs the artificial stimulation of a potent vaccine containing the proper antigens obtained from the infecting bacteria.

10 The pathogen-selective culture selects the etiologically important organism from a mixed culture, and the vaccine made from it contains both the endotoxins and the soluble exotoxins of the infecting bacteria.

11 When, in addition to the extirpation of accessible and removable diseased tissue that has become a favorable soil for the propagation of the infecting germs, the required specific antibodies have been produced in sufficient quantities to overcome the infecting organisms and their toxins, the focus of infection can truly be said to be eradicated at both the primary and the secondary foci.

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EFFECT OF DIATHERMY TREATMENT OF KIDNEYS ON THE RENAL FUNCTION

AS MEASURED BY THE UREA CLEARANCE TEST

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Largely as the result of the speculation that Bright's disease results from spasm of the renal vessels, diathermy treatment has been extensively employed in this disease in the past few years. The belief has prevailed that the diathermy current actually heats the kidney and thus causes relaxation of the arteriolar spasm, in turn resulting in better perfusion of the kidney with blood.

Contradictory literature has grown up regarding the observed effects of renal diathermy.¹ Some investigators have found neither a diuretic effect nor any evident therapeutic advantage, whereas others have stated that they have had good results.

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¹ These include:

- Bergell P. and Baumstark R. Zur Pathogenese und Therapie der Nierenklerose. *Ztschr. f. phys. u. diätet. Therap.* 26: 426, 1922.
Bronner H. and Schuller J. Zur Diathermie der Niere, München med. Wchnschr. 74: 1829 (Oct. 28) 1927.
Buck G. Anleitung zur Diathermiebehandlung, ed. 2. Vienna Urban & Schwarzenberg, 1926.
Ewig W. Diathermiebehandlung der Nierenentzündung. *Deutsche med. Wchnschr.* 57: 51 (Jan. 9) 1931.
Kolscher, G. Diathermic Treatment of Medical Kidney Disease. *Arch. Phys. Therapy* 8: 391 (Aug.) 1927.
Kowarschik Josef. Die Diathermie, ed. 6. Berlin, Julius Springer, 1928.
McIntosh J. F., Möller E. and Van Slyke D. D. Studies of Urea Excretion. III. The Influence of Body Size on Urea Output. *J. Clin. Investigation* 6: 467 (Dec.) 1928.
Möller E., McIntosh J. F., and Van Slyke D. D. Studies of Urea Excretion. II. Relationship Between Urine Volume and the Rate of Urea Excretion by Normal Adults. *J. Clin. Investigation* 6: 427 (Dec.) 1928.
Nagelschmidt Franz. Lehrbuch der Diathermie, ed. 3. Berlin, Julius Springer, 1926.
Rausch Z. Die Wirkung der Nierendiathermie auf die renalen Hyper-tonien. *Deutsche med. Wchnschr.* 58: 1440 (Sept. 9) 1932.
Rauteberg. Die künstliche Durchwärmung innerer Organe. *Deutsche Kongr. inn. Med.* 28: 463, 1911.
Weinstein M. L. and Klein, J. The Effect of Medical Diathermy on the Renal Excretion of Urea and Chlorides. *Illinois M. J.* 51: 385 (May) 1927.

¹⁶ Solis Cohen (footnotes 6 and 8).

¹⁷ Solis Cohen and Heist⁶, Boerner and Solis Cohen⁴, Solis Cohen and Rubenstein¹⁴, Solis Cohen Myer. Accentuating Pathogenic Organisms in Culture by Utilizing the Inhibitory Influence of Whole Blood. *Brit. J. Exper. Path.* 8: 149-154 (June) 1927. Lowe E. C. Pathogen Selective Cultures as an Aid to the Diagnosis of Infective Foci. *Brit. M. J.* 2: 98-100 (July 21) 1928. Solis Cohen Myer. The Pathogen Selective Vaccine. Its Preparation and Administration. *M. Times* 58: 206-207 (July) 1930.

¹⁸ Kolmer J. A. and Boerner Fred. *Approved Laboratory Technique*. New York: D. Appleton & Co. 1931. p. 395.

In order to obtain evidence concerning the effects of diathermy on renal function I have observed the effect of one-hour periods of diathermy on the urea clearance. The subjects were either normal or those suffering from hemorrhagic Bright's disease, nephrosis, or essential hypertension.

PROCEDURE

The patients were all kept in bed during the test. A control period of one hour was run followed by one

ance was estimated as described by Møller, McIntosh and Van Slyke.

The diathermy machine employed was number 4 of the Westinghouse X-Ray Company. One electrode was placed over each kidney region and a large electrode over the upper part of the abdomen. An attempt was made to give as high dosage as could be tolerated by the patient without serious discomfort. In most cases from 1,700 to 1,900 milliamperes could be employed.

RESULTS

The accompanying table presents the results of the diathermy treatment.

In all cases the blood urea was not changed to any large extent there being a slight tendency to fall from the first period to the last. Also, no consistent change in the water excretion was noted, and, lastly, the urea clearance was not altered significantly. Blood pressure measurements during the diathermy treatment showed no consistent change from the control level.

SUMMARY

Diathermy treatment has been given to fourteen subjects (normal subjects and patients with hemorrhagic Bright's disease, nephrosis and essential hypertension) for one-hour periods. No significant change was observed in the blood pressure or in the renal function as measured by the urea clearance test, diuresis or blood urea. The results afford no support for the assumption that renal diathermy is of therapeutic value in essential hypertension or Bright's disease.

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CREATINE METABOLISM IN CHILDREN WITH HYPOTHYROIDISM

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The discovery of metabolic functions of creatine in muscle metabolism has attracted considerable clinical interest in the study and treatment of disorders of the muscular system particularly in pseudohypertrophic muscular dystrophy and myasthenia gravis. This subject was reviewed by Harris and Brand¹ in a recent issue of THE JOURNAL.

Evidence is gradually accumulating, however, which indicates that the metabolism of creatine has a wider clinical importance than in the specific myopathic diseases. Changes in creatine excretion have been noted in individuals not suffering from disorders of the muscular system. A detailed discussion of these changes and their significance in the various phases of normal and pathologic physiology may be found in the writings of Hunter² and Rose.³ It seems likely that creatinuria in the human being is related to defective creatine storage in muscle or to abnormally high creatine synthesis. Creatinuria occurs in all types of muscular dystrophy and in states of increased endogenous protein catabolism, as in fever and in certain cases of

From the Departments of Pediatrics and Physiology, University of Illinois College of Medicine.
1 Harris M. M. and Brand Erwin. Metabolic and Therapeutic Studies in the Myopathies. J. A. M. A. 101: 1047 (Sept. 30) 1933.
2 Hunter Andrew. Monographs on Biochemistry. London: Longmans Green & Company 1928.
3 Rose W. C. Annual Review of Biochemistry 2: 187 1933.

Results of Diathermy									
Case	Diagnosis	Blood Urea Mg per 100 Cc	Corrected Urine Volume Cc per Minute*	Urea Clearance per Cent of Normal	Blood Pressure				
					Sys- tolic	Diastolic			
1	Normal	16.5	23	89.7	116	70			
			5.7	91.0	112	72			
		15.1	3.6	86.0					
2	Normal	13.5	6.5	112.0	122	80			
			8.2	86.4	114	76			
		14.3	5.6	77.3					
3	Hemorrhagic Bright's disease	83.4	1.4	6.0	152	91			
			2.7	7.1	160	83			
		81.3	2.4	6.9	164	83			
4	Hemorrhagic Bright's disease	24.9	1.3	3.4					
			3.1	32.5					
		24.5	3.0	28.8					
5	Hemorrhagic Bright's disease	26.5	1.0	92.0	120	78			
			1.2	94.1	118	76			
		26.4	1.7	85.4					
6	Hemorrhagic Bright's disease	20.9	1.5	8.6	162	103			
			2.2	8.6	148	96			
		20.5	2.7	12.3	152	93			
		22.8	1.2	9.2	142	102			
		22.2	1.9	9.5	142	96			
7	Hemorrhagic Bright's disease	22.5	2.0	9.7	140	96			
		18.5	0.9	50.2					
			4.4	63.0					
8	Hemorrhagic Bright's disease	17.9	6.5	63.5	160	110			
		62.6	1.1	15.4					
			1.2	14.6					
9	Hemorrhagic Bright's disease	62.3	1.3	14.9					
		75.9	1.3	14.3					
			1.9	13.9					
10	Recovered hemorrhagic Bright's disease	75.0	2.3	15.6					
		12.0	4.6	95.3	140	67			
			6.4	101.2	142	66			
		12.0	5.3	172.6	138	61			
		10.9	2.9	121.8	124	62			
11	Hemorrhagic Bright's disease		3.6	127.4	120	60			
		10.8	5.9	135.7					
		77.7	1.3	8.0	160	83			
		77.6	1.0	7.0	164	86			
		76.4	2.2	7.7					
12	Essential hypertension	11.2	10.9	83.9	210	130			
		11.0	7.9	89.3	180	110			
		9.6	10.3	111.7	184	116			
		12.0	2.0	64.1	172	110			
		11.9	4.6	94.8	160	106			
13	Essential hypertension	11.4	11.8	80.3					
		11.2	10.9	88.9	184	116			
		11.0	7.8	89.3	188	112			
		7.3	6.6	65.2	288	136			
		7.7	7.4	85.5	245	125			
14	Malignant hypertension	7.3	6.8	67.0					
		11.7	5.2	78.2	240	123			
		10.8	6.0	80.7	223	115			
		18.9	0.6	64.5	240	140			
		18.0	0.7	69.7	234	140			
		18.1	4.2	53.1					
		17.8	0.79	84.3	270	142			
		16.2	0.93	95.7	272	142			
		16.0	3.4	60.9	280	146			
		20.8	0.6	63.2	263	170			
			1.0	65.6	255	165			
		20.5	1.1	59.0	262	170			

* Corrected urine volume is the observed urine volume x 1.79 sq meters body surface. The correction is used as described by McIntosh and Van Slyke.

hour of diathermy and again a one-hour control period. Four hundred cubic centimeters of water was given just before the collection of the first urine specimen and again before the diathermy was started. The blood urea was determined in the middle of each period. Before, during and after the diathermy the urea clear-

hyperthyroidism. Apparently a number of factors play a part in determining the extent of normal creatinuria, which in the present state of knowledge cannot be definitely interpreted.

Normally creatine is not found in the urine of the male adult but small amounts of creatine are excreted periodically in the urine of normal women, possibly indicating a controlling influence of the sex hormones.⁴ In infants and children, however, creatinuria is physiologic in both sexes until about the age of puberty. This fact was first pointed out by Rose⁵ in 1911. Almost simultaneously McCrudden⁶ published the results of his investigations on the effect of carbohydrate and fat on the excretion of creatine in cases of retarded development. One of his subjects was a female cretin aged 8 years in whom creatine excretion was markedly reduced. The significance of this observation was not appreciated at the time as there were meager data on creatine metabolism in pathologic conditions. However some years later Beumer and Iseke⁷ observed that hypothyroidism in children was invariably accompanied by a diminution and sometimes by a complete suppression of creatine excretion.⁶ The same investigators also demonstrated that the creatine excretion in hypothyroid children returns to normal after the administration of thyroid extract. Since this observation other investigators have noted an apparent relationship of creatine metabolism and thyroid activity.⁸ Experimentally, it has been shown that operative removal of the thyroid gland leads to a reduction or complete cessation of creatine excretion and that it promptly returns to normal after the giving of thyroid extract.¹⁰ It has also been shown that the thyrotropic hormone of the anterior pituitary lobe has almost the same effect as thyroid extract in producing an increased excretion of creatine in the normal adult rat.¹¹

From these observations it appeared that the relationship of the creatine metabolism to thyroid activity might be of clinical interest. A number of clinical observations have been made in adults with severe hyperthyroidism when an increased creatine excretion has been found.¹² This information has limited clinical application for purposes of diagnosis, as the finding is not altogether consistent and as there are other more reliable diagnostic aids in that condition. In children, however, hypothyroidism often presents a difficult problem for diagnosis and treatment, particularly in borderline cases.

It seemed advisable therefore, to investigate further the clinical significance of diminished thyroid activity and creatine metabolism during the period of childhood

PROCEDURE AND METHODS

Extensive creatine and creatinine excretion studies have been carried out on thirty-four children, normal and with various types of pathologic conditions. Detailed observations are reported at this time on two cases of hypothyroidism in children. Twenty-four hour urine specimens were collected on two girls with hypothyroidism, one (D J, aged 5 years) for fifty-three consecutive days and another (V K, aged 12 years) for thirty-six consecutive days. The preformed creatinine was determined by the Folin colorimetric method and by the total creatinine by the Folin-Benedict method in duplicate. The patients were on a general hospital diet containing meat once a day and approximately a quart of milk a day.¹³ Rectal temperatures were taken three times a day. As soon as the patients were stabilized metabolically, a creatine toler-

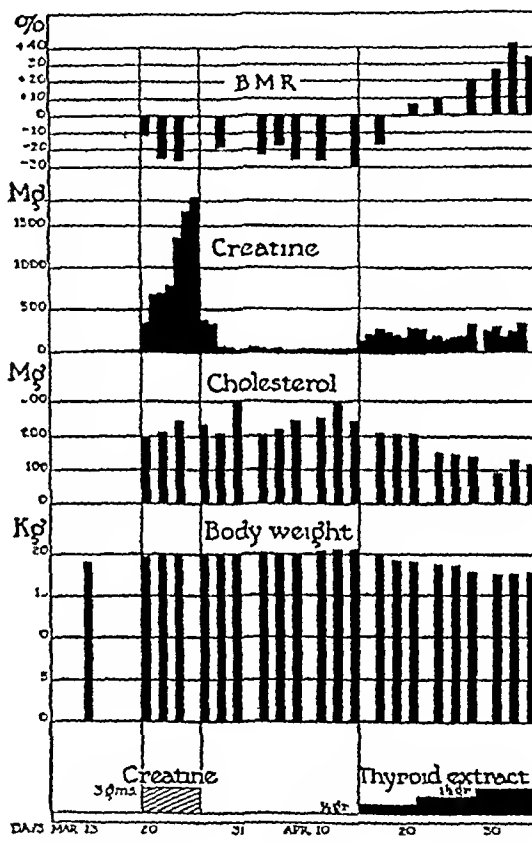


Chart 1—Observations in the case of D J, a girl aged 5 years

ance test was given consisting of 3 Gm of creatine by mouth daily for seven days (D J) and five days (V K). The amount of creatine fed and eliminated is given in the charts. The periods in which thyroid extract was administered are indicated as to time and dosage.

METABOLIC AND THERAPEUTIC OBSERVATIONS

The subjects showed an absence of the physiologic creatinuria of childhood when not receiving thyroid therapy or creatine by mouth. The absence of creatine from the urine was not due to a low protein intake, as the diet described was not creatine free and contained an adequate amount of protein. In the case of the older subject (V K), the experimental period was started while she was still on thyroid extract. This

13 The children were purposely not put on a weighed creatine free diet as it was desired to study the creatine excretion under natural clinical conditions.

- 4 Read B E J Biol Chem 46 281 (April) 1921 Beumer H and Fasold J Klin Wchnschr 10 937 (May 16) 1931 Ztschr f d ges exper Med 80 238 1931
- 5 Rose W C J Biol Chem 10 265 1911 1912
- 6 McCrudden F H J Exper Med 15 457 1912
- 7 Beumer H and Iseke C Berlin klin Wchnschr 57 178 1920
- 8 Scholz in 1905 while conducting a study of cretins found creatinine excretion diminished but owing to the methods used by the author not much reliance can be placed on this observation
- 9 Krause R A and Cramer W J Physiol 44 1912 Proc Physiol Soc Cramer W and Krause R A XVIII XIV Proc Roy Soc London 86 550 560 1913 Gross E G and Steenbock, Harry J Biol Chem 47 45 (June) 1921
- 10 Schenk P Arch f exper Path u Pharmacol 95 45 1922 Frontali G Arch internat Physiol 13 431 1924 Takahashi Kongressblatt f inn Med 45 751 1921 Eimer K Ztschr f d ges exper Med 77 455 1931
- 11 Pugsley, L I Anderson E M and Collip J B Paper read before the Division of Medicinal Chemistry American Chemical Society Sept 14 1933
- 12 Shaffer P A J Biol Chem 3 1907 Proc Am Soc Biol Chem VIII Denis W J Biol Chem 29 447 (April) 30 47 (May) 1917 Kepler, E J and Boothby W M Am J M Sc 182 476 (Oct) 1931 Brentano C Arch f exper Path u Pharmacol 163 156 1931 Hedrich W Deutsches Arch f klin Med 171 27 1931

patient showed a gradual decrease in urinary creatine as the amount of thyroid extract administered was reduced. She continued to excrete creatine for three days after thyroid therapy was discontinued. Another hypothyroid child under observation showed the same reaction.

Creatine appeared in the urine the day following thyroid administration and continued as long as the thyroid extract was given. A temporary increase in creatine excretion was noted immediately following an increase in the dose of thyroid extract. The thyroid therapy had no appreciable effect on the preformed creatinine excretion. The total creatinine coefficient of the younger patient (D J) without treatment averaged 21.2. On thyroid treatment the average rose to 29.0. The first figure is lower and the latter figure higher.

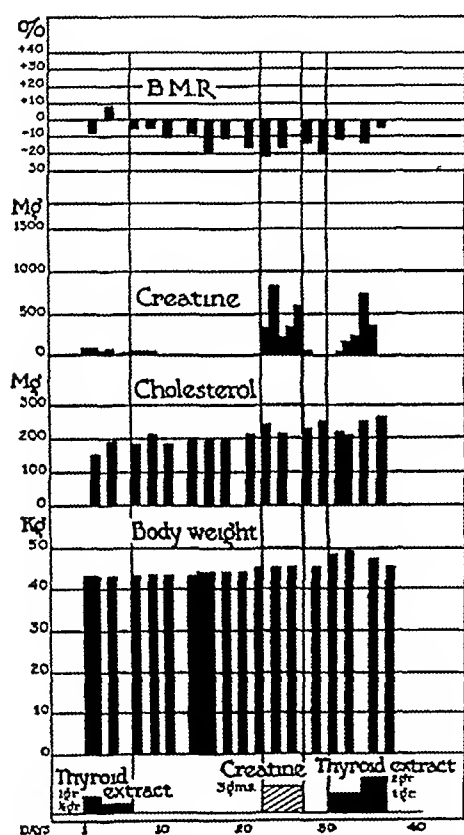


Chart 2—Observations in the case of V K, a girl aged 12 years

than the creatinine coefficient of 23, which is considered by Harding and Gaebler¹⁴ to be normal for children. The older subject (V K) had an average total creatinine coefficient of 15.4 without treatment. On thyroid treatment the coefficient rose to 24.6.

The fate of ingested creatine in these cases is of interest. The younger child (D J) excreted only 45 per cent of the ingested creatine as creatine and showed no increase in creatinine excretion. This subject continued to excrete creatine in considerable quantities for four days after ingested creatine was discontinued. The older child (V K) excreted only 19 per cent of the ingested creatine but showed a definite rise in creatinine excretion. This patient excreted a small amount of creatine the day after creatine feeding was stopped, but it completely disappeared from the urine after the second day.

COMMENT

The hypothyroid children studied have shown a definite change in creatine metabolism. This is characterized by a diminution or complete absence of the physiologic creatinuria usually found in children up to the age of puberty. Thyroid feeding restores the hypothyroid child to the condition of creatinuria characteristic of the normal child. The creatinuria is seen to be a very delicate index of the effect of ingested thyroid, as it occurs even before any definite change is noted in the basal metabolism and blood cholesterol. It is not possible to state how the thyroid hormone affects the creatine metabolism, but it is obvious that directly or indirectly it exerts a profound and determining influence on the character of creatine metabolism. A probable explanation of the diminished creatine excretion is that it may be due to a low endogenous metabolism incident to hypothyroidism.

The response of the subjects to ingested creatine is also interesting. Both children have a greater tolerance for creatine than normal children of the same age. Krause¹⁵ fed a considerably smaller quantity of creatine to two normal girls, one, aged 6 years, excreting creatine, and the other, aged 11 years, not excreting creatine. He found 56 per cent of the ingested creatine excreted in the case of the younger child and 31 per cent in the case of the older child.

Magee¹⁶ studied two normal boys, aged 6 and 9 years, and found, respectively, 75 and 33 per cent of the endogenous creatine excreted as such. She also noted less conversion to creatinine and a more prolonged creatine excretion over a longer period of time in the younger child.

It has been found that with normal subjects the younger the child the relatively greater amount of both endogenous and exogenous creatine is excreted. In the two subjects studied there was an absence of endogenous creatine excretion during the period in which they were not receiving thyroid. When creatine was fed by mouth during the control period, the tolerance for creatine was found to be greater than in normal children and less appeared in the urine. Moreover, the normal tendency of the younger child to excrete more creatine on a creatine tolerance test is seen to be exhibited under conditions of hypothyroidism. In other words, while the quantitative response to the creatine tolerance test is modified by the condition of hypothyroidism, it has not altered the influence of age. The factors inherent in the age of the patient require further study.

The comparison of the changes in creatine excretion with other criteria of the efficacy of treatment in hypothyroidism is interesting. It will be noted from the charts that following thyroid therapy a change in creatine excretion takes place long before there is a significant change in the basal metabolic rate, blood cholesterol or body weight. From these observations it seems apparent that measurement of the urinary creatine is a delicate index of the effect of thyroid administration. In view of the greater ease, simplicity and reliability of creatine analysis than of the basal metabolic rate in children, it seems that this measurement may serve as a useful clinical aid in controlling thyroid medication.

¹⁵ Krause R. A. Quart J Exper Physiol 7:87-101, 1913

¹⁴ Harding V. J. and Gaebler O. H. J Biol Chem 54:579 (Nov) 1922

¹⁶ Magee M. Catherine. Creatine and Creatinine Metabolism in Progressive Muscular Dystrophy. Am J Dis Child 42:19 (Jan), 1932

SUMMARY AND CONCLUSIONS

- 1 The metabolism of creatine appears to be definitely influenced by thyroid activity during childhood.
- 2 During the period from infancy until about puberty creatinuria is physiologic. Hypofunction of the thyroid causes a decrease or complete cessation of creatine excretion which can be restored to normal values after the administration of thyroid extract. This is accompanied by a corresponding change in the clinical condition of the patient.
- 3 From a comparison with other diagnostic criteria of hypothyroidism in children the change in creatine metabolism appears to be an important finding which may be useful in diagnosis and in the control of therapy.

ENDEMIC TYPHUS FEVER IN HAWAII

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There is an ever increasing interest in the epidemiology and geographic distribution of American typhus fever.

Epidemic (Old World) typhus fever was well known to the physicians of the early nineteenth century. Typhus fever was first differentiated from typhoid by Gerhard, studying the Philadelphia epidemic of 1836. Typhoid means a disease like typhus fever. Typhus abdominalis became a clinical entity under the name of typhoid.

Eberth in 1880 and Gaffky in 1884 discovered the typhoid bacillus, now more properly designated *Eberthella typhi*.

Brill in 1897 observed a disease in New York which he differentiated from typhoid and which for a long time, bore his name. At that time he considered it a distinct clinical entity in no way related to typhoid, nor, later, to typhus fever. Subsequently it was proved to be immunologically similar to European typhus.

In 1906 Ricketts discovered the small gram-negative intracellular bodies that bear his name "*Rickettsia*" in the wood tick that transmits Rocky Mountain spotted fever, and these were later found in the human subjects of the disease, as well as in typhus fever subjects and typhus fever lice.

In 1909 Nicolle first succeeded in infecting monkeys with blood from typhus fever patients. Later it was demonstrated that in guinea-pigs the disease has a unique course.

In 1910 Wilson of Belfast and in 1914 Weil and Felix discovered that certain strains of *B. proteus-vulgaris*, isolated from the urine of typhus fever patients were agglutinated in high dilution of blood from typhus fever patients. This is a heterologous agglutination, since the agglutinable strain of *B. proteus-vulgaris*, known as *Proteus X 19* has no etiologic relationship to typhus fever. In low dilutions nonspecific agglutination may take place, but in dilutions over 1:300 it points quite diagnostically to typhus fever or Rocky Mountain spotted fever. This reaction, known as the Weil-Felix reaction, may become positive as early as the fifth day of the disease.

In 1931 Dyer and his associates conclusively proved that typhus fever (American variety, alias Brill's disease) was carried by the fleas of wild rats.

Most of the foregoing facts had been lost sight of by Honolulu physicians for at irregular intervals during the past ten years, sporadic cases that clinically rather closely resembled typhoid have been reported as typhoid or paratyphoid in the face of consistently negative laboratory observations. Most of these cases were rather similar—a prodromal period rather sudden onset rose spots of exaggerated character on the chest abdomen inner arms and thighs (but not on the wrists ankles or face), headache, cough fever as high as 104 F., a spleen normal in size, no enteric symptoms save frequently constipation, sterile blood cultures stool cultures negative for the typhoid group (occasionally a bacillus suspected of being paratyphoid C)—afebrile a bit too early for typhoid, negative Widal reaction and negative agglutination reaction for *Alcaligenes abortus*, *Alcaligenes melitensis* and the bacillus of tularemia. The laboratories received undeserved criticism. The clinician and the clinical pathologist were making the same mistake again and again and calling it experience.

Almost a hundred years after Gerhard differentiated typhoid from epidemic typhus fever the physicians of Honolulu were faced with the need to differentiate endemic typhus fever from typhoid. McCoy of the National Institute of Public Health, here to investigate leprosy in August 1932, suggested that this atypical symptom complex might belong in the group of Rickettsia or typhus-like diseases. He was good enough to send us subcultures of *Proteus X 19*.

Not until recently did an opportunity to investigate a typical case present itself.

Mrs. S. became suddenly ill with headache, malaise and body pains Sept. 2, 1933. September 23 she was again afebrile and convalescent. During the three weeks of her illness she presented the characteristic manifestations of headache, malaise constipation and later loose bowels, "typically exaggerated maculopapular rose spots," no splenic enlargement fever to 104 F., negative blood and oft repeated feces cultures, and negative agglutination reactions, even after convalescence, with *B. typhosus*, paratyphoid A and B, and *Alcaligenes abortus*, *Alcaligenes melitensis* and the bacillus of tularemia. There were no complications nor sequelae.

October 9 the blood serum, in a dilution as high as 1:10,000 gave an easily read agglutination of *Proteus X 19*, a twenty-four hour culture being used, suspended in saline solution and incubated two hours at 37 C. and in the icebox over night. Control serums did not agglutinate in dilutions of 1:320, though some were positive in 1:160. This seemed to offer conclusive proof that the patient had been suffering from endemic typhus fever since the symptomatology ruled out epidemic typhus fever as well as Rocky Mountain spotted fever, both of the Western and Eastern type.

Just previous to the inception of her illness the patient had moved into a newly constructed house the yard of which had served as a trash dump for neighbors during the construction, affording an excellent rat harborage.

I investigated with the Weil-Felix reaction a series of patients sick two years previously. In the H family of three the father had first become ill with the symptoms of an atypical typhoid. The father had hardly entered convalescence when the young son contracted the same disease. Shortly after that the mother became ill with the same symptoms, excepting that in her case the rose-macular rash was very prominent. All three patients made rather rapid recoveries. Two years after the illness the serum of the father agglutinated *Proteus X 19* in a dilution of 1:320 the son's in 1:640 and the mother's in 1:1,280. At the time of their illness many laboratory procedures had been instituted in their cases as well as in the case of a maid suspected of being a typhoid carrier in an effort to confirm the diagnosis of typhoid all to no avail. At the time of their illness this family had had in their home a small

colony of white rats, as pets, whose cage was accessible to wild rats. The female white rat was sick at that time and for that reason the colony was given away just after Mrs. H's illness.

A further survey showed that three other patients, leaving the hospital just recently with a diagnosis of fever of undetermined origin, gave strong Weil-Felix reactions, one in a dilution of 1:5,000, another in 1:10,000. Another patient, Miss M., ill at that time in the hospital with typical symptomatology, but admitted with a provisional diagnosis of typhoid or measles, on or about the seventeenth day of the disease gave a Weil-Felix reaction in a dilution of 1:80,000.

At the present writing about ten cases have been detected in Honolulu. These facts were presented before the Honolulu County Medical Society, Nov. 3, 1933, and it is anticipated that more cases will now come to light. Honolulu has recently been through a prolonged spell of very dry weather, excellent for the breeding of rat fleas, and the present high incidence of endemic typhus fever may be dependent on that fact.

Three cases of unconfirmed typhoid of from one to two years ago failed to give any agglutination with *Proteus* X 19, not all unconfirmed typhoid is necessarily typhus fever.

The older writings, in a confused fashion, tell of epidemics of typhus fever in the Sandwich Islands, certainly there has been no Old World typhus fever here since 1898. Just what the interepidemic reservoir of Old World typhus fever is seems to be still a mystery. This disease, transmitted from man to louse to man, might outlive the interepidemic period in man in an attenuated, afebrile form, but no proof of this has been advanced. The louse does not transmit the disease to the rat or to the next generation.

Endemic typhus fever is to be found chiefly on the Atlantic and Gulf seaboard, from the North, well into the South, and as far inland as Montgomery, Ala. A focus in and around Savannah, Ga., seems to have been closely studied, under observation, Dr. V. H. Bassett says its mortality is certainly increasing. While the mortality is usually given as 1 per cent, there has been one death for each twelve cases in the course of a certain year.

As far as I can determine, no cases have been reported from the inland part of the United States, from the Middle West or from the Far West. Cases have been reported from southern California and from several other points within the continental part of the United States, but there is reason to believe that these were imported cases of Mexican Tabardillo fever, more akin to Old World typhus fever in its mode of transmission and mortality. If, in the Middle and Far West, every case of fever of unconfirmed origin should be given the benefit of a Weil-Felix reaction in addition to the Widal, it is possible that new foci of the disease might be discovered.

While epidemic typhus fever is a disease of man, transmitted from man to man by the louse, endemic typhus fever is essentially a disease of rats transmitted to the flea and then, by accident, transmitted to man. Here the passage ceases, the quarantine regulations should be aimed at the rats, not the patient. It has been proved that rats from an area in which human cases of endemic typhus fever have arisen carry in their brains and suprarenals the virus of the disease.

Epidemic typhus fever is a disease of winter, endemic typhus fever one of summer and fall. The time of greatest prevalence of lice is winter, that of fleas is summer and fall. Fortunately, in the East, the prevalence periods of these two vectors do not much

overlap. Even in the southern part of the United States there are seasonal changes.

Here in Hawaii, however, temperature and seasonal fluctuations are practically nil, almost any month of the calendar may be the hottest, the coldest, the wettest or the driest. Of rat fleas there are plenty, fortunately there are not many lice, but they do exist. And now there is reason to believe that there is an endemic typhus fever reservoir in our rats. With this marked overlap of vector seasons, it will be interesting to see whether some day unwittingly the experiment of passing the virus of endemic typhus fever may be performed from a rat to a flea, and from that flea to a louse-infested man, and from that man to a louse, and from that louse to a second man. What will the second man have, endemic typhus fever or epidemic typhus fever?

On two of our islands, Hawaii and Maui, there exist limited areas in which the rat population is infected with plague bacillus and in which areas occasional human cases appear. There is at present being conducted through cooperation of the federal and territorial governments, an intensive epidemiologic survey of the rat and flea situation, from the plague point of view. This machinery, already set up might with little additional expense and labor investigate the same rats and fleas for the presence of endemic typhus fever. It is obvious that further cross protection experiments in guinea-pigs, with the viruses of typhus fever, epidemic and endemic, and spotted fever, Eastern and Western must be carried out against the local infection. The local material must come from human patients, rat fleas and rat tissues. At present the mentioned stock strains of viruses are not available in the territory.¹

The established presence of endemic typhus fever in Honolulu should be of considerable interest not only to the local health authorities but also to those of Seattle, San Francisco and Los Angeles, as well as to those of Japan, China and the Philippines. With the ever decreasing time of transport from one of these places to the other, the danger of disseminating this disease increases. While rat guards are placed about shipping with meticulous care, there is always danger of a break in technique. At present, with its three weeks of illness and a very low mortality rate, this disease has a greater economic importance than one of public health. But who is to say, with accuracy, what our peculiar geographic location plus our peculiar climatic conditions may mean to the natural history of this disease?

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¹ Since the foregoing was written serum from one of the reported cases was submitted to the U. S. Public Health Service and protection tests were carried out at the National Institute of Health through the courtesy of that bureau. Of six control pigs inoculated with typhus virus only all developed characteristic fever and serological lesions. All six pigs inoculated with this virus plus 0.5 cc. of convalescent serum failed to develop characteristic fevers and serological lesions. This makes the diagnosis of endemic typhus highly presumptive.

Ketosis—Under conditions of starvation or the administration of a diet low in carbohydrate and high in fat or in diabetes in which the carbohydrate metabolism is perverted, keto acids are produced in the body. These acids appear in the blood and are excreted into the urine by the kidneys as aceto-acetic acid and β -hydroxybutyric acid, the latter being produced apparently by reduction of the former. The acetone excreted is formed by the decomposition of these acids. This condition of ketosis arises from the failure of oxidation of the fatty acids with an even number of carbon atoms beyond the point where the chain is reduced to the four carbon acids above mentioned.—Gainsborough. *Hugh The Therapeutic Use of the Ketogenic Diet Practitioner* 132:45 (Jan) 1934.

SEVERE GRANULOPENIA FOLLOWING
THE USE OF BARBITURATES
AND AMIDOPYRINE

REPORT OF A CASE

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Following Schulz's classic description of agranulocytosis in 1922 reports of an apparently primary type of leukopenia have become increasingly numerous. According to the recent statement of Madison and Squier¹ over 500 of these cases are now on record. Wells² has quoted Stursherg, Marchand and Blumer as stating that differentiation during life between overwhelming suppurative so-called aleukemic leukemia and agranulocytosis may at times be impossible. With this in mind it would be helpful to call these cases granulopenia. Kracke³ has suggested this term because it places emphasis on the one common observation and accurately describes the characteristic blood picture. Obviously, much would be gained if these conditions could be classified according to the etiology involved.

It has long been recognized that benzene is highly toxic to the bone marrow, and benzene poisoning has been extensively studied both clinically and experimentally. It has only recently been suggested, however, that the enormous number of drugs containing a benzene chain might be a source of benzene intoxication. Emile-Weil⁴ recently pointed out that the incidence of benzene poisoning has been increasing parallel with the increasing use of benzene in industry. Likewise, it may be significant that the apparent increase in the incidence of granulocytic leukopenia parallels the increasing use of such benzene derivatives as the barbiturates and amidopyrine.

The following case is presented because it adds to the evidence suggesting that severe granulopenia may follow from the combined administration of such commonly used drugs as Luminal and Pyramidon.

REPORT OF CASE

A woman house physician, aged 25, had been previously in good health. Oct 31, 1933, because of headache, she took amidopyrine (Pyramidon), 5 grams (0.3 Gm.), and phenobarbital (Luminal), one half gram (0.03 Gm.), at 1 p m. During the afternoon she felt as though she was "coming down with a cold" and complained of continued headache, malaise and chilliness. Her temperature first taken at 5 p m was 101 and she went to bed at that time. At 7 p m she took allylisopropylbarbituric acid (Alurate) 2 grams (0.13 Gm.) and one tablet of Lumodrin the latter containing according to the label Ephedrin hydrochlorid gr $\frac{3}{8}$, Luminal, gr $\frac{1}{4}$, Pyramidon gr 2. At 8 p m she suffered a severe shaking chill and was moved into isolation quarters. Her fever at 10 p m was 103 and the pulse rate was 120. Physical examination was otherwise entirely negative. The next morning the laboratory found the hemoglobin to be 71 per cent the red cell count 3,820,000 and the white cell count 2,950, with 51 per cent of polymorphonuclear neutrophils. Three hours later the total white count was unchanged, but 10 per cent of immature neutrophils were noted. At 4 p m the white cell count was 2,050 with only 30 per cent of granulocytic cells,

17 per cent of which were myelocytes. During the next two days the total white count remained practically unchanged but the differential counts showed a slowly increasing percentage of mature granulocytes. Blood films were examined repeatedly for malarial but nothing suggestive was seen. The urine was normal. On the fourth day the white count was 2,900, with only 3 per cent of immature granulocytic cells. Except for continued weakness the patient felt practically normal. On the fifth day she returned to duty, feeling stronger but with a white count still under 4,000 and a differential count at times showing myelocytes and many band forms. Several days later, when the possibility was realized that the drugs used might have been responsible for the chill and leukopenia, the following additional interesting history was obtained.

The patient had been quite certain that she had not previously used either barbiturates or amidopyrine except on one other occasion, and that almost a year before. At that time, the onset of a week's illness had also been preceded by an afternoon headache. She had then likewise taken amidopyrine and phenobarbital for relief. A few hours later she had suffered a chill and afterward remained in bed several days on account of weakness. Her condition had at that time been regarded as a case of influenza, but no blood counts had been taken on that occasion.

It was practically six weeks before a normal differential count was recorded, when the total count was 7,000. Except immediately after the initial chill her temperature has been normal. This fact, together with absence of palpable glands or spleen and so uneventful and complete a clinical recovery, appears to rule out everything except a transitory leukopenia.

I have recently attempted to evaluate the allergic factor in this patient's reaction to phenobarbital and amidopyrine by injecting, subcutaneously, small amounts of each drug, both separately and combined, in saline solution. The local reactions were slight and seemed to indicate no hypersensitiveness to the benzene chain as far as the patient's skin was concerned. Likewise no appreciable change was noted in the leukocyte count following the injection of such small amounts of these drugs.

COMMENT

In 1931 Kracke⁵ reported severe and repeated attacks of agranulocytosis in an individual using large amounts of coal tar derivatives. At that time he suggested that the benzene chain contained in these drugs might act as a powerful leukocytic depressant. More recently he⁶ has reported that a review of nine cases of agranulocytosis revealed that eight of these individuals had been taking benzene derivatives prior to the clinical onset of their illness.

It is the commonly accepted belief that the reacting power of the individual's bone marrow determines the type and effectiveness of all leukocytic response. This fact serves to emphasize the seriousness of employing drugs that may be capable of depressing the mechanism of leukocytosis. It seems only a matter of wisdom in the light of recent observations, to regard the use of barbiturates and amidopyrine with this possibility in mind. Available evidence is hardly sufficient to contraindicate entirely the use of these drugs, but their administration calls for watchful supervision on the part of both the clinician and the laboratory.

SUMMARY

Granulopenia should not be regarded as a primary type of blood dyscrasia until all possible etiologic factors have been eliminated.

An apparent increase in the occurrence of granulopenia may be related to the widespread use of drugs containing a benzene derivative.

A woman, aged 25, developed an acute and alarming leukopenia following the use of barbiturates and amidopyrine for the relief of a simple headache.

From the Department of Pathology St. Luke's and Children's Mercy Hospitals.

¹ Madison F. W. and Squier T. I. Primary Granulocytopenia After Administration of Benzene Chain Derivatives. *abstr. J. A. M. A.* 101: 2074 (Dec. 23) 1933. S. B. Grant, P. S. Hench, Johnson, McGuire and C. H. Watkins in the discussion and personal communications to the author.

² Wells A. H. *J. Missouri M. A.* 30: 237 (June) 1933.

³ Kracke R. R. *J. Lab. & Clin. Med.* 17: 993 (July) 1932.

⁴ Emile-Weil P. *Bull.* 30: 16 (Jan.) 1932.

⁵ Kracke R. R. *abstr. J. A. M. A.* 101: 1276 (Oct. 14) 1933.

⁶ Kracke R. R. *Am. J. Clin. Path.* 1: 385 (Sept.) 1931.
Am. J. Clin. Path. 2: 11 (Jan.) 1932.

The benzene chain contained in both drugs is possibly responsible for the severe reaction and the disappearance of the granulocytes from the blood

A number of similar cases have been reported recently

A difference may be expected in the reaction to benzene quickly absorbed from the alimentary tract, as compared to the type of benzene poisoning that may result from the prolonged, slow absorption that occurs in industrial exposure

Individuals are known to vary greatly in their susceptibility to benzene. Granulopenia following the use of barbiturates and amidopyrine may therefore occur only in those individuals who are unusually susceptible to the benzene chain

Forty-Fourth and Mill Creek Parkway

CLINICAL MANIFESTATIONS OF HIGH AND LOW PLASMA MAGNESIUM

DANGERS OF EPSOM SALT PURGATION IN NEPHRITIS

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WITH THE TECHNICAL ASSISTANCE OF

VICTOR G. HAURY, B.A.

MINNEAPOLIS

Although a great deal of clinical significance has been attached to variations in blood calcium, variations in blood magnesium have entirely escaped notice. Very little has been known even about what happens when a patient takes an ordinary purgative dose of epsom salt. Matthew Hay¹ found that one normal man excreted 28 per cent of the ingested magnesium through the kidneys in twenty-four hours, and Yvon² found 21 per cent. Using a new and convenient method for the quantitative determination of magnesium in blood plasma and urine, we³ have found that seven normal men excreted from 40 to 44 per cent (average 42.6 per cent) of the magnesium taken in a single ordinary purgative dose of epsom salt within twenty-four hours after ingestion. However, in spite of the large amount of magnesium absorbed, the concentration of magnesium in the blood plasma (normal, from 1.8 to 2.5 mg of magnesium per hundred cubic centimeters, average normal, 2.09) is scarcely affected (average increase, 0.24 mg of magnesium per hundred cubic centimeters, maximum increase, 0.41 mg). In normal dogs and normal rabbits the percentage of ingested magnesium that is excreted and the concentration of the magnesium in the blood plasma are almost exactly the same as in man, and with corresponding doses by mouth the plasma

concentration also remains practically unchanged. In animals the percentage of the ingested magnesium that is excreted in the urine is practically constant, regardless of the dose ingested or of the concentration of magnesium in the blood plasma.

HIGH PLASMA MAGNESIUM (HYPERMAGNESEMIA) AND EPSOM SALT PURGATION

However, when the kidneys are injured, the results are totally different. We have found in animals in which renal injury had been produced experimentally that less magnesium is excreted than normally. The excretion of magnesium is less in animals in which the tubules are more severely injured than the glomeruli (corrosive mercuric chloride nephrosis) than in those in which the glomeruli are injured more than the tubules (cantharides glomerulonephritis). The decrease in excretion of magnesium corresponds quite closely to the decrease in excretion of phenolsulphonphthalein but does not correspond to the alterations in excretion of xlose. We have found also that in nephrectomized animals and in animals with renal, and especially tubular, insufficiency the ingestion of magnesium sulphate causes a tremendous and rapid rise in plasma magnesium, sufficient even to bring them into a state of coma. Coma occurred whenever the plasma calcium reached or exceeded 17 mg of magnesium per hundred cubic centimeters of plasma. This exactly coincides with the level at which Neuwirth and Wallace⁴ and Taylor and Winter⁵ found coma setting in after the subcutaneous injection of magnesium salts.

We have therefore studied the effects of the ingestion of ordinary purgative doses of magnesium sulphate on the plasma magnesium and the general physical condition in a series of patients suffering from renal disease. In all these patients, just as in the nephritic animals, a tremendous rise in plasma magnesium occurred within from four to six hours after an ordinary purgative dose of magnesium sulphate (epsom salt) had been taken by mouth. While one such dose was not sufficient to raise the magnesium concentration in the plasma to the level at which coma sets in (about 17 mg of magnesium per hundred cubic centimeters of plasma) it often did rise to about two thirds of that concentration (from 9 to 11 mg) and a number of the patients did show a decidedly increased drowsiness or even a light coma accompanying the increase in plasma magnesium. The results are indicated in chart 1.

NOTES ON CASES

Normal—Plasma⁶ nonprotein nitrogen 30 mg, creatinine from 15 to 20 mg, magnesium from 1.85 to 2.09 mg. After taking from 20 to 30 Gm of epsom salt ($MgSO_4 \cdot 7H_2O$) average increase 0.24 mg, maximum increase, 0.4 mg. Excreted in urine phenolsulphonphthalein, from 60 to 80 per cent in two hours; magnesium excreted in twenty-four hours from 40 to 44 per cent (average 42.6 per cent) of the magnesium ingested.

HIGH PLASMA MAGNESIUM

CASE 1—*Subacute glomerulonephritis*. W. A., a woman aged 41 in the Minneapolis General Hospital complained of edema. Plasma nonprotein nitrogen 88, creatinine, 5.5, magnesium, 2.98, calcium, 11.3. Urine phenolsulphonphthalein 39 per cent. After 25 Gm of epsom salt by mouth, plasma magnesium 5.5, calcium 13.0. Magnesium excreted in twenty-four hours 23.8 per cent. Little effect on mental activity.

⁴ Neuwirth I. and Wallace G. B. J. Pharmacol. & Exper. Therap. 35: 171 (Feb.) 1929.

⁵ Taylor W. F. and Winter J. E. J. Pharmacol. & Exper. Therap. 35: 435 (April) 1929.

⁶ Amounts in plasma are always milligrams per hundred cubic centimeters.

From the Department of Pharmacology, University of Minnesota.

This paper was announced for presentation before the Section on Pharmacology and Therapeutics of the American Medical Association at the Milwaukee Session, June 15, 1933.

This investigation was made possible by a grant of funds from the Therapeutic Research Committee of the American Medical Association. Most of the patients on whom the observations were made were in the medical service of Dr. Hohart A. Reimann at the University of Minnesota Hospital and of Dr. George E. Fahr at the Minneapolis General Hospital. One was from the private practice of Dr. Charles B. Wright and three from the neurologic service of Dr. Joseph C. Michael at the Minneapolis General Hospital, all of whose cooperation is deeply appreciated. Preliminary reports have been published in Proceedings of the American Society for Clinical Investigation (J. Clin. Investigation 11: 841 [July] 1932; 12: 983 [1933]), Proceedings of the American Society for Pharmacology and Experimental Therapeutics (J. Pharmacol. & Exper. Therap. 48: 277 [1933]), and Proceedings of the Society for Experimental Biology and Medicine (Proc. Soc. Exper. Biol. & Med. 30: 996 [1933]).

¹ Hay, Matthew. J. Anat. & Physiol. 17: 222, 1883.

² Yvon P. Arch. de physiol. norm. et path. 5: 304, 1898.

³ Hirschfelder A. D. and Serles E. R. J. Clin. Investigation 11: 841 (July) 1932; J. Biol. Chem. March 1934.

CASE 2—Nephrosis 1, a woman aged 25, in the Minneapolis General Hospital, was mentally alert Plasma nonprotein nitrogen 73, creatinine, 47 magnesium, 298, calcium, 113 Urine phenolsulphonphthalein 29 per cent Mentally active After 20 Gm of epsom salt by mouth Plasma magnesium, 775 calcium 149 Urine magnesium excreted, 217 per cent Listless and drowsy

CASE 3—Acute glomerulonephritis M R a man aged 33 in the University Hospital with a blood pressure of 150 systolic, 100 diastolic, was mentally alert Plasma nonprotein nitrogen 60, creatinine, 49, magnesium, 187, calcium, 98 Urine albumin + +, phenolsulphonphthalein 39 per cent After 30 Gm of epsom salt by mouth Plasma magnesium 79 calcium 148 Urine magnesium excreted, 263 per cent Near coma, vomiting

CASE 4—Acute glomerulonephritis K, a woman aged 57, in the Minneapolis General Hospital, with a blood pressure of 170 systolic, 115 diastolic was mentally active Plasma nonprotein nitrogen 98, creatinine 89 magnesium, 273 calcium 119 Urine albumin + + +, phenolsulphonphthalein, 59 per cent After 20 Gm of epsom salt by mouth Plasma magnesium, 922, calcium, 157 Urine magnesium, 207 per cent Very drowsy, near coma

CASE 5—Chronic glomerulonephritis L J a woman, aged 35, in the University Hospital was inactive and drowsy Plasma nonprotein nitrogen, 136, creatinine, 12, magnesium, 39, calcium, 199 Urine albumin + + +, phenolsulphonphthalein, 26 per cent After 25 Gm of epsom salt by mouth Plasma nonprotein nitrogen 136, creatinine, 12, magnesium, 165 per cent Light coma

CASE 6—Chronic glomerulonephritis R A, a man, aged 60 in the Minneapolis General Hospital, with a blood pressure of 190 systolic, 125 diastolic, was mentally alert Plasma nonprotein nitrogen, 185, creatinine, 175, magnesium, 478, calcium 152 Urine albumin + + + +, phenolsulphonphthalein, 15 per cent After 25 Gm of epsom salt Plasma magnesium, 1035, calcium, 235 Urine magnesium, 10 per cent Light coma, hard to awaken

1975 Urine albumin + + +, phenolsulphonphthalein 15 per cent After 30 Gm of epsom salt by mouth Plasma magnesium 105, calcium, 241 Urine magnesium, 185 per cent Very drowsy

CASE 8—Acute glomerulonephritis E R, a woman, aged 39, in the University Hospital, with a blood pressure of 150 systolic 110 diastolic, was very alert Plasma nonprotein nitrogen, 100,

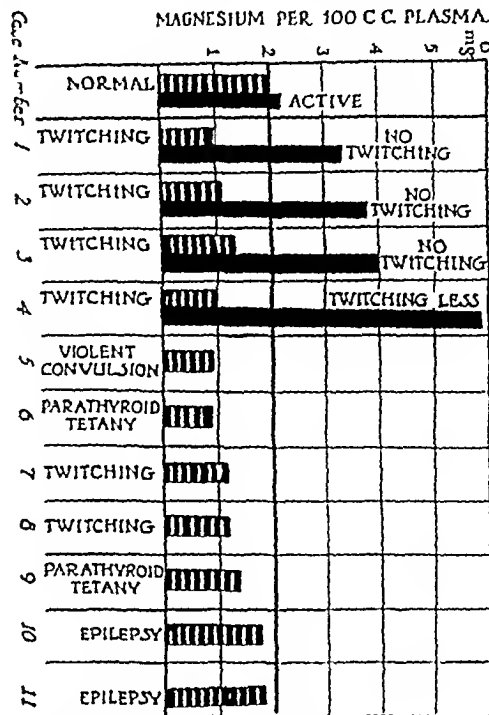


Chart 2—Observations in cases showing low plasma magnesium Legends have same significance as in chart 1

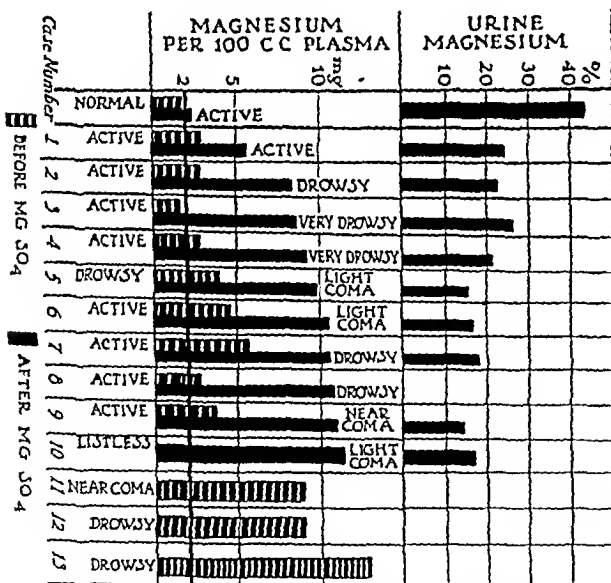


Chart 1—Observations in cases showing high plasma magnesium Urine magnesium = percentage of ingested magnesium excreted in urine in twenty four hours Before magnesium sulphate = milligrams of magnesium per hundred cubic centimeters of plasma before taking epsom salt (MgSO₄ 7H₂O) by mouth After magnesium = milligrams of magnesium per hundred cubic centimeters of plasma from four to six hours after taking epsom salt by mouth Words below the cross hatched lines refer to mental condition before taking epsom salt those above the solid line represent mental condition from four to six hours after taking epsom salt

CASE 7—Acute glomerulonephritis E P, a man, aged 43, in the Minneapolis General Hospital with a blood pressure of 165 systolic, 110 diastolic, was mentally alert Plasma nonprotein nitrogen, 85 creatinine, 875, magnesium, 575, calcium,

creatinine 9 magnesium 249 calcium 110 Urine albumin + + +, phenolsulphonphthalein 275 per cent After 30 Gm of epsom salt Plasma magnesium, 1075, calcium, 178 Drowsy

CASE 9—Chronic glomerulonephritis E L, a woman, aged 27, in the University Hospital, with a blood pressure of 200 systolic 135 diastolic was alert Plasma nonprotein nitrogen, 265, creatinine, 23 magnesium 41, calcium, 169 Urine albumin + + + + phenolsulphonphthalein, 12 per cent After 20 Gm of epsom salt by mouth Plasma magnesium, 1091, calcium, 185 Urine magnesium, 1535 Very drowsy, difficult to awaken

CASE 10—Acute glomerulonephritis O L, a man, aged 58, in the University Hospital with a blood pressure of 185 systolic, 140 diastolic, was listless Plasma nonprotein nitrogen, 1955 creatinine, 253, magnesium, 425, calcium, 195 Urine albumin + + +, phenolsulphonphthalein 12 per cent After 30 Gm of epsom salt by mouth Plasma magnesium, 1132 calcium 259 Urine magnesium, 175 per cent Hard to awaken, light coma

CASE 11—Chronic glomerulonephritis J J, a woman aged 62, in the University Hospital, with a blood pressure of 175 systolic 125 diastolic, near coma Plasma nonprotein nitrogen 215, creatinine 25, magnesium 893, calcium, 197 Urine albumin + + +, phenolsulphonphthalein, 128 No epsom salt given

CASE 12—Subacute glomerulonephritis O J, a woman aged 31, in the University Hospital, was very dull and listless Plasma nonprotein nitrogen 190 creatinine, 22, magnesium 90 calcium 240 Urine albumin + + + +, phenolsulphonphthalein, 17 per cent

CASE 13—Acute glomerulonephritis F S a man aged 52 in the University Hospital, with a blood pressure of 190 systolic 115 diastolic, was very drowsy Plasma nonprotein nitrogen, 190 creatinine 215, magnesium, 130, calcium, 220 Urine albumin + + + + phenolsulphonphthalein, 5 per cent, total urine 150 cc Died Autopsy showed arteriosclerotic kidneys

Since a single ordinary dose of epsom salt by mouth can raise the concentration of magnesium in the blood of nephritic patients to two thirds of the concentration at which coma sets in and since with larger doses it is easy to induce coma in nephritic animals, it seems probable that a few repeated doses of epsom salt would induce coma in the patients. It is therefore most probable that there are every year in the United States many hundreds of cases of coma occurring in nephritic patients which are diagnosed uremic coma but which in reality are magnesium coma caused by the use of epsom salt as a purgative. Since experimental animals could be brought out of this coma instantly and their lives could be prolonged by the intravenous injection of calcium chloride the intravenous injection of calcium chloride would probably restore such patients to consciousness.

We are not stating, nor do we think, that all or even most cases of uremic coma are due to magnesium intoxication, but we are merely calling attention to the fact that a condition of coma easily mistaken for uremic coma can be induced in nephritic patients by epsom salt purgation. Magnesium citrate would unquestionably have the same effect.

Our results in no way contradict those of Blackfan and his collaborators,⁷ who have administered magnesium sulphate intravenously for the control of uremic convulsions, or those of Dorsett⁸ and McNeile and Vruwink⁹ for eclamptic convulsions. Since they gave intravenously in carefully controlled doses only sufficient magnesium sulphate to produce subsidence of the convulsions, they stopped the administration as soon as a sufficiently high level of magnesium concentration in the blood had been reached. However, when the drug is administered by mouth and absorbed continuously from the intestine without regard to its concentration in the blood, this level can easily be exceeded.

Since our experiments on animals with renal insufficiency have shown that coma cannot be induced by tremendous doses of sodium sulphate it would appear that sodium sulphate should be the saline purgative of choice in patients with renal disease.

Our experiments on animals¹⁰ showed also that animals whose plasma magnesium was only slightly raised (to 5 mg or more) were much more sensitive than normal animals to ordinary doses of morphine. This explains Dr Osler's old aphorism that "in severe nephritics and very old persons morphine should be given with caution." Epsom salt was Dr Osler's favorite saline purgative and was administered almost as a routine in his wards at Johns Hopkins Hospital.

LOW PLASMA MAGNESIUM (HYPMAGNESEMIA)

Since Kruse, Orent and McCollum¹¹ have induced a form of tetany in rats that were raised on a diet free from magnesium it seemed probable that cases showing convulsions or other conditions of increased neuromuscular activity would be encountered clinically in which the plasma magnesium is low.

We have encountered thus far ten such clinical cases, in each of which convulsions or muscular twitchings were present. The data of these cases are shown in chart 2.

CASE 14—*Chronic glomerulonephritis, hypertension and convulsions*. S, a woman, aged 53, at the University Hospital, complained of edema of the legs and arms, and of intermittent general muscular twitchings. Plasma nonprotein nitrogen, 200, creatinine, 15, magnesium, 0.95, calcium 10.8. Urine albumin + + +, phenolsulphonphthalein, 12 per cent. After 20 Gm of epsom salt by mouth. Plasma magnesium, 3.3, calcium 11.9. No more twitching.

CASE 15—*Chronic glomerulonephritis*. C O, a man, aged 36 in the Swedish Hospital, had general muscular twitching. Plasma nonprotein nitrogen, 76.5, creatinine, 5.5, magnesium, 1.09, calcium, 9.3. Urine albumin + +, phenolsulphonphthalein 22 per cent. After 20 Gm of epsom salt by mouth. Plasma magnesium, 3.78, calcium, 13.0. No twitching.

CASE 16—*Chronic glomerulonephritis*. P S, a man, aged 51 at the Minneapolis General Hospital was nervous, and had general muscular twitching. Plasma nonprotein nitrogen, 55.0, creatinine, 4.3, magnesium, 1.31, calcium, 16.7. Urine albumin + +, phenolsulphonphthalein, 33 per cent. After 25 Gm of epsom salt by mouth. Plasma magnesium, 4.0, calcium, 17.3. No twitching resting quietly.

CASE 17—*Eclampsia*. I H, a woman, aged 47, at the University Hospital, was pregnant and had frequent headaches and general muscular twitchings passing into convulsions. Plasma nonprotein nitrogen 33, creatinine, 2.1, magnesium, 1.0, calcium 11.3. After 25 Gm of magnesium sulphate by mouth. Plasma magnesium, 5.87, calcium, 14.13. No twitching or convulsions.

CASE 18—*Glomerulonephritis*. W C, a man aged 51, at the Northwestern Hospital, had violent convulsions (uremia) and a blood pressure of 160 systolic, 100 diastolic. Plasma nonprotein nitrogen 175, creatinine 18, magnesium, 0.9, calcium, 24.0. No epsom salt was given.

CASE 19—*Parathyroid deficiency*. H, a man aged 61, in the University Hospital with a blood pressure of 130 systolic, 90 diastolic, had marked convulsions. Plasma nonprotein nitrogen, 30, creatinine, 1.8, magnesium, 0.93, calcium, 7.0. No epsom salt was given.

CASE 20—*Possible cerebral injury*. M, a woman, aged 20, in the University Hospital, had general muscular twitching. The physical examination was negative and an encephalogram was negative. Plasma magnesium 1.14, calcium, 10.0. No epsom salt was given.

CASE 21—*Epilepsy (?)*. MCK, a boy aged 12 years, in the University Hospital had intermittent twitching of the upper and lower extremities every two or three days, followed by sleep for several hours (possible epilepsy). Plasma magnesium, 1.16, calcium, 11.8. No epsom salt was given. Was relieved later by ketogenic diet.

CASE 22—*Parathyroid deficiency*. B, a woman, aged 42, in the University Hospital had light convulsion. The laboratory report was negative. Plasma magnesium, 1.35, calcium, 9.0. No epsom salt was given.

CASE 23—*Epilepsy*. E E, a woman, aged 35 in the Minneapolis General Hospital, had epileptic attacks every two to three months and was restless between attacks. The laboratory report was negative. Plasma magnesium, 1.77, calcium, 12.9. No epsom salt was given.

CASE 24—*Epilepsy*. D, a woman, aged 42 had epilepsy (grand mal occasional attacks). The laboratory report was negative. Plasma magnesium, 1.8, calcium, 13.7. No epsom salt was given.

It will be noted that two of these are cases of parathyroid tetany. This accords with the experimental results of McCollum and his collaborators and with the clinical observations of Howland and Marriott,¹² Denis

7 Blackfan K. D. and Hamilton Bengt. Boston M. & S. J. 193. 617 (Oct.) 1925. Blackfan K. D. and McKhann C. F. Acute Glomerular Nephritis in Children. J. A. M. A. 97. 1052 (Oct. 10) 1931.
8 Dorsett I. Am. J. Obst. & Gynec. 11. 227 (Feb.) 1926.
9 McNeile L. G. and Vruwink John. Magnesium Sulphate Intravenously. J. A. M. A. 87. 236 (July 24) 1926.
10 Hirschfelder A. D. and Haury V. G. Proc. Soc. Exper. Biol. & Med. 30. 1157 (May) 1933.
11 Kruse H. D., Orent E. R. and McCollum E. V. J. Biol. Chem. 96. 319 (May) 1932. 100. 601 (May) 1933. Orent E. R., Kruse H. D. and McCollum E. V. Am. J. Physiol. 101. 454 (Aug.) 1932. Kruse H. D., Schmidt Marguerite M. and McCollum E. V., ibid. 105. 635 (Sept.) 1933.

12 Howland John and Marriott W. McK. Quart. J. Exper. Med. 11. 289 (July) 1918.

and Talbot¹³ and Bulger and Gausmann,¹⁴ who also found low blood magnesium in some but not in all cases of parathyroid tetany. Moreover, Salvesen and Linder¹⁵ and Lang¹⁶ found that removal of the parathyroid glands in animals caused no change in blood magnesium.

Three of our patients with low plasma magnesium suffered from idiopathic epilepsy. Denis and Talbot also had reported two. But since we have also found practically normal plasma magnesium in four epileptic patients (177, 197, 213 and 26 mg respectively) it is evident that a low plasma magnesium is not a constant finding in this disease. It is possible, however, that there may be a variability in the plasma magnesium of such individuals and that periods of low magnesium may precede and accompany the attacks. We are at present engaged in a further study of this question.

Four of the patients with low plasma magnesium had glomerulonephritis. That this should occur in spite of the diminished ability of the nephritic kidney to excrete magnesium may seem paradoxical, but since such patients are usually on a milk or at least on a soft diet, it is evident that their intake of magnesium salts can easily remain below their power to excrete magnesium. When the usual purgative dose of epsom salt was administered by mouth to three of these patients, the plasma magnesium rose within from four to six hours from the previous concentrations of 0.95, 1.09 and 1.37 mg per hundred cubic centimeters, respectively, to 3.3, 3.78 and 4.0 mg, nearly double the normal concentration, and simultaneously with this increase in magnesium the twitchings or convulsions subsided.

Denis and Talbot have reported also one case of lobar pneumonia and one case of bronchopneumonia, both of which presented convulsions and one case of chorea with low blood magnesium. However, we have had a case of chorea with normal plasma magnesium (2.13 mg) and normal calcium (12.2 mg).

In view of the cases here reported, it is evident that there is a clinical syndrome associated with low plasma magnesium accompanied by a condition of hyperirritability of the neuromuscular system often associated with muscular twitchings or convulsions. These cases are probably more common than has been realized.

At least in the patients whose kidneys are pathologic the twitchings or convulsions can be relieved by the administration of a purgative dose of epsom salt by mouth.

SUMMARY AND CONCLUSIONS

1 When normal individuals take epsom salt by mouth they excrete about 40 per cent of the ingested magnesium in the urine in twenty-four hours but the concentration of magnesium in the blood plasma does not rise appreciably.

2 The concentration of magnesium in the plasma may vary greatly under clinical conditions.

3 There is a clinical syndrome of high plasma magnesium (hypermagnesemia) accompanied by somnolence or coma.

4 This may be induced in patients with renal insufficiency by the oral administration of one or more purgative doses of epsom salt.

5 Many cases of coma in nephritic patients diagnosed uremic coma, may be simply magnesium coma.

induced by epsom salt purgation. From such coma patients could probably be awakened by intravenous calcium chloride.

6 Sodium sulphate is preferable to epsom salt for patients with renal insufficiency.

7 There is a clinical syndrome of low plasma magnesium (hypomagnesemia) accompanied by muscular twitching or by convulsions.

8 When this occurs in patients with renal insufficiency, the twitchings or convulsions are relieved by oral administration of epsom salt.

SUDDEN DEATH FROM DINITROPHENOL POISONING

REPORT OF A CASE WITH AUTOPSY

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LOS ANGELES

In an article in July 1933 Cutting, Mehrtens and Tainter¹ stressed the remarkable potency of dinitrophenol as a metabolic stimulant and brought forward evidence (based on extensive animal experimentation and a small series of human cases) that its administration in proper dosage accelerates cellular metabolism apparently without harmful effects. They therefore proposed its carefully supervised clinical use in the treatment of obesity, hypothyroidism and similar depressed metabolic states.² However, because of its known toxic properties they warned that "there are limitations to and possible dangers from the use of this drug clinically. It should be used only under strictly controlled conditions." This warning was emphasized in an editorial³ and by a preliminary report of the Council on Pharmacy and Chemistry of the American Medical Association⁴ which appeared in the same issue (July 15) of THE JOURNAL. The editorial stated that "a drug with the potency and effects of dinitrophenol is a two-edged sword with appalling possibilities for harm as well as for good" and warned that "certainly for the present, at least such investigations should be largely limited to controlled studies in hospitals by physicians competent in evaluating the effects of the drug and with laboratory facilities capable of accurately determining blood, body tissue and other changes."

In a series of fourteen cases of obesity treated with dinitrophenol as recommended by Cutting, Mehrtens and Tainter, Anderson, Reed and Emerson⁵ observed one case of what they term allergic "qualitative idiosyncrasy" with striking cutaneous manifestations. This patient had received an oral dose of 39.3 mg per kilogram of body weight over a period of fourteen days and the authors do not regard this as an instance of repeated small therapeutic doses producing toxic effects similar to those described for larger doses. The probability of an allergic etiology is strengthened by the early work of Mayer (reviewed by Perkins⁶). Mayer

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1 Cutting W C, Mehrtens H G and Tainter, M L. Action and Uses of Dinitrophenol. J A M A 101 193 (July 15) 1933.

2 Dinitrophenol a Metabolic Stimulant editorial J A M A 101 213 (July 15) 1933.

3 Council on Pharmacy and Chemistry. Alpha Dinitrophenol. J A M A 101 210 (July 15) 1933.

4 Anderson H H, Reed A C and Emerson G A. Toxicity of Alpha Dinitrophenol. Report of Case. J A M A 101 1053 1055 (Sept 30) 1933.

5 Perkins R G. A Study of Munitions Intoxications in France. Pub Health Rep 34 235 (Oct 24) 1919.

13 Denis W and Talbot F B. Calcium in the Blood of Children. Am J Dis Child 21 29 (Jan) 1921.

14 Bulger H A and Gausmann F. J Clin Investigation 12 113 (Nov) 1933.

15 Salvesen H A and Linder G C. J Biol Chem 58 635 (Dec) 1923.

16 Lang K. Ztschr f klin Med 122 206 1932.

studied the effects of dinitrophenol on munitions workers who handled the material during the manufacture of explosives. Until hygienic preventive measures were instituted, many of these individuals developed dizziness, headache, vomiting, high fever, night sweats, and similar disturbances, and in some instances sudden death occurred. Mayer discovered that the exposed workers evinced wide variations in their susceptibility to the dinitrophenol. These variations were wholly unpredictable, except that persons with chronic rheumatism, tuberculosis, alcoholism, renal disorders and hepatic disease seemed to have a lessened resistance to the substance. Undoubtedly Cutting, Mehrtens and Tainter¹ had these experiences in mind when they commented: "Finally, the possibility of an idiosyncrasy such as an unusual sensitivity or atypical response to the drug should be kept in mind, although we have not seen unusual reactions. In view of these things we urge that, for the present, dinitrophenol be used only as an experimental therapeutic procedure in carefully selected patients under close observation by the physician."

Further proof that dinitrophenol may possess treacherous toxic possibilities was afforded by the work of Masserman and Goldsmith.⁶ They selected eighteen patients between 18 and 40 years of age, free from discoverable organic disease, whose psychobiologic underactivity was evidenced by sluggishness, passivity and apathy. These patients were given 60 mg of sodium dinitrophenol daily and the dose was increased 60 mg every third day to a maximum of 5 mg per kilogram in divided doses, or until adverse symptomatology contraindicated further treatment. Six of the eighteen patients showed some improvement in their mental state. The results were indeterminate in eight cases. Toxic effects characterized by fall in blood pressure, tachycardia, acidosis and progressive stupor were observed in five cases, in one of which death occurred. These authors conclude that "dinitrophenol may possess a cumulative toxic activity which is not heralded by excessive sweating, dermatitis or pyrexia but which seems, on the other hand, to be characterized by a fall in the blood pressure, tachycardia, the onset of acidosis, and progressive torpor."

In spite of these repeated warnings it is not surprising that the use of dinitrophenol has not been restricted to the carefully controlled conditions urged by every one who has written authoritatively on the subject. Perhaps such restriction is too much to expect when an inexpensive chemical holds out promise of being a delightfully simple answer to the prayers of many men as well as of maidens. He who points a comparatively short and easy route to weight reduction will be rewarded with the rapturous gratitude of obese patients, and the patient with a passion for slimming will addict himself with pathetic fanaticism to a method which may spare him the safer but more uncomfortable procedures. It appears that within the past few months dinitrophenol has been sold and ingested, with and without prescription, in alarming quantities. We have investigated a number of drug stores in this locality, and the number of prescriptions for dinitrophenol to be seen on file at the end of a single day is disquieting. Worse than this, however, is the practice on the part of some pharmacists of selling the substance over the counter to any and every applicant, without prescription and without ade-

quate precautions. In the case we are recording, the dinitrophenol was sold to a girl who had heard of the remedy from a friend and the label merely bore the pharmacist's instructions of how many capsules to take each day. This, we believe, is the third reported instance of death due to dinitrophenol. One case has been recorded by Masserman and Goldsmith⁶ and one by Geiger. Geiger's case, however, was apparently a proved result of heavy overdosage.

REPORT OF CASE

History.—M. B., a white woman, aged 25, single, weighing 147 pounds (66.7 Kg.) had never been seriously sick but in recent years for pure esthetic reasons, had worried about her obesity. She was employed as a social service worker (in a county health center) and in June 1933 she consulted one of the physicians at the health center, complaining of obesity, "lack of pep" and dysmenorrhea. At this time her basal metabolic rate was found to be -12 . The physician prescribed desiccated thyroid one-fourth grain (0.016 Gm.) three times a day and the patient continued to take thyroid tablets probably quite constantly, until March 2, 1934. Since her work brought her into daily contact with capable physicians, it may reasonably be assumed that during this period she at no time complained of any alarming symptoms of thyroid overdosage. She lived with her parents, who assure us that she appeared to them to be in good health and good spirits.

During the afternoon of March 2, 1934, her duties took her to the office of Dr. F., with whose office nurse Miss W., she fell into a conversation. She confided to Miss W. that she wished to reduce her weight and that she had been taking thyroid preparations for some months with altogether made quite effect. It happened that during lunch, that day, Miss W. had heard some doctors discussing a new reducing agent—dinitrophenol—and had herself bought some capsules of the compound from the pharmacist in a nearby drug store. Miss W. told of her discovery and later was informed by the pharmacist that the patient purchased some dinitrophenol from him on the same day (March 2). Miss W. is positive that the patient had never heard of dinitrophenol until she informed her of the substance and of the properties claimed for it. The parents are certain that their daughter ingested her first dinitrophenol capsule March 2.

The pharmacist, Mr. B., states that he sold the patient thirty-five capsules of dinitrophenol (Eastman Kodak Company's 24 Sodium Dinitrophenol) each capsule containing 3 grams (0.2 Gm.). The box and what remain of the capsules are in our possession. The label on the face of the box is imprinted with the name of the pharmacy and bears typewritten instructions: "one capsule the first day, two the second three the third and four thereafter." The contents of the capsules are not named or described.

On Monday, March 5, the patient met Miss W. again and told her that she was taking dinitrophenol and that she "wasn't feeling so well." She attributed her feelings to the fact that the action of the thyroid had not yet "worn off" and that in some way the combined action of the dinitrophenol with the thyroid was producing uncomfortable results. However, she opined that the thyroid effect would soon disappear and did not propose curtailing her dinitrophenol program.

Tuesday, March 6, while at work, she complained of headache, backache, weakness, dizziness, shortness of breath and excessive perspiration. Her companions assured her that the weather was to blame, and she did not leave work.

Wednesday, March 7, she felt unable to go to work but did not stay in bed, attributing her symptoms to an oncoming cold. During the day the parents noticed that she took two of the dinitrophenol capsules. About 6 p. m., she became restless and complained of the increasing severity of her headache, pains in legs and arms and of a sensation of "burning up." She appeared flushed, perspired profusely, and this so impressed a friend who called about 8 p. m. that he anxiously volunteered to go and buy a thermometer. Instead, the parents decided to call a physician. The physician did not know that the girl had been taking dinitrophenol but her condition appeared to him

6 Masserman, J. H. and Goldsmith, Harry. Dinitrophenol: Its Therapeutic and Toxic Actions in Certain Types of Psychobiologic Underactivity. *J. A. M. A.* 102: 523-525 (Feb. 17) 1934.

7 Geiger, J. C. A Death from Alpha Dinitrophenol Poisoning. *J. A. M. A.* 101: 1333 (Oct. 21) 1933.

so alarming that he referred her immediately to the Los Angeles County General Hospital. All this time she complained more and more bitterly of the sensation of "burning up" and kept calling for water. She vomited violently several times and became comatose about 1 a m while en route to the hospital in an ambulance. In removing the patient from the ambulance, the driver noticed that the sheets and cot were wet with perspiration.

The family history was not significant. The patient's childhood diseases were measles, pertussis and chickenpox. Her menses began at the age of 14 and were always somewhat irregular and attended by considerable discomfort. As already mentioned she visited a physician in June 1933, complaining of obesity, "lack of pep" and dysmenorrhea.

Physical Examination (in hospital admitting room 330 a m March 8).—The temperature was 101.8 F, pulse 140 respirations 56. The blood pressure was not recorded. Dr. Hauser, who examined the patient, states that he is sure the temperature (recorded by a nurse) was higher than the record shows. Probably such a high respiratory rate would preclude an accurate determination of the mouth temperature. (However, in the fatality observed by Masserman and Goldsmith⁸ the highest rectal temperature was 102, just before death.)

The patient was comatose and could not be aroused but was restless perspiring profusely and breathing deeply and rapidly. The extremities were flaccid and no reflexes could be elicited. The pupils were regular but failed to react to light or in accommodation. The heart rate was very rapid, and auricular fibrillation was suspected.

In the admitting room a tentative diagnosis was made of poliomyelitis and the patient was sent to the communicable disease unit, where preparations were immediately made to do a spinal puncture. However, the patient died suddenly at 4:35 a m, before the spinal puncture could be completed. Artificial respiration, caffeine sodiobenzoate and intracardiac epinephrine were given with no response. The body came to autopsy ten hours after death, having been well preserved at optimal temperature.

Autopsy.—Livor mortis was marked over the head, neck, upper extremities and thorax. Moderate rigor mortis was present.

The pupils were equal and regular each measuring 5 mm in diameter. The sclerae were distinctly yellowish (causing us to suspect jaundice) and the conjunctival vessels were engorged. Fat over the sternum measured 3 cm in thickness and over the abdomen 5 cm.

The meninges appeared normal. Coronal serial sections through the brain revealed no gross evidence of pathologic change.

The pleural surfaces were smooth and glistening and the pleural cavities contained no fluid. The right lung weighed 480 Gm and the left 380 Gm. There was no evidence of consolidation or bronchopneumonic patching. All lobes were crepitant, but cut surfaces of the lungs at all levels appeared hyperemic, and bloody fluid exuded freely on the slightest pressure. The bronchi contained no excessive or abnormal secretion.

The heart was normal in size and shape and weighed 220 Gm. The pericardium was smooth and glistening. No endocardial lesions were present. The valve orifices were not dilated or narrowed and the valve leaflets showed no thickening. The myocardium was somewhat flabby. The coronary vessels were thin walled and patent throughout their course. The intimal surface of the aorta was pale and smooth and presented no evidence of syphilitic or atherosclerotic changes.

The esophagus was normal. The stomach contained about 300 cc of faintly blood-tinged fluid. The gastric mucosa was intact and gave no indication of having been in contact with any irritating or corrosive material. However, there were many reddish blue areas of discoloration apparently due to small submucosal hemorrhages and toward the cardia these areas were confluent, so as to impart to this region a uniformly bluish hue. The duodenum and upper half of the jejunum also showed some of these small hemorrhages, which probably represent the effects of much violent vomiting.

The liver was dark brown, firm, and weighed 1,400 Gm. The cut surface had a finely mottled appearance, which was by no

means marked enough to suggest chronic passive congestion. The gallbladder was filled with brown bile, and the extrahepatic biliary passages were patent.

The spleen was slightly larger than normal, dark purple, quite firm, and weighed 190 Gm.

Multiple sections through the pancreas revealed no gross evidence of pathologic changes.

The kidneys were normal in size and shape and together weighed 250 Gm. The capsules stripped with ease, leaving a smooth, somewhat purplish surface. The cortex was of normal thickness. The suprarenals showed no remarkable change.

The fimbriated ends of the fallopian tubes were sealed against the ovaries by rather firm adhesions and the tubes were slightly distended and contained a small amount of turbid fluid. The ovaries and uterus appeared normal.

The urinary bladder contained 300 cc of clear urine which was strikingly yellow, the color being especially noticeable in the foam when the urine was agitated. The urine was aspirated before the bladder was opened and saved for examination. The bladder itself appeared normal.

Unfortunately, dinitrophenol poisoning was not suspected at the time the urine was examined so that no chemical tests were made to determine the presence of the compound in the urine. The reaction of the urine was alkaline. The specific gravity was 1.025. Examination revealed albumin, two plus bile pigments, negative sugar, acetone and diacetic acid, negative, benzidine test for occult blood, negative. Microscopic examination revealed a few granular casts.

Blood chemistry post mortem showed creatinine 2.5.

Blood culture post mortem gave no growth after twelve days' incubation.

MICROSCOPIC EXAMINATION

Fortunately, consent for autopsy was obtained almost immediately, and in the interval the body was kept in a refrigerated cubicle. Hence there were practically no postmortem changes and it was possible to make accurate interpretations of microscopic sections.

The convoluted tubules of the kidneys showed the most striking changes. They were in all stages of degeneration. In some places there was only cloudy swelling and pyknosis, but most of the tubules showed actual necrosis. Between the tubules the interstitial tissue appeared edematous. There was much fine hematogenous pigment in the tubular epithelium especially in the bases of the cells (fig 1). The capillary and arterial loops in the glomeruli were distended in places. The blood vessels in the pyramids were markedly distended and there were occasional small hemorrhagic areas.

There were very extensive areas of disintegration and separation of liver cells, apparently by fluid. These areas were confined to the periphery of the lobules; the central portions being unaffected (fig 2). As a result of these peculiar changes, each lobule appeared widely separated from the adjacent lobules. The cytoplasm of the liver cells in the periportal areas was granular and the nuclei were pyknotic (fig 3).

The splenic pulp was unusually full of blood.

The small blood vessels of the mucosa of the stomach were markedly distended and in places actual small hemorrhages seemed to have occurred into the mucosa. The mucosa appeared very edematous, and the glandular epithelium was disintegrated and contained an abnormal number of lymphocytes.

The pancreatic tissue was unusually well preserved, and this probably constitutes good evidence that changes seen in other organs cannot be assumed to be due to postmortem changes.

There was marked congestion of the alveolar walls of the lungs. In places there was considerable edema in the alveoli.

There was marked segmentation and fragmentation of the cardiac muscle fibers in all sections (fig 4). The tissue of the spinal cord, pons and medulla was hyperemic and the capillaries were uniformly distended with blood. There was no perivascular edema and no perivascular round cell infiltration. Section through the pons at the level of the eighth nerve showed slight ganglion cell degeneration.

CHEMICAL TESTS OF TISSUE

A measured quantity of kidney tissue was acidified and steam distilled for approximately one hour. The resulting distillate was colorless but turned canary yellow on the addition

of ammonium hydroxide. The color disappeared again when acid was added.

Since dinitrophenol is a standard indicator whose pH range is known, the indicator properties of a solution of the distillate were compared with those of a solution of dinitrophenol diluted so as to have the same intensity of color. The color changes occurred at approximately the same pH value.

In accordance with tests described by the French workers⁸ 200 Gm of liver tissue was immersed in 95 per cent alcohol for five days, and the resulting extract displayed the same indicator properties as the kidney distillate.

Both the solutions thus obtained from kidney and liver gave a positive Le Mithouard reaction. This test and many others are described in detail by Magne, Mayer and Plantefol.⁸

Finally 400 cc of the kidney extract was concentrated by evaporation to 10 cc. This concentrate gave a strongly positive reaction when tested according to the method of Derrien. The technique of the reaction of Derrien is quoted from the French workers by Anderson, Reed and Emerson.⁴

COMMENT

Following the autopsy we were unable to propose so much as an intelligent guess regarding the cause of death, therefore the patient's relatives were questioned regarding the possibility of her having ingested mushrooms (several deaths from mushroom poisoning having been reported in this district recently) and regarding any medicine she might have been taking. The mushroom theory was ruled out, but the father did recall seeing her take some "pink capsules" and these he brought to us the next day. The capsules contained a yellow crystalline powder and this immediately called to our minds the peculiar yellowness of the urine, which unfortunately, we had by this time discarded. A young obese woman might have been trying to reduce her weight and might have been using dinitrophenol. We compared the substance in the capsules with a sample of dinitrophenol and they appeared identical. The melting point was found to be 114 F. The substance was readily soluble in water, and the solution became colorless on the addition of acid and yellow again when alkalinity was restored. Later we talked with the pharmacist from whose store the purchase was made. He confirmed our presumption that the capsules contained dinitrophenol and referred us to Miss W., a friend of the deceased. From these persons and from the family we were able to piece together and substantiate the history as related.

In the box brought to us by the father were nineteen capsules of dinitrophenol. Since thirty-five capsules were sold to the deceased, she obviously took sixteen capsules between March 2 and March 7 inclusive. This harmonizes exactly with the instructions on the label to take "one capsule the first day (March 2), two the second, three the third, and four thereafter." It may reasonably be assumed that she took one on Friday (March 2), two on Saturday, three on Sunday, four on Monday, four on Tuesday, two Wednesday morning and none Wednesday afternoon, when her symptoms became more prominent. Each capsule contained 180 mg of dinitrophenol, so that a total dose of 2,880 mg was taken in a period of five days.

It seems to us indisputable that this girl's sudden death is attributable directly to the action of dinitrophenol.

THERAPEUTIC DOSAGE OF DINITROPHENOL

Cutting, Mehrtens and Tainter¹ gave nine patients daily oral doses of from 3 to 5 mg per kilogram of body

weight with no ill effects. In their series of fourteen cases, Anderson, Reed and Emerson⁴ gave fourteen patients daily oral doses of about 3 mg per kilogram, with one case of sublethal toxicity. Apparently a daily oral dose of from 3 to 5 mg per kilogram is the accepted safe therapeutic dosage.

This figure was based largely on animal experimentation. Tainter and Cutting⁹ found that the average fatal dose for 50 per cent mortality in rats, dogs and rabbits was between 20 and 30 mg per kilogram. Magne, Mayer and Plantefol⁸ concluded from studies of a large and varied series of animals that the reliable fatal dose was about 50 mg per kilogram. To human subjects, Mehrtens and Tainter¹ have given as high as 10 mg per kilogram for a small number of doses.

When our patient took four capsules a day (or 107 mg per kilogram daily) she was consuming more than the recommended therapeutic dose but was well below the limit of what is thought to be the fatal dosage.

IDIOSYNCRASY TO DINITROPHENOL

From the evidence available it seems probable that as compared with animals human beings have a more variable and more unpredictable susceptibility to dinitrophenol. Magne, Mayer and Plantefol⁸ found that only a small number of animals succumbed to a dose smaller than the generally effective lethal dose for their particular kind. Tainter and Cutting⁹ also observed that the limit of tolerance was fairly regular within each animal species, though some species, particularly the pigeon, succumbed to a dose which other animals could tolerate with safety. While certain responses such as the fever were very variable in no single instance, apparently, did an experimental animal die unexpectedly as a result of a dose of dinitrophenol which for other animals of the same species was demonstrably well below the safety limit.

This relative uniformity of tolerance is apparently not true of the human subject and if not true it is the point to be stressed. Naturally there is no large well controlled series of human cases on which a conclusion might be based. But we have already pointed out that Mayer² discovered a striking variation in the susceptibility of the men and women who handled dinitrophenol in the French munitions factories during the war. A group of people doing the same type of work in identical surroundings often manifested responses varying apparently all the way from a complete absence of deleterious symptoms to sudden death. The preliminary report of the Council on Pharmacy and Chemistry³ points out that "these accidents grew so numerous that it was proposed at one time to abandon the manufacture of this compound despite the then great demand for it."

Aside from the small series of cases reported by Cutting, Mehrtens and Tainter,¹ the only carefully controlled clinical trials of dinitrophenol have been conducted by Anderson, Reed and Emerson⁴ who encountered one case of serious toxicity in a series of fourteen, and by Masserman and Goldsmith,⁶ who observed four cases of toxicity and one death in a series of eighteen. Perhaps the increasingly widespread and promiscuous use of the compound will have at least one good result. It may provide in an unpleasant manner evidence of the human responses to dinitrophenol. The case we are recording is the third fatal example of this probability.

⁸ Magne, H., Mayer, A. and Plantefol, L. *Ann. de physiol. et physiochim. biol.* 8: 1176, 1932.

⁹ Tainter, M. L. and Cutting, W. C. *Miscellaneous Actions of Dinitrophenol*. *J. Pharmacol. & Exper. Therap.* 49: 187-209 (Oct.) 1933.

The total dosage in this case (weight 67 Kg) was 288 Gm in five days. In the case recorded by Anderson, Reed and Emerson¹ (weight 79 Kg) the total dose was 315 Gm over a period of fourteen days. In both instances the total amount of dinitrophenol consumed was well within the estimated safety limits, and the victims probably each had an abnormal susceptibility

with dinitrophenol died within one minute. Hence while dinitrophenol seems beyond doubt to act by accelerating cellular oxidation, it cannot be shown to antagonize agents that depress cellular oxidation.

CLINICAL SIGNS AND SYMPTOMS

Probably one of the most treacherous properties of dinitrophenol is that it seems to induce a relative euphoria in subtoxic doses. Thus Cutting, Mehrtens and Tainter¹ observed that their nine patients treated for obesity "did not suffer from any deleterious symptoms, as a result of their reducing treatment. On the contrary, they felt better and more active than before." We suggest that this may be a treacherous property, because it seems to us that it may betray the patient into a false sense of well being. From our present understanding of the subject it is clear that the responses of a few patients cannot safely be used as a criteria for other individuals. For the present the only safety lies in confining the clinical use of the drug to very closely supervised cases.

Hyperthermia with profuse perspiration and what the French call "thermic dyspnea" seem to be the outstanding signs of toxicity. Cutting, Mehrtens and Tainter¹ found that, in a series of eight patients, single doses between 5 and 10 mg per kilogram provoked no changes in temperature, pulse or respiration but did cause copious sweating. Three single doses "of more than 10 mg per kilogram gave increases in temperature of 3 degrees C or more, in respiration of 15 to 30 per minute, and of pulse 20 to 30 per minute. The latter doses are considered too dangerous for routine use." Probably it is wise to stress this warning. The first sign of abnormal sweating or elevation of temperature (or

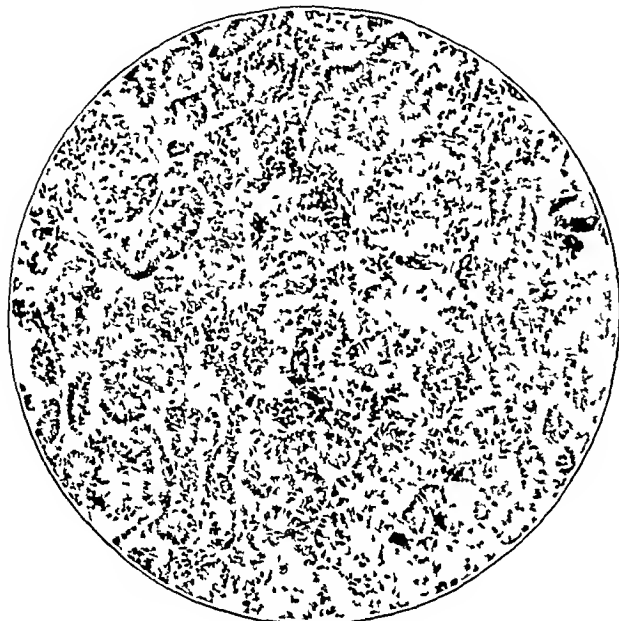


Fig 1—Section of kidney showing tubular degeneration

to dinitrophenol. The outstanding difference is that our patient had been taking thyroid for several months before she began to use dinitrophenol. There is a possibility, on which we are not competent to pass judgment, that the fatality was due to some vicious synergism between the action of dinitrophenol and of thyroid. It is more probable that our case represents, like that reported by Anderson, Reed and Emerson,⁴ an allergic idiosyncrasy to dinitrophenol.

The patient observed by Masserman and Goldsmith⁶ received 606 Gm in fourteen days, but since she weighed 130 Kg the dosage is not significantly greater, and she probably did not die of simple overdosage.

ACTION OF DINITROPHENOL

The work of Magne, Mayer and Plantefol⁸ is in agreement with that of Tainter and Cutting⁹ that in animals and men fever occurs from dinitrophenol administration as a result of increased tissue metabolism, apparently by a direct peripheral action on body cells. Carbohydrate seems to be singled out as the main fuel for this metabolic increase. Magne, Mayer and Plantefol showed that the rise in temperature is not due to action on the heat center, because they were able to produce it in poikilothermic animals, in anesthetized animals, in curared animals, in animals with the cord severed, and in isolated strips of muscle. Their final conclusion was that "dinitrophenol 1-2-4 seems to be a direct excitant of cellular oxidation."

Since cyanide inhibits cellular oxidation and dinitrophenol augments it, Tainter and Cutting⁹ injected cyanide into pigeons at the height of their response to an injection of dinitrophenol. Methylene blue (methylthionine chloride) can be shown successfully to antagonize a similar dose of cyanide, but the pigeons protected



Fig 2—Section of liver under low power showing peculiar separation of liver cells in the periphery of the lobule

according to Masserman and Goldsmith⁶ fall in blood pressure and tachycardia) should call for abrupt discontinuance of the medication, for, as Cutting, Mehrtens and Tainter¹ state, the "margin between the febrile and the fatal dose is narrow."

Various tests have been devised, especially by the French workers, for the detection of dinitrophenol in blood, urine and certain viscera. Their importance, for

the present, seems to lie mainly in helping to establish cause of death in a disputed case. According to Perkins, a persistence or increase in amount of dinitrophenol in the urine (measured by the Derrien test) should be considered a sign of intolerance. In our case it seems probable that Derrien's test would have been positive, since the urine was strikingly yellow. How-

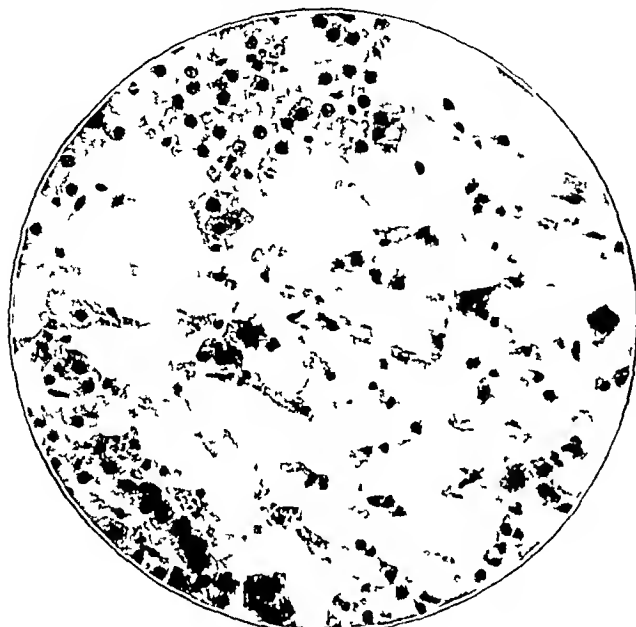


Fig. 3—Section of liver under high power showing degeneration of liver cells in the periphery of the lobule

ever, in the case recorded by Anderson, Reed and Emerson, Derrien's test was repeatedly negative, so that it cannot be regarded as a means of testing allergic sensitivity to the compound.

TREATMENT OF DINITROPHENOL POISONING

Tainter and Cutting⁹ injected six rabbits with from 20 to 40 mg of dinitrophenol, and when the usual respiratory and temperature changes developed, the rabbits were given from 10 to 40 mg of morphine. The rise in temperature was checked and the respiratory rate returned to normal, but all the animals died. Other depressants, such as barbital and chloralose, were equally disappointing. These facts indicate that while morphine may be useful to counteract excitement and dyspnea (and is so recommended by Perkins⁶) it cannot be regarded as a true antidote and will not save life in a case of severe poisoning.

Tainter and Cutting⁹ then tried agents calculated to reduce muscular or cellular activity and to reduce local blood flow. All these agents, such as sodium gluconate, dextrose plus insulin, moniodoacetic acid, quinine and salicylate, were found ineffective in animals.

Whenever dinitrophenol is used clinically it should therefore be borne in mind that there is no known antidote and that, once the process of intoxication begins, no means of arresting it are available. The action of the agent cannot be opposed. At present one can merely try to support the organism through the crisis. Mayer⁵ found (in treating munitions workers) that this could best be done by giving massive intravenous injections of dextrose. In animals Tainter and Cutting⁹ found that the only measures which affected the mortality were administration of fluids, and cooling baths.

PATHIOLOGY OF DINITROPHENOL POISONING

Hundreds of experimental animals have been examined post mortem but no lesions peculiar to dinitrophenol poisoning have been described. Mayer⁵ in 1915 was the first physician who had the opportunity of studying tissues of human victims. He found that, while edema of the lungs and fatty infiltration of the liver may occur, there are no characteristic lesions.

Our case probably presents the first microscopic study of tissue taken at autopsy since Mayer's early work, and we have added very little. Even if the lesions we observed were unique, it would be rash to consider them pathognomonic on the strength of one case. However, the lesions in the kidney, liver and heart seem to us sufficiently arresting to warrant careful description. The pronounced tubular degeneration has been understressed and may signify that dinitrophenol acts on the kidney in a manner similar to other poisons, such as corrosive mercuric chloride and phosphorus. The peripheral spacing and early degeneration of liver cells seems to us a most unusual finding and is well seen in the photomicrograph. Fragmentation of the cardiac muscle fibers probably indicates the severity of the intoxication and a sudden, agonizing death.

CONCLUSIONS

1 Every one who has commented on the use of dinitrophenol has stressed the importance of restricting its clinical trials to carefully selected cases under constant supervision. However it appears that the compound is being widely popularized as a weight-reducing agent and is being bought and used with no competent direction. This seems highly deplorable in the present state of knowledge of human responses to dinitrophenol.

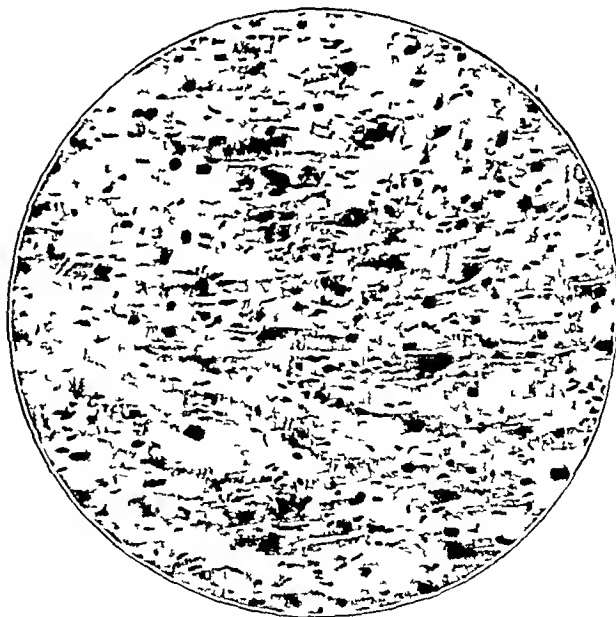


Fig. 4—Fragmentation and segmentation of heart muscle fibers

2 Thorough and extensive animal experiments have been performed (notably by Tainter and Cutting⁹ and by Magne, Mayer and Plantefol⁸) and the toxic effects and the fatal dosage for animals have been accurately determined. This work, however, must not be presumed on too freely in dealing with human beings and it can have no value whatever in predicting or preventing the occurrence of severe allergic manifestations.

3 There is no antidote for dinitrophenol poisoning. The only measures that have seemed to reduce the mortality in animals have been administration of fluids, and cooling baths. In dinitrophenol-poisoned munitions workers, Mayer found that intravenous injections of dextrose constituted the most effective treatment. This seems rational because of the marked loss of tissue glycogen that has been shown to occur. Morphine allays the excitement and the dyspnea and may check the rise in temperature, but it cannot halt the intoxicative process, and, in dogs poisoned with dinitrophenol, morphine does not affect the mortality.

4 In the case of sudden death from dinitrophenol poisoning reported, the victim heard of the compound from a friend and bought and used it without competent supervision. A physician was not consulted until a few hours before death.

5 The dosage in this case was high but within the presumed limits of safety, so the fatality should probably be regarded as an example of allergic idiosyncrasy.

6 Before taking dinitrophenol, the patient had been taking desiccated thyroid extract, one-fourth grain (0.016 Gm) three times a day for about one year. We do not know whether or how this has significance.

A CASE OF FATAL DINITROPHENOL POISONING

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AND

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SAN FRANCISCO

In a short note recently published,¹ attention was drawn to a fatality that occurred from dinitrophenol poisoning. Since this drug is being widely used as a metabolic stimulant, and since the complete details of this case were available only to us, it seemed desirable to publish a full account of it, together with the pathologic observations. This case report will also emphasize the fact which we have consistently stressed,² namely, that careless or reckless use of this drug may have unfortunate consequences.

REPORT OF CASE

History—H. G., a man, aged 37, a graduate of a Vienna medical school but unlicensed to practice in this country, called on one of us (T.) to obtain information regarding dinitrophenol as a metabolic stimulant. He stated that he was suffering from general glandular dysfunction, including a hypopituitarism resulting from a previous sphenoiditis. His libido was gone and no therapy had been beneficial. On questioning, he admitted that the metabolic rate was normal and that he had little, if any, need of weight reduction, since he was not obese. The patient's account of his glandular dysfunction was neither tangible nor convincing. In addition, there was noticeable slurring of speech and eccentricities of manner, which aroused suspicion of some more definite disease process. He was therefore advised that the drug offered no prospect of benefit to him, since he needed neither to increase his metabolism nor to lose weight. In the resulting discussion the pharmacologic actions of the drug and its power to produce severe or fatal hyperpyrexia were explained and apparently understood.

About a month later, one of us (T.) was asked for advice on the treatment of this man, who was in the Central Emergency Hospital, with Dr. Charles Benninger in charge, from the effects of a dose of dinitrophenol taken that day. He died, however, before the suggested cold bath and oxygen therapy could be started.

On admission to the hospital at 5:30 p. m., he told the attendants that one week previously he had taken a single 5 grain dose of dinitrophenol by mouth and that he had suffered a terrific fever for about half a day, with a loss of weight of 6 pounds (2,737 Gm). Wishing to repeat the treatment, he said he took another 5 grain dose by mouth at 11 a. m. on the day of admission. At 5 p. m. he was taken to the Emergency Hospital suffering from hyperpnea and pain in the chest. At 7 o'clock the rectal temperature was 105.0 F., and at 9:30 105.7 F. The blood pressure was 140 systolic and 124 (?) diastolic, with a rapid pulse up to 146 per minute. Respiration was extremely rapid and deep. Treatment by the hospital staff consisted of two doses of morphine, one-fourth grain (0.016 Gm), for the chest pain and acetylsalicylic acid, 20 grains (1.3 Gm), for the fever. There was some restlessness and mental confusion beginning about 9 p. m., and death occurred at 10 o'clock. Twenty minutes later the rectal temperature was above the limits of the clinical thermometer (probably around 115 F.), rigor was present, and the skin appeared darkly cyanotic.

Examination of the patient's belongings by the authorities showed a box of sodium dinitrophenol capsules, of 100 mg each, with only ten of the original hundred capsules left. Since he took the drug only twice, he must have taken ninety capsules, or 9 Gm. of the drug, in these two doses, or at least 4.5 Gm. in the final dose, which proved fatal.

Subsequent investigation revealed that he was receiving trypanamide injections from another physician, which he had requested for syphilis of the central nervous system. The blood Wassermann reaction was negative but he had insisted on being given the antisyphilitic therapy that would not permit a spinal fluid examination. He had also been interested in the possible use of fever therapy, such as by malaria or diathermy, in the treatment of the supposed syphilis.

From the evidence available, we cannot be sure whether he took 5 Gm. by mistake for 5 grains, as might be inferred from his statement about dosage, or whether he took a large dose deliberately, for the therapeutic effect of the high fever he knew it would produce. The latter seems the more probable explanation, since, in a conversation with a physician during the week after his first dose, he described his first experience with it as being accompanied by a very high fever, which was very beneficial. On being urged by the physician not to be so reckless again, he retorted that he would take another dose the next Sunday and that, if it resulted fatally, he would be just another martyr to science.

Necropsy—This was performed at the San Francisco coroner's office eleven and a half hours after death. We are indebted to Dr. Sherman Leland, autopsy surgeon at the coroner's office, for permission to witness the autopsy and for the tissues given to us for microscopic study.

The body was that of a well developed, well nourished man of medium stature who appeared to be about 50 years of age. Mixed grayish brown hair was present over the scalp. The skin was of fine texture throughout and showed a barely perceptible yellowish tint. The subicteric tint was most apparent in the sclerae and conjunctivae. A marked postmortem lividity of the dependent parts was present.

The thorax and abdomen were covered by a moderate layer of yellow subcutaneous fat measuring 3 cm. in thickness. The abdominal and thoracic muscles were of normal color and appearance. The peritoneum was smooth, moist and glistening. A moderate amount of fat was contained in the long apron-like omentum. The stomach was moderately distended, extending 2 inches below the left costal margin. Considerable gas and semisolid fecal material were retained in the colon.

A number of fibrous adhesions were scattered throughout the left pleural cavity. Both pleural cavities were free of fluid.

A large amount of fat was present in the anterior mediastinum. The pericardial sac contained a few cubic centimeters

From the Departments of Pharmacology and of Pathology, Stanford University School of Medicine.

1 Geiger J. C. A Death from Alpha Dinitrophenol Poisoning. *J. A. M. A.* 101:1333 (Oct. 21) 1933.
2 Cutting W. C., Mehertens H. G. and Tainter M. L. Actions and Uses of Dinitrophenol. *J. A. M. A.* 101:193 (July 15) 1933.
Tainter M. L., Stockton A. B. and Cutting W. C. Use of Dinitrophenol in Obesity and Related Conditions. *ibid.* 101:1472 (Nov. 4) 1933.

of clear, straw-colored fluid. A few small ecchymotic hemorrhages were present in both visceral and parietal layers of the pericardium.

The heart was of normal size. A moderate amount of sub-epicardial fat was present over the right ventricle. The heart valves and chambers were normal. The heart muscle was a medium reddish brown, firm and rather moist. The endocardium was glistening and showed a moderate edema. Occasional small hemorrhagic spots were also present in the endocardium. The base of the aorta was essentially normal.

The left lung was about normal size and heavy, and on cut section it showed a marked congestion and a moderate pulmonary edema. The surface was a purplish red. The bronchi were congested and contained a small amount of bloody mucus. No frothy fluid, however, was present in the trachea or large bronchi. The peribronchial lymph nodes were small and anthracotic.

The right lung showed an old apical scar. Otherwise the lung was essentially the same as the left.

The spleen was of normal size. A few fibrous adhesions were present over the convexity. The cut section showed a dark congested pulp of firm consistency.

The left and right kidneys were of normal size, showing slight remnants of fetal lobulation. The capsules stripped readily. The surfaces were smooth and of a medium reddish brown. On cut section the parenchyma appeared normal. The peripelvic fat was moderately increased in amount. The mucosa of the renal pelvis was smooth, pale and glistening.

The liver was of normal size. The capsule was smooth, except for a few tiny areas in which it appeared slightly "loose." Cut section showed a moderate degree of congestion and a slight but definite icteric tint. The liver cut with normal resistance.

Pale golden yellow bile of normal viscosity was contained in the gallbladder. The latter was of normal size. Considerable fluid of a pale yellow was present in the stomach. The color

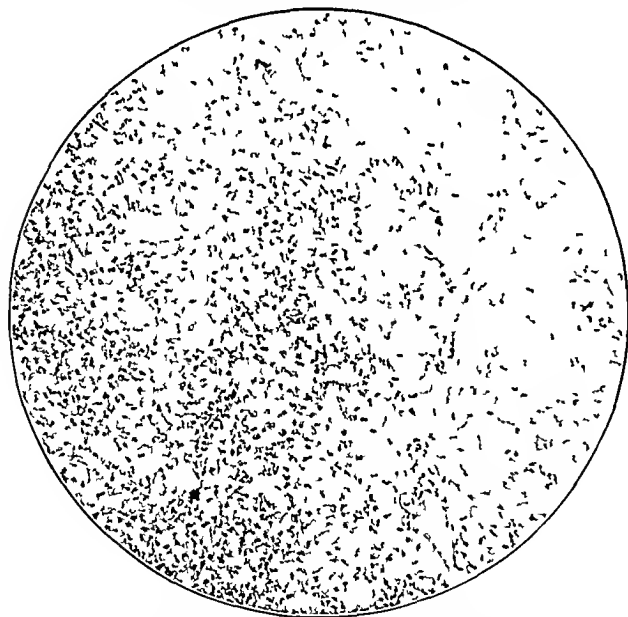


Fig. 1—Moderate congestion and slight detachment of liver cells. Slightly reduced from a photomicrograph with a magnification of 80 diameters.

appeared to be due to bile staining and was not the typical color of dinitrophenol.

The calvarium was of normal thickness and markings. The brain showed a definite but slight edema. A few tiny hemorrhagic spots were present in the pia over the temporal and parietal lobes.

The anatomic diagnosis was dinitrophenol poisoning fatal, ecchymoses of the endocardium, pericardium and pia, pulmonary edema, tuberculosis, pulmonary and apical, healed, and pleuritic adhesions.

Histologic examination of the liver showed a slight detachment of the hepatic cells from one another (figs 1 and 2) with no apparent change in the reticulo endothelial cells. A slight fatty infiltration was present in the periphery of the lobules.

An extreme congestion of the lung was present throughout. The septums and the alveolar walls showed a marked congestion and a slight edema. Small amounts of plasma with a few red blood corpuscles were present in some of the alveoli.

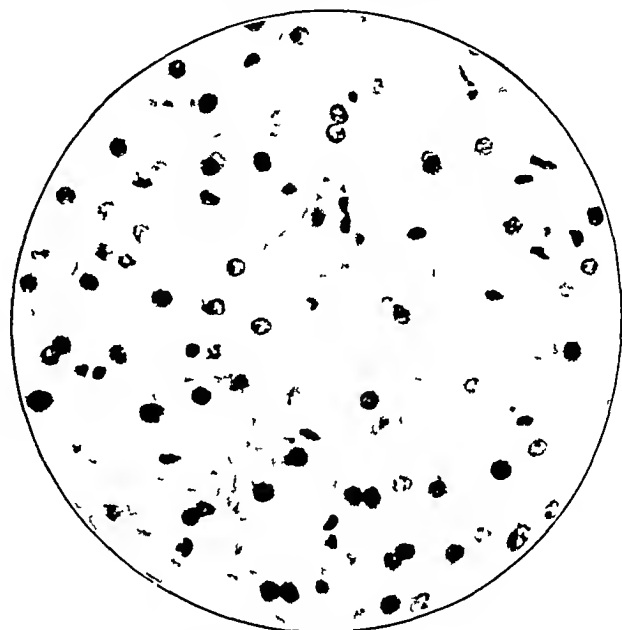


Fig. 2—Detail of detachment of hepatic cells. Slightly reduced from a photomicrograph with a magnification of 450 diameters.

(fig 3). In a few sections, some of the small blood vessels were filled with masses of agglutinated red blood corpuscles.

Sections of the heart showed considerable transverse fragmentation of the muscle fibers and a slight variation in the intensity of staining.

Histologically, the kidney showed a moderate congestion of both cortical and medullary portions in some areas. The glomeruli were essentially normal aside from congestion. In scattered areas, some of the convoluted tubules showed a slight to marked cloudy swelling of the lining epithelium with beginning detachment of the lining cells.

The brain sections showed no evident abnormalities and no evidence of syphilis.

Aside from a moderate congestion of the pulp, the spleen was essentially normal.

Estimation of Dinitrophenol in the Blood—The blood was partly hemolyzed so that a clear plasma could not be obtained. With the use of blood to which dinitrophenol had been added as a standard for comparison the content of dinitrophenol was estimated colorimetrically, by two different methods, as follows.

First method. Blood was diluted ten times with distilled water, a protein-free filtrate was obtained with sodium tungstate and sulphuric acid. Clear colorless filtrate was alkalinized with sodium carbonate and the color estimated against the standards made at the same time in normal blood. Five cubic centimeters of the patient's blood was found to contain 0.15 mg of dinitrophenol. For a total blood volume of 10 per cent of his estimated body weight of 80 Kg. this would give 240 mg in the blood. Or, if evenly distributed between blood and tissues it would indicate about 24 Gm of dinitrophenol in the entire body.

Second method. A 10 per cent solution of the patient's blood in distilled water and standard solutions of dinitrophenol in blood were acidified and extracted with chloroform, the chloroform was removed and the residue evaporated to dryness over a water bath. The residue was taken up in water with sodium carbonate, reacidified and extracted with chloroform.

The chloroform was evaporated off again and the residue redissolved with sodium carbonate and distilled water up to volume. With the use of Wilpole's double tube technique, against control tubes treated similarly, 5 cc of the patient's blood was found to contain 0.19 mg of dinitrophenol. This would give, calculated as before, 304 mg in the blood, or 304 Gm of dinitrophenol in the whole body. The average of these two results would be 272 Gm of the acid dinitrophenol, or 3.31 Gm of the sodium salt which he actually took.

We know from experiments now under way that dinitrophenol is rapidly excreted in the urine, the greater part leaving the body within twenty-four hours. Since the patient survived the administration eleven hours, during which time excretion was doubtless going on, the amounts of dinitrophenol demonstrated in the blood are in general agreement with the aforementioned conclusion, namely, that about 5 Gm was the dose actually taken. Since the average daily clinical dose is 300 mg of sodium dinitrophenol, he took what was probably about seventeen times the usual therapeutic dose and about eight times the highest dose we have ever given to the most resistant patients.

SUMMARY

1 A case is reported of death occurring eleven hours following the oral administration of between eight and seventeen times the usual therapeutic dose of dinitrophenol.

2 The dosage taken was estimated, by various methods, to have been at least 24 but more probably 5 Gm. The man weighed approximately 80 Kg, giving an estimated dosage of 62.5 mg of dinitrophenol per kilogram of body weight.

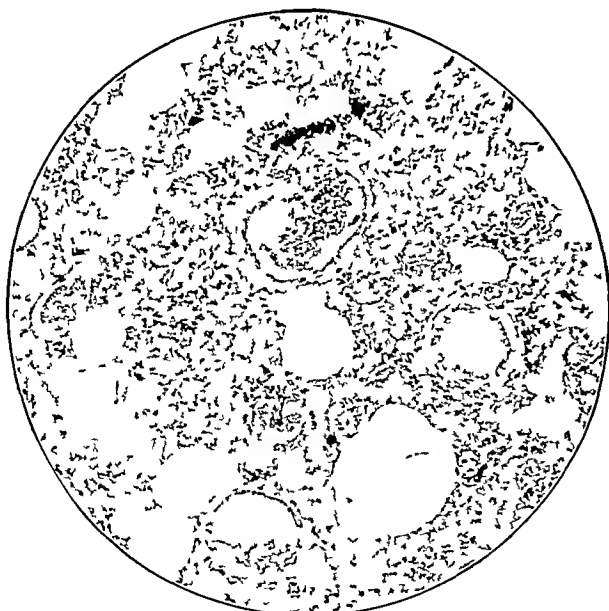


Fig 3—Marked congestion of alveolar and septal blood cells. Slightly reduced from a photomicrograph with a magnification of 80 diameters.

3 The drug was self-administered with the apparent attempt to produce hyperpyrexia as a therapeutic measure for a supposed syphilis of the central nervous system.

4 The rectal temperature shortly after death was so high that it could not be recorded by a clinical thermometer, probably being at least 115 F.

5 The onset of rigor mortis was rapid, the body being rigid within ten minutes.

6 A subicteric discoloration of the sclerae and conjunctivae was present and was due in all probability to the color of the drug itself.

7 The anatomic changes consisted chiefly in a marked rigor mortis, an acute pulmonary congestion and edema, ecchymotic hemorrhages in the endocardium, pericardium and pia, mild nephrotic changes in the kidneys, and a slight detachment of the liver cells from one another.

8 The clinical and anatomic changes bear a striking resemblance to those seen in cases of heat stroke.

Sacramento and Webster streets

Clinical Notes, Suggestions and New Instruments

TRANSDUODENAL DECOMPRESSION AND REINTRODUCTION BY PROTOCYLIS OF GASTROINTESTINAL DRAINAGE IN ACUTE MECHANICAL ILEUS

CARL G. ROBERTS, M.D., Chicago

Mrs. F. B., aged 45, married and the mother of two children, admitted to St. Elizabeth Hospital, July 23, 1933, had three days previously had a sudden onset of colicky pain in the epigastrium, which localized in the right lower quadrant within twenty-four hours. Simultaneously with the onset of pain she vomited repeatedly and felt as if she had a fever. After three days of ineffectual self-medication, a physician was called, who advised immediate removal to the hospital.

Her previous history was essentially negative with the exception of an attack of scarlet fever in infancy and a fracture of the right seventh rib due to an automobile accident in January 1933. The family history revealed that one sister had died of pulmonary tuberculosis.

On admission her temperature was 100 F, pulse 104 and respiration rate 28. There was marked rigidity of the right abdominal muscles with pronounced tenderness at McBurney's point. The leukocytes numbered 16,800, with 90 per cent polymorphonuclears, 5 per cent lymphocytes and 5 per cent large mononuclears. The urine contained a trace of albumin, many hyaline casts, a number of epithelial cells and a few pus cells.

The general appearance of the patient was indicative of a condition more serious than was suggested by her pulse and temperature. A tentative diagnosis was made of acute appendicitis with probable rupture.

Examination through a McBurney incision disclosed a perforated gangrenous appendix, very black throughout its length, surrounded by about 180 cc of greenish yellow, foul smelling pus. The adjacent cecal wall was edematous, discolored and congested. The appendix was removed, the pus was evacuated, and Penrose drains were placed in the paracolic fossa and pelvic basin. The muscle, fascia and skin were left unsutured, the entire operation consuming twenty-five minutes.

The pathologic examination, by Ernst Pribram, July 25, revealed that the appendix was 3 inches (7.6 cm) long and about one-half inch (1.25 cm) wide. The wall was thick and green throughout. The mucous membrane was necrotic. The periappendiceal tissue, 1½ inches (3.75 cm) in diameter, was intensely infiltrated and inflamed. Microscopic examination revealed gangrenous appendicitis and perityphilitis. A smear from the abdominal wall showed pus cells yielding gram-positive and gram-negative bacteria and diplococci.

After the first two days the patient's pulse rate varied from 88 to 100, but she continued to have a septic temperature. Drainage was profuse, both smear and culture showing many gram-positive and gram-negative diplococci and bacteria.

August 3 she had a severe chill lasting twenty-five minutes followed by a temperature of 102 F and a pulse rate of 138. During the next twenty-four hours she was unable to void urine and repeated catheterization was necessary. August 7,

bimanual examination revealed bulging of the culdesac, and through a posterior colpotomy 500 cc of pus was evacuated. Following this, the temperature was distinctly lower for two days, when it again became irregularly septic. Voluntary micturition reappeared after the operation, accompanied by diarrhea, which continued for a few days.

August 11, a roentgenogram revealed marked elevation of the right diaphragm with a limitation of movement, and, although no fluid level was apparent, this finding together with the persistent septic temperature was suggestive of subphrenic abscess. August 12, she was again removed to the operating room, the ninth rib was resected in the midaxillary line and the subphrenic space was entered by the transpleural route, where an abscess was found and drained.

The temperature and pulse rate gradually returned to normal, so that by August 21 they were 98.8 F and 80, respectively. The general condition of the patient, however, was not entirely satisfactory, as the primary abdominal wound showed little tendency to heal, still draining very profusely. September 13, a blood transfusion was given to combat the severe sepsis and anemia, following which her condition improved, drainage decreased and both wounds began to heal.

October 11, she complained of cramplike pains and vomited a number of times. An enema resulted in the evacuation of a

corresponding decrease in nonprotein nitrogen and carbon dioxide combining power, the pulse rate returned to normal, and on October 16 a glycerin enema resulted in the expulsion of much flatus and a large stool. The patient was given increasing quantities of liquids, and on October 22 she was able to sit out of bed.

Because of her previous operation and prolonged drainage, it was felt that the obstruction was due to adhesions involving only a part of the circumference of the intestinal wall, therefore the chances were good for spontaneous recovery of peristaltic function if distention was relieved and the morgeanic salts were replaced. This conjecture proved correct, the convalescence was uneventful, no secondary operation was necessary, and the patient was dismissed, November 5.

REINTRODUCTION OF GASTRIC CONTENTS

After reading the case report of Block¹ of Philadelphia, who reintroduced the gastric contents by rectum in a case of acute dilatation of the stomach, I felt that this might be a desirable method of replacing the lost gastric and intestinal fluids in certain cases of obstructed ileus.

In the case reported by Block¹ the use of the acid gastric secretion resulted in irritation and diarrhea but the results otherwise were gratifying. In the duodenal contents, however,

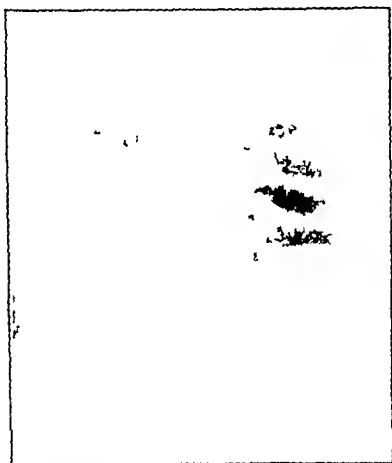


Fig 1—Elevation of right diaphragm indicating presence of subphrenic abscess. Aug 11, 1933.



Fig 2—Appearance Oct 11, 1933, showing Levine tube in duodenum and distended, gas-filled loops of ileum arranged in vertical instead of transverse ladder formation.



Fig 3—Barium enema showing point of obstruction near ileocecal valve. End of tube is seen below transverse colon.

formed stool but no flatus. Nausea and vomiting increased, however, not even water being retained. On examination there was slight abdominal distention, borborygmi, visible peristaltic waves and tenderness in the umbilical and hypogastric regions. A working diagnosis of acute ileus was made, following which a flat roentgenogram revealed gas-filled loops of ileum and a barium enema disclosed a point of obstruction proximal to the ileocecal valve.

Although the diagnosis was made within twenty-four hours of the onset, the patient's condition was so grave that it was deemed unwise to attempt even an enterostomy. The stomach was lavaged and a Levine tube passed intranasally through the stomach into the second portion of the duodenum. It was felt that, in the absence of segmentation of the bowel and a generalizing peritonitis, this would result in decompression, just as an enterostomy relieves distention. There was no further vomiting following the passing of this tube which remained in situ for three days. The drainage material, composed of gastric, biliary, pancreatic and jejunal fluids, was collected from the tube and given to the patient by proctoclisis in quantities of 180 cc every four hours. Hartmann's solution and dextrose were used intravenously, together with one ampoule of pitressin every three hours.

There was immediate improvement in the general condition of the patient, within forty-eight hours the pain and distention disappeared, there was an increase in blood chlorides with a

the acid gastric juice is neutralized by biliary and pancreatic secretions, so that the collected fluids are alkaline in reaction and are not irritating to the normal rectal mucosa.

What of the danger from toxicity of this material? According to Elman,² a liter of normal intestinal contents containing trypsin, peptones, phenols, amines and other substances together with gas bacilli may be reintroduced in the normal gastrointestinal tract without any harmful results. A few cubic centimeters of some normal intestinal contents are sufficient to kill when injected in the circulation. The toxin present in intestinal obstruction does not seem to be harmful in the presence of undamaged mucosa, retaining its normal power of selective absorption,³ therefore when reintroduced by proctoclisis not only is the drainage material harmless but its composition is probably superior and more adaptable than any synthetic solution that can be devised. The experience of Wilkie⁴ is strongly corroborative of this statement.

The question of the absorptive ability of the rectum may be raised, but, in the presence of depletion of body fluid or dehy-

1 Block, F. B. Acute Intestinal Obstruction. *S. Clin. North America* 12: 1483 (Dec.) 1932.

2 Elman, Robert. Treatment of Late Acute Intestinal Obstruction. *Surg., Gynec. & Obst.* 56: 175-181 (Feb.) 1933.

3 Dragstedt, L. R., Moorehead, J. J. and Burch, F. W. Intestinal Obstruction. *J. Exper. Med.* 25: 421-439 (March) 1917.

4 Wilkie, D. P. D. Some Principles in Abdominal Surgery. *Brit. J. Surg.* 11: 586 (Jan.) 1924.

dration with its consequent increase of blood concentration and viscosity, absorptive capacity is increased. Perusse⁵ demonstrated that isotonicity is not the ideal concentration for proctoclysters, as a hypotonic solution is more readily absorbed. Dehydration secondary to the vomiting of ileus increases the blood concentration, consequently a solution even more concentrated than the gastro intestinal fluids will be readily absorbed if given by proctoclysis.

This case is reported with the full realization that nothing can be more misleading than to base positive opinion on one or more cases without extensive scientific observation checked by proper controls. Further investigation should be based on scientific experimental research, amplified by clinical application over a considerable period of time, before logical conclusions can be reached. The results obtained in this one case were so dramatic and positive that the report seems warranted as a clinical experience, which may be an inspiration for detailed investigation and experimental research to test its merit.

152 West Division Street

THE LINGUAL TONSILS AND SOME OF THEIR COMMON ABNORMALITIES

LESTER HOLLANDER, M.D. PITTSBURGH

Maximow,¹ in his textbook on histology, gives a clear-cut description and three excellent illustrations of the lingual tonsils. He says "The bulgings on the root of the tongue are caused by spherical accumulations of lymphoid tissue, they are peripheral nodules with germinal centers—the lingual tonsils and the follicles of the tongue. On the free surface of each of them a small opening can be noticed. It leads into a deep, irregular invagination lined with stratified squamous epithelium—the crypt. The epithelium of the crypt is surrounded by lymphoid tissue, innumerable lymphocytes infiltrate the epithelium and assemble in the lumen of the crypt, where they degenerate and form masses of detritus with desquamated epithelial cells and bacteria. The excretory ducts of the follicles open into the crypt or on the free surface."

The importance of the lingual tonsils arises from the fact that a considerable number of the medical profession is not mindful of their existence and also that some of the abnormalities which occur in them are not sufficiently familiar. Although they may be involved in any one of what Boyd² calls the "big four" of pathologic changes of the tongue—syphilis, carcinoma, tuberculosis and inflammation—they are much more frequently the seat of simple hypertrophy, residual infection or hyperkeratosis of the epidermis overlying them.

These simple conditions are frequently viewed with great alarm, as they are interpreted as malignant disease. Attention is usually called to them during routine examination of the throat or mouth. Subjective symptoms occur infrequently and only when they are the seat of residual infection. Occasionally patients who are in the habit of looking at their tongues become aware of their presence and become greatly alarmed by finding these lesser or greater lumps.

I have made it a point to observe them for some time on routine examinations of the tongue. Mostly they protrude but slightly from the margin of the organ at the root; the opening of the crypt is small under normal conditions. As they are part of the lymphoid structure of the body, they are not infrequently found enlarged in patients in whom generalized lymphoid hypertrophy occurs.

Dissimilarity in size or an increase in the aperture of the cryptic opening, which may become deep and fissure-like, calls for careful examination. In the latter instance it is not infrequent to find that a semisolid, cheesy material can be expressed from the crypt. In several instances I have noticed an offensive

odor associated with it. One such example is noteworthy to record because the patient's chief complaint was fetor ex ore. Only the left lingual tonsil was enlarged sufficiently to widen the crypt. Removal of the tonsil-bearing area of this side of the tongue improved the condition.

Subjective symptoms do occur in conjunction with residual or chronic infection. Especially is this true if the opening is insufficient to permit the easy outflow of the purulent material. At times this leads to fairly marked tenderness, the symptoms are usually exaggerated on mastication.

Three cases are presented briefly to illustrate some of the points in question.

CASE 1—W. L. F., a man, aged 36, was sent to me by a laryngologist with a diagnosis of early carcinoma of the tongue at the margin. Examination showed the right lingual tonsil somewhat larger than the left, but the crypt was not distended. The mucous membrane covering a portion of it showed a grayish white plaque about 1 mm in diameter, over which it seemed to be thickened. The rest of the mucous membrane covering the lingual tonsil looked macerated. There were no subjective



Fig. 1 (case 1)—Acanthosis overlying the mass of lymphoid structure underneath it.

symptoms. This abnormality was noticed during a routine throat examination. The entire tonsil-bearing area was removed by radio knife cautery.

Microscopic examination showed a normal lingual tonsil and hyperkeratosis of the epidermis overlying it. In figure 1 the slight acanthosis is shown overlying the mass of lymphoid structure underneath it.

CASE 2—Mrs. W. W., aged 42, presented herself for examination on account of pain and tenderness at the left side of the tongue. The left lingual tonsil was somewhat larger than the right and was firmer in consistency. The opening of the crypt was patulous or distended. The area was very sensitive. No roughness of the teeth was noted. The entire area was removed by radio knife cautery. Microscopic section showed, in addition to a fairly large lymphoid structure, the presence of inflammatory exudate about the periphery and intracellular edema. It was interpreted as a chronic (residual) infection of the lingual tonsil.

CASE 3—Mrs. G. B., aged 48, was referred to me because of a bilateral enlargement at the root of the tongue. The medical history was interesting because of a frequently recurring tonsillitis which she had suffered over a period of the last ten years.

Figures 2 and 3 demonstrate clearly what was found. On the right side a lobulated mass, soft but not friable, was pro-

⁵ Perusse, G. L. Jr. The Solution of Choice in Proctoclysis. Surg. Gynec. & Obst. 54: 774-784 (May) 1932.

From the Pittsburgh Skin and Cancer Foundation.

¹ Maximow, A. A. Textbook of Histology, edited by William Bloom. Philadelphia: W. B. Saunders Company, 1931, p. 483.

² Boyd, William. A Textbook of Pathology. Philadelphia: Lea & Febiger, 1933, p. 436.

truding well beyond the margin of the tongue. On the left side a deep fissure separated the hypertrophied lingual tonsil and appeared as a deep cleft. A marked fetor ex ore was present, apparently coming from the left side. The lesions were destroyed by electrocoagulation.

DIFFERENTIAL DIAGNOSIS

As already mentioned and as in all chronic and persistent abnormalities of the oral mucosa, carcinoma, syphilis, tuber-

2 In looking for causes of fetor ex ore, residual infection in the lingual tonsil should be considered as a possibility.
631 Jenkins Building,

AUTOMATIC HYPODERMIC SYRINGE FOR SELF ADMINISTRATION OF INSULIN AND OTHER USES

HERBERT BUSHER, M.D., ST. PAUL

The greatest drawback in the treatment of diabetes with insulin, encountered in active practice, is the necessity of the patient to administer this medication himself with a hypodermic needle. The instinct of self preservation creates in every human being a fear to inflict pain on himself. Many a sufferer from diabetes struggles along on diet, to his own detriment and to the chagrin of his physician simply because he lacks the will power necessary to overcome this natural inhibition.

To overcome this difficulty I have devised an automatic hypodermic syringe. The device holds the syringe under ten



Fig 2 (case 3)—Hypertrophy of the right lingual tonsil

culosis, irritation from a rough or jagged tooth and irritation from tobacco, especially if the latter is used in the form of chewing, are the foremost considerations. Without going into the minutiae of detail, in general the following points will lead one straight. The absence of (a) hardness, as in carcinoma; (b) progressive or retrogressive changing character as in a syphilitic gumma; (c) satellite lymph node enlargement as in



Fig 3 (case 3)—Hypertrophy of the left lingual tonsil, showing deep fissure like crypt

a chancre, (d) slow progressive ulceration quality, as in tuberculosis (unless the residual infection is due to the Koch bacillus).

If there is doubt, however, the tonsil-bearing area can be easily removed under local anesthesia. The radio knife cautery simplifies the procedure. A microscopic examination will then usually clear up the diagnosis.

SUMMARY

1 The three cases of lingual tonsils reported here illustrate certain common disorders found in them.

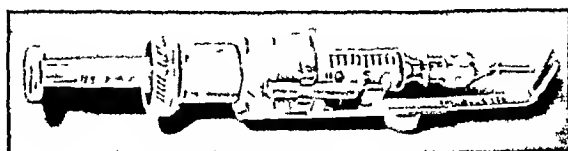


Fig 1—Automatic hypodermic syringe

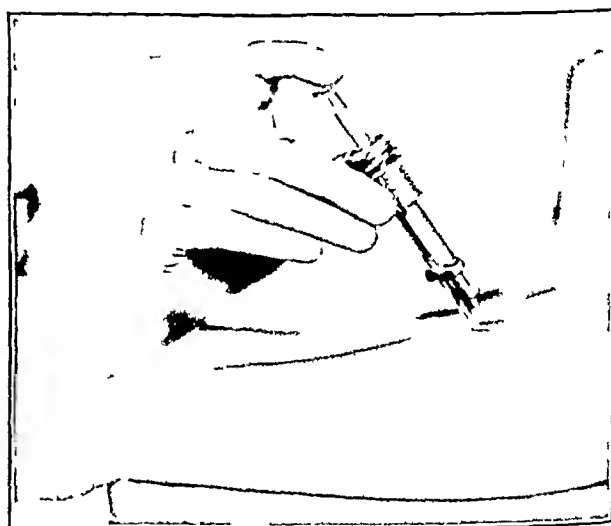


Fig 2—Method of use

sion by means of a spring. After the syringe has been filled with the required amount of insulin it is drawn back and cocked. The device is then placed firmly against the skin, and by touching a trigger the needle is thrust through the skin with lightning rapidity, very much as the modern spring lancet punctures the lobe of the ear in obtaining a drop of blood for laboratory examination. The rapidity with which the needle is inserted precludes any distortion of the skin, and therefore makes the procedure practically painless. Also, the spring-power insertion eliminates the voluntary push with its attendant inhibitory fear.

In addition to self administration there are other uses for which this device is well adapted. For instance children will appreciate the painless injections not only in pediatric practice but also in the schools, where most of them receive their diphtheria immunizations.

The device has a foot-rest, which can be adjusted to the desired depth of needle insertion. The needle can readily be removed and another put on without unsterilizing it. And the syringe itself can easily be taken out of the device, and another syringe put in.

1071 New Lowry Building

NEW APPARATUS FOR REHABILITATION FOLLOWING
INJURIES TO THE LOWER EXTREMITIES

G LYNN KRAUSE M D St Louis

The after-care of patients recovering from fractures of the lower extremities has always been a considerable problem both to the patient and to the physician. From the time that the patient is ready to bear his weight on the lower extremities until his discharge he is constantly apprehensive of falling and disturbing the healing of the fracture. In order to remove these fears from his mind and to restore self confidence in his power of locomotion, I have devised an apparatus that has proved successful in a number of cases.

CONSTRUCTION AND USE OF THE APPARATUS

The apparatus consists of a framework of galvanized iron pipe joined together by tees and elbows. The base of the frame is 25 by 25 inches and is mounted on ball bearing rubber tired casters. It can be opened in front and wheeled up to the patient and then fastened. The upper framework is smaller than the base, measuring 20 by 20 inches and 35 inches from top of base to floor. Three sides of the frame are rigid, the fourth, or front, consists of a movable piece of pipe, which locks into place by a spring catch. The side opposite to this gate, or the back of the frame, is curved so as to accommodate the patient's hips and buttocks. The sides, to the right and left, are equipped with arm supports similar to those on crutches, and can be raised or lowered by set screws to fit the patient and help him to support himself during the early part of his rehabilitation.

These crutch supports are in turn connected to the top framework by oversized tees, one on each side, which act as hinges so that the crutch attachments may be folded on to the lower frame when the patient has learned to support himself well enough to do away with the arm supports. From the center of the gate in front to the center of the curved bar in the rear, a well padded canvas sling is suspended. This strap passes between the patient's legs and supports the entire body above the hips. This arrangement allows the feet to touch the ground, so that the patient can begin to move his limbs in the normal manner for walking and yet keeps the weight of his entire body off the injured limb. As he recovers his confidence and the injury becomes more secure, the strap between his legs is gradually lowered so as to place more and more weight on his feet. The casters allow him to 'walk' about as he regains confidence and reeducates the muscles of his limbs. At first the patient uses the adjustable crutch supports under his arms, but, as he improves and bears more weight, these supports are folded to the sides. Since the base is wider than the top it is impossible for the apparatus to tip over. The adjustability of crutch and sling will accommodate any adult patient.

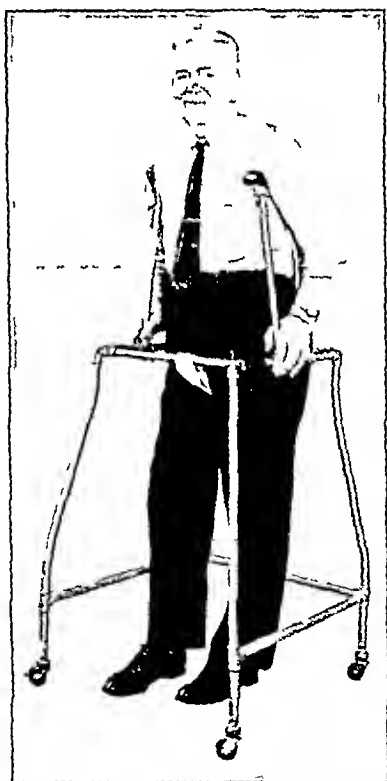


Fig 1—Ambulatory crutch for certain disabilities of the lower extremities

The apparatus is being used at present on a man, aged 54, weighing 228 pounds (103 Kg). Both legs were broken at the knee joint in an automobile accident, the fracture extending into the joint, the femur, tibia and fibia were broken. After a fair amount of bony union had been obtained, I was unable to get him to use crutches. When I put him in this device he was able in a few days to walk from one to two blocks. The exercise afforded is rapidly bringing back the use of his joints and muscles. He has acquired his equilibrium and confidence in walking. Also there is no danger of falling and injuring the broken parts or incurring any additional injuries.

With this apparatus the time the patient stays in bed is considerably shortened, which is a distinct advantage, particularly in elderly patients, in whom pneumonia is so prone to develop.

This apparatus can be used not only for fractures but also for rehabilitation in various forms of paralyses involving the lower extremities and in old cases of arthritis of the lower extremities, muscular dystrophies and atrophies, poliomyelitis, ankylosis and other conditions.

614 Beaumont Medical Building

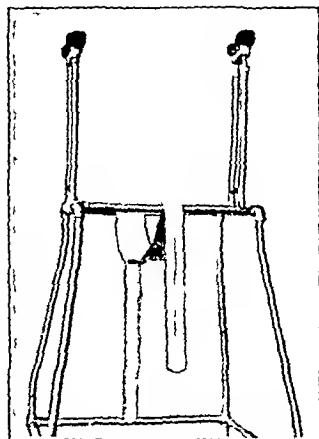


Fig 2—Detail of crutch

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS
H A CARTER Secretary

THE MCINTOSH ELECTRICAL CORPORATION AND THE AMERICAN COLLEGE OF PHYSICAL THERAPY

IN THE JOURNAL, Sept 23, 1933, page 999, the Council on Physical Therapy authorized publication of the report dealing with the American College of Physical Therapy, 5 North Wabash Avenue, Chicago. The purpose of this article was to inform the profession concerning the status of the so-called "College."

Several announcements of the "College" advertising the alleged postgraduate course and clinics in physical therapy were referred to the Council on Physical Therapy by physicians who had received them through the mail. In each case an announcement was attached to a piece of advertising matter of the McIntosh Electrical Corporation.

Two days after the aforementioned issue of THE JOURNAL was in print, a letter was received from the McIntosh Electrical Corporation by the secretary of the Council on Physical Therapy. In this letter the McIntosh Corporation definitely denied any present affiliation with the American College of Physical Therapy. The Council on Physical Therapy takes this opportunity to publish this statement of the McIntosh Electrical Corporation.

CIRCUMDUCTOR NOT ACCEPTABLE

The Circumductor is a mechanical exercising machine, manufactured by the Circumductor Corporation, Ltd., Los Angeles. The machine resembles an operating table equipped with extensions, levers, clamps and straps, to which the patient, lying on his back, may be fastened securely. Passive exercise is administered by means of various levers which are moved or rotated through certain predetermined angles by an electric

motor Arrangements are made also for so called stretching of the muscles

In the advertising matter propagandizing this unit, the firm makes this statement "The Circumductor positively accomplishes the following

- "a Equalization of tension of opposed sets of muscles
- "b Relief of muscular congestion
- "c Improvement of muscular tonus
- "d Rebuilding of weak and unexercised muscles
- "e Breaking down of muscular adhesions"

In the Council's investigation of the Circumductor, the promoters were requested to submit evidence to verify the therapeutic claims advanced After giving careful consideration to such evidence as was made available, the Council declared it insufficient to justify the acceptance of the machine Most of the reports received from those who have had experience with it were negative and, moreover, in noncritical reports recording optimistic views, only three or four cases were cited as evidence One user believed that the machine produced a certain psychologic effect on patients which effect he considered to have some value The Council is of the opinion that psychologic effects may be produced more economically and scientifically thru by a utlization of this machine

Because of the lack of conclusive and critical evidence to substantiate the therapeutic efficacy of the claims made and because the safety of the unit is questioned the Council decided to omit the Circumductor from its list of accepted physical therapy devices

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION

PAUL NICHOLAS LEECH Secretary

DEXTROSE (See New and Nonofficial Remedies, 1934 p 270)

The following dosage forms have been accepted

Sterile 2½% Dextrose in Physiological Sodium Chloride Solution in Vacoliter Container Each 100 cc contains dextrose U S P 2.62 Gm and sodium chloride 0.85 Gm

Prepared by Don Baxter Intravenous Products Corporation Chicago (American Hospital Supply Corp Chicago eastern distributor)

Sterile 5% Dextrose in Physiological Sodium Chloride Solution in Vacoliter Container Each 100 cc contains dextrose U S P 5.25 Gm and sodium chloride 0.85 Gm

Prepared by Don Baxter Intravenous Products Corporation Chicago (American Hospital Supply Corp Chicago eastern distributor)

Sterile 7½% Dextrose in Physiological Sodium Chloride Solution in Vacoliter Container Each 100 cc contains dextrose U S P 7.85 Gm and sodium chloride 0.85 Gm

Prepared by Don Baxter Intravenous Products Corporation Chicago (American Hospital Supply Corp Chicago eastern distributor)

Sterile 10% Dextrose in Physiological Sodium Chloride Solution in Vacoliter Container Each 100 cc contains dextrose U S P 10.50 Gm and sodium chloride 0.85 Gm

Prepared by Don Baxter Intravenous Products Corporation Chicago (American Hospital Supply Corp Chicago eastern distributor)

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT PAUL NICHOLAS LEECH Secretary

CYPRESS OIL-N N R AND OIL OF CYPRESS-SCHIMMEL AND CO OMITTED FROM N N R

Cypress Oil, with the accepted brand Oil of Cypress-Schimmel and Co (Fritzsche Bros, Inc, distributor), was first included in New and Nonofficial Remedies in 1912 as a palliative preparation for use in whooping cough With the expiration in 1933 of the current three year term of acceptance of the commercial preparation, the Council reviewed the evidence for the usefulness of the product The firm's submitted advertising consisted of a reprint of a paper by Dr O Soltman in Therapie der Gegenwart March, 1904 There appears to be little or no recognition of Cypress Oil in American or English

books of pharmacology There is brief mention of the drug in Pfundler and Schlossman's Handbuch der Kinderheilkunde.

In the light of these considerations the Council concluded that there is no good reason for the continued inclusion of Cypress Oil in New and Nonofficial Remedies and voted to omit it with the accepted brand

Committee on Foods

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS RAYMOND HERTWIG Secretary

NOT ACCEPTABLE

CURTISS BUTTERFINGER 1¢
CURTISS BUTTERFINGER SENIOR 5¢
THE CHOCOLATE COVERED PEANUT BUTTER CONFECTION

The Curtiss Candy Company, Chicago, submitted to the Committee on Foods Curtiss Butterfinger 1¢ and "Curtiss Butterfinger Senior 5¢" wrapped bar confections of chocolate coated centers prepared from peanut butter, corn syrup, sucrose, skim milk powder, molasses, salt, baking soda and flavoring

Manufacture—The center is prepared by cooking the corn syrup sucrose skim milk solids and molasses in a steam jacketed kettle until a definite temperature is reached The steam is turned off, the other ingredients are mixed in, the total mass is pulled and honeycombed by machine, and is mechanically spun to a desired size and shape The prepared centers are chocolate covered artificially cooled and wrapped.

Analysis (submitted by manufacturer) —		per cent
Moisture		20
Ash		12
Fat (acid hydrolysis method)		23.3
Protein (N x 6.25)		10.6
Reducing sugars as dextrose		14.0
Sucrose (copper reduction method)		25.3
Crude fiber		0.4
Carbohydrates other than crude fiber (by difference)		62.5

Calories—5 per gram 142 per ounce

Discussion of Name—The name Butterfinger for a food article suggests the presence of butter as an important ingredient In fact the product contains no butter but peanut butter or ground peanuts Foods containing butter and peanut butter respectively have greatly different nutritional values The term butter used as a part of the trade name for a food article containing no butter is misinformative and misleading Food names should be appropriate and conform to the nature of the foods "Peanutbutter Finger" accompanied by some such descriptive statement as "Chocolate covered peanutbutter confection" is an appropriate name and designation for this product

The manufacturer was informed of the Committee's criticisms and recommendations but has not demonstrated compliance This product will therefore not be listed among the Committee's accepted foods

NOT ACCEPTABLE

BA-BEE NON-ACIDITY BREAD

The Ba-Bee Pastry Shoppe, Erie Pa, submitted to the Committee on Foods a white bread called both "Ba-Bee Non-Acidity Bread" and "Ba-Bee Acidity Bread," made by the straight dough method having the following ingredients patent flour, buttermilk, water, yeast, salt dry skim milk, honey, cream of tartar, bicarbonate of soda and distilled vinegar (acetic acid)

Analysis (submitted by manufacturer) —		per cent
Moisture		40.0
Ash		1.6
Fat (ether extraction method)		2.0
Protein (N x 6.25)		10.9
Crude fiber		0.5
Carbohydrates other than crude fiber (by difference)		45.0
Acidity as lactic acid		0.73

Discussion—The submission to the Committee named the bread "Non-Acidity Bread" a leaflet accompanying the loaf designated the product "Acidity Bread" and stated "A White

Loaf produced under a new and scientific process This bread will not increase weight or create acidity in the stomach, as it does not contain any sugar or fat solids Try a loaf of this marvelous bread today

The submission discloses that the bread is prepared in the usual manner and not by a "new and scientific process" The bread will "increase weight" and "create acidity" in the stomach just as do other breads The claim the bread "does not contain any sugar or fat solids" apparently is intended to differentiate this bread incorrectly from other breads and thereby give greater plausibility to the absurd names and other false claims There is no objection to appropriate quantities of fat and sugar in bread

The bread names and advertising are deceptive, an attempt to convey fictitious quasimedical values to an ordinary food This product therefore, will not be listed among the Committee's accepted foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION

RAYMOND HERTWIG Secretary

KREEMEX BUCKWHEAT AND WHEAT FLOUR

Manufacturer—Allied Mills, Inc., Kreemex Cereal Division, Greenville Ohio

Description—Self-rising flour mix containing buckwheat flour, standard patent flour, soya flour, dextrose, calcium acid phosphate, sodium bicarbonate, salt, corn flour and corn starch

Manufacture—Definite proportions of the formula ingredients are automatically mixed and packed in cartons

Analysis (submitted by manufacturer) —

	per cent
Moisture	11.3
Ash	4.4
Fat (ether extraction method)	2.5
Protein (N X 6.25)	11.0
Crude fiber	1.3
Carbohydrates other than crude fiber (by difference)	69.5

Calories—3.4 per gram 97 per ounce

VITAMIN D FORTIFIED PASTEURIZED MILKS

- (1) ARISTOCRAT DAIRY PRODUCTS COMPANY'S
- (2) CROWLEY'S
- (3) DAIRYLAND
- (4) EAST SIDE JERSEY DAIRIES
- (5) LYON'S
- (6) MARIGOLD
- (7) SUNSHINE DAIRY COMPANY'S
- (8) BANQUET SELECTED
- (9) CONSUMERS GOLD SEAL
- (10) LINCOLN DAIRY'S
- (11) MARION PURE MILK COMPANY'S
- (12) MED-O-BLOOM

Distributors—(1) Aristocrat Dairy Products Company, Atlanta, Ga (2) Crowley's Milk Company Inc., Binghamton, N Y (3) Southwest Dairy Products Company, Fort Worth, Texas (4) East Side Jersey Dairy Company, Anderson, Ind (5) Lyon Creamery Company, Ltd, Riverside, Calif (6) Marigold Dairies Inc., Rochester, Minn (7) Sunshine Dairy Company, Milwaukee (8) Banquet Ice Cream & Milk Company, Indianapolis (9) The Consumers Dairy Company, Toledo, Ohio (10) Lincoln Dairy Company, Hartford Conn (11) Marion Pure Milk Company, Marion, Ind (12) Med-O-Bloom Dairy, Kokomo Ind

Description—Bottled pasteurized milk fortified with vitamin D (vitamin D concentrate prepared from cod liver oil), contains 400 U S P X (Revised, 1934) vitamin D units per quart

Preparation—The milk complies with legal requirements and is pasteurized by the standard holding method See THE

JOURNAL, July 1, 1933, page 34 for description of fortification with vitamin D

Vitamins—The vitamin D concentrate used and the fortified milk are regularly tested biologically Clinical investigation shows this milk to be a reliable antirachitic agent

Claims of Distributors—A vitamin D fortified antirachitic pasteurized milk having otherwise the natural flavor and food values of usual pasteurized milk

IRRADIATED VITAMIN D PASTEURIZED MILK

- (1) ANNETTE'S DAIRY'S
- (2) BLOSSOM DAIRY COMPANY'S
- (3) CLOVER LEAF-HARRIS
- (4) GRAND RAPIDS CREAMERY COMPANY'S
- (5) GRAND RAPIDS CREAMERY COMPANY'S GOLDEN JERSEY
- (6) OLD TAVERN FARM'S
- (7) PEVELY DAIRY COMPANY'S
- (8) WORDEN'S

Distributors—(1) Annette's Dairy, Savannah, Ga, (2) Blossom Dairy Company, Charleston, W Va, (3) Clover Leaf-Harris Dairy, Salt Lake City, (4) and (5) Grand Rapids Creamery Company, Grand Rapids, Mich, (6) Old Tavern Farm, Inc, Portland, Maine, (7) Pevely Dairy Company, St Louis, and (8) R F Worden & Sons, Inc, Waterbury, Conn

Description—Bottled pasteurized vitamin D milk irradiated with ultraviolet light (patent No 1,680,818)

Preparation—The milk complies with legal requirements and is pasteurized by the standard holding method For description of irradiation, see THE JOURNAL, Oct 7, 1933, p 1155

Vitamins—Clinical investigation shows this milk to be a reliable antirachitic agent Contains 135 U S P X (Revised, 1934) vitamin D units per quart

Claims of Distributors—Irradiated antirachitic pasteurized milk having otherwise the natural flavor and food values of usual pasteurized milk

MCCORMICK'S BEE BRAND POULTRY SEASONING

Manufacturer—McCormick and Company, Inc., Baltimore

Description—Spice mixture for seasoning poultry, including sage, thyme, marjoram nutmeg and black pepper

Manufacture—Definite proportions of the spice ingredients prepared as described for McCormick's Bee Brand Allspice (THE JOURNAL Oct 28, 1933, p 1393), are mixed and automatically packed in tins

Analysis (submitted by manufacturer) —

	per cent
Moisture	9.7
Total ash	10.3
Acid insoluble ash	2.5
Nonvolatile ether extract	7.7
Protein (N X 6.25)	12.9
Starch (diastase method)	0.4
Crude fiber	16.2
Carbohydrates other than crude fiber (by difference)	43.2

Claims of Manufacturer—All ingredients conform to the definitions and standards of the United States Department of Agriculture

BEWLEY'S BEST WHOLESOME WHOLE WHEAT FLOUR

Manufacturer—Bewley Mills, Fort Worth, Texas

Description—Dark red hard winter whole wheat flour

Manufacture—The wheat is thoroughly cleaned, ground in a burr mill, redressed on a centrifugal reel, and packed in sacks

Analysis (submitted by manufacturer) —

	per cent
Moisture	11.5
Ash	1.9
Fat (ether extraction method)	2.0
Protein (N X 5.7)	15.0
Crude fiber	2.0
Carbohydrates other than crude fiber (by difference)	67.6

Calories—3.5 per gram 99 per ounce

Claims of Manufacturer—A whole wheat flour conforming to the United States Department of Agriculture definition and standard

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, APRIL 7, 1934

DINITROPHENOL POISONING

In this issue of THE JOURNAL appear the reports of two cases of sudden death from poisoning with dinitrophenol (pp 1141 and 1147). The authors review the available literature on the subject which would seem to indicate that the drug is treacherous and that its administration, as has been previously emphasized in THE JOURNAL, should invariably be under the control of a physician. In the case reported by Drs. Poole and Hanning a young woman secured for herself and took without medical instruction a dosage of this substance far beyond what has been established as a safe amount. In accordance with instructions placed on the label by the druggist from whom the preparation was purchased, the patient took 3 grams the first day, 6 grams the second day, 9 grams the third day, 12 grams on the fourth day, 12 grams on the fifth day, and possibly 6 grams on the sixth day. On the seventh day she died. Apparently an ordinary daily dosage of from 3 to 5 mg per kilogram of body weight is a safe therapeutic dosage. The patient began with a daily dosage of 180 mg and on the fifth day was taking 720 mg. Nevertheless, even these tremendous and obviously excessive doses were below the limit of what was thought to be the fatal dosage, based on animal experiments.

The investigators conclude that, as compared with animals, human beings have a more variable and an unpredictable susceptibility to dinitrophenol. While the literature on the subject, as far as concerns the use of this product on human beings, is not extensive, there is already evidence to indicate that the special susceptibility to the drug is far more frequent than drug sensitivity as applied to most other medical preparations.

As is usual with any drug used for cosmetic purposes, commercial interests have promptly entered the field of exploitation of dinitrophenol. There is not the slightest doubt that vast numbers of people are taking this preparation both with and without the advice of their physicians. At least two of the physicians who broadcast health information to the public

through the radio and through the press have mentioned the use of this drug and have apparently failed to warn the public adequately concerning its dangers. Innumerable letters have poured into the headquarters of the American Medical Association asking for further information. Reports such as those here referred to should be taken as a definite warning of the toxicity and the special danger associated with dinitrophenol in some cases. Physicians who administer the drug to their patients should inform them thoroughly concerning such dangerous manifestations as increased temperature, severe urticaria and pruritus, and recommend immediate discontinuance of the preparation on the appearance of any symptoms of this character.

LOBAR PNEUMONIA

Knowledge of the pathogenesis of lobar pneumonia has reached a point that offers unusually promising angles for continued attack. That these possibilities are not being neglected is attested by three recent articles emphasizing different phases of the problem. Moreover, wide dissemination of the advances in knowledge of pneumonia are necessary, since most practitioners see relatively few cases during the course of a year. Thus Sutcliffe and Finland¹ state that the number of cases of lobar pneumonia reported annually in Massachusetts is from 4,080 to 5,544, making perhaps one case a year for each of 6,595 practicing physicians.

Smillie and Leeder² investigating the spread of pneumonia have studied this problem by taking cultures of the nasopharynx in 264 contacts of 64 patients with lobar pneumonia due to types I and II pneumococci. The results indicate that about 20 per cent of the immediate family contacts of the patients harbored the homologous strain of pneumococci. Hospital contacts were rarely infected, however, and the Boston investigators therefore believe that it is justifiable to treat cases due to types I and II in open wards of general hospitals. The evidence studied suggests that there is some additional factor other than simple contact which determines the transfer of type I or II pneumococci from a patient with lobar pneumonia to contacts. Possibly colds may be the factor, or one of the factors, responsible. It was apparent that carriers of types I and II pneumococci may continue as carriers for a considerable period without giving rise to pneumonia in either the carrier or his contacts and without producing a second group of carriers.

Much stress has been placed on the early diagnosis of lobar pneumonia especially since the advent of specific serum therapy. With a view to improving the ability to make early diagnoses and follow the course

¹ Sutcliffe W. D. and Finland Maxwell. Type I Pneumococcal Infections with Especial Reference to Specific Serum Treatment. New England J. Med. 210: 237 (Feb.) 1934.
² Smillie W. G. and Leeder F. S. Epidemiology of Lobar Pneumonia. Am. J. Pub. Health 25: 129 (Feb.) 1934.

of the infection, Graeser, Wu and Robertson³ studied forty cases of lobar pneumonia by means of serial daily roentgenograms and physical examinations. Comparison between these methods showed the roentgenogram to be the superior in detecting the early lesion and disclosing the extent of the process while the consolidation was developing. At the stage of maximum consolidation, however, the two methods were about equally informative. Visceral displacement could not usually be demonstrated by physical examination. When seen in the roentgenogram it was generally manifested as an elevation of the diaphragm on the affected side. In a few cases a slight shift of the mediastinum toward the lesion could be shown.

Type specific serum has found its greatest usefulness so far in lobar pneumonia due to the type I pneumococcus. Sutliff and Finland in studying this matter further, find no room for doubt that concentrated type I antipneumococcus serum exerts a striking symptomatic effect and reduces the death rate by one half in type I lobar pneumonia in adults. They consider that the results which may be expected in patients treated before the end of ninety-six hours of illness are symptomatic change in two thirds of the recovered patients within thirty-six hours of beginning treatment, and a death rate of approximately 10 per cent. Again early diagnosis and prompt serum administration are emphasized. The high cost of potent serum, they consider, is a problem being gradually met by increased use and improvements in manufacture and distribution. In any case, the results are so valuable that the serum should be used regardless of cost.

SOME FACTORS IN WOUND HEALING

The rapidly growing knowledge of the manifold types of nutritional defects and their relation to human well being is beginning to influence almost every field of medical practice. Indeed, at present the investigation of the indispensable exogenous facts, such as the vitamins and certain inorganic compounds, and researches on the endogenous hormones, seem to vie with one another for consideration in the domain of practical therapy. Foods have become in the eyes of practitioners something more than mere carriers of energy. Glandular secretions and extracts, derived from tissues and organs distributed along the way from the pituitary to the gonads, are finding applications and experimental trial in a dozen unusual ways. As a medical writer remarked nearly a century ago, we have to cultivate a science and exercise an art.¹

Much is being written about "growth promoters," an expression used most commonly to include some of the vitamins, but any essential ingredient of the diet is in truth a "growth promoter," for without it the

normal development of a part or all of the organism is likely to be disturbed. From this standpoint, shortage of iodine or calcium or some unsaturated fatty acid (as has lately been contended) may be quite as disastrous as is the lack of one of the newly recognized vitamins. In the case of calcium or phosphorus, the presumable damage to developing teeth and their bony sockets is obvious to the dentist. The lack of iodine upsets the function of the thyroid gland and thus in turn the metabolism as a whole.

In many respects the processes of wound healing are comparable to those of growth. New tissue must sometimes be formed. Hence it becomes important to discover whether and, if so, in what respects repair processes in the body may be accelerated by special dietary measures. As recently stated,² malnourished patients must occasionally be subjected to surgical procedures, and often it is necessary to restrict the amount of diet after operation. Only too frequently does one observe the wounds of undernourished patients, particularly those of children, healing slowly and becoming infected. Unfortunately, it is not always possible in the clinic to establish the exact nature of a case of malnutrition or to determine the deficiency of the previous diet that produced it. So, too, it is quite impossible to tell whether a prolonged healing time of a wound is the result of malnutrition alone or of other causes more obscure.

For the present, these uncertainties can best be solved by recourse to animal experimentation. The studies of Harvey and his collaborators² are a step toward some of the solutions. They have shown that the rate of fibroplasia in "standardized wounds" of soft tissues notably in the stomach wall, is surprisingly independent of the diet. In adult animals, for example, the rate of return of healing strength in wounds of the stomach was not appreciably affected by complete starvation, nor was it affected by giving half the required amount of an adequate diet over a short period. On the other hand, the healing of wounds in the stomachs of young rats was decidedly retarded by giving only half the required amount of an adequate diet. This retardation in healing of the wounds in the stomachs of young rats can possibly be explained by a reduction either separately or in combination of certain elements of the diet. The most probable elements are the vitamins, especially in relation to the deficiency of proteins and salts.

It is satisfying to learn the remarkable ability of wounds to heal in spite of great variations in the amount of food consumed. Evidently, under stress the body mobilizes its reserves in an effective way regardless of the intake. Perhaps this circumstance will help to explain the recent observation³ that even marked interference with the circulation in the limbs need not retard the healing of fractures or other defects.

³ Graeser J. B. Wu Ching and Robertson O. H. Physical Signs and Roentgenographic Findings in Lobar Pneumonia in Adults Arch. Int. Med. 53: 249 (Feb.) 1934.

¹ Latham's Lectures on Diseases of the Heart 1845.

² Jones E. L. Briggs Harry Shea Richard and Harvey S. C. Effect of Complete and Partial Starvation on the Rate of Fibroplasia in the Healing Wound Arch. Surg. 27: 846 (Nov.) 1933.

³ Key J. A. and Walton Frank. Healing of Fractures and Bone Defects After Venous Stasis Arch. Surg. 27: 935 (Nov.) 1933.

Current Comment

INSURANCE PRACTICE ITS QUALITY AND ITS ECONOMICS

American physicians have become accustomed to seeing the effects of compulsory health insurance depicted in a roseate hue. Representatives of the foundations who would lure the American medical profession into greater and greater participation in the trend toward socialistic and state medical practice are wont to emphasize the increased emoluments of the medical profession under such systems. Insidiously they urge that the vast majority of physicians are not adequately paid for the service they render and that compulsory health insurance or some similar system will greatly enhance the incomes of medical men. In this connection the following quotation from the *London Lancet*¹ provides both information and argument.

The deputation from the Insurance Acts Committee was received by the Minister of Health on March 8th when Dr. Dain spoke of the hardship inflicted on many members of the profession by the 10 per cent cut on the 9s capitation fee. This hardship is common knowledge amongst medical administrators although hardly realised by the public. Many insurance doctors have had to take their sons away from public schools as a result of this and other deductions. The quarterly cheque without the cut was often completely mortgaged before its arrival, ends hardly met then, so that the loss of ten pounds out of every hundred just made the difference, necessitating change of plans of outlook, and often of environment. The national emergency which docked panel cheques also affected private practice. The patient who used to consult his doctor when not well learnt to go without medical attendance, others who used to be regular private patients went to hospitals, with the result that the receipts from private practice have fallen considerably in every area, and particularly in those industrial areas where unemployment is severe. The increasing number of doctors in private practice has made things still more difficult.

The Minister could not promise the deputation that the cut would be removed, but he did promise that the profession would not be forgotten and that their 10 per cent should be restored if other people's were restored. This was really confirming the promise made by Mr. Neville Chamberlain when he was Minister of Health at the time the cut was imposed—namely, that as the profession had faced the situation created by the national emergency with such good grace he would see to it that when the emergency was over the capitation fee should be restored to normal at the earliest possible moment.

Turning from this enlightening paragraph, one finds another interesting point of view expressed in a discussion by Dr. Hugh Cabot² before the Association of American Medical Colleges. The proponents of state systems of practice have constantly asserted that the people generally in the countries in which such systems prevail get more and better medical service than is available to the majority of the American people. Dr. Hugh Cabot has at various times in his addresses before medical organizations expressed a highly social point of view. Nevertheless, his personal observation of medical practice is definitely in favor of the American system. Thus he says:

A brief and cursory and, I think perhaps careless study of the situation in five or six foreign countries in which my person and family have been involved has convinced me that there is no country in the world at the present time, unless it

be England, in which the average American can receive the grade of medical attention which he has come to believe necessary. In other words, the medical service in many other countries is very well suited to the demands of those countries. I think, for instance, that Denmark is, perhaps, the outstanding country in which the people and the medical profession are very well adjusted to each other, but I am not at all prepared to assume that if we should transfer the precise conditions in Denmark to this country that anybody who properly represented the public would be satisfied with it.

WILLIAM H. WELCH—TWO ANNIVERSARIES

On April 7, Dr. William H. Welch completes fifty years of continuous service to the Johns Hopkins University and to the Johns Hopkins Hospital, on April 8, he celebrates his eighty-fourth birthday. *THE JOURNAL* wishes to extend to Dr. Welch on this occasion its congratulations both on reaching this birthday and on his continuous interest in the problems of American medicine, from both the scientific and the social point of view. It is hoped that the coming years may give opportunity for a continuance of his earnest and sincere counsel.

SPECIES DIFFERENCES IN ORGANO- THERAPY FOR PERNICIOUS ANEMIA

It has long been known that, in addition to the hematologic and neurologic symptoms of pernicious anemia, the syndrome is characterized by gastric involvement. Indeed, it has been said¹ that achlorhydria is the usual accompaniment of the disease. The marked efficacy of beef, hog and horse liver as well as of desiccated whole stomach of the hog indicates that these tissues contain something which takes an important part in hemopoiesis but which, in the absence of normal gastric function, cannot be obtained from ordinary food materials. That this curative property does not reside in liver and stomach tissues of all species is apparent from some recent studies on the dog. Ivy, Morgan and Farrell² have demonstrated that total gastrectomy in this species is not regularly followed by anemia. In later studies³ in which canine liver was used, the response with both the extract and the whole tissue led to the conclusion that, although the substance effective in pernicious anemia is present in dog's liver the concentration there is only about one-fifth that in the livers of the other species commonly used in this connection. Likewise, when desiccated whole stomach of the dog was given to patients with pernicious anemia there failed to appear the typical signs of remission of the disease, despite the fact that all these persons responded in the usual way to the administration of horse liver. As total gastrectomy in the hog gives rise to an anemia⁴ and hog liver is a potent therapeutic agent in pernicious anemia, it appears that gastric function in the dog does not play the same part in hemopoiesis that it does in certain other species.

¹ Moschowitz, Eli. The Relation of Achlorhydria to Pernicious Anemia. *Arch. Int. Med.* 48: 171 (Aug.) 1931.
² Ivy, A. C., Morgan, J. E. and Farrell, J. I. *Surg., Gynec. & Obst.* 53: 611 (Nov.) 1931.
³ Strauss, M. B. and Castle, W. B. *Proc. Soc. Exper. Biol. & Med.* 31: 360 (Dec.) 1933. Richter, O., Ivy, A. C. and Meyer, A. F. *Ibid.* 31: 550 1934.
⁴ Maillon, G. L. and Ivy, A. C. *Proc. Soc. Exper. Biol. & Med.* 31: 554 1934.

¹ *Lancet*, 1: 600 (March 17) 1934.

² Cabot, Hugh. *J. A. Am. M. Colleges*, January 1934, p. 34.

Association News

MEDICAL BROADCASTS

National Broadcasting Company

The American Medical Association broadcasts on a coast to coast network each Monday afternoon from 4 to 4 15 Central standard time (5 o'clock Eastern standard time, 3 o'clock Mountain standard time, and 2 o'clock Pacific standard time)

The next three broadcasts will be as follows

April 9 Peculiar Accidents, W W Bauer, M D
April 16 Bird with a White Breast, W W Bauer, M D
April 23 Sanitation Goes Modern, W W Bauer, M D

Columbia Broadcasting System

The Association broadcasts on a Western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4 30 to 4 45 Central standard time. The next three broadcasts will be as follows

April 12 Pretty Polly, W W Bauer, M D
April 19 More Health Delusions, W W Bauer, M D
April 26 Million Murdering Death, W W Bauer, M D

ANNUAL CONGRESS ON MEDICAL EDUCATION, LICENSURE AND HOSPITALS

Thirtieth Annual Meeting held in Chicago Feb 12 and 13, 1934

(Continued from page 1091)

DR MERRITTE W IRELAND, Washington, D C,
in the Chair

JOINT SESSION OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS AND THE AMERICAN CONFERENCE ON HOSPITAL SERVICE

Responsibility of the Hospital Trustee and the Relationship Between Trustees and Staff

HON HOWARD S CULLMAN, New York Since, in voluntary hospitals, ultimate responsibility is vested in the board of trustees, the board must be aware of professional matters. That consciousness, however, need only include the appointment of a medical board in whom the trustees have full confidence. The trustees should relegate all professional questions to professional men, confining their activities to the lay aspects of hospital work. The average director feels that he is doing his bit if he helps raise money for actual maintenance charges or expansion programs. If directors, whom I assume to be able business men familiarized themselves with the business policies of hospitals, I am convinced that there would be a minor revolution in many established practices. There are innumerable opportunities in the hospital field for the business man to perform a constructive function, if he will merely trouble to understand that function. A valuable cooperation between various institutions could be achieved in obtaining ambulance appropriations, in large scale purchasing arrangements, in organizing a system for training hospital executives, in discovering and publishing valuable facts on hospital, medical and nursing costs. Many of the difficulties between municipalities and private hospitals would never arise if hospital trustees considered it a part of their function to act as lay ambassadors between the world of science and a somewhat bewildered public. All the authorities vested in the directors of a private hospital are in the case of public institutions, properly within the province of a municipal state or county department of hospitals. I can see no advantage in duplicating or dividing these functions. A board of directors that can serve no useful purpose is a potential menace.

Meddling in professional matters by laymen is pernicious. There is no surer way to undermine the morale of a medical board and disrupt an otherwise excellent service than for lay directors to suggest appointments or promotions to the professional staff. I am strongly opposed to members of the medical staff sitting on the board of trustees. I approve

thoroughly of physicians sending their representatives to board meetings to present the professional point of view, but I do not believe that these representatives should have a voice or vote in the business management of the institution. I am convinced that the doctor-business man is either a second rate doctor or a second rate business man or both. It is unfair and unnecessary to burden a professional staff whose scientific duties should command all its time and attention, with problems that can readily and advantageously be handled by laymen.

The relationship between a hospital board of trustees and the medical staff should closely parallel the relationship between the directors of a corporation and the technical staff—a business-like cooperation based on mutual confidence and mutual understanding.

DISCUSSION

DR NATHANIEL W FAXON, Rochester, N Y The duties of the trustees are legislative rather than executive. They should refrain from directing administrative detail and should never interfere with strictly medical matters. Nevertheless, through proper organization they can not only keep themselves better informed regarding what is going on in their own hospital but they can also be of great assistance to the medical and administrative staff. All hospitals have three groups: (1) the trustees, (2) the administrative staff responsible for the running of affairs and coordinating the efforts of all, (3) the medical staff. Some hospitals have, and there is needed in all, a connecting group—an executive board representing the trustees, the medical staff and the administrators staff. The exact composition of this board is unimportant, there may be a majority of trustees or a majority of medical men; the essential point is a group in which the varied interests of the entire institution may be discussed, an agreement reached and reference made to the body having power to act. Trustees are the connecting link between indirect welfare, represented by hospital and medical care, and direct welfare, represented by the giving of food, clothing and shelter. There has always been a distinction between these two forms of charity. It is impossible to state accurately the amount of charitable work done by voluntary or private hospitals. The American Hospital Association, seeking to obtain at least a cross section of this work, compiled replies from 169 hospitals in nineteen states. These hospitals provided approximately ten million dollars' worth of free service to full charity patients—five million of this was paid for in some way—but the hospitals had to go in debt for the remaining five million. Here is a social financial problem for trustees.

SYMPOSIUM ON THE UNIVERSITY CLINIC

Size and Scope of a University Clinic

DR HENRY S HOUGHTON, Chicago There are now not more than six or eight of all the medical schools in the United States and Canada that are not integrated with the structure, organization, methods and objectives of universities to which they are attached. Inevitably the training of physicians becomes more and more identified with the general field of higher education. The soundest formal education in medicine is the one that "makes the student the unit of education, not the course, the credit hours, nor the faculty." Nothing should induce us, however, to recede from educational standards that are demonstrably good, provided the means of attaining those standards are consistent with common sense, honesty and good will.

How large should a teaching clinic be? I can find no dependable criteria, no single or unitary standard, because of variations in forms of instruction. With amphitheater clinics and large group demonstrations, fewer patients are needed. With students in an apprentice relationship, taking active part in diagnosis and professional care, more patients per student unit are required. Larger clinics, therefore or fewer students, is the answer for this type of teaching. As between these alternatives, a reduction in students appears to be the logical course to advocate. Most of the difficulties now being experienced by practitioners, and most of the hard looks cast by organized medicine at teaching clinics arise not alone from general economic disorders but also from overcrowding and maldistribution.

What field shall a university clinic cover? Definitions are difficult here, because of the varieties of structure and relationship that exist in different institutions. Even within the

category of tax-supported hospitals and clinics, under state or municipal control, there is great variation, from the Nebraska University Hospital in Omaha (no salaried teachers, no hospital charges) to the neighboring University of Iowa (where all members of the teaching staff are on salary, and more than 90 per cent are on the so-called full time basis) in which all classes of patients are admitted. The range in private teaching hospitals and clinics, endowed or substantially self sustaining, also is broad and includes on the one hand institutions like Cornell and the University of Chicago Clinics, which maintain pay clinics as a part of their teaching organization, and on the other, organizations like Rush Medical College which handles its outpatient teaching program through a charitable dispensary endowed for the care of the poor at a nominal charge or entirely free. It is possible to propose basic functions that should be served by these institutions.

(a) Educational and scientific. It is the business of a university in all its divisions to forward the acquisition and diffusion of knowledge. Its success will depend on the wisdom and skill of those who teach in it and it is appropriate to measure its worth by these standards. This applies to clinical service, instruction and research quite as much as it does to economics or theology.

(b) Social functions. These premises have a special application in the care of the sick and the teaching of medicine. The leaders in clinical education are men of recognized professional skill, and their service cannot properly be denied to those who are able to pay for it. If these leaders are giving their undivided time to the university, some form of pay clinic results. If the university claims only a portion of their time those who wish their service pay for it as a matter of private treaty. The result is the same, as a basic economic problem.

(c) Limitations. There are however, natural boundaries in the scope of an instructional clinic conducted in this fashion. It is improper for a university to build up a clinical unit that shall exceed the needs of teaching and research. Whatever is necessary for purposes of study should be provided but expansion beyond that point would represent an unsound educational and social policy.

The topic assigned to this symposium does not refer to it explicitly but there is an implied query as to whether or not universities ought to maintain pay clinics for furnishing teaching material. The American Medical Association officially raises this question and has voiced its disapproval of the conduct of teaching clinics that utilize for instruction those who can and do pay a professional fee for the service rendered. It is appropriate to outline the structure and program of the University of Chicago Clinics.

(a) Student body. Not more than sixty-five undergraduate students in clinical studies can readily be accommodated which is approximately the present enrolment. In addition, there is postdoctorate instruction, and a few students are taking other degrees than the doctorate in medicine.

(b) Formal instruction. This is given in apprentice form. A system of clerkships is employed. Groups are very small. There is intimate participation in the care of patients.

(c) Types of patients. There are three types: full pay, part pay and free. All are available for teaching. In 1932-1933 the total outpatient visits numbered 138,976, new admissions totaled 16,611. The clinic furnishes approximately 15 new patients per instructional day for medical students on service in that division, leaving out of account the advanced students who as interns and assistant residents rotate into the outpatient unit. Full pay patients were from 4 to 6 per cent of the total number. From 85 to 90 per cent of the patients paid something after careful investigation of their ability to pay by the admissions officers. Approximately 10 per cent were wholly free. Determination of capacity to pay is made by trained workers, after a detailed social history has been secured. In judging a patient's ability to pay, the family's resources are compared with the obligations brought by illness. In the inpatient service the picture alters perceptibly, 63 per cent during 1932-1933 paid the full rate, 63.0 per cent paid part of the cost of their hospitalization, 30.7 per cent were wholly free.

Two types of criticism of this theory and practice are voiced. One comes from those preoccupied with problems of medical

economics, who contend that the clinics are being run for profit without reference to teaching needs, that they are making a great deal of money, and that they are damaging the practice of local physicians very much. The other criticism arises from those who look with disfavor on the educational program being followed.

Are the clinics being run for profit? It will suffice to point out that the annual operating deficit in these two services is in excess of \$200,000 annually (1932-1933, \$254,058), covered by endowments and gifts (exclusive of affiliated institutions). No teaching clinic can be expected fully to carry its own costs.

Are the clinical teachers damaging the practice of local physicians? Very little. A survey made late in 1933 showed 32 per cent of the new admissions to be outside of Chicago altogether and 48 per cent outside of the local area of the clinics. The remainder constituted less than 0.8 per cent of the population of the district. Assuming that each of the new outpatients from the South Side paid \$1.29 (which was the average paid by private free and part pay taken together for the period under review) and that each patient made seven return calls at the same rate each of the doctors practicing in the university outpatient department took \$742 during the year out of the local district the total population of which exceeds a million people. If on the other hand these instructors were in the private practice of medicine on the South Side the competitive factor would be at least eight or ten times as great. This is the answer to the accusation so often made that the university is engaged in educating doctors and then taking their prospective clients away from them. In a practical sense the university clinical staff has been taken out of competition. The total of professional fees for all types of service rendered in outpatient and inpatient departments together was \$1060 in 1932-1933 for each full time physician who sees patients in the university, including the affiliated hospitals. Taking account again of charges of local competition and deducting the percentage of patients coming from outside this area the sum would be \$551. If these men were in practice the picture would be very different as far as competitive practice is concerned. I am not including in any of these figures the number of patients actually referred by practicing physicians to the clinics which is in excess of 7 per cent of the total number. In the six years of operation, the volume of patients has risen somewhere near to the optimum for purposes of teaching and study. People do not continue coming to a place that does not serve them properly, especially when they have to pay if they are able to do so as much as they would to run high class physician outside. No one can say that the system I have described is the best. It is in my judgment an important and highly significant experiment in medical education.

The disturbing issues that confront medicine in the United States are not the minor competitive element that exists in university clinics, like this, nor the abuses imputed to free clinics, but the much more difficult and baffling problems of selecting the proper number of the right kind of men to give society intelligent medical care at a fair cost and of finding a way to distribute these men reasonably well throughout our population. Those in charge of teaching clinics are as alive to the perplexities of the situation as any one could be. They have no desire to contribute to the overloading of the profession by teaching great crowds of students, or to its economic distress by developing oversize clinics.

It is conceded that there is a competitive factor in clinics of the type under discussion, but if the competition is honorable it can properly be defended. It is fair and honorable (a) if conducted in accordance with the ethical regulations of the guild, (b) if charges are as carefully adjusted as they are in a high class private practice and are not below those asked by properly equipped private physicians, (c) if it does not expand beyond its obvious requirements for instruction and study.

The Teaching Clinic

DR NATHAN B. VAN ETLEN, New York. The one organization that should control medical education in the United States is the one that represents the whole of the medical profession of the country. All special societies that divert the activities of physicians and weaken the power of the national

organization should confine themselves to the special exhibition of their special interests and give all their political strength to the organization that represents medicine in every corner of the land

Standards of medical education should be those erected by the American Medical Association only, and the ethics of educational institutions should be the same as the personal ethics of every member of the association. Competitive practice of medicine by educational institutions should be eliminated as unfair employment of institutional prestige and advertised excellence in competition with individual physicians, who should have every freedom of opportunity which is their right.

The teaching clinic should be especially careful about competing for patients with their own graduates or with any practicing physicians. More than any other group, teachers are supposed to be exemplars in education and in ethical behavior, and they should subordinate personal ambition to strict adherence to rules of conduct which respect the professional privileges of others. I cannot see the slightest reason for restricting the activity of the university professor, provided there is no implication that he represents the institution in his private work. The really big man in medicine has not gained distinction from large fees but rather from the volume of his work, which has been attracted by the exhibition of unusual skill. The converse is the little soul whose vanity craves the satisfaction of material accumulation.

Competitive practice of medicine by an incorporated medical school or clinic is the corporate practice of medicine, is an operation of unsocial exclusion and combination bargaining, distinctly unprofessional. Such groups should be denied hospital privileges in tax-supported institutions where the rights of the taxpaying physician must be protected. These groups are operating in restraint of individual opportunity and should be vigorously disapproved. The university clinic must never interfere in any way with the return of the patient to the practitioner. A large part of its educational function should be to help the practitioner and never to compete with him.

Some plan must be evolved to control the crowding into an already crowded profession of the two thousand or more American students now enrolled in foreign universities. Some international understandings should be attempted, since the economic distress of physicians seems to be no deterrent to those of our young people who are determined to become physicians.

The university clinic should provide clinical education in clinical centers in our large cities from which clinical knowledge might flow to the surrounding country and to which practicing physicians may come for the continuing education which we all need all our lives. The scope of the university clinic should include postgraduate teaching of any physician in any specialty after he has qualified himself by a definite period of general experience. It would seem to be within the scope of the university clinic to extend graduate education through the medium of county medical societies by lectures supported by local clinical demonstrations planned and executed by university faculties. Graduate teaching carried to the physician has been very irregularly offered but is keenly appreciated by him.

The Outpatient Clinic

DR J H J UPHAM, Columbus, Ohio. This article was published in full in *THE JOURNAL*, March 31, page 980.

DISCUSSION ON THE UNIVERSITY CLINIC

DR JOHN WYCKOFF, New York. I think there can be no question that the medical student must work in a clinic. The first speaker neatly evaded saying how large that should be. Of course, I think none of us know. The school which I have the honor to serve has all the material and more than we need. We feel that to do adequate teaching we need six hospital beds for every clinical clerk, and we feel that we need two outpatient visits daily for every clinical clerk. Dr Van Etten says that the patient should always be returned to the doctor. I don't believe that if the 'always' must be in there it will be possible to teach medicine properly in a university clinic. Do we teach students only disease or do we teach students how patients react to disease? Certainly the patient in the ward which I have in Bellevue Hospital reacts to disease dif-

ferently from the patient one sees in private practice, and, surely, one of the great failures in medical education in the past has been that the student has not had contact of late years with anything except one social stratum. I cannot see how we can produce the type of physician which the profession has a right to demand that we produce unless patients are studied who come from a different social stratum such as is found in a charity hospital. If the patient who comes to the university clinic always is returned to his physician, how, then, is the student to follow the course of ambulatory disease except in the type of patient who is the type of patient that he will probably himself never treat? The other statement which I should like to discuss is the last statement that Dr Upham made. In talking of the pay clinic he seemed to feel that it had no place in undergraduate work. How is the student to be taught as an undergraduate that he must think of the patient's circumstances, if that opportunity is never given to him? It seems to me that it might be a good thing in a medical school to have undergraduate students work in a pay clinic. There was one thing that Dr Houghton said, with which I feel I can agree, and that is that I doubt whether the university teacher and the university clinic are a true source of competition to the practitioner of medicine. I work in a medical school where we do not have full time clinical teachers. I work in a medical school where fifty years ago the clinical teachers were tremendously in competition with their graduates.

DR AUSTIN A HAYDEN, Chicago. I feel that I speak from, and maybe for, the 6,000 physicians of the metropolitan area of Chicago, whose offices and whose services have been through the period of this depression, as they have been through the periods of other catastrophes that have befallen the American people, always at the service of the people without regard for pay. The statement that Dr Upham makes that the free outpatient clinic has become a recognized part of medical education, and a necessary part, goes without saying. That is the accepted way in which the clinical training can be delivered. The size and the scope of the clinic, from which this shall proceed, and the general character of it contain matters that are, as Dean Houghton admits, matters of controversy. According to a survey that was made by the Chicago Medical Society there are 1,000,000 clinic visits in the city of Chicago every year, at least there were in the last year. This number has been appreciably increased within the last year. In 1929 that number amounted perhaps to 600,000. There was no complaint at that time from any institution that that amount of clinical material was not sufficient for the clinical teaching that was to be done. As near as we can estimate, there are about 10,000,000 office visits in the city of Chicago annually, so that we believe that the total matter under discussion represents somewhere around 10 per cent of medical office practice. I do not blame Dr Houghton for not more specifically stating that the size of a clinic will necessarily depend largely on the ideals of teaching and the objects of instruction that the head of the department has who is conducting that clinic. Dr Houghton states that pay clinics have been criticized for being run for profit, without reference to teaching needs. He denies that. But I believe that his denial cannot be absolute. No one has ever said that the University of Chicago was making money out of the clinics that Dr Houghton is conducting. But there has appeared in the conduct of the institution a deficit running in 1932 to \$274,000 which, divided by 65, makes about a \$4,000 deficit on every individual that goes through that school. The futility of this expenditure is emphasized by the fact that 80 per cent of the students who have the opportunity of this educational full time system that Dr Houghton advocates, when it comes to a choice between a full time and a part time system of education in medicine decide against Dr Houghton's system and go to the West Side to old Rush Medical College to finish their medical instruction. It would seem that that is a useless use to put this money to. Dr Houghton has stated that he believes that the use of fees derived from the patients that pay at the clinics of the University of Chicago are a proper source of income for the university by which to cut down their deficit, in other words that by paying doctors at the University of Chicago on a full time basis somewhere from \$742 a year to the munificent sum of \$1,060 a year the fees of those medical men can properly be diverted to the eradication of the deficit

of the university in the operation of its clinics. He thinks that that is a tenable position, in fact, he says that it is fair. In the instance of the University of Chicago no request has ever come to the society for the establishment of a clinic at the University of Chicago. It was not made known to the Chicago Medical Society, and only 6 per cent of the patients that Dr. Houghton has spoken of actually are referred to the clinic by practitioners. So I think the conclusion is justified that as an aid to the general practitioner the university clinic has not been a great help.

DR IRVING S. CUTTER, Chicago When the Ward Memorial Building was constructed, it was the judgment of the faculty that there should be a very strong emphasis placed on outpatient teaching. The question as to whether patients would be received in that clinic who could afford to pay a physician was distinctly answered, positively answered, in the negative. There is a careful social survey of every patient so that under no possibility shall any patient be admitted who can afford to pay a physician. There are thousands of people in all the large cities who are unable to pay physicians and who lend themselves generously, willingly, for clinical teaching. Students are assigned to the several departments in this outpatient clinic so that they work there anywhere from four to six hours daily. I am sure that the clinic that does not take into consideration the human relations of every patient who comes to the clinic falls far short of the principal desirability to the teaching of medicine. It would be very easy for us to have a clinic where patients would be received who might pay more than others. It would be simple and there would no doubt be a gross each year, of possibly \$100,000 or even more if that should be done. It is not done because we feel we have no right to receive any patient and charge that patient, if that patient is able to take care of his own personal medical responsibility. I have the feeling about the so-called free clinic that there is a tremendous increase in mendicancy and that a careless administration of free medical care is bound to result in a whirlwind to the medical profession unless proper safeguards are instituted. It is a good deal like the patient who comes in without a careful social survey and who is later found by the joint emergency relief to have thousands of dollars in the banks. The careful social survey is paramount. After it has been made certain the patient cannot afford to pay, the patient is entitled, somewhere, to genuine, sympathetic, skilful medical care. If it cannot be done in the clinics, the so-called free clinics, it must be done by the city or the county or the state, because that patient needs relief. If the faculty of Northwestern should assume that, because of the gift of a building and of adequate funds with which to equip that building with every modern medical appliance we had the right to charge these individuals as much as the private physician on the outside would charge them, I would feel that we had actually subverted the purpose of the gift. It is unfair that huge funds are solicited from philanthropists to set up great laboratories, clinics and hospitals and then actually enter on the practice of medicine in competition with the private individual. At Northwestern there are between 450 and 550 patient visits daily. That is an adequate number for the students we have to educate. I would not assume for a minute that, if we had 1,000 patients applying daily, we would admit them. We have reached the upper limit of our necessities and beyond that point we would assume that the patients applying for admission would have to be sent elsewhere. I think there are, on the average, about thirty to forty patients each day turned away by the clinic because it is found that they are able to pay a private physician. I am sure that no one of us has any specific point of divergence primarily from any of the authors, but I do feel that, viewing the thing in the broadest principle, from the broadest point of view, from the principle that, after all, the student becomes the doctor ultimately and that the plan under which he is trained influences his life thereafter—viewing the thing thus broadly, we must be very careful indeed that great endowments shall not subvert the student in his tendency thereafter in the practice of medicine. If we are to have general socialization of medicine, perhaps the clinics, some of them that have been mentioned, are wise and good. I doubt very much if that will ever occur. There is one thing quite aside from these papers and that is we have to educate honest men

We have got to educate students who are so fundamentally sound in the practice of medicine that temptation of no sort will swerve them from the direct path.

DR REGINALD FITZ, Boston One of the important things, for teachers in any sort of a clinic to recognize is that, after all, the one really democratic thing in this country is disease. All people get sick. What we have to do is to bring up our students to realize that they must learn how to treat illness in a whole range of different sorts of people. It is unfortunate, if it should occur, that the medical student should be brought up with the idea that the treatment of pneumonia among poor people is any different from the treatment of pneumonia among wealthy people. Dr. Will Mayo said that any good doctor ought to consider himself a trustee of his patient's pocketbook. I wish that some scheme could be brought out by which students could have that taught to them more properly. Often, in teaching clinics, the teachers themselves encourage the students to spend money right and left the idea being that the hospital happens to be so endowed that they can order tests ad infinitum. I should like to see taught more that the physician should spend the patient's money in the wisest possible way. It doesn't make one bit of difference in any given case whether a patient happens to have money or not; the point is that the student has to train himself to think that under no conditions is he going to waste anybody's money, that he has to learn to be economical, sensible and democratic.

DR LANCELY PORTER, San Francisco It has been found that we can get the medical men's cooperation by recognizing that our duty does not end to the state as a medical school when we have graduated a group of well qualified young men to practice medicine. It is our duty to carry medical knowledge to the practitioner. This can easily be done. A few years ago 200 patients a year were referred to the state university medical school. Last year we had more than 3,000, and every month the number is growing. The doctor sends his patient, knowing that he is going to get back a full report on his patient and, furthermore, that he is going to be able to get any further advice he wants about that patient. The doctor is his own social service worker on that case. If a doctor says that a patient can pay nothing or a third or half or all of the costs of x-ray and other expensive diagnostic procedures we accept that as a statement. We don't go behind that. If the medical profession is not competent to do its own social service in such cases honestly, it isn't our business to question the integrity of the men who send us cases. That has been a very valuable thing. The only other point that was brought up that seemed sad was this constant emphasis on the difference between laboratory and clinical medicine. I thought that was dead many years ago. Clinical laboratory work is nothing more than an extension of ordinary methods of examination of the patient.

DR C. R. BARDEEN, Madison, Wis. When one talks in numbers instead of about individuals, there is always involved the question of the profession at large and the public at large, and the only way in which medicine can be satisfactorily practiced is through some sort of agreement as to the general policies in which both are represented. It is not fair to say that it is wholly a question of organized medicine to determine how medicine shall be practiced. The patient has as much to say about it as the physician. But the physician needs to educate the patient as to proper methods. I am strongly in accord with Dr. Lewis that the main thing to aim at is to train good family doctors. The family doctor is to be considered the primary basis of the profession. If that is the case, then we perhaps are overlooking his interest more than other interests in speaking so glibly of how fair it is to establish big public clinics and compete with the family doctor and protect the interests of the specialist. The great run of diseases are not outside the financial resources of the great run of people in normal times. I think that if we are going to train family doctors, one of the first things we ought to think of is not competing too much with the kind of service he can best render.

DR HENRY HOUGHTON, Chicago This has been an extremely helpful discussion. The problem of pay clinics used for teaching purposes has had a number of wallops this afternoon, most of which I think have forwarded our thought

When I said that I thought these clinics ought to be within the limits of the ethics of the guild, I meant exactly within the limitations of ethics of the American Medical Association, of organized medicine, and nothing else. There have to be clinics to teach in, one kind or another, and free clinics are potentially as great sources of abuse as any pay clinic could be. These things have to be watched and regulated. They have to be dealt with honestly, clearly and fairly. There are dangers on both sides. In the clinic that I discussed there has been an effort to keep it at the level that Dr. Wynckoff was talking about. I accept his figure of two patients outpatient cases, daily per student as the ideal. We have not quite attained that ideal. The figure of six beds per clinical clerk we have accepted as being the proper ideal to reach. I have offered an interpretation of certain facts that are open for study. They are questions that arise out of a fundamental teaching educational policy of the University of Chicago, which have been of record for at least twenty years. There was one basic proposition, which I think is worthy of careful study, namely, that the income of physicians comes from the public, whether the physician practices directly and privately or indirectly through an institution. This is an inevitable part of the consideration of the use of pay clinics for educational purposes.

DR. AUSTIN A. HAYDEN, Chicago. I should like to say that I think the establishment of a well set up course in medical economics and perhaps medical history by a practicing physician is something that can be well considered by every medical school in the United States. The last thing I want to say is to the deans. I want to tell them that I think they have taken entirely too little interest in the problems of the practicing physician. When the student has been graduated by their institution, they have largely lost interest in him, or at least their interest has not been manifest by going to his meetings and learning his views. Only by the mutual exchange of ideas can the proper policies be shaped for the guiding of these institutions in the future.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Personal—At the meeting of the Arkansas State Board of Health, January 18, Drs. Joseph G. Gladden, Western Grove, was named president, Thomas Wilson, Wynne, vice president, and William B. Grayson, Little Rock, secretary.

State Medical Meeting—The fifty-ninth annual meeting of the Arkansas Medical Society will be held at Little Rock, April 16-18, under the presidency of Dr. Leonce J. Kosminsky, Texarkana, and with the Pulaski County Medical Society acting as host. Physicians participating in the program include:

Morris Fishbein, editor of *THE JOURNAL*, Chicago. The Trend of Medical Practice.
Shelby B. Hinkle, Little Rock. Progress in Obstetrics and Gynecology.
Arless A. Blair, Fort Smith. Childhood Tuberculosis.
Isaac G. Jones, De Queen. Conservative versus Radical Surgery.
Roy I. Millard, Dardanelle. Coronary Thrombosis.
John J. Shea, Memphis. Relationship of Allergy to Otolaryngology.
Ira F. Jones, Fort Smith. Uterine Hemorrhage.
Joseph G. Mitchell, El Dorado. Effects of Quinine on the Second and Eighth Nerves.
Oscar W. Bethea, New Orleans. Newer Developments of Physical Diagnosis.
Everett D. Plass, Iowa City. Subject not announced.
George R. Siegel, Clarksville. Endocrine Therapy in the Climacteric.
William Decker Smith, Texarkana. Carcinoma of the Uterus.
Charles S. Holt, Fort Smith. Progress in Surgery.
Henry G. Rudner, Memphis. Symptoms and Treatment of Dysfunction of Colon.
Hallel Unterberg, St. Louis. The Psychoneuroses.
Roland M. Klemme, St. Louis. Trigeminal Neuralgia. Diagnosis and Treatment.
Solomon F. Hoge, Little Rock. Late Syphilis.
William T. Wootton, Hot Springs. National Park Allergy an Every-day Problem.

Dr. Fishbein will address also an evening session on "Fads and Quackery in Healing." The annual banquet and president's ball and reception will be held Tuesday evening.

CALIFORNIA

Health Departments Merge—The San Leandro Health Department and the Alameda County Health Department have combined and will function under the direction of Dr. Ira O. Church, county health officer. Dr. Luther Michael retired as health officer of San Leandro, having held the position many years.

Deaths from Mushroom Poisoning—With eighteen deaths within a week in California from mushroom poisoning, Dr. Jacob C. Geiger, health officer of San Francisco, issued a warning, March 3, advising all except botanical experts to avoid mushrooms unless their species and source are definitely known; it is reported Dr. Geiger urged that consumers purchase their mushrooms from a certified source, pointing out that poisoning is seldom traced to commercial markets.

Professor Not Associated with "Anti-Narcotic League"—Dr. Clinton H. Thienes, professor of pharmacology, University of Southern California School of Medicine, states that he has no connection with an organization called "International White Cross, Anti-Narcotic League, Inc.," with headquarters in San Francisco. In a letter to the executive secretary of the organization he protests against the use of his name as a member of its advisory council on a pamphlet entitled "The Truth About the Narcotic Situation in the United States." Dr. Thienes states that he disapproves the contents of this pamphlet and asks that his name be removed from all literature and other matter prepared, written or sponsored by the organization.

CONNECTICUT

Society News—At the quarterly meeting of the New Haven County Public Health Association in New Haven, March 1, the speakers were Dr. Herbert R. Edwards, acting health officer, on "Examination of Food Handlers," Mr. Sidney G. Davidson, superintendent, Grace Hospital, "Hospital Charges and Other Problems as Related to Public Health," and Mr. Warren J. Scott, director, bureau of sanitary engineering, state department of health, "Various Methods of Sewage Treatment in Connecticut."

Health at Hartford—Telegraphic reports to the U. S. Department of Commerce from eighty-six cities with a total population of 37 million, for the week ended March 24 indicate that the highest mortality rate (22.4) appears for Hartford and for the group of cities as a whole, 12.5. The mortality rate for Hartford for the corresponding week last year was 10.9, and for the group of cities, 11.7. The annual rate for eighty-six cities for the twelve weeks of 1934 was 12.7, as against a rate of 12.3 for the corresponding period of the previous year. Caution should be used in the interpretation of these weekly figures as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

DISTRICT OF COLUMBIA

Medical Bills in Congress—S. 3186, introduced by Senator McCarran, Nevada, proposes to provide compensation for disability or death resulting from injury to employees in certain employments in the District of Columbia. The term "injury" is defined to include such occupational disease or infection as arises naturally out of employment or as naturally and unavoidably results from accidental injury. An injured employee is to be authorized to secure first aid when necessary "from any qualified physician." If the injured employee desires additional medical attention, he must submit a request therefor to the deputy commissioner, who is authorized by the bill to permit the employee to continue treatment under the physician who rendered first aid treatment, or may direct the employee to submit himself for an examination and/or treatment to a physician or a group of physicians chosen by the deputy commissioner.

GEORGIA

District Meetings—The Fourth District Medical Society was addressed at LaGrange, February 7, among others, by Drs. Robert L. Carter, Thomaston, on "Tuberculosis and Its Surgical Treatment."—The Tenth District Medical Society devoted its meeting, February 14, in Augusta, to a series of clinics.—Dr. Allen H. Bunce, Atlanta, gave a paper before the First District Medical Society, March 21, on "Treatment of Chronic Infectious Arthritis."

Cancer Clinic—The creation of the Atlanta Cancer Clinic for pay patients has been authorized with headquarters in the Medical Building of the Georgia Baptist Hospital, Atlanta.

A diagnostic fee commensurate with the patient's circumstances will be charged, the funds to be used for the maintenance of the clinic. A written report giving the diagnosis and recommendations for treatment will be sent to the patient's physician. Each applicant for admission to the clinic must be accompanied by or bring a letter from his physician. When there is no family physician, a signed statement to that effect will be required. The clinic will have available 370 mg of radium. Dr James L. Campbell has been designated director of the clinic.

ILLINOIS

Illegal Practitioner Found Guilty—Mr S. J. Kuslewski, chief inspector of the Department of Registration and Education of the State of Illinois, reports that E. H. Bernard of Chicago was taken before Judge Helander of the municipal court, February 20, on the charge of practicing medicine without a license. Bernard pleaded guilty, was fined \$100 and was sentenced to one year in the House of Correction.

Health Promotion Week—April 29 to May 5 has been designated as "health promotion week" in Illinois. Tuesday of that week is to be observed as "Child Health Day" in accordance with a proclamation issued by President Roosevelt. Speakers may be secured without local cost either through the state department of public health or from the speakers bureau of the Illinois State Medical Society, 185 North Wabash Avenue, Chicago.

Chicago

Personal—A course on ocular muscles was given at Northwestern University Medical School, April 24 by Dr Alfred Bielschowsky, professor of ophthalmology, University of Breslau, Germany.

Rongetti in Another Penitentiary—Amante Rongetti, who recently completed a term in Fort Leavenworth Kan, is now serving a sentence of from one to fourteen years in the Illinois State Penitentiary at Joliet having been convicted of manslaughter. He was received at Joliet, February 10. In his first trial on the charge of causing a death through an illegal operation, Rongetti was sentenced to death but at the second trial the supreme court committed him to the penitentiary for from one to fourteen years. Rongetti completed a three year sentence at Leavenworth February 6 for violation of the Harrison Narcotic Act (THE JOURNAL, Nov. 7, 1931, p. 1393).

IOWA

Graduate Courses Sponsored by State Society—The speakers bureau of the Iowa State Medical Society inaugurated three courses on graduate medical education recently. One on general therapeutics opened at Creston February 21 continuing weekly until April 25. Out-of-state speakers participating in this course are Carl R. Moore, Ph.D., Drs. Paul Cannon, Clifford J. Barborka, Samuel M. Femberg, George W. Hall, and Oliver S. Ormsby, all of Chicago. George B. Eusterman, Rochester, Minn., and Arthur L. Tutum, Madison, Wis. The course on neurology and psychiatry was initiated March 1, at Oskaloosa, these weekly sessions ending May 3. Dr. Alfred W. Adson, Rochester, Minn., was the visiting speaker. Infectious diseases is the theme of the third course which opened in Mount Pleasant, March 2. The concluding lecture in this weekly series will be May 4. One out-of-state speaker participated in this group, Dr. Fred W. Garde, Rochester.

KANSAS

Personal—Dr. Fay E. Garther, Lenora, has been appointed health officer of Norton County. Dr. Eber Reeves has been named health officer of Decatur County. Dr. Charles McKinley has been appointed physician at the state penitentiary, Lansing, succeeding Dr. Robert H. Moore, resigned. Dr. Darrel L. Evans has been named health officer of Riley County, succeeding Dr. John R. Mathews, Manhattan, who has resigned to engage in private practice in Glenwood Springs, Colo. He had held the position since 1923.

KENTUCKY

Private Physicians to Immunize Children—The Louisville city health department under Dr. Hugh R. Leavell, has announced a new policy with respect to immunization of school children, under which all children whose parents are able to pay are to be sent to private physicians. Formerly all school children were immunized by the health department at public expense. In cooperation with the Jefferson County Medical Society the department is arranging a policy of having patients pay for medical service according to their ability and the

society is preparing a list of physicians willing to accept these "part pay" patients. Steps have recently been taken to readjust also the hospitalization of the county indigent, the entire budget relating to health and hospitalization having been transferred from the county welfare department to the health department. Dr. Ben Wilson Smock has recently been appointed assistant to Dr. John D. Trawick, county health officer, and comprehensive plans are under way for coordination of the city and county health departments.

Society News—A symposium on the common infections was presented at a meeting of the Jefferson County Medical Society March 5, by Drs. Charles Dwight Townes, Will R. Pryor, Ayrine E. Bell and Karl N. Victor. Dr. William T. Pride, Memphis, Tenn., addressed the society, March 19, on "Gnathostome Repairs of Old Lacerations at the Time of Delivery" under the auspices of the Louisville Obstetrical and Gynecological Society. Drs. Louis Feid, Jr. and Clifford J. Strachley, Cincinnati, addressed the Mason County Medical Society, Mayville, February 14, on treatment of benign uterine hemorrhage and classification of heart diseases, respectively.

LOUISIANA

State Medical Meeting at Shreveport, April 10-12—The fifty-fifth annual meeting of the Louisiana State Medical Society will be held at Shreveport April 10-12 with headquarters at the Washington Youree Hotel, and under the presidency of Dr. Carl A. Weiss, Baton Rouge. Included in the scientific program are the following physicians:

Joseph F. Kniphton, Sr., Shreveport, The Failing Heart of Middle Life.
John H. Musser, New Orleans, Treatment of Cardiovascular Syphilis.
Emmerich von Haam, New Orleans, Importance of Biopsy in the Diagnosis of Cancer.
Harold J. Kearney, New Orleans, Bronchoscopic Aspiration in the Treatment of Lung Suppuration.
Arthur A. Herold, Shreveport, Pathology: The Basis of Scientific Medicine.
Vernon D. Hargrove, Shreveport, A Review of 112 Cases of Amebiasis.
Martha Eleanor Cook, Lake Charles, A Simplified Treatment of Infantile Diarrhea.
Charles W. Duval, New Orleans, The Host Cell Reaction to Invasion by Bacillus of Leprosy.
Francis J. LeJeune, New Orleans, Hoariness: Its Significance.
Denn Lewis, Baltimore, President, American Medical Association, Chicago, The Surgical Lesions of the Breast.
Leon J. Menville, New Orleans, Bone Tumors from a Radiologic Standpoint.
Peter C. Raffagnino, New Orleans, The Chronically Diseased Cervix as a Focus of Systemic Infection.
Alec J. Lelerc, Monroe, Suppurative Otitis Media.
Rufus Jackson, Baton Rouge, Nonpurulent Accessory Sinusitis.
George A. Meyer, New Orleans, Hypotension in Relation to Toxemia in Pregnancy.
Leon Gray, Shreveport, Squint and Its Treatment.
Rudolph Matis, New Orleans, On Vascular Surgery in Louisiana: A Historical Review.
Wiley R. Buffington, New Orleans, Importance of Recent Advances in the Etiology and Treatment of Certain Conjunctival and Corneal Diseases in General Medicine.
Clifford P. Rutledge, Shreveport, Diagnosis and Treatment of Intoxication by Use of the Barium Enema Under Fluoroscopic Control.
Edward J. King, New Orleans, Induction of Labor by Medical Means Contrasted with Surgical Methods.
George C. Britalora, New Orleans, Compression Fractures of the Spine.

MAINE

Society News—Dr. Sidney C. Dyrville, Newton, Mass., addressed the Cumberland County Medical Society, February 23, on "Correlation of Clinical and Pathological Findings in Bright's Disease." The Portland Medical Club heard Dr. Henry P. Johnson discuss "Some Effects of Climatic Changes on the Mucous Membranes of the Upper Respiratory Tract," February 6. Speakers before the Kennebec County Medical Society in Gardiner, February 15, included Drs. Bernhardt I. Wulff, Waterville, on "Intravenous Urography," and Frank B. Bull, Gardiner, "Blood Transfusions." At a meeting of the Oxford County Medical Society in Rumford, February 23, Dr. Warren E. Kershner, Bath, spoke on physicians' liability insurance and mastoid problems in general practice.

MASSACHUSETTS

Dr. Irving Appointed Professor of Obstetrics—Dr. Frederick Carpenter Irving has been appointed William Lambert Richardson professor of obstetrics at Harvard Medical School. He is the first incumbent of the chair, which was recently created under the will of Dr. Richardson, former professor of obstetrics and dean of the medical school. Dr. Richardson bequeathed \$100,000 to endow the professorship and the Harvard Corporation voted to name it in his honor. Dr. Irving was born in Gouverneur, N. Y., in 1883. Graduating from Harvard Medical School in 1910, he engaged in practice in Boston the same year, and became affiliated with the school in a teaching capacity in 1922.

Society News—Dr Thomas J O'Brien, Boston, addressed the South End Medical Club, March 20, on medical legislation. —At a meeting of the Middlesex East District Medical Society in Stoneham, March 14, Dr William R Morrison spoke on "Stomach Surgery."—The clinical and experimental observations on the effect of total thyroidectomy was the discussion before the Harvard Medical Society March 13, speakers were Drs Samuel A Levine, Eugene C Eppinger, Philip Shambrough, Morton G Brown, Max T C Schnitzer and Elliott C Cutler, and Margaret E Sawyer, Ph D.—Among the speakers before the New England Roentgen Ray Society, March 16, was Dr Edward C Vogt on "The Esophagus and Gastro Intestinal Tract in Infants and Children."—Drs Harry C Solomon, Houston H Merritt, Jr, and Merrill Moore conducted a symposium on neurosyphilis before the Boston Society of Psychiatry and Neurology, March 15 and Dr Robert E Fleming and Elmer Stotz, BS, discussed "The Blood and Spinal Fluid Alcohol in Abstainers, Chronic Alcoholics and in the Psychoses."

MICHIGAN

Dinner to Dr Kamperman—Dr George Kamperman, Detroit was honored by a dinner, given by his former residents, February 20, to mark his fifteenth anniversary as head of the department of obstetrics and gynecology of Harper Hospital. Following the dinner, Dr Owen C Foster unveiled a large framed "photomontage," a composite photograph depicting characteristic Harper Hospital scenes which serve as a background for photographs of Dr Kamperman and surgeons trained by him since his appointment. It now hangs in the obstetric club room of the hospital. Dr Harold C Mack presented a bound testimonial and guest book containing letters and photographs of former and present residents.

County Secretaries' Conference—At the annual conference of the county secretaries of the Michigan State Medical Society in Ann Arbor, March 7, the following program was presented:

Reuben L Kahn ScD, Ann Arbor, Recent Developments in Immunology
Dr Carl E Badgley, Detroit Traumatic Surgery
Dr Cyrus C Sturgis Ann Arbor Therapy in Anemias
Dr Charles L Brown, Ann Arbor Therapy Limitations in Hypertension
Dr Ledru O Geib and Henry F Vaughan, Dr PH, Detroit, Our Preventive Medicine Program
Dr James B Bradley Eaton Rapids Legislation
Dr Louis LeFevre Muskegon, County Society Program in the Care of Indigents
Dr James D Bruce Ann Arbor Progress and Planning in Postgraduate Education
Drs LeFevre John B Jackson Kalamazoo Herbert E Randall and Carl F Moll Flint J Milton Robb Detroit Richard R Smith and Burton R Corbus Grand Rapids Medical Problems and Policies

In addition, Dr Carl D Camp, Ann Arbor, conducted a neurologic clinic.

MINNESOTA

Personal—A farewell dinner was given in honor of Dr Elmer C Bartels, January 23, by fifty-five physicians of Duluth. Dr Russell J Moe was toastmaster. Dr Bartels has since gone to Springfield, Ohio, to practice.—The University of Minnesota recently received a gift of \$500,000 for the advancement of medical research from Drs William J and Charles H Mayo, Rochester.

Dr Allen Honored on Hundredth Birthday—Dr Wilson A Allen, Rochester, was presented with a resolution of the Olmstead-Houston-Fillmore County Medical Society congratulating him on his one hundredth birthday and creating for him as a special honor, the title of emeritus member with the privilege of active membership, without payment of dues. A telegram offering congratulations was also received by Dr Allen from President and Mrs Roosevelt. Dr Allen observed his birthday, March 6 but because he was confined in a hospital, no special celebration was held. The resolution points out that Dr Allen has been a member of the Minnesota State Medical Association since its organization. A resolution was also adopted by the common council of the city of Rochester in recognition of Dr Allen's centenary. Dr Allen served as mayor of Rochester for one term 1895-1896. He graduated from Hahnemann Medical College and Hospital, Chicago, in 1879.

MISSISSIPPI

Bill Introduced—S 506, to amend the law relating to privileged communications proposes that a physician shall not be required to disclose such a communication in any legal proceeding unless the patient expressly waives the privilege at the time of the trial. The present law prohibits such a dis-

closure in any "civil" proceeding "except at the instance of the patient."

Society News—Speakers before the Central Medical Society, February 6, included Drs Robert B McLean, Jackson, on "Urticaria and Angioneurotic Edema," and Robin Harris, "Association of Scintillating Scotoma and Nasal Accessory Sinus Disease."—The meeting of the Issaquena-Sharkey-Warren Counties Medical Society in Vicksburg, February 13, was devoted to a discussion of the common cold.

NEBRASKA

Society News—A symposium on obstetrics was presented before the Cedar, Dakota, Dixon, Thurston and Wayne Counties Medical Society, Emerson, February 20 by Drs Leo J Killian, Wakefield, John Buis, Pender, Paul F Suman, Wayne, Ralph C Gramlich, Walthill, Stuart H Cook and Glen E Peters, Randolph. —At a meeting of the Sixth Council District Medical Society, Osceola, January 16, Omaha physicians presented addresses. Drs Rodney W Bliss, on peptic ulcer, Abram E Bennett, traumatic encephalitis, and Charles A Owens, Jr, transurethral resection.—Dr Abraham Levinson, Chicago, addressed the Omaha-Douglas County Medical Society Omaha, March 27, on diagnosis and treatment of meningitis. Three physicians of Council Bluffs, Iowa, addressed the society March 13, as follows. Drs Gordon N Best, on "Chronic Obstruction of the Duodenum", Maurice C Hennessy, "Foreign Bodies Producing Bowel Obstruction" and Karl R Werndorff, "Reconstruction of Function in Paralyzed Extremities."—Drs Maurice E Grier and Lloyd O Hoffman, Omaha, addressed the Otoe County Medical Society, Nebraska City, April 9, on infections of the genital tract.

NEW JERSEY

Bill Passed—A 245 has passed the assembly, proposing to amend the dental practice act by authorizing the revocation of a license to practice dentistry, if the licensee violates any of the rules or regulations which the state board of registration and examination in dentistry may hereafter adopt with respect to the practice of dentistry.

NEW YORK

Bill Passed—A 417 has passed the assembly, proposing to amend the pharmacy practice act by providing (1) that a drug shall be deemed to be misbranded within the meaning of the act if its package does not bear a statement of the percentage of barbituric acid contained therein, but (2) that the act shall not apply to the manufacture and sale of proprietary medicines except those containing poisons, deleterious and/or habit-forming drugs and chemicals.

Bills Introduced—A 1926, to amend those provisions of the medical practice act relating to osteopathy, proposes (1) to designate osteopaths as "osteopathic physicians", (2) to forbid licensed osteopaths to perform surgery with the use of instruments, except to cut the umbilical cord, to circumcise, to use forceps for delivery, to repair the perineum, to lance superficial abscesses and to repair skin lesions, and (3) to permit licensed osteopaths to use and prescribe narcotics, anesthetics, antiseptics, vaccines, antitoxins and serums. A 1927, to amend the provisions of the medical practice act relating to osteopathy, proposes that a license to practice osteopathy (1) shall not permit the holder to perform surgery with the use of instruments, except to cut the umbilical cord, to circumcise, to use forceps for delivery, to repair the perineum, to lance superficial abscesses, and to repair skin lesions, and (2) shall permit the holder to use and prescribe metaphen, resorcinol, zinc oxide, hydrogen peroxide, mercurochrome, iodine, potassium permanganate, menthol, thymol, ichthyol, sulphur, alcohol spiritus frumenti, colloidal silver compounds, silver salts, adrenalin, ephedrine, epinephrine, iodoform, bichloride of mercury, phenol, opium and its derivatives, cocaine and its salts, novocain, procaine, veronal, luminal, amytal and its sodium salts, chloroform ether, nitrous oxide, ethyl chloride, avertin, butyn, toxic toxin antitoxin antitoxin staphylococcus vaccine, streptococcus vaccine, polyvalent vaccine, autogenous vaccine, pneumococcus vaccine, tetanus antitoxin, typhoid vaccine, neoipax and tetraiodophenolphthalein for use in x-ray diagnosis.

New York City

New Members of Board of Health—Dr Haven Emerson, professor of public health administration, Columbia University College of Physicians and Surgeons and Dr Frank L Babbott, Jr, president of Long Island Medical College Brook-

lyn, were appointed members of the board of health by Mayor La Guardia in February. Dr. Emerson was health commissioner of New York from 1915 to 1918. The new members succeed Drs. Harry P. Swift and Rand Percy Crandall.

Salmon Lectures—Dr. Charles Macfie Campbell, professor of psychiatry, Harvard University Medical School, Boston, will deliver the 1934 series of Salmon Lectures at the Academy of Medicine, April 13, 20 and 27 (*THE JOURNAL*, January 27, p. 300). The title of the first lecture will be "Trends in Psychiatry," the second, "Classification Versus Dynamic Analysis," and the third will embody conclusions and suggestions.

Committee to Promote Sanitary Dispensing of Foods—There has been organized in New York a Committee for the Study and Promotion of the Sanitary Dispensing of Food and Drinks, the purpose of which is to educate the public to demand sanitary practices in the dispensing of food and drinks in public eating places. Dr. Alec N. Thomson is chairman and Homer N. Calver, former editor of the *American Journal of Public Health*, is executive officer. The committee urges the public to protest to the management against all unsanitary practices observed, to commend the management of places that uphold high sanitary standards and to report by name and address to the board of health all public eating places violating high standards.

Society News—Speakers at a meeting of the Medical Society of the County of New York, February 26, were Drs. Thomas Francis, Jr., on "Diagnosis and Treatment of Influenza," Henry T. Chickering, "Prognosis and Treatment of Lobar Pneumonia," and George G. Ornstein, "Pulmonary Atelectasis."—Dr. Boris M. Fried, among others, addressed the New York Pathological Society, February 22, on "Allergic Inflammation of the Lungs."—A symposium on "Indications for Roentgenotherapy in Malignant Disease of the Ear, Nose and Throat" constituted the program of the New York Roentgen Society, February 19, speakers were Drs. Maurice Lenz, Arthur P. Stout, Alfred A. Schwartz, John D. Kerran, Jr., Robert E. Buckley and George H. Semken.—A symposium on acute and chronic emphysema was presented before the New York Surgical Society, March 14, by Drs. John F. Connors, Harold Neuhof, Adrian V. S. Lambert and Walton Martin.

—The staff of Memorial Hospital presented a symposium on gastro-intestinal tumors before the Society for the Advancement of Gastro-Enterology, February 28, among the speakers were Drs. James Ewing, Lloyd F. Craver and George T. Pack and Edith Quimby, associate physicist.—Drs. William B. Castle, Boston, and Robert L. Moorhead addressed the Medical Society of the County of Kings, February 20, on "Modern Concepts of Anemia and Its Treatment" and "Cancer of the Larynx—Importance of Early Diagnosis," respectively.—At a meeting of the International and Spanish Speaking Association of Physicians, Dentists and Pharmacists, January 19, speakers were Drs. Franz Groedel, Frankfurt, Germany, on hydrotherapy, Burton T. Simpson, Buffalo, on radium therapy, and George Henry, on psychotherapy. Dr. Jacob M. Gerslberg, who was reelected president, gave his official address on the life of Professor Ramon y Cajal of the University of Madrid. At the February meeting a symposium on gastro-enterology was presented, with the following speakers: Drs. L. Lee MacPhee, Boston, Leopold Lichtwitz, and George E. Binkley, and John Oppie McCall, D.D.S.

PENNSYLVANIA

Ten Deaths from Psittacosis in Pittsburgh—At least ten deaths and several cases of psittacosis recently occurred in Pittsburgh as a result of contact with sick parrots in the pet department of a large department store. Psittacosis was first suspected when it became known that seven deaths had occurred among employees on only two floors of the store within two weeks, supposedly of pneumonia. A physician called to care for the eighth employee believed to have pneumonia had learned that the two floors of the store were decorated with parrots and parakeets. He notified the city health department. Examination revealed that they had the disease and postmortem examination of the eighth patient from the store confirmed the diagnosis. The store in question immediately destroyed all its birds, discontinued the pet department and fumigated the store. All psittacine birds in the city were quarantined. The epidemic was traced to a shipment of 130 birds from California in January, of which three were dead on arrival, it was said. Dr. Lucius F. Badger of the U. S. Public Health Service went to Pittsburgh to conduct an investigation, March 17, after which he announced that the epidemic appeared to be under control. Later reports stated that two other pet shops had received shipments in which birds were sick or dead and

that one case of psittacosis had been diagnosed from each shop. The San Francisco *Examiner* reported, March 17, that the California State Board of Health was investigating the report that some of the birds sent from California were shipped in violation of specific orders from the board.

Philadelphia

Gerhard Medal Awarded—The Pathological Society of Philadelphia will award the William Wood Gerhard Gold Medal to Dr. George H. Whipple, dean of the University of Rochester School of Medicine and Dentistry, Rochester, N. Y., at a meeting April 12. Dr. Whipple will deliver the annual Conversational Lecture of the society, his subject being "Regeneration of Hemoglobin and of Blood Plasma Proteins Controlled by Diet Factors."

Impostor Claims Relationship—A man has recently circulated among physicians in Washington, D. C., claiming to be a brother of Dr. Joseph McFarland, Philadelphia, and asking financial aid, it is reported. His story was that he had run past a stop light and damaged the car of another person, for which he was arrested and fined \$25 which took all his ready cash. He stated that unfortunately he was without identification but knowing that pathologists would know his "brother," he took the liberty of asking aid. He is a slender man with steel gray hair, slightly bald about 60 years old, well dressed, and with several teeth missing in front. Dr. McFarland has no brother.

Society News—Speakers who addressed the Philadelphia Academy of Surgery, March 5, were Drs. Robert H. Ivy and Lawrence Curtis on "Experience with Newer Procedures in Surgery of the Cleft Palate," and Alexander Randall, "Advances of Prooperative X-Rays in Kidney Tumor in Children."—Dr. Lyndon G. Richards, Boston, addressed the Philadelphia Laryngological Society, March 6, on "Sinusitis in Children: Diagnosis and Treatment."—Drs. William C. von Glahn and Alwin M. Pappenheimer, New York, were guest speakers at the meeting of the Pathological Society of Philadelphia, March 8, on "Relation Between Rheumatic and Subacute Bacterial Endocarditis."—Dr. Gabriel Tucker, among others, addressed the Philadelphia Pediatric Society, March 13, on "Obstructive Disperser in Children."

WASHINGTON

Society News—Dr. Andrew C. Ivy, Chicago, will be the guest speaker at the annual open meeting of the Tacoma Surgical Club, April 7. Dr. Ivy will lead a symposium on modern knowledge of the physiology of the gastro-intestinal tract and will speak in the evening on "Applied Physiology of the Alimentary Tract." Demonstrations will be held at Tacoma General Hospital.—Dr. Howard L. Updegraff, Los Angeles, addressed the King County Medical Society, Seattle, March 19, on "Methods of Reconstructive Surgery."

WISCONSIN

William Snow Miller Lecture—Chuncey D. Leake, Ph.D., professor of pharmacology, University of California Medical School, San Francisco, delivered the eighth annual address under the William Snow Miller Lectureship at the University of Wisconsin, March 23. Dr. Leake's subject was "Relations of Medicine and Art."

Personal—Dr. Gilbert E. Scamman, Milwaukee, has been appointed acting head of the Northern Hospital for the Insane, Winnebago, replacing Dr. Peter P. Bell, resigned.—Dr. William M. Sweener, Milwaukee, celebrated his fiftieth anniversary in the practice of medicine, March 11. Dr. Sweener was a founder of the old Milwaukee Medical College now a part of Marquette University, and served as professor of diseases of children from 1894 to 1904.—Dr. Albert Schmidt, Liberty Grove, celebrated his ninetieth birthday in January, he was greeted by all the residents of the village.—Dr. James E. Newton was recently appointed mayor of Hudson.

Fifty Years in Practice—Residents of Oostburg and the contiguous territory gave a reception and banquet February 20, in honor of Dr. Edward Was, who has practiced fifty years in the community. Dr. Was, a native of The Netherlands, graduated from Rush Medical College, Chicago, in 1884 and began practice in Oostburg immediately. Speakers at the banquet included Drs. William H. Gunther, William Van Zanten, Otho A. Fiedler, Otto T. Gunther, Harry H. Heiden and J. P. Zolten, all of Sheboygan, Emmett F. Guy, Oostburg, John E. Guy, Milwaukee, Anthony Voskuil, Cedar Grove, and Robert M. Nichols, Sheboygan Falls. A plaque was presented to Dr. Was, inscribed with the legend "Fifty Years of Faithful Service, 1884-1934, from the Village of Oostburg."

GENERAL

Journal for Digestive Diseases—March 15 marked the first publication date of the *American Journal of Digestive Diseases and Nutrition*. The journal will be issued monthly from Fort Wayne, Ind. Dr. Frank Smithies, Chicago, is editor, and Dr. Beaumont S. Cornell, Fort Wayne, supervising editor.

Death Rate Among Policyholders—The death rate for 1933 among the industrial policyholders of the Metropolitan Life Insurance Company in the United States and Canada was 802 per thousand, the lowest ever recorded for this group, this in spite of a sharp increase in January in deaths from influenza, and the principal degenerative diseases. Decreases took place in deaths from tuberculosis, pneumonia, conditions arising from pregnancy and childbirth, diphtheria, whooping cough and measles. The death rates for diarrhea and enteritis and for fatal machinery accidents showed no change from their previous low points reached in 1932. Cancer, heart disease and diabetes recorded higher mortalities than ever before, even when the fact is taken into account that a larger proportion of the insured group is now in the older age groups. Accidental deaths, especially automobile fatalities, increased, though the number of deaths of children as a result of automobile accidents has diminished. The 1933 mortality rate for falls was the highest in fifteen years.

Epidemics of Measles—It has been estimated that 7,000 cases of measles have occurred in Washington, D. C., since January 1, eleven persons have died. This is said to be the heaviest epidemic since 1921 in the capital. Philadelphia newspapers reported, March 18, that 10,688 cases had been reported to the city health department since January 1, with forty deaths. Baltimore had 1,988 cases reported between January 1 and March 14. It was reported more than 2,500 cases had occurred in El Paso County, Texas, from January 1 to March 6, with fifty-six deaths. Fifteen members of the freshman class at Harvard University, Cambridge, Mass., were stricken, the *New York Times* reported, March 22. Other epidemics have been reported from the following towns: Toledo Ohio, 700 cases during the first nine days of March, Springfield, Ill., 800 cases between February 1 and March 18, Chattanooga, Tenn., 310 cases in the first two weeks of March, Salt Lake City, Utah, 506 cases during the week preceding March 4. The U. S. Public Health Service reported that 30,806 cases had been reported from forty-six states during the week preceding March 4, compared with 14,081 for the corresponding week of 1933.

Society News—Dr. James R. Garber, Birmingham, Ala., was elected president of the Southern Interurban Gynecological and Obstetrical Society at a meeting in Birmingham, February 17. Dr. Willard R. Cooke, Galveston, Texas, vice president, and Dr. James L. Seibold, Birmingham, secretary. Drs. Everett D. Plass, Iowa City, and George P. Muller, Philadelphia, were guest speakers. The Society for the Study of Asthma and Allied Conditions will hold its spring meeting in Atlantic City, April 28. The tenth annual scientific meeting of the American Heart Association will be held in Cleveland, June 12 at the Cleveland Hotel. The program will be devoted to arteriosclerotic heart disease. This association moved its headquarters, March 30, to the RCA Building, 50 West Fiftieth Street, New York. The congress of the Association of French-Speaking Physicians of North America is to be held in Quebec, August 27-29, in conjunction with the twenty-third session of the Association of Physicians of the French Language, which includes members from France and Belgium. The American Association on Mental Deficiency will hold its annual meeting at the Hotel Waldorf-Astoria, New York, May 26-29. The afternoon session, May 29, will be held jointly with the American Psychiatric Association. Dr. Groves B. Smith Godfrey, Ill., is secretary of the association. Dr. Philip H. Kreuscher, Chicago, was elected president of the Northwest Regional Conference in St. Paul, Minn., February 25, succeeding Dr. Benjamin F. Bailey, Lincoln, Neb.

Medical Bills in Congress—*Changes in Status*. The Independent Offices' Appropriation Bill, H. R. 6663, which has been passed by the House and the Senate over the veto of President Roosevelt (Public Law No. 141), provides, among other things, that any veteran not dishonorably discharged suffering from disability, disease, or defect, who is in need of hospitalization or domiciliary care and is unable to defray the necessary expenses therefor, shall be furnished such hospitalization or domiciliary care in any Veterans' Administration facility, within the limitations existing in such facilities irre-

spective of whether the disability, disease, or defect was due to service. A statement under oath by the veteran on such form as may be prescribed by the Administrator of Veterans' Affairs must be accepted as conclusive proof of inability to defray necessary expenses. S. 2688 has been reported to the House, with recommendation that it pass. It validates payments made by disbursing officers of the army for the medical and hospital treatment of members of the Reserve Officers' Training Corps and of members of the Citizens' Military Training Camps who contracted disease in line of duty while en route to or from and while at camps of instruction. *Bills Introduced*. S. J. Res. 92, introduced by Senator O'Mahoney, Wyoming, proposes to create a commission to formulate a permanent national policy with respect to benefits for veterans and dependents of veterans. S. 3111, introduced by Senator McKellar, Tennessee, proposes to authorize the erection of a veterans' hospital in middle Tennessee. S. 3175, introduced by Senator Couzens, Michigan, proposes to authorize claims to withdraw alcohol tax free. H. R. 8818, introduced by Representative Welch, California, proposes to extend the benefits of the United States Public Health Service to fishermen, trappers, net tenders, and other persons subject to the laws relating to American seamen. H. R. 8846, introduced by Representative Dockweiler, California, proposes to provide an increase of compensation for certain veterans' widows.

Government Services

Veterans' Compensation Restored

Pensions or compensation to veterans whose benefits were reestablished by the passage, over the President's veto, of the Independent Offices' Appropriation Act for the fiscal year 1935, will be restored with the least possible delay, the Administrator of Veterans' Affairs has announced. The Veterans' Administration estimates that approximately 330,000 World War veterans, 180,600 Spanish-American War veterans and 34,900 dependents of Spanish-American War veterans will be affected by the new legislation, at an increase in cost to taxpayers of approximately \$83,000,000 annually. Any veteran not dishonorably discharged who suffers from disability, disease, or defect, and who is in need of hospitalization or domiciliary care, and who is unable to defray the necessary expenses therefor, is to be furnished such hospitalization or domiciliary care in any Veterans' Administration facility, within the limitations of such facilities, irrespective of whether the disease, disability, or defect was due to service. A statement under oath by the veteran must be accepted as conclusive evidence of inability to pay. Under section 200 of the World War Veterans' Act certain disabilities were declared presumptively to be of service origin. The Economy Act of March 20, 1933, severed the service connections based on presumptions. The new act reestablishes these presumptions. The new law also restores to veterans with service-connected disabilities the same rate of compensation that was payable to them prior to March 20, 1933, except that the rate paid to veterans whose disabilities are service connected by presumptions is to be 75 per cent of the rate paid prior to the date named. Veterans of the Spanish-American War, who entered service on or before August 12, 1898, and persons who served in the Boxer Rebellion or Philippine Insurrection, who were receiving pensions for disability or age, March 19, 1933, are entitled by the new law to receive not less than 75 per cent of the pension then being paid, subject to certain restrictions relating to the financial need of the veteran, and whether or not the veteran is hospitalized. All laws in effect March 19, 1933, granting monetary benefits to veterans of the Spanish-American War, including the Boxer Rebellion and the Philippine Insurrection, are reenacted in their entirety, subject to the limitations prescribed in the new law and to such reduction in pensions, not exceeding 25 per cent, as may hereafter be made. The provisions of section 213, World War Veterans Act, are reestablished, whereby a person who is injured as a result of training, hospitalization or medical or surgical treatment or examination is awarded compensation on the same basis as if the condition were incurred in the military or naval service. Hereafter, service-connected money benefits payable to veterans of the World War are to be entitled compensation, not pension. Former compensation rates paid to totally blind World War veterans are reestablished, except where the veteran is furnished hospital care by the government and except as to cases involving fraud, mistake or misrepresentation.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 10 1934

The Battle of the Barbiturates

The controversy that has arisen over the dangers of the use as hypnotics of the large group of derivatives of barbituric acid was mentioned in *THE JOURNAL*, February 10. It has been continued in the medical press to such an extent that it has been termed by the *Lancet* the Battle of the Barbiturates. Sir William Willcox, who struck the note of warning is still the protagonist on the side of danger. His experience as a toxicologist is unrivaled but the leading psychiatrists oppose him. In the *Lancet* he repeats his warning that the barbiturates have a powerful action on the nervous system and that care is required in their repeated daily use. It is constantly brought to his knowledge that in therapeutic doses symptoms such as mental depression, drowsiness, visual hallucinations, vertigo, ataxic gait, indistinct speech, squint, nystagmus and paralysis of the limbs are common results. Indeed a complex of symptoms identical with those of cerebellar disease, postrolateral sclerosis, epidemic encephalitis, bulbar paralysis or meningitis may be produced. Professor Richards of Aberdeen has recently sent him notes of three cases in which loss of memory and automatism followed daily therapeutic doses of barbiturates, and as a result an excessive number of tablets was unconsciously taken. Sir William disputes the figure that out of 5147 suicides in 1931 only 13 were due to barbiturates (*THE JOURNAL*, February 10, p. 468). In 1933 Sir William treated eighteen cases of dangerous poisoning. Most of the deaths occur in persons who have been taking the drugs in repeated daily doses. He fully admits their value in the treatment of mental disorder.

Sir James Purves-Stewart, a neurologist, has observed three cases of paralytic syndromes of the mesencephalic, cerebellar and spinal type respectively following chronic use of barbiturates in therapeutic doses for hypnotic purposes. Other correspondents give further evidence of the increase of cases of poisoning due to barbiturates. From 1909 to 1914 there were admitted into the hospitals in Budapest thirty-five cases of barbituric poisoning, but in 1932 there were admitted into one hospital of that city eighty-seven cases of barbituric poisoning and in addition phenobarbital had appeared on the list and was responsible for eighty cases. The argument on the other side is that the barbiturates have been used with safety and good results in an enormous number of cases. Sir Maurice Craig, a psychiatrist, wishes that Willcox had a few years' experience in the treatment of mental disturbances, for he would then appreciate what prescribing for these patients entails. He also considers it satisfactory that the suicide rate and accidental death rate taken together for barbiturates do not exceed two thirds of 1 per cent of the suicide rate in the country.

Professor Richards uses the term 'automatism' for the mental condition induced by the habitual taking of barbiturates which is so dangerous and yet has never been stressed in publications on the subject. Knowledge for the need of another tablet seems to persist, while the memory is so affected by the drug that the patient does not realize that he has already satisfied the need and automatically repeats the dose at intervals.

The Tax on Insulin

A protest has been evoked by the imposition of a 33 per cent tax on imported insulin. In the house of commons Commander Locker-Lampson described it as a mistake in morals as well as in medicine and a tax on poverty and disease. There were in this country 100,000 victims of diabetes whom

this tax exploited. For the government, Mr. Shakespeare replied that our experience since the imposition duties had shown that they did not necessarily mean an increase of price. When insulin was first manufactured in this country in 1923 the price was \$6 for 100 units. In 1933 two firms in this country were producing it at 48 cents and a third at 40 cents retail. After the imposition of a duty, the British price had been reduced: two firms were producing it at 44 cents and a third at 34. The price of the imported product had not risen in spite of the duty but remained at 34 cents. Insulin was cheaper in this country probably than in any other country in the world except possibly Scandinavia. Recently representations were made by American and Canadian producers to British producers that if the price was reduced any more it would be impossible to compete and produce it at an economic level. The fall of British prices since the imposition of the duty can be explained as either due to further improvements in the method of manufacture or to the fact that the profit was so large as to allow the reduction. The fact that Danish insulin after paying the 33 per cent duty is sold at the same price as the lowest British insulin shows that in the absence of a duty insulin could be sold at 33 per cent less than the present price. The minister expressed surprise that the Danish insulin was not made dearer by the duty but continued to be sold at the lowest British price. Elementary economics would have told him that there cannot be two prices for the same article in the same market and that if the Danish continued to be sold it would have to conform to the British price. All the sophistries cannot hide the fact that the insulin tax is a method of preventing the fall in price and is wanted for this purpose by the British manufacturers. It seems impossible to get from the minister the price at which insulin is sold in Denmark but according to the *Manchester Guardian* (the leading liberal paper in this country) 100 units could be bought there a few years ago for 23 cents.

Cysticercosis as a Cause of Epilepsy

At a meeting of the Royal Society of Tropical Medicine Col. W. P. MacArthur, consulting physician to the British army, showed that many cases of epilepsy were due to cysticercosis of the brain, a most important advance. The president of the society, Sir Leonard Rogers, described the paper as "historic." About 100 soldiers are discharged every year from the British army because of epilepsy. For many years occasional cases of cysticercosis complicated by epilepsy have been observed but their significance was missed until they were reviewed as a whole when it was noticed that all these cases were examples of heavy infestation with striking clinical signs and that there was no admixture of milder forms of the disease. Colonel MacArthur propounded the theory that the lighter grades of infestation were included in the heterogeneous group of 'epilepsy' mentioned. An inquiry to test this theory produced such strong confirmatory evidence that the war office about eighteen months ago ordered all cases of late developing epilepsy sent to the military hospital, Millbank, for special investigation. Colonel MacArthur has collected more than sixty military cases of cysticercosis and twenty have been diagnosed at the hospital during 1933. In the great majority of cases there was no evidence of infestation at any time with the adult *Taenia solium*. In the minority the symptoms began while the patient was under treatment for tapeworm or there was a latent period of several years between the complete expulsion of a worm and the development of clinical cysticercosis. There is always a larger number of palpable cysts than show themselves, for, when they eventually calcify and become visible in roentgenograms more may be seen in one arm than can be palpated in the whole body. The cysts may be detected in the muscles or subcutaneous tissue of any part of the body. Their size when

palpated in muscles, usually suggests that of a pea or hazelnut. In the brain the cysticercus becomes enclosed in a wall of sclerosed neuroglia. The death of the cysticercus is associated with increase in the quantity of fluid in the cysts which therefore becomes tense. Colonel MacArthur holds that while alive cysticerci usually are tolerated by the host, but after their death they act as irritants. Surrounding the dead cysticercus the brain tissues are seen to be undergoing active degenerative change with marked cellular response. In the brain, degenerating tissue may extend for at least 5 mm. beyond the cysticercus. After the death of the cysticercus, about three years is required for the scolex to calcify.

Of the nervous manifestations of cysticercosis epilepsy is the commonest. The fits may begin about the time the cysts are first detected or there may be a long latent period before the first fit. As the parasites may lodge in any part of the brain, any symptoms—motor, sensory or mental—of a focal lesion may be produced. The picture may be that of cerebral tumor, disseminated sclerosis or, if there is hyperinfestation, acute encephalitis.

The diagnosis of cysticercosis is usually missed because of failure to think of the disease. The history may be suggestive—the onset of fits in an adult without evidence of familial or personal epileptic taint. Residence abroad increases the probability of cysticercosis. The most helpful sign is the presence of palpable cysts, for which the patient should be examined from head to foot. But even in cases of heavy infestation of the muscles the parasites may not be evident. To demonstrate the parasite, a cyst should be excised. Roentgenography may disclose calcifying cysts.

No medicinal treatment is curative. The large number of parasites found in the brain and their wide distribution do not encourage resort to surgery. The successful removal of cerebral cysts has been reported, but before cure is certain time must be allowed for the other parasites in the brain to die, which may take years.

The Population Problem in India

Major General John Megaw, late director general of the Indian medical service and now president of the medical board India Office, gave a lecture to the East India Association on "Health and Population in India." He said that India was now the most populous country in the world, and in the last decennial period the increase was 10.6 per cent. Unless some unexpected check was applied there would be 400 millions of persons in India in 1941. He did not advocate any particular form of population control, whether celibacy, delayed marriage or contraception. Each individual and community must decide as to the special method of control acceptable to them. What he advocated strongly was that the people should be instructed in the hard facts which had to be faced and told how other countries had dealt with them. Remedial action ought to be prepared after a thorough investigation of the case by the best brains in England and India. The root cause of the trouble was ignorance, and the remedy was education. The difficulty would be to prepare a sound working scheme for instruction in life planning in an effective and acceptable manner. The cinema and broadcasting could be made instruments of revolutionizing the life of the Indian peoples in a few years.

In 1800 the population of Great Britain was 9 millions, growth for four of five centuries before that time having been extremely slow. Today it was between 40 and 42 millions—far too many—and yet it had been possible to produce out of this narrow environment what he believed to be the healthiest nation in the world. This had been accomplished not so much because of medical science as because of social circumstances which had been controlled by the government and by individual effort combined with education.

PARIS

(From Our Regular Correspondent)

Feb. 14, 1934

The Academy's Protests Against New Fiscal Rulings

To make up the deficit in the budget, parliament has introduced legislation designed to bring in more taxes and subjecting the liberal professions (physicians, lawyers, authors and artists) to closer surveillance. It is held that many members of these professions make insufficient declarations as to their taxable income since there is no adequate control. Parliament has ruled that all members of the liberal professions shall be compelled to keep a record of their daily receipts, which tax officers shall have the right to examine. The physicians immediately objected that they would be violating the right to privileged communication if they revealed the names of their clients. The law has therefore authorized the physician to use a figure in place of the name of a client, the figures being recorded in another book, kept secret, while the physician is compelled to give his clients receipts for the sums paid, only the accepted figure appearing on the receipts. The law thus modified has been passed by the two houses of parliament, which hopes to collect 400,000,000 francs (\$26,000,000), in this manner. The medical syndicates immediately raised energetic protests and emphasized that the substitution of a number for a name did not constitute sufficient protection of professional secrets. The Academy of Medicine took up the question. Professor Balthazard pointed out that an edict of parliament of 1750 still in force, formally declares that medicine is not a trade but a matter of science devotion and sacrifice. The Academy thereupon passed unanimously the following resolution: "The Academy wishing to join in the protests of the various medical groups against the new fiscal regulations imposed on the medical profession and recalling that physicians consider themselves bound absolutely by the right of privileged communication protests against the regulations that appear inapplicable and opposed to the spirit of social and human solidarity of the medical profession which cannot in any wise be compared with a commercial profession." Previously, Messieurs Vanvertz, Bezançon and Sirey had, in turn, shown that the law was not feasible. A physician summoned in an emergency to a patient cannot always carry his receipt book with him. The fees demanded of clients vary, in the option of the physician with their financial worth, so that controllers of the treasury would constantly be suspecting fraud.

Right of Injured Workmen to Refuse Operations

The question as to the right of a person who is injured in an occupational accident to refuse an intervention has been much discussed before the Society of Legal Medicine. The most competent members have been unable to reach an agreement on the subject. The fact is, the law is poorly worded and is susceptible of several interpretations. The society admits however that if an injured person whose condition might be improved by an intervention capable of diminishing his invalidity and consequently his benefits should refuse to accept such intervention he would be liable to suffer a reduction of his compensation. The society accepts such a reduction as only natural when during the course of treatment, the injured person is guilty of an inexcusable wrongful act. The cases are unfortunately numerous in which persons injured in an accident in order to secure larger compensation, voluntarily neglect their treatment. The insurance companies thus damaged use all their efforts to prove such fraudulent neglect. The courts in such cases have rendered contradictory decisions for the bad faith of the injured person is often difficult to prove. Hence the insurance companies desire a more precise wording of the law and the proper text of the law has been the subject of discussions before the Society of Legal Medicine. If the

approval of the society can be secured for the text of a law, it can be presented to parliament with such guarantees as would make it likely to be accepted, except by the socialists, who, as a matter of principle, always take the side of the workman. A preliminary text has been drawn up which reads as follows: 'If before the expiration of the time limits for revision (three years) the injured person refuses a benign operation to be performed, for example, under local anesthesia (ethyl chloride)—an operation that without risk would improve the functional state, the disability compensation shall be diminished in such proportion as the expert shall decide and the courts shall approve, if they deem it advisable. Mr. See approved these conclusions in general but remarked that in parliament it would no doubt be contended that the law of 1898 defines the apportioned compensations as a contract recompense. Mr. Huguency admitted that the abuses are much more frequent than is generally supposed but thought that a revision of the law is useless, since it already provides for a reduction of the benefits in case of inexcusable wrongful act on the part of the workman. Mr. Bourgeois held that the cost of the new operation should be paid by the employer together with half of the injured man's salary during treatment. Mr. Huguency responded that the costs would fall on the insurance companies, since they are benefited by having the compensation of the workman reduced. No definite conclusions have been reached as yet, owing to the difficulty of defining the expression "inexcusable wrongful act" of the workman.

Compulsory Antityphoid Vaccination

The Academy of Medicine, at the suggestion of Messieurs Vincent, Dopter and Leon Bernard, has adopted unanimously a resolution recommending that antityphoid and antiparatyphoid vaccination of all the personnel of the merchant marine be made compulsory. Cases of typhoid among this personnel are frequent, being in part the result of the impure water they drink, when on shore leave, in the small ports of France and foreign countries where hygiene supervision is defective. The incubation period being sometimes rather long the diagnosis by the ship's physician is often erroneous, and the sailors with a false diagnosis of gastric disorder with fever, often go to their homes in rural districts and create foci of typhoid.

BERLIN

(From Our Regular Correspondent)

Feb. 12, 1931

Control of Proposed Cancer Cures

The federal commission for the combating of cancer, in its new line-up, has expressed a willingness to test out the proposals that are made by physicians and laymen for the prevention, recognition and cure of cancerous diseases. This supervision will be carried out with the cooperation of the president of the federal bureau of health, the competent representative of the Prussian Medizinalverwaltung and the head of the department of pharmacology at the University of Berlin. All proposals, including those that appear at once to be useless, will at least be registered. Those that appear to have some possible value will be discussed by the commission as a whole, and such suggestions as seem worthy of serious consideration will be placed in the hands of experts. Remedies, the application of which, after a preliminary test, offers any possibilities of success will be tried out in a series of experiments in institutions, and during that time no information will be given out to the inventors of procedures. They will not be permitted to visit the institutions where the trials are being conducted. Before such research is begun, they must sign a statement to the effect that they will not make, either publicly or privately, any claims to rights or prerogatives with respect to publica-

tions, based on the fact that such trials are being made at the instance of the federal commission for the combating of cancer. They must agree that, following this research they will use solely the report, in unabbreviated and unemended form, of the federal commission. If the producers and inventors do not accept these conditions or do not adhere to them, or refuse to impart the information needed for the trials, the research will immediately be discontinued. In conducting such experiments, especial value will be attached to the securing of cancer cases that lend themselves to the drawing of comparisons. The hospital record card for tumor patients, which has been elaborated by the federal commission will be made the basis for the selection of suitable cases.

Fundamental Changes in German Hygiene

Before the Berlin Medical Society Professor Zeiss, the recently appointed hygienist of Berlin, delivered an address on 'The National Tasks of German Hygiene.' With the national revolution he pointed out the objectives and tasks of hygiene have been modified. In fact a fundamental change of views has occurred. Whereas under the former regime the main emphasis in hygiene was placed on social welfare and today the principles of demographic science which has of late, received new impulses must be more vigorously and actively applied. Thus hygiene more than ever has become the center for a number of related fields. The hygienist is especially fitted to become the exponent of true racial research. He is the natural diplomat of the physicians. The old conceptions of hygiene are outmoded. The old points of view of social hygiene must be abandoned. Fifty per cent of the program in this field must be omitted. Many branches of hygiene have, moreover, developed into well controlled special fields with their own technique for example street cleaning and sewage disposal. However the division of hygiene into special branches is to be condemned. It is important to consider and to carry on hygiene as an indivisible whole. Medical students must, however, become familiar with fields hitherto entirely neglected for example, with the problem of Germans living in scattered groups in foreign countries many of whom have for years waged a bitter fight for existence.

Zeiss called attention to the difficulties the scientist encounters today in endeavoring to explain all phenomena on the basis of the natural sciences. It has been known for some time that typhoid epidemics are not entirely dependent on the water. Even at the risk of being decried as a mystic Zeiss asserted that physicians should not reject astrology without further inquiry as having no scientific basis. Astronomical happenings should be studied as they have a possible connection with the appearance and disappearance of epidemics.

The Relation of Physiology and Physics

Addressing the Prussian Academy of Sciences Prof. Wilhelm Trendelenburg, of the University of Berlin, spoke on 'The Relation of Physiology to Physics.' This problem falls into three parts: the question of the share of physiology in the acquirement of a knowledge of the principles of physics, the question of the part played by physics in the sense perception and, in studying the problem from a deeper philosophical angle the question of the basic principles of research in both sciences and the compatibility of the 'world views' based on them.

The declarations of physics concern an "objective" external world, assumed hypothetically to exist, although adequate scientific proof of its existence cannot be furnished. But all knowledge of physical objects existing outside ourselves is derived through subjective sense perceptions, hence, to that extent, physics is, essentially, subordinated to physiology. It is of interest to the physicist to obtain a measure with which to test the subjectivity of the various perceptions. In all the

more delicate inquiries the senses, such as smell taste, touch, sense of warmth, sense of equilibrium and even hearing, must be eliminated, which leaves sight as the physical sense that is the organ of apprehension *par excellence*. Of the various functions of the eye, visual acuity functions most accurately. Accordingly, the physicist always seeks to reduce the establishment of differences of shades of light (for example, in the case of light absorption by solutions or the blackening of photographic plates) to coincidence or space measurements by the interposition of suitable apparatus. The brownian movement places a physical limitation on the sensitiveness of the various types of apparatus. The physiologic limitation is reached at the place where the points to be observed are no longer perceived to be separate and distinct. That is the case when on the retina, the space separating the images is considerably less than 0.001 mm, for then the stimuli no longer strike different retinal elements.

The second question concerns the physical theory of the various organs of sense. In recent years the mechanism of general nerve conductions has been studied by means of the Einthoven thread galvanometer. In observations on the acuity of smell it has been found that butterflies are capable of detecting at considerable distances the presence of almost unbelievably small concentrations of substances. Investigations on the smallest quantity of light that the human eye can detect following complete accommodation to the dark show that fifty photons suffices to produce a single light sensation. In continuous illumination, about three times as many photons per second are required. According to Noddack, a single light quantum to each of the retinal rods is sufficient for the production of light perception. Physicists have completely changed their views concerning the nature of light. How closely is physiology bound to the changing status of physical research? Would a "crisis" in physics bring about a crisis in physiology? Trendelenburg holds that, in spite of the recent upheavals in physics, one cannot speak of a crisis in that science but only of the overthrow of certain theories. That there should be a succession of theories lies in the nature of scientific research. One must take the attitude that all one can demand of a theory is that it shall be reconcilable to all ascertained facts that come within its scope. Physiology needs not to reestablish its claims to its factual acquisitions but needs only to reinterpret them.

From the lofty pinnacle of the philosopher, therefore, one views the following remarkable prospect. Physics can obtain no knowledge that is not colored, as it were by physiology, while physiology cannot, on its own account, make any final pronouncements without consulting physics. Will the two theoretical structures support each other, or can problems arise that will effect the downfall of both? Such a menace lies in the psychophysical problem, which takes a position before all science based on observations and is independent of it. Research in the natural sciences can reveal only physical facts. The specific character of conscious experience on the 'inside' of the physiologic processes is not accessible to such research.

Exhibits by the Public Library

The Badische Landesbibliothek in Karlsruhe makes a practice of organizing instructive exhibits. Just now the library is coming to the aid of the public health service. Under the heading "Literature on Health Culture" numerous manuscripts, printed works and pictures dating from the ninth to the nineteenth century have been combined in an exhibit. Of particular interest are the illustrations found in books and manuscripts produced about the year 1000 in the Reichenau cloister on Lake Constance. Then there are old prints that shed light on the development of anatomy surgery and education of the people in hygiene and health legislation also works of Frank and Mai, Baden's pioneers in the field of public health culture.

AUSTRALIA

(From Our Regular Correspondent)

Feb 20, 1934

Australasian Medical Congress

The fourth session of the Australasian Medical Congress (British Medical Association) was held at Hobart, Tasmania, the southernmost city in Australia.

CANCER RESEARCH AND TREATMENT

In 1900 the death rate of cancer in Australia was 57 per hundred thousand persons. In 1931 it was 105. For a time it was thought that this increase was fictitious, being the result of closer study and more accurate diagnosis. The time for this theory, true as it possibly was between 1900 and, say, 1910 has passed. In a scattered population such as exists in Australia, the distribution of radon is more convenient than the use of the element itself. Other advantages are that the patient under treatment by gaseous radium can leave the hospital as soon as the application is made. The danger of loss is negligible. The radium bomb has been definitely considered uneconomic, conditions requiring the bomb can be as effectively treated by high voltage roentgen therapy. Great economy is achieved, as all available energy from the radium is collected and used, the radium is never idle, many more patients can be treated, and the needles can be bent and prepared according to the specification of the surgeon. During the last seven years a sum of £373,165 has been allotted for the cancer campaign by the commonwealth and state governments and other state organizations. A total of approximately 12 Gm of radium has been put into use. Cancer clinics have been instituted at eighteen large metropolitan hospitals as well as a number of extrametropolitan hospitals. In the four years since treatment by radium was begun on an organized basis, radium has been used in the treatment of approximately 10,000 cases of cancer. The number of cases treated by means of x-rays or surgery or by other methods in which radium has had no part is not known.

As to the success achieved on the one hand the death rate from all forms of cancer has increased from 96 to 105 per hundred thousand in the last four years. On the other hand, although sufficient time has not elapsed to enable figures to be given in terms of the five-year series, the results of treatment are definitely improving, and the mortality statistics for 1931, based on the estimated population in the age groups for that year, showed a decline in cancer mortality in all such groups under 65 years of age.

Dr L J Clendinnen of Melbourne discussed the present status of radium in the treatment of cancer. In cancer of the tongue he said, radium treatment has been disappointing. There is an immediate response to its treatment with radium, but the growth soon recurs nearby. The use of radium has displaced surgical operation in the treatment of lip cancer, because radium is able to deal with the infiltrating border of the growth in a way that is not possible by surgical operation. In cancer of the breast, Dr Clendinnen quoted figures of 218 patients treated in Melbourne in the last five years and showed that, of the patients in the inoperable stage treated by operation, 100 per cent had growths in adjacent areas within six months of the operation. Among the corresponding class treated with radium the local recurrence rate was 13 per cent. He quoted these figures in support of the contention that cancer of the breast, incompletely removed would recur more quickly than if it was treated by radium. Finally he referred to cancer of the uterus. Every patient who had sought relief from the condition he said, had the disease in an advanced stage. He made a plea for the education of the public in the early signs and symptoms of cancer of the uterus so that patients may

apply for treatment while there is some hope of its being successful

The pathologic aspect of the cancer problem was discussed by Dr J V Duhig of Brisbane, who said that until recently the cancer pathologist did not see much beyond the horizon of fixed tissue histology. Today no review of the pathology of cancer could be even moderately complete without a survey of the work of the experimental cytologist, pathologist and biochemist, and latterly the physicist.

Dr E H Molesworth of the University of Sydney, who read a paper on the status of roentgen therapy in the treatment of cancer, said there was a strong tendency on the part of many persons to regard roentgen treatment and radium treatment as separate entities. In reality there was exactly the same difference between the two as there was between treatment by radium implanted in the tissues surrounding the growth and that by radium at a distance. Ultimately only economic considerations would determine whether a roentgen tube radium at a few centimeters distance, or a radium bomb would be employed for a tumor in any given situation.

In a discussion on the surgical treatment of cancer, Dr F P Sandes of Sydney said that cancer surgery had become a definite specialized branch of the healing art and that the time was long past when cancer should be regarded solely as a surgical disease. Cancer treatment was no longer individualistic but a matter for team work. The surgeon should be at the head of the team, but he would not be able to occupy this position unless he trained himself to fill it. In reference to work of cancer immunology carried out on animals he said it was not too much to hope that in the near future the results obtained might be made applicable to man.

An interesting observation was made by Professor Chapman of Sydney, who investigated the cancer incidence among road workers who had been handling tar for the past thirty years. He found that cancer was less common than in corresponding age groups of the general population.

Introduction of Disease by Airplane

The development of airplane communications with Australia, traversing, as they do, the areas of endemic disease in the 'East, has necessitated the provision of special quarantine arrangements in Northern Australia. With the transit time reduced to about five days from these endemic areas, a real danger has been introduced. In consultation with other countries, regulations are now being framed whereby all persons arriving in Australia from the north will be required to have been vaccinated recently against smallpox. Otherwise they will be vaccinated at Darwin. Persons suspected of carrying other dangerous diseases will be detained at the new quarantine station that is to be built at Darwin. Owing to the rarity of smallpox in Australia it is felt that the people are protected by effective vaccination. A serious outbreak in any of the thickly populated districts would have serious consequences. The England-Australia air mail will traverse some of the danger areas of the world where smallpox, cholera and yellow fever are rife. Strict measures must be taken to protect Australia from this menace. A bacteriologic and diagnostic laboratory is also being constructed at that center, which is the first port of call of airplanes arriving in Australia. Tropical disease is receiving increased attention in Australia today. Dr R W Cilento has been appointed research officer in Tropical Diseases at the School of Tropical Medicine at Sydney.

Infant and Maternal Welfare in New Zealand

Another low record for infant mortality, 32.15 per thousand live births, has been established for New Zealand. This is also a world record. The birth rate was also the lowest on record. The maternal figures are not so stimulating. The

total puerperal mortality rate has remained practically stationary since 1927. The mortality from the toxemias has risen slightly, that from the 'accidents' of pregnancy has risen considerably, while the mortality from septic abortion has risen alarmingly. On the other hand the mortality from puerperal sepsis, excluding septic abortion, shows a most gratifying fall from 2.01 in 1927 to 0.68 in 1931. The rising returns of mortality from septic abortion are giving the New Zealand authorities great concern. Out of twenty-nine fatal cases that were officially investigated in the year 1931 twenty-six occurred in married women, which indicates that the incentives to abortion arise mainly from social and economic circumstances and not from loose living. Here is one of the most difficult problems in the whole field of maternal mortality.

During the past ten years a generous provision of hospital beds for midwifery has been made and it now amounts to one bed per thousand of the white population. During the year under review, 70 per cent of the total births took place in hospitals. It is interesting to note that there were far fewer instrumental deliveries; the forceps rate having fallen from 14.5 per cent in 1927 to 9.15 per cent in 1931. Hospital deliveries have also enabled a far wider application of the principles of surgical asepsis. It is a world-wide problem that the rising sepsis mortality from criminal abortion should counteract the improvement that is gained in the mortality from sepsis following labor. There is a trend of unofficial opinion in these parts of the world which tends toward the continental outlook on abortion.

Tetanus from Catgut

Considerable disquietude has been occasioned by the occurrence in New South Wales during the past twelve months of four cases of tetanus following surgical operations in which catgut was used. The usual method of attempted sterilization adopted is by means of red mercuric iodide and alcohol. Samples of catgut so treated have been shown bacteriologically not to be sterile and tetanus bacilli have been obtained from cultures.

Typhoid from Oysters

An epidemic of twenty-four cases of typhoid is in progress in Brisbane. Investigations by the health department showed that the patients were all supplied with oysters by one vendor who obtained them from beds that were in close proximity to the main sewer into the bay. Typhoid bacilli were isolated from samples of oysters taken from this bed.

Marriages

- EUGENE JOSEPH LOY, Petersburg, Ky., to Miss Alberta N. Sheldon of Dupont, Ind., at Lexington, Ky., Nov. 22, 1933.
JEREMIAH ROBERT JOHNSON to Miss Lois Ellis, both of Ramsey, N. C., at Chesterfield S. C., Dec. 23, 1933.
CHESTER A. KISSINGER to Mrs. Edward Higgins, both of Milwaukee, at Woodstock, Ill., February 17.
WENDEL J. BURKETT PITMAN, N. J., to Miss Anita L. Sprigman of Woodbury, February 17.
JULIUS HOWARD STOKES McBEE, S. C., to Miss Helen Rhoad of Strawberry, Dec. 28, 1933.
CARLOS IZLAP GREIN to Miss Kittie Albergotti, both of Orangeburg S. C., January 14.
ROY M. LANIER Brownsville, Tenn., to Miss Mildred Jones of Memphis, February 16.
HARRY GREENSTEIN to Miss Ethel Rose Simon, both of Chicago, February 1.
ARTHUR KARL KOFF to Miss Dorothy Hess, both of Baltimore, January 17.
JAMES E. JOSES to Miss Gladys Haws, both of Indianapolis, January 25.

Deaths

Ernest Scott • Columbus, Ohio, Ohio Medical University, Columbus, 1900, professor of pathology, Ohio State University College of Medicine since 1915, and assistant professor of veterinary pathology, 1908-1915 professor of histology, 1903-1904, and professor of pathology, 1904-1910, at his alma mater, professor of pathology, Starling-Ohio Medical College, 1908-1915, member of the American Association of Pathologists and Bacteriologists and the American Society of Clinical Pathologists, bacteriologist to the city board of health, 1904-1908 on the staff of the Columbus State Hospital and pathologist to the University Hospital, aged 58, died, March 5, at his home in Westerville, of coronary thrombosis

William A. Frontz • Baltimore, Johns Hopkins University School of Medicine, Baltimore, 1911, member of the American Association of Genito Urinary Surgeons and the American Urological Association, associate professor of urology at his alma mater, served during the World War, aged 48 associate editor of the *Journal of Urology*, visiting urologist to the Sinai Hospital and assistant visiting urologist to the Johns Hopkins Hospital, where he died, March 23, of heart disease

Maurice Packard • New York, Columbia University College of Physicians and Surgeons, New York, 1900, on the staffs of the Gouverneur Hospital, Hospital for Joint Diseases, Broad Street Hospital and the Jewish Maternity Hospital, New York, and the Home for the Aged Infirm, Yonkers, aged 57, died, March 15 of heart disease, while en route to the Pan American Medical Congress

William Ralph Campbell • Major, M. C., U. S. Army, Omaha, Neb., University of Colorado School of Medicine, Denver, 1916, served during the World War, entered the medical corps of the U. S. Army as a first lieutenant in 1918 and in 1929 was made a major, aged 44, died March 9, in the Station Hospital, U. S. Army, Fort Leavenworth, Kansas

Norman Smith Starr, Oklahoma City, University of Michigan Homeopathic Medical School, Ann Arbor, 1915, member of the Associated Anesthetists of the United States and Canada, served during the World War, aged 45 died, January 30, in the Veterans' Department of the Oklahoma State Hospital, Norman

Luther Franklin Robinson, Ullin Ill. Hospital College of Medicine, Louisville, Ky., 1889, member of the Illinois State Medical Society, past president and secretary of the Pulaski County Medical Society, for fifteen years bank president formerly mayor, aged 82, died, February 15, of arteriosclerosis and acute nephritis

James Walter Reese, Cleveland Ohio State University College of Homeopathic Medicine, Columbus, 1915 served during the World War, formerly member of the city health department, aged 41, died, March 2, in the U. S. Marine Hospital, of acute meningitis, chronic sinusitis and carcinoma of the left antrum

Lewis Harry Adler, Jr. • Philadelphia, University of Pennsylvania School of Medicine, Philadelphia 1888 member of the House of Delegates of the American Medical Association in 1911, fellow of the American College of Surgeons, on the staff of the Charity Hospital, aged 69 died, March 5, of heart disease

John Marion Wolfe, Jacksonville, Ill., Barnes Medical College, St. Louis, 1898, member of the Illinois State Medical Society past president of the board of education on the staffs of Our Saviors Hospital and the Passavant Memorial Hospital, aged 62, died, February 23, of toxemia and nephritis

William P. S. Henry, Everett, Pa., University of Pennsylvania School of Medicine, Philadelphia 1882 member of the Medical Society of the State of Pennsylvania past president of the Bedford County Medical Society served during the World War, aged 77 died, February 17 of pneumonia

Vito Witting • Urbana Ill., Royal University of Florence Faculty of Medicine and Surgery Florence Italy 1926 in 1928 vice secretary to the Italian Congress of Medical Radiology aged 30, on the staff of the Carle Memorial Hospital where he died February 11 of lymphatic leukemia

Robert Joseph Shea, New York Cornell University Medical College, New York 1914 member of the Medical Society of the State of New York, fellow of the American College of Surgeons on the staff of St. Elizabeth's Hospital aged 43 died, February 15 of coronary sclerosis

Alexander Chace Sanford, Newport, R. I., Bellevue Hospital Medical College, New York, 1898, member of the Rhode Island Medical Society secretary of the Newport County Medical Society, aged 59, visiting physician to the Newport Hospital, where he died, February 2

William Farquhar Bacon • York Pa., Bellevue Hospital Medical College New York, 1882, member of the House of Delegates of the American Medical Association in 1908, and from 1916 to 1922, on the staff of the York Hospital, aged 74 died, February 15, of heart disease

Angell Sigvart Hoiland • Minneapolis, University of Minnesota Medical School, Minneapolis, 1910, fellow of the American College of Surgeons, aged 49, on the staff of the Lutheran Deaconess Home and Hospital, where he died, February 22, of valvular heart disease

Thomas Francis Healey, Stamford, Conn., Long Island College Hospital, Brooklyn, 1908 member of the Connecticut State Medical Society, served during the World War aged 51 died suddenly, March 16, in the Stamford Hospital, of perforated duodenal ulcer and peritonitis

Henry Seaton Hutchison, Toronto, Ont., Canada, University of Toronto Faculty of Medicine 1900, assistant professor of medicine at his alma mater, physician in charge of the outpatient department of the Toronto General Hospital, aged 54 died, January 6

James E. Mason, Stettler, Alta., Canada, Western University Faculty of Medicine, London, Ont., 1914, fellow of the American College of Surgeons, ship surgeon on the S. S. *Niagara*, aged 48, died, in January, on board ship on the Pacific Ocean

Elmer Ellsworth Vorhies, Cambridge, Ohio, Starling Medical College, Columbus, 1893, member of the Ohio State Medical Association, formerly county coroner and state senator, aged 68, died, February 11, in the Swan Hospital, of heart disease

Charles Tracie Henderson, Gouverneur, N. Y. Syracuse (N. Y.) University College of Medicine, 1911, member of the Medical Society of the State of New York, on the staff of the Stephen B. Van Duzee Hospital, aged 54 died, February 7

Henry A. Brierley, Pccuhar, Mo. University Medical College of Kansas City, Mo., 1895, member of the Missouri State Medical Association aged 65 died, March 1, in the Wesley Hospital, Kansas City, Mo. of coronary thrombosis

Herbert Halsey Hurd • Chippewa Falls, Wis. Rush Medical College, Chicago, 1878 past president of the Chippewa County Medical Society aged 81, died, March 9, in St. Joseph's Hospital, as the result of a fractured hip received in a fall

La Vern I. Rogers • Galesburg, Mich. University of Michigan Medical School, Ann Arbor, 1907 aged 51, on the staffs of the Borgess Hospital and the Bronson Hospital, Kalamazoo, where he died, February 12, of pneumonia

Albert E. Hoff • North Bend Neb. Central Medical College of St. Joseph Mo. 1898, fellow of the American College of Physicians, past president of the Dodge County Medical Society, aged 63, died, January 27, of heart disease

Alfred Jesse Stewart, Ontario, Calif. Hahnemann Medical College and Hospital, Chicago, 1896 College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1906, aged 65, died, January 13

John Wesley Robinson, Grand Rapids, Mich. Illinois Medical College, Chicago 1900, on the staff of the Michigan Soldiers' Home Hospital, aged 62 died, March 7, in the Butterworth Hospital of cerebral hemorrhage

Manly Eugene Siler, Mercer Tenn., Memphis Hospital Medical College, 1907 member of the Tennessee State Medical Association for many years president of the school board, aged 51, died, February 12, of heart disease

Henry Wade, Starksboro, Vt. University of Vermont College of Medicine, Burlington, 1883, member of the Vermont State Medical Society, health officer, aged 81, died, January 2, of injuries received in an automobile accident

Carlton Victor Wilder, Atlantic, Iowa, Hahnemann Medical College and Hospital, Chicago 1882, member of the Iowa State Medical Society on the staff of the Atlantic Hospital, aged 82, died February 13 of heart disease

Algernon Winston Walden, Owingsville Ky., College of Physicians and Surgeons Baltimore 1883 county health officer at one time member of the state board of health, aged 77, died, February 28 of cerebral hemorrhage

Le Roy Boyd, Birmingham Ala., Medical College of Alabama Mobile 1887 member of the Medical Association of the State of Alabama aged 70 died, February 21 of angina pectoris and arteriosclerosis

Campbell Ford, San Francisco University of California Medical Department 1891, member of the California Medical Association, died 69, died, February 11, of an incised wound of the throat presumably self inflicted

Edward Evan Sargent & Le Roy, III, Miami Medical College, Cincinnati, 1893 for twelve years president of the school board, aged 65 died February 20, in the Brooklyn Hospital, Normal, of agranulocytosis

Arthur E Walker & Anthony Kan Medical College of Indiana, Indianapolis 1892, past president and secretary of the Harper County Medical Society, aged 73 died, February 5, of cerebral hemorrhage

Osmond Nason Hoyt, Long Beach Calif., Hahnemann Medical College and Hospital Chicago 1879 formerly superintendent of the state board of health of South Dakota aged 90 died Dec 30, 1933

George L Morgenthau & Chicago Dartmouth Medical School Hanover, N H 1888 for many years on the staff of the Michael Reese Hospital aged 71 died March 21 of eczema and morphine poisoning

George Dill Rowe, 1st Providence R I Medical School of Maine, Portland 1889 member of the Maine Medical Association aged 67, died March 3 when he was unable to escape from a burning hotel

Octavus P Larpe & Philadelphia Medico-Chirurgical College of Philadelphia 1898 aged 65 died March 14 in the Temple University Hospital, of cellulitis of the neck and septicemia

Oscar O Blakeslee, Cincinnati Ohio College of Physicians and Surgeons, Baltimore 1882 city health officer aged 80, died February 28 in the Brown Memorial Hospital of pneumonia

Birt B Reeder, Clarksville Fla Georgia College of Eclectic Medicine and Surgery Atlanta 1910, aged 54 died March 2, in a hospital at Dothan Ala of carcinoma of the stomach

Joseph Lemuel Campbell, Bristol Penn Chattanooga Medical College 1902 member of the Tennessee State Medical Association aged 58 died, February 17 of myocardial insufficiency

Alexander Abraham Aron, Philadelphia, University of Pennsylvania School of Medicine Philadelphia 1906 aged 50, died March 5, in the Mount Sinai Hospital, of cardiovascular disease

Bertha Caroline Downing Kennettunk Maine Women's Medical College of Pennsylvania Philadelphia 1896 aged 72, died, Nov 21, 1933, of chronic nephritis and intestinal hemorrhage

George Munson Vindegrift, New York University of the City of New York Medical Department 1879 aged 80, died suddenly, February 10 in Snow Hill Md of heart disease

Edward Sutherland Winbiger & Alexis, III Rush Medical College, Chicago 1893 for many years member of the school board, aged 66, died, February 12, of hepatic cirrhosis

James Mitchell Hartley, Hollywood Fla Atlanta Medical College, 1915 member of the Florida Medical Association aged 45, died, February 19 of a self inflicted bullet wound

Albert Asa Cannaday & Roanoke Va University of the City of New York Medical Department, 1888, aged 70, died, February 22, in the Shenandoah Hospital, of Ludwig's angina

Thomas Emmett McDermott, Minneapolis, Chicago Medical College, 1883, aged 77, died, February 20, in St Barnabas Hospital, of uremia and carcinoma of the prostate

Mat Marshall McRee, Dallas, Texas, Vanderbilt University School of Medicine, Nashville Tenn, 1901, aged 57, was found dead, February 26, of a self inflicted bullet wound

George M Stillman, Argyle, N Y, Albany Medical College, 1885, formerly county coroner, aged 75 died, February 24, of arteriosclerosis and chronic myocarditis

Frederick Kellogg Hollister, East Hampton, N Y New York Homeopathic Medical College and Hospital, 1895, aged 64 died, February 4, of carcinoma of the larynx

James Willard Bazell & Winslow, Ariz, University of Louisville (Ky) School of Medicine, 1909, formerly health officer of Winslow, aged 52, died, Dec 22, 1933

Lamont B Smith, Youngstown, Ohio, Cleveland Homeopathic Medical College, 1898, aged 56, died, February 12, in St Elizabeth's Hospital, of cardiorenal disease

James Rutherford Bingham & New York, Trinity Medical College Toronto, Ont, Canada, 1893, aged 71, died, March 9, in the Doctors Hospital of pneumonia

Thomas Sheldon Taylor, Schellsburg, Pa, University of Louisville (Ky) School of Medicine, 1907, aged 47, died, February 10 in Miami Fla, of acute nephritis

Samuel Addison Roberts, Salem, Ind., University of Louisville (Ky) School of Medicine, 1882, county health officer aged 73, died March 2, of nephritis

S Hilton Baker, Killbuck Ohio, Medical College of Ohio Cincinnati 1887, member of the Ohio State Medical Association aged 69, died March 8 of nephritis

Minnie Dell Baker, Nashville, Mich, Hahnemann Medical College and Hospital Chicago 1891, aged 75, died, in February, at Grand Rapids of myocarditis

Oscar Lee Wilson, Rushville Neb Medical College of Indiana, Indianapolis 1879, aged 76, died, January 20, of chronic myocarditis and arteriosclerosis

Parker Fiske Wesley, Haviland, Kan, Hospital College of Medicine Louisville Ky, 1905 aged 50, died February 19, in a hospital at Pratt of acute nephritis

George W Richardson, Dundee, Mich, University of Buffalo School of Medicine 1878, also a pharmacist, aged 81, died March 7, of cerebral hemorrhage

Henry Marcellus Johns, Waco, Texas University of Tennessee Medical Department Nashville, 1895, aged 70, died, January 31 of cerebral hemorrhage

Jeremiah R Sturtevant, Theresa N Y Albany Medical College 1872, aged 86, died, January 19, of chronic myocarditis and concussion of the brain

Robert Lincoln Watkins & New York University of the City of New York Medical Department, 1887, aged 70, died, February 25 of lobar pneumonia

Frederick Graham Brien, Elphinstone, Manit Canada, University of Manitoba Faculty of Medicine, Halifax 1894, aged 71 died Dec 30 1933

Basil Dennis Spalding, Richmond Va, University of Maryland School of Medicine, Baltimore 1891 aged 70, died February 17, of myocarditis

John Borsman Rone, Oklahoma City University of Louisville (Ky) School of Medicine 1893, aged 71, died suddenly February 8, of myocarditis

William Lockwood West New Martins, Ohio, Jefferson Medical College of Philadelphia, 1874 aged 83, died in February, of pneumonia

Edward Payson Ward Whitmore Lake, Mich Chicago Medical College 1887 aged 71, was found dead, February 16, of valvular heart disease

Frank M Wright, Indianapolis Indiana Eclectic Medical College Indianapolis 1889 aged 75, died February 14 of pulmonary tuberculosis

Lewis F Hammonds, Dunnville Ky, University of Louisville School of Medicine 1897, aged 65, died, February 21 of cerebral hemorrhage

William Clark Watson & Bridgeport Conn Long Island College Hospital Brooklyn, 1897, aged 60, died January 22, of heart disease

Austin Roy Harman Lubec, Maine Jefferson Medical College of Philadelphia, 1896, aged 61, died, January 22, of angina pectoris

William Arnold Christian & Chicago Cincinnati College of Medicine and Surgery, 1899, aged 62 died, February 4, of brain tumor

Joseph L Smith, Hoagland, Ind, Eclectic Medical Institute Cincinnati, 1878, aged 82, died, February 22, of chronic myocarditis

Emil C Schoene, Milwaukee Chicago Physio Medical College, 1895, aged 70, died suddenly, February 13, of coronary sclerosis

John Albert Christilaw, Winnipeg, Manit, Canada Manitoba Medical College, Winnipeg, 1914, aged 61, died, January 23

Cyrus Henry Cutter, Aurora Ill, Rush Medical College, Chicago, 1881, aged 76 died, March 4, of coronary sclerosis

Henry Rosenblith, Chicago Illinois Medical College, Chicago, 1900, aged 63 died, February 14, of coronary thrombosis

Daniel Webster Shier, Weston, Ont, Canada, Trinity Medical College, Toronto, 1895, aged 65, died, January 8

Aaron G Rogers & Parker, Ind (licensed, Indiana, 1897), aged 84, died, February 9, of carcinoma of the prostate

Correspondence

TREATMENT OF AMEBIASIS

To the Editor —There is a communication in THE JOURNAL, Dec 2, 1933, pages 1819-1820, signed by Dr J C Geiger and others, with respect to the various drugs used in the treatment of human amebiasis due to infestation with *Endamoeba histolytica*. In this, reference is made on page 1820, column 2, paragraphs 2 and 4, to the use of "bismuth subcarbonate in massive doses" in the treatment of this infestation, and a paper by the late Dr W E Deeks and myself in the *American Journal of Tropical Medicine* (5 97 [March] 1925) is mentioned. Kindly permit me to correct an error here.

It is bismuth subnitrate, not the subcarbonate, that was first used in this manner by Dr Deeks. I do not have at hand this copy of the *American Journal of Tropical Medicine* and my supply of reprints has been exhausted. I am referring, however, to the original paper which was entitled "The Etiology, Symptomatology and Treatment of Intestinal Amebiasis" by Dr Deeks and myself. This appeared in the Proceedings of the International Conference on Health Problems in Tropical America, published by the United Fruit Company in 1924, pages 271-308.

I make this correction because Dr Deeks and myself at first and myself later tried bismuth subcarbonate in massive doses and found that the results were not as good as when the subnitrate was given. The dose is a heaping teaspoonful well mixed in milk or water from three to five times a day.

I have used this treatment since it was first advocated by Deeks and Shaw in the *Medical Record* Nov 13, 1909.

In acute dysentery its use should be supplemented by emetine when this can be given under experienced supervision. It has been known for many years and reported that emetine is a dangerous drug and that its toxic effects cannot be predicted. These may come on after the first dose or later at any time during the course of treatment. It is particularly dangerous in patients with any form of myocardial degeneration or weakness. At present I would not advocate the use of bismuth subnitrate in the acute fulminating types of amebic dysentery, as I believe that valuable time might be lost. These cases are in my opinion best treated by a wide open cecostomy and thorough irrigations through the cecostomy and through the rectum as well. This method was used by Dr A B Herrick when he was chief of the surgical clinic in the old Ancon Hospital, during the construction days of the Panama Canal, before Rogers had reintroduced emetine and it was found to be very effective in the acute fulminating types and also in the chronic types that did not yield to other treatment.

In the milder types of amebic dysentery, however, and especially in the chronic forms of infestation without diarrhea and dysentery I have found bismuth subnitrate very useful indeed. It should be given over a period of two or three months and I have never seen any harm result, except in two cases in which the bismuth was contaminated with antimony and these were long ago.

Several theories have been advanced as to why bismuth subnitrate is efficacious and these were discussed by Dr Deeks and myself in the paper referred to. However at this time I believe it is efficacious solely as an astringent. Very likely it also cleans out the amebas living in the lumen of the bowel and prevents these from entering the tissues.

In a paper entitled *Human Amoebiasis Due to Infection with Entamoeba Histolytica* (*Ann Trop Med & Parasitol* August 1928) I stated that I believe if the ulcers and other pathological lesions of the large intestine can be caused to heal the amebas in the tissues will disappear and I am still of this belief otherwise there would be no permanent cures.

I should not like to be understood as claiming that bismuth subnitrate is a true specific and always cures the infestation, since I have used other drugs frequently in conjunction with it, but for me it is a sheet anchor.

In addition to the articles you mention that may be consulted with respect to amebic dysentery in the footnote to your review of this subject in THE JOURNAL, Nov 18 1933, page 1639, permit me to suggest "The Amoebae Living in Man," by Clifford Dobell, published in 1919 by William Wood & Co., New York, and the chapter on the "Entamoebae of Man," in "Protozoology," by C M Wenyon, volume I, page 84, also published in 1926 by William Wood & Co. Any one interested in the study of human amebiasis will find these authoritative and instructive.

In several communications received from friends at home they have mentioned the difficulty they are encountering in using the wet fixation and Heidenhain's iron hematoxylin method of staining. I had much trouble years ago in learning to use this method correctly. In the *Annals of Tropical Medicine and Parasitology* 8 133-320 (July) 1914, is an article of mine entitled "A Study of the Entamoebae of Man in the Panama Canal Zone." In this article I put down all the troubles which I encountered and endeavored to describe in detail the various methods of wet fixation and staining which were in use at that time and are still useful today. Dr R B H Gradwohl described wet fixation and staining in THE JOURNAL Jan 6, 1934, page 65, which covers most of the essential points. I myself should advise the use of slides and not of cover glasses, as the latter are difficult and very troublesome to handle.

I have found that fixation in a modified Schaudinn's fluid, consisting of two parts of physiologic solution of sodium chloride saturated with corrosive mercuric chloride and one part of 96 per cent or absolute ethyl alcohol, plus the addition of from 25 to 5 per cent of glacial acetic acid, has given me better results than the aqueous solution saturated with corrosive mercuric chloride, without the acetic acid. The weaker acetic acid solution is better for the delicate trophozoites in acute and subacute dysentery, and the stronger solution gives better fixation for cysts. I believe that from twenty to sixty minutes is too long a time for fixation of thin stool smears since most authorities find that from five to ten minutes is ample. I prefer to fix at room temperature, as the heated fixing solutions produce artefacts, as has been pointed out by Leland Cleveland.

In step 6 of his article, Dr Gradwohl does not mention that the preparations should be thoroughly rinsed after mordanting. It is very important that this be done, two separate containers holding at least 1 liter of water each being used. If the preparations are not thoroughly rinsed, an excess of the mordant is carried over into the hematoxylin solution, making decolorization difficult, and the amebas are likely to appear a dirty yellow with indistinct nuclei instead of showing a clear gray cytoplasm with sharply defined and clear cut black or deep purple nuclei.

Also in step 6 Dr Gradwohl has omitted to state that the hematoxylin solution should be diluted one half with distilled water before using. The 1 per cent stock solution is too strong. It is not necessary though advisable to allow the solution to ripen for four weeks before using. If it is thoroughly aerated by allowing a current of air to pass through it over night it will be ready for use in the morning. The diluted solution should be filtered after use into a clean bottle. Later this filtered diluted solution should be used with an equal part of the original stock solution diluted one half then filtered again into the second bottle and so on until the original stock solution is used up when there will be two bottles of stain. These can be used undiluted repeatedly and they improve with use until

the hematoxylin is finally precipitated. This can be told by adding a few drops of the stain to a test tube half full of tap water. If the resulting color is yellow or green, the stain is no longer useful, if the color is blue or violet, the stain is still good. Only a good quality of distilled water should be used for diluting the stool solution, tap water or alkaline water will precipitate the hematoxylin or, rather, the hematin, which is the active staining principle. The staining solutions should be kept in brown glass bottles, away from the light.

Free living amebae can be obtained easily in the zoological laboratories of most of our universities at home. If these are used for practice the necessary skill and judgment can be obtained by those unfamiliar with the method more readily than by using stool smears in the beginning. Wet fixation and staining is a tiresome method but I do not know of any other that will give such accurate results in distinguishing the five species of amebae found in the stools.

WILLIAM M. JAMES, M.D., Panama, R. P.

DENTAL CARIES

To the Editor—I have read with interest the editorial on dental caries published in *The Journal* of February 17 and I would like to submit the following comment.

There have appeared recently in several periodicals (including *Science* 78:419 [Nov.] 1933) articles by Bunting and his associates in the University of Michigan which claim emphatically and with an air of finality that the etiology of dental caries has been fully established by them and that *Lactobacillus acidophilus* is the active causative agent.

Such an assertion if based on adequate scientific evidence would in the last analysis imply three things: (1) that caries is caused by a specific organism, (2) that the organism is *Lactobacillus* and (3) that the *Lactobacillus* is unequivocally *L. acidophilus*.

1. The bacterial etiology concept still lacks general support. This is revealed by a general review of papers appearing in dental journals and by unpublished statements of investigators of dental pathology. So-called proof of bacterial etiology relationship appears still to be far from complete.

2. Researches during the past six or seven years have impressed on me the numerical importance of high acid-producing streptococci in caries and noncaries mouths compared with *Lactobacilli*. By following the quantitative plating method devised and recommended by Rodriguez (*J. Am. Dental A.* 17:1711 [Sept.] 1930) my associates and I demonstrated the occurrence of millions of high acid-producing bacteria per cubic centimeter of saliva but these proved, on close observation to be streptococci essentially, instead of *Lactobacilli*, as featured by Rodriguez and later by Mrs. Hadley. If bacterial acids do play an important role in dental caries is it not plausible that streptococci should be even stronger contributing factors in caries production than *Lactobacilli*?

3. In spite of certain isolated claims to the contrary, the *Lactobacilli* of the mouth and tooth cavities are of definite "oral" type and differ in several important respects from the "intestinal" types, including *L. acidophilus*. Some of these fundamental differences were stressed by me (*Jale J. Biol. & Med.* 4:485 [March] 1932). Morishita (*J. Bact.* 18:181 [Sept.] 1929) recognized the aciduric organisms of the mouth and intestine as being different. Researches of the past two years have strongly confirmed my belief in the diversity of the two general types.

Some writers claim to have shown that mouth *Lactobacilli* may be dissociated into rough forms which resemble *L. acidophilus* of the intestine. Their observations were incomplete and not convincing. More recently, Weinstein, Anderson and Rettger (*J. Dental Research*, August 1933) failed in attempts

to derive one type from another. Dissociation was effected to a certain point but could not be carried further.

I do not wish to detract from the work of those whose claims are so strongly affirmed with my own. I take this occasion, however, to protest against the high powered claims made and reiterated again and again by these investigators. In the present limited state of knowledge regarding the etiology of caries conservatism is the safer course. Little can be gained for example, by referring to the mouth *Lactobacilli* as *L. acidophilus*.

I. I. RITTGER, Ph.D., New Haven, Conn.

Professor of Bacteriology, Yale
University School of Medicine

LOCAL ANESTHETICS IN ARTICULAR PAIN

To the Editor—The recent reply of Dr. J. C. Weinstein (*The Journal* of March 3 p. 714) to the criticism (January 13 p. 145) of the use of local anesthetics in articular pain (Paris letter Nov. 4, 1933 p. 1492) so supported my experience that I desire to add my own observations. I have not used such treatment in acute conditions.

In chronic painful articular conditions two recent cases have convinced me of the efficacy of local anesthesia in certain cases. I would feel hesitant in using it in unquestioned infection or in polyarthritis. But occasionally a case appears in which there are no definite demonstrable infective foci and drug therapy appears to be ineffectual. These persons are disabled, are never free from pain and have usually made the rounds of doctors and have had a session with the chiropractor.

H. M., a man aged 43 seen in bed for nearly one year after a fall on the ice had severe pain in and about the right hip joint. The pain was worse at night and was lancinating. His only relief was through occasional opiates. He was financially unable to have medical care. He walked only with effort and pain. One cubic centimeter of 1 per cent quinine and urea hydrochloride was given deep into the muscles about the right hip joint. Severe pain followed for about twelve hours followed by nearly complete relief. A second treatment was given four days later. The nocturnal pain ceased. He was able to walk and today four months later he has only a slight limp.

T. S., a man aged 40, a C. W. A. employee referred to me by the preceding patient had been troubled by a painful stiff right hip with darting pain down the back of the leg along the course of the sciatic nerve. This had continued for one year. He had taken some drugs but had been given many chiropractic adjustments with no relief. Physical examination showed definite infected (carious) teeth but otherwise nothing. He was advised to have the teeth cared for. In the meantime he was given 0.5 cc. of 2 per cent solution of procaine hydrochloride into the muscles about the right sciatic notch. Twenty-four hours later he reported relief. At intervals of three to five days he was given two more injections of 0.5 cc. of 1 per cent quinine and urea hydrochloride. After the second treatment he was able to dance. For a week diathermy treatments and massage were given and in the third week he was discharged free from all pain. At the end of two months he is still a grateful patient.

Naturally I know that statistics cannot be considered accurate when based on two cases but I believe that local anesthetics, administered with aseptic care in the region of a persistently painful joint should be given consideration.

R. E. LOGAN, M.D., Galena, Ill.

A CASE OF EXTRA-OCULAR MUSCULAR PARESIS TREATED WITH GLYCINE

To the Editor—A man aged 32 first came to one of us (H. N. B.), Aug. 27, 1928 complaining of a recent diplopia. Paresis was present of all the muscles of the left eye supplied by the internal and external branches of the third cranial nerve. There was only a slight ptosis of the upper lid. The patient has been under systemic treatment ever since that time. He had an extremely sluggish patella reflex. Blood examination was negative. The Wassermann reaction of the blood and spinal fluid was negative. He was given several doses of neosarsphenamine and a mercury compound and potassium iodide internally. Examination of the paranasal sinuses gave negative results. He had some infected teeth, which were removed. The possibility

of multiple sclerosis was considered and a diagnosis was made by an English neurologist of myasthenia gravis, though there was a distinct inequality of the pupils.

The history of this case has been one of continued improvement and regression. The vertical diplopia, which worried him most, would improve and so would the ptosis. The extraocular muscles of the right eye would then become affected as the left eye had been.

On the patient's return from England last summer, he was placed on ephedrine at the suggestion of the neurologist in London, and there was some improvement noticed immediately. Then (after consultation with H. H. B.) glycine was given in the hope that we would obtain benefit from its administration in this unusual case. At the end of several weeks the condition improved so much that it was no longer necessary to cover one eye with an opaque lens, for the diplopia was no longer a source of discomfort to the patient. Since in this case there had been periods of improvement under the former treatment combined with rest, we were at first inclined not to be too sanguine, but the patient is firmly convinced that this period of improvement has lasted longer and that he has approached a more normal state than at any time since the beginning of the trouble. The patient is an extremely intelligent man and has given his condition a thorough analysis and expresses himself to be delighted with the improvement made.

H. H. BEARD, PH.D.,
H. N. BLUM, M.D.,

Departments of Biochemistry and Ophthalmology,
Louisiana State University Medical Center,
New Orleans

IDIOSYNCRASY TO SALYRGAN

To the Editor—I have read with interest Dr. Carter Smith's report on the use of salyrgan in one patient over a period of three years (*THE JOURNAL*, February 17, p. 532). He states that only one instance of idiosyncrasy to salyrgan has been reported in the literature, that by Andrews in the *Lancet*, July 18, 1931. I wish to point out that Dr. Bongiorno and I reported a case of sudden death due to salyrgan in a nephrotic child, aged 4, in the *Canadian Medical Journal* (25:73 [July] 1931). The injection preceding the fatal one caused a chill fever, a morbilliform rash, anorexia and malaise. Good diuresis was obtained, whereas previous injections failed to provoke a satisfactory response. A week later the sixth and fatal dose was given, causing sudden death, which was anaphylactic in nature.

I. J. WOLF, M.D., Paterson, N. J.

THE RELATION OF THE USE OF ALCOHOL AND TOBACCO TO CORONARY OCCLUSION

To the Editor—In connection with the article of Drs. White and Sharber on the relation of alcohol and tobacco to angina pectoris (*THE JOURNAL*, March 3, p. 655) a brief report on the effect of these substances on coronary occlusion is, I think of interest.

Of 150 patients with coronary occlusion seen in private practice 52 per cent were total abstainers, 34 per cent occasionally used alcohol and 14 per cent were habitual drinkers. Of a group of 150 patients with the same age and sex ratios who did not have coronary occlusion 48.6 per cent were total abstainers, 40.6 per cent occasionally used alcohol and 10.6 per cent habitually used alcohol. There was therefore no apparent relation between the use of alcohol and coronary occlusion with the exception that one or two patients in the series developed occlusion during a period of exhaustion following a prolonged debauch. Of the same group of patients with coronary occlu-

sion, 34 per cent were nonsmokers, 36.6 per cent moderate smokers (not more than twenty cigarettes or three cigars or pipes a day) and 30 per cent were excessive smokers. Of the control group, 34 per cent were nonsmokers, 33.3 per cent moderate smokers and 32.6 per cent excessive smokers.

The number of cases analyzed is, of course, too small to warrant sweeping conclusions. Yet the figures suggest that, as in angina pectoris, so in coronary occlusion the use of alcohol and tobacco is of little if any significance.

GEORGE BLUMER, M.D.,
New Haven, Conn.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted on request.

LEUKOCYTE COUNT IN APPENDICITIS

To the Editor—A patient having the symptoms and signs of acute appendicitis has the usual leukocytosis with more than 90 per cent polymorphonuclear leukocytes. Is there any danger in doing the operation with the polymorphonuclear count 90 per cent or above? One surgeon of my acquaintance will not operate on a patient showing 90 per cent or more. Is this good surgical judgment? What change occurs if any, in the blood count of the same patient as described when the appendix ruptures? Please give other signs of a ruptured appendix. Kindly omit name.

M. D. Oklahoma

ANSWER—A percentage of polymorphonuclear leukocytes in appendicitis of over 90 indicates pus or gangrene usually with a peritonitis. Occasionally there may be pus under tension. In general, the high percentage of polymorphonuclears indicates a severe infection or a massive toxic absorption, while a high total count indicates a high resistance. No matter how low the total count a high percentage of polymorphonuclears indicates a very severe toxemia.

Following perforation there may be a preliminary rise of the total count, but when toxic absorption becomes excessive there is a drop which may extend well below normal. However, the percentage of polymorphonuclears rises rapidly to over 90.

The differential count is the most important laboratory finding to differentiate between an improved and a more serious condition.

The general condition, including pulse rate, fever, blood pressure and local symptoms, will be the deciding factor in determining the diagnosis and the probability or length of time since perforation. Since the total count is usually high early after perforation with a high polymorphonuclear percentage, the presence of a falling total count or a rising percentage of polymorphonuclears is indicative of a progressive peritonitis and a grave prognosis.

The Schilling method of differential count is of value in prognosis since the increase of early or immature forms of neutrophilic leukocytes is of serious significance regardless of the total count.

With a perforation and spreading peritonitis, the outcome is usually fatal unless the peritonitis is localized to the region of the appendix or the source is removed in the first twenty-four hours.

In most cases the peritonitis remains localized and becomes walled off. Because of this fact, most physicians do not wish to operate with a peritonitis unless the patient is seen shortly after perforation. However, unless there is evidence of the peritonitis becoming walled off by localized symptoms or a mass it is quite likely that if the peritonitis continues to spread the patient will die unless a leaking perforated appendix is removed.

With a localized peritonitis as evidenced by a mass or very localized symptoms suggesting periappendicular abscess operation should be delayed. Most of these masses will subside and after two or three months the appendix should be removed.

If the toxemia increases with evidence of a local abscess, it should be drained preferably after a week's time. The drainage should be made without opening the general peritoneal cavity either through a muscle splitting incision or, in a pelvic abscess through the rectum.

A polymorphonuclear increase of over 90 is not a contra-indication to operate. It indicates the critical time for use of

the best surgical judgment as to the necessity for immediate operation, following a careful clinical examination. Only the immediate removal of a leaking perforated appendix with a spreading peritonitis can prevent a fatal outcome, while breaking up adhesions in a walled off peritonitis or perforated appendicitis should not be done by operation in the early stages.

ADMINISTRATION OF IRON—SODIUM CACODYLATE— COD LIVER OIL

To the Editor—Will you kindly send me information concerning the following questions? What are the relative merits of iron given orally and hypodermically? What is the relative quantity absorbed by the two methods? What is the value of sodium cacodylate injections as compared with an iron injection such as Ferrasse's (serpiginous ampoule)? Do you consider cod liver of tonic value for adults?

PAUL GRAY, M.D. Hightfield, N. J.

ANSWER—Hypodermic administration avoids local action on the alimentary tract but this can be avoided also by proper administration of suitable iron salts by mouth, e. g., insoluble preparations such as ferrous carbonate or poorly ionized iron compounds such as iron and ammonium citrate. When iron is injected all of it is absorbed, but most of it so rapidly eliminated (chiefly by the large intestine) that the amount which remains in the system is probably no larger than the quantity which remains when the iron is absorbed from the alimentary tract. Arsenic, whether administered in the form of cacodylate or otherwise, acts in a different manner from iron in that the former tends to increase the number of red blood corpuscles, the latter the amount of hemoglobin when administered in suitable doses. Cod liver oil is of tonic value only when there is a deficiency of vitamin A or D or of easily assimilable fat in the diet.

LUPUS ERYTHEMATOSUS AND SYPHILIS

To the Editor—Kindly inform me as to the prognosis and the latest treatment of lupus erythematosus in a young married woman who contracted syphilis about one and half years ago and who was under neosalvarsan and bismuth treatment for that length of time. Do you think there is a possibility of any relationship between the treatment of syphilis and the skin condition? If so is it advisable to continue with the antisyphilitic treatment? Please omit name.

M.D. New York

ANSWER—The prognosis in lupus erythematosus depends entirely on the type of the disease. It is poor in the acute disseminate variety with grave constitutional symptoms and fever. In the subacute disseminate variety the outlook is fair. In the ordinary chronic discoid type the prognosis is good although the course of the disease may be capricious and recurrences are not infrequent. The latest method of treatment is by intravenous injection of gold sodium thiosulphate, beginning cautiously with doses of from 5 to 10 mg. and reaching a maximum of from 50 to 100 mg. once weekly. Serious reactions have been reported from gold therapy, but in properly selected cases the results are excellent. When there is intolerance to gold, bismuth compounds may be tried intramuscularly. Local treatment will depend entirely on the severity of the inflammatory symptoms. At times, light freezing with carbon dioxide snow may be beneficial.

There is no relationship between the treatment for syphilis and the development of lupus erythematosus. Antisyphilitic treatment should be continued only if the serologic reaction is still positive or if clinical evidence of syphilis is still present.

POSTOPERATIVE GAS PAINS

To the Editor—What is the most recent theory as to the etiology of postoperative gas pains and what is the present concept as to the prevention and treatment? After a recent appendectomy the patient complained of gas pains for eight days in spite of enemata, rectal tubes and solution of pituitary. Some surgeons advocate castor oil on the second or third day after operation. Is this considered good practice? Please omit name and address.

M.D. Iowa

ANSWER—There is little after-effect on the movements of the gastro-intestinal tract due to etherization or section of the abdominal wall or exposure to the air with cooling.

The paralyzing effect on the bowel is less under local than under general anesthesia. Spinal anesthesia paralyzes the inhibitors and permits overactivity of the propulsive peristalsis.

The loss of propulsive peristalsis is constant after intestinal operations, while the rhythmic pendular movements may continue to function. A general reflex inhibition may be produced reflexly through the splanchnics by stimulation of the intestine or of any sensory surface at operation.

Following any intestinal operation a localized loss of motor function occurs, especially of the propulsive peristalsis, varying

with the extent of trauma to some extent. The pylorus may contract reflexly and delay evacuation as a protective mechanism to the intestine.

The distention of the intestine may to a large extent be prevented by maintaining tonus and the rhythmic contractions with morphine sulphate, although propulsive peristalsis may be but slightly affected. The protective action of morphine has recently been advocated in general peritonitis to prevent over distention with complete paralysis of the wall.

The recent use of a concentrated sodium chloride solution intravenously and as an enema has been highly satisfactory for postoperative distention. An enema of 150 cc. of a 10 per cent solution of sodium chloride gives better results than the usual treatment advocated for gas pains or distention.

Castor oil both before and after operation has been abandoned by most surgeons. Catharsis will tend to spread a localized peritonitis and is dangerous in appendicitis.

Large enemata may produce a similar bad effect and should be given for distention or gas pains only after that possibility has been considered.

Fecal impaction or colon spasm perhaps indicating operation may necessitate the flushing type of enema but rarely catharsis.

USE OF X-RAYS IN ACNE VULGARIS

To the Editor—I should like to have your experience in the use of x-ray tubes as a therapeutic agent in the treatment of acne vulgaris. Do you know where a technician could go to take a course in roentgen therapy? I will appreciate any information that you can give as to the advisability of the use of x-rays. J. T. GRAY, M.D. Stillwater, Okla.

ANSWER—Permanent cures can be obtained in selected cases of acne vulgaris to the extent of 87 per cent with roentgen treatment plus general medical attention. From eight to sixteen weekly treatments are usually required. It is the most certain way to obtain a permanent cure in three or four months. The treatment is not without danger and should be given only by a physician who is well trained in x-ray work and also who knows a great deal about acne vulgaris. Courses in roentgen therapy are given in many places. Courses in so-called superficial roentgen therapy are given at the New York Post Graduate Medical School. Courses may also be obtained at the Mayo Clinic, at the New York University and Bellevue Hospital Medical College and many other places. The indications and contraindications for the roentgen treatment of acne vulgaris are contained in chapter 28, page 431, of MacKee's book on X-rays and Radium in the Treatment of Diseases of the Skin, Philadelphia, Lea and Febiger, 1927.

DIFFERENTIAL DIAGNOSIS OF EDEMA

To the Editor—A woman aged 40 has an edematous condition involving the whole body. It does not pit on pressure. It is worse at certain times than at others. It is worse in the early morning but on exercise tends to disappear to some extent. The face seems to be more affected than other parts of the body. The heart and kidneys are normal. Allergy does not seem to play any part. What other conditions would you consider as an etiologic factor? Please omit name.

M.D. Arkansas

ANSWER—This question does not supply information relative to the duration of the condition and other physical signs apart from the edema. It must be remembered that any edema of long standing tends to lose its pitting characteristic.

A general, nonpitting edema without cardiovascular or renal disease would suggest the following conditions:

1. Myxedema, which occurs most commonly between 30 and 50 years of age and more commonly in women than in men. The puffiness occurs most noticeably about the face and eyes with characteristic swelling of the ankles and wrists. It is associated with a masklike expression, with mental and physical sluggishness, and with an extremely low basal metabolic rate. It may appear spontaneously or may follow thyroidectomy. The response to thyroid therapy is usually satisfactory.

2. Chronic hereditrophedema (Milroy's disease), which comes on early in life and usually affects only the lower extremities. In cases in which the upper part of the body has been involved the swelling has never been so great as that observed in the lower extremities.

3. Beriberi, a deficiency disease. Here the edema pits on pressure unless of long standing, and it is associated with other ailments, particularly a peripheral neuritis.

4. "Nutritional edema" thought to be due to a lack of protein in the diet together with an overabundance of fluid and salt. This edema usually pits on pressure and the dietetic errors should aid in the diagnosis.

From the information given, myxedema seems most likely.

ACETIC ACID IN RINGWORM

To the Editor—In Queries and Minor Notes in THE JOURNAL Dec 2 1933 I noticed Dr Rittenhouse's inquiry regarding a local application that would be effective in ringworm of hairy regions. The answering discussion mentions iodine and croton oil but does not name a simple remedy that I have found to be successful. Three dermatologic textbooks that I have examined also do not list this application.

Several years ago I noticed a barber making an application to a ringworm on a patron's face and inquired what he was using. The solution was 18 per cent acetic acid and the barber told me that one or two applications invariably cured the condition and that he also used it for barber's itch (sycois). Being quite sure that 18 per cent acetic acid would at least do no harm I began using this application for ringworm both on hairy regions and otherwise and have had constantly good results. Any tinea infection may be thus treated. I have used it in a few mild cases of epidermophytosis (athlete's foot) with benefit. The only objection is the burning caused by the application which is however of short duration. The application of acetic acid is not repeated sooner than three days. The ordinary ringworm subsides after one or two treatments. An infected ringworm of the scalp was treated six or even times before it became inactive. Usually ammoniated mercury ointment is prescribed to be used after the application of the acetic acid.

I do not know who may have originated this treatment of ringworm or whether it is in common use, but it has proved a satisfactory treatment of a common and usually stubborn condition.

A L NIELSON, M D, Harlan Iowa

ANSWER—Acetic acid has been used as a remedy for ringworm for a long time. Kaposi (Hautkrankheiten Vienna and Leipzig, Urban and Schwarzenberg, 1880, p 740) lists it as one of many remedies for ringworm of the scalp. H R Crocker (Diseases of the Skin, ed 2, Philadelphia, P Blakiston's Son & Co, 1893, p 865) recommends it for the treatment of tinea circinata, to be painted on the patch after it has been thoroughly cleansed with soap and water. Of modern writers O S Ormsby (Diseases of the Skin, ed 2, Philadelphia Lea & Febiger, 1921, p 892) mentions acetic acid as an adjuvant to other remedies, using it with or just before the other parasiticide. On the next page he lists glacial acetic acid as one of the strong remedies for ringworm of the scalp.

ANTIQUITY OF THE USE OF OPIUM

To the Editor—What preparation of the poppy was first used in the practice of medicine and when? What drug was used for the relief of pain during the first fifteen years of the eighteenth century?

C C HOWARD, M D, Glasgow Ky

ANSWER—Opium, the dried juice of the unripe poppy capsules, was no doubt known in remote antiquity, though infusions of poppy capsules and the pulp of unripe poppy seeds were probably used still earlier. The papyrus of Ebers (1552 B C) mentioned "spenn" seeds in the preparation of a "remedy to prevent the excessive crying of children." Hippocrates (460 B C) described the properties of the juice of the white poppy. Its employment at that time was chiefly in the form of highly complex mixtures such as the "mithridatum" of Damocrates or the theriaca of Andromachus. There can be no doubt that it was opium that was chiefly used for the relief of pain in the early part of the eighteenth century. In the later part of the seventeenth century, Thomas Sydenham had introduced its alcoholic tincture, made from opium and saffron with wine (Sydenham's laudanum), as the greatest of all remedies, and paregoric originated with Dr Le Mort, professor of chemistry at the University of Leyden between 1702 and 1718. It was also at this time that Dover, the inventor of Dover's powder, practiced a proprietary preparation known as "black drops," which was a vinegar of opium, was also extensively used at that time.

RINGWORM OF TOENAIL

To the Editor—One of my patients has a ringworm of both great toes following athlete's foot. This infection does not appear to affect the surface of the nail but has undermined the lateral edges for about one third of the nail's width. Please suggest treatment. Please omit name.

M D Michigan.

ANSWER—Ringworm of the nails is one of the most stubborn forms of fungous infection. Great patience and perseverance in treatment are required to cure it by nonsurgical methods but this is possible in most cases. Tincture of iodine best applied in the case described with a medicine dropper the solution being allowed to run under the nail, is one of the best remedies. After daily use for a time irritation is apt to occur when a soothing ointment as 10 per cent boric acid in petrolatum may be applied for a day or two, then Whitfield's ointment, 6 per cent salicylic acid and 12 per cent benzoic acid in ointment of rose water may be used daily for several weeks. Another course of the iodine solution should then be given. No preparation of mercury should be used while the effect of the iodine remains for

fear of a dermatitis. It is often necessary to change remedies several times before a cure can be achieved. Many other remedies are recommended, among the best of them an alcoholic solution of thymol, 1 per cent or stronger, or salicylic acid 10 per cent or corrosive mercuric chloride, 1:500, in alcohol.

One-fourth erythema dose of unfiltered x-rays, once a week for a maximum of eight weeks, or a stronger dosage of filtered x-rays if the nail plate alone is exposed, are sometimes successful when other measures fail. The rest of the finger should be protected by lead, and no irritating local application should be used for from two weeks before until two weeks after the treatment. After the effect of the rays has passed off, one or more of the remedies mentioned should be used for, if not wholly eradicated, the disease will recur.

Avulsion of the nail is seldom necessary but may be done if all else fails. It is best done under general anesthesia and followed by an iodine ointment, about 5 per cent, until the nail grows again, which requires about five months.

FINGER SUCKING BY CHILDREN

To the Editor—A boy, aged 4½ has nursed the two middle fingers of each hand chiefly the right since birth only when sleepy or asleep. He has developed normally in every way and had an attack of enteritis for four weeks when 13 months of age. Intervention to cure the habit was not begun early enough, and over the past year taping the fingers and splints to the elbows have been tried without success. The only local change noticed is a slightly loose condition of the two upper middle teeth. He exhibits a nervous tendency and recently has begun to bite his nails. I am in doubt as to whether to urge cure of the habit or recommend no treatment at all. Would the methods to use for such a cure tend to aggravate his nervousness? Your recommendation mentioning methods will be appreciated.

H QUILLIAN JONES M D Fort Myers Fla

ANSWER—Finger sucking or thumb sucking is of common occurrence in infancy and young childhood. As stated in the query, it is most likely to occur when the child is sleepy or asleep, or when he is nervous, fatigued or sick. The habit may persist from infancy into childhood. Most of these children recover from the habit spontaneously, though sometimes it continues for a considerable period.

The condition is sometimes difficult to treat, though if the child is manifestly nervous it is well to manage the general condition by rest, quiet, and the avoidance of overstimulation and fatigue. If too much is made of the condition, the habit may become worse and may continue in spite of attempts to forbid it, or by promises of reward or threats of punishment. The application of all tasting substances to the fingers gives only temporary results. A rubber nipple or pacifier may at times be used as a temporary substitute for the thumbs or fingers, though even this method usually fails. Globular aluminum mitts to cover the hands or thumbs prevent the introduction of the fingers into the mouth. In many cases the habit is stopped when the child grows older, and too strenuous treatment may tend to increase general nervousness and induce other bad habits.

ALOPECIA IN CHILDREN

To the Editor—Family history, Wassermann reaction and so on being negative what could one think of in a girl aged 4 years otherwise healthy with a growing depression over the right parietal bone and progressive clean baldness?

CLARENCE B FOSTER M D Greensboro, Va.

ANSWER—Alopecia may occur from one to six months after an acute fever. The hair begins to fall out, though this seldom leads to baldness. In mycosis fungoides, diabetes mellitus, myxedema or the cachexia of tuberculosis the hair may fall out and the condition may remain permanent. Alopecia is sometimes seen after the administration of thallium acetate or boric acid. It is observed after toxic doses of mercury, antipyrine or arsenphenamine. Congenital or acquired syphilis may cause alopecia.

In alopecia areata the hair is suddenly lost. The baldness occurs in sharply defined areas without signs of inflammation. The patches tend to spread peripherally. They are frequently multiple. Alopecia areata rarely occurs under 5 years of age. The affected scalp may be thinner than normal and the area is frequently depressed below the level of the surrounding skin.

Alopecia areata must be distinguished from ringworm although the former is rapid in onset and spreads diffusely and the bald areas are smooth and show no fungi, scales, vesicles or crust. In ringworm the fungus may be demonstrated and the extension of the bald area is slower.

Impetigo, erysipelas or other violent inflammatory diseases of the scalp may cause temporary bald areas, but the disease causing the loss of hair is readily observed.

PROPHYLACTIC VACCINATION AGAINST RABIES
IN DOGS

To the Editor—I have been unable to obtain satisfactory information as to whether the antirabies serum administered to dogs for the purpose of preventing rabies is considered effective in the prevention of this disease. Could you give me any information concerning this?

WILLIAM S. CRAWFORD, M.D., Tulsa, Okla.

ANSWER—There is no antirabies serum for the prevention of rabies. Prophylactic injection of dogs against rabies is done with so called vaccines of the fixed virus. There are two such vaccines available, namely, the phenol treated and the chloroform treated. In both these vaccines the virus is either dead or rendered so virulent that it does not produce rabies in rabbits on subdural injection. At present the experiments with the chloroform vaccine are encouraging, but no data are available as to its efficacy under field conditions (Schoenung H. W. Prophylactic Vaccination of Dogs Against Rabies *J. Am. Vet. Med. Ass.* 78:703 [May] 1931). The maximum duration of immunity after vaccination is thought to be one year.

CALCULATION OF LOSS OF VISION

To the Editor—I was interested in an article in a recent issue of *Hygiene* by James F. Lebensohn entitled "Mysteries of Vision." I have been puzzled several times to know the percentage loss of vision in compensation cases and would like to know more in detail the mathematics for the authors' calculations of various losses of vision. As I understand it the insurance companies consider a vision of 20/200 or less a total loss of vision as far as work is concerned. A vision of 20/30 is considered a 10 per cent loss of vision.

HOWARD I. MITCHELL, M.D., Lexington, Va.

ANSWER—On the basis of personal clinical investigations, A. C. Snell (*Ann. Otol. Rhinol. Laryng.* Oct. 31, 1925, p. 1367) found that total incapacity lay between a visual acuity of 20/200 and 20/300 determined by the nature of the employment, the age of the person, the duration of subnormal vision, and the will to work. Though most states have ruled that 20/200 is industrial blindness, mathematically this visual acuity represents a general visual efficiency of 20 per cent. Test charts can be procured from Bausch and Lomb, Rochester, N. Y., that alongside the distance notations have the A. M. A. ratings of visual efficiency. The full table with a consideration of the various factors involved in the determination of visual acuity has been presented by J. J. Lebensohn in the *Archives of Ophthalmology* 10:103 [July] 1933. For details of the method of calculation the article entitled "Percentage Evaluation of Visual Acuity" by A. C. Snell and S. Sterling (*Arch. Ophthalm.* 54:443 [Sept.] 1925), should be consulted.

ANTISTREPTOCOCCUS SERUM IN ERYSIPELAS

To the Editor—What is the present status of antistreptococcus serum in septicemia and in erysipelas?

MORRIS F. SUDLER, M.D., Lawrence, Kan.

ANSWER—The use of antistreptococcus serum in septicemia rests on an empirical basis. There is no evidence available to show that such treatment is specifically successful. The use of antistreptococcus serum in erysipelas is based on the demonstration that the streptococcus of erysipelas produces a specific toxin against which a specific antitoxin can be produced by immunization of horses with the toxin. In other words in the case of erysipelas there is available a specific antitoxic serum which, according to many reports, gives good results in early cases. However, not all reports of the results with the serum are favorable.

ELECTROCOUCTION WITHOUT MARKS ON SKIN

To the Editor—Is there sufficient experimental or clinical data to determine whether or not one can become electrocuted by coming in contact with electric light wires without having evidence of receiving burns on the skin?

ROSS TRIGG, M.D., Fort Worth, Texas

ANSWER—Current markings of the skin are not always present in cases of electrocution caused by currents of low tension (110 volts). Several cases have been reported in which most careful search failed to detect external evidences of electrocution (Meyner, K. *Wien klin. Wochenschr.* 35:619 [July] 1923; Furth *Munchen med. Wochenschr.* 64:926, 1917; Jellinek, S. *Wien klin. Wochenschr.* 36:157 [March 1] 1923; Spuren Kunde der Elektrizitat, Vienna, 1927). In some instances the current markings are easily overlooked, especially if they are located in regions of the body covered by hair or are on the hands of laborers with a thickened scaly skin. Examination with the aid of a hand lens may help to detect these insignifi-

cant changes. On the tips of the fingers, finger prints may help to locate the current marks, since in this region the normal linear markings are obscured.

TOXIN ANTITOXIN AND TOXOID

To the Editor—I noticed in *Queries and Minor Notes* in *The Journal*, Nov. 18, 1933, page 1663, an inquiry concerning immunity. I have had diphtheria four or five times. I received three courses of toxin antitoxin in different years. The Schick test is still positive but the reaction is less severe each time. I took two injections of toxoid and the Schick test was negative.

JOHN G. WILSON, M.D., Norristown, Pa.

ANSWER—The treatment of diphtheria with antitoxin tends to reduce the active immunity, so that it is quite possible for a person thus treated to have more than one attack of diphtheria. The prompt neutralization of the toxin by the antitoxin reduces the reactions of the body against the toxin. When the passive immunity due to the antitoxin subsides the person in question may become susceptible again to diphtheria toxin. The fact that the Schick test was positive after the injection of toxin antitoxin means that adequate active immunity had not been established at any time. On the other hand the two injections of toxoid appear to have established sufficient active immunity to make the Schick test negative.

PARENT'S BLOOD INJECTION AS PROPHYLACTIC
IN MEASLES

To the Editor—I please tell me whether an injection of blood from a parent who has had measles into a child will prevent measles. If so, what amount? Kindly omit name.

M.D. Georgia

ANSWER—Yes, the injection of such blood will prevent measles if it is injected in the incubation period. At least 4 or 5 cc. should be injected intramuscularly, and this quantity would better be doubled or quadrupled in older children and when the injection is made late in the incubation period.

SYPHILITIC PERIOSTITIS AND TABES

To the Editor—Kindly advise as to the treatment of syphilitic chronic periostitis of both legs as evidenced by x-rays. The blood Wassermann reaction is negative, the spinal Wassermann was not taken. Infection occurred twenty years ago and a few injections of neosalvarsan were given. There are severe night pains at intervals, varicose veins, marked wasting of the calf muscles and absent knee jerks. The pupils react sluggishly. The patient shows low blood pressure and loss of weight. Would such a case react to bismuth injections and iodides by mouth?

M.D. Pennsylvania

ANSWER—The absent knee jerk, sluggish pupils, nocturnal pains and wasting of the calf muscles suggest tabes or at least neurosyphilis. A spinal puncture should be done and a more complete neurologic examination. Chronic periostitis of the legs due to late syphilis should improve with injections of bismuth compounds and iodides by mouth. These should alternate with courses of mercurial injections and small doses of one of the arsenophenamines.

NO INCOMPATIBILITY IN MIXTURE OF CACODYLATE
SALICYLATE AND METHENAMINE

To the Editor—Would you please let me know what results when sodium salicylate is mixed with hexamethylenetetramine (methenamine) and also what is formed when sodium cacodylate, sodium salicylate and hexamethylenetetramine are all mixed together? Kindly omit name.

M.D. Alabama

ANSWER—Mixtures of these substances were made and solutions of these mixtures in water were prepared and both allowed to stand forty-eight hours. Neither the dry mixture nor the solutions showed the slightest evidence of change.

PSITTACOSIS

To the Editor—The question has come up as to possible hazards to public health in handling birds other than parrots and parakeets. I wonder whether you can tell me if any other species, particularly canary birds, are sometimes subject to psittacosis or any other disease which is transmitted to man.

M. J. LAKE, M.D., New York

ANSWER—The investigations of K. F. Meyer and his associates in San Francisco have shown conclusively that other birds than parrots and parakeets may suffer from psittacosis. Meyer and Eddie (Spontaneous Psittacosis Infections of the Canary and Butterfly Finch, *Proc. Soc. Exper. Biol. & Med.* 30:481 [Jun.] 1933) report the occurrence of psittacosis in a man and his wife who came in contact with canary birds having

the disease, to which they are highly susceptible. Canary birds may harbor paratyphoid-like organisms and consequently become a possible source of food poisoning. The birds also may harbor coccidial organisms in the respiratory tract which may be pathogenic for human beings.

APPENDICITIS WITH WORMS

To the Editor—Recently I examined an appendix that contained *Oxyuris vermicularis* in large numbers. How frequently does this parasite produce an appendiceal disturbance simulating an acute appendicitis? Please omit name. M D Illinois

ANSWER—Such observation is quite common, and it is agreed that the worms may cause appendicitis. They may produce appendiceal colic, they may irritate the mucosa sufficiently to cause catarrhal inflammation, and even hemorrhagic areas, and they may penetrate into the walls of the appendix, carrying infection with them. The frequency with which they actually produce symptoms simulating appendicitis is still quite as much *sub judice* as the more hotly debated question regarding the importance of fecaliths. It is, however, not great.

ACTION OF GLYCERIN HYPODERMICALLY

To the Editor—I request that you supply me with information on the action of chemically pure glycerin on the tissues if used hypodermically. What are its irritant qualities when used in this way in full strength or undiluted or in any dilution with water? It is understood of course that the preparation would be sterilized. H T CUMING M D Pace Miss

ANSWER—Glycerin is an irritant when injected in full strength or in any but great dilution. It also causes laking of the blood, owing, it is believed, to an osmotic effect on the red blood corpuscles during their passage through the area in which it has been deposited.

INSULIN IN DEMENTIA PRAECOX

To the Editor—Kindly give me the latest treatment of dementia praecox with insulin. A Viennese physician Dr Zuckel is supposed to have obtained superb results. I am interested as I have a relative who has dementia praecox. The treatment requires putting the patient into insulin shock. Could you give me detailed information regarding this treatment? M D, New York

ANSWER—We are not acquainted with the work of Dr Zuckel. His name does not appear anywhere in the last ten volumes of the *Quarterly Cumulative Index Medicus*, which lists all medical publications of any importance. Insulin is not mentioned as a remedy for dementia praecox in the comprehensive paper on endocrine treatment of the psychoses by Hoskins and Sleeper in the *American Journal of the Medical Sciences* (184:158 [Aug.] 1932). On the other hand insulin is frequently used in the treatment of all forms of psychosis with malnutrition due to unwillingness of the patient to take food.

HOLZKNECHT'S SPACE

To the Editor—What is Holzknacht's space with respect to the left lateral border of the heart on a roentgenogram? Kindly omit name. M D Pennsylvania

ANSWER—Holzknecht's space refers to the middle lung field in the roentgen screen or film image of the chest in oblique projection when the rays pass from the left posteriorly to the right anteriorly. In this projection there are three clear lung fields: the right, the left and the middle (Holzknecht's). This space is also referred to as the retrocardiac or the prevertebral space, bounded anteriorly and to the left by the posterior border of the heart, and to the right and posteriorly by the vertebral column.

CRIMSON ANILINE CRYSTALS OR ROSANILINE HYDROCHLORIDE

To the Editor—In *Queries and Minor Notes* in THE JOURNAL Oct 7 1933 page 1173 under Preparations of Cadavers for Dissection in Tropical Countries, you mention crimson aniline crystals for coloring the injection mass. I am unable to procure this chemical. It is not even mentioned in any of the books that are at my disposal here. Will you be kind enough to let me know another name or chemical formula under which it can be obtained possibly the source of its manufacture? Please omit name. M D Colorado

ANSWER—Crimson aniline, aniline red, basic fuchsin and magenta are trade names for the same thing, namely a preparation of rosaniline hydrochloride. The dye may be obtained from any of the dealers in dyes.

TRAUMA AND MYOCARDITIS

To the Editor—An obese man of 69 was struck by an automobile Sept 17 1933 and sustained some contusions and shock. He is bringing suit against an automobile insurance company to recover damages on the ground that the injury produced an acute exacerbation of a chronic myocarditis and permanent and total disability as a result. Is it at all likely that the previous heart condition could be made worse by the accident? Please omit name. M D Minnesota

ANSWER—The accident itself obviously could not have altered myocardial conditions. It does occasionally happen that pre-existing conditions are first called to the patient's attention after such an accident, when they are discovered by the attending physician. It is possible that the enforced rest and altered circulatory conditions might accentuate some condition already present but it does not seem possible that this could be more than temporary. It does not seem at all probable that permanent and total disability could result.

PROTECTION IN ROENTGENOGRAPHY

To the Editor—I am subjected to x rays in my work to the extent of half an hour of fluoroscopic work approximately five times a week. I should like an opinion if you feel that this might be sufficient to cause any feeling of fatigue or produce any secondary anemia. I do not use any lead gloves goggles or protective apron. Please omit name and address. M D Michigan

ANSWER—Half an hour of fluoroscopic work approximately five times a week may cause fatigue but not secondary anemia. It is imprudent not to use protective measures, such as apron and gloves.

OPERATIVE TREATMENT FOR SACROILIAC SPRAIN

To the Editor—What is the present status of the operative treatment for sacro iliac sprain? MERVIN T. SUDLER, M D Lawrence, Kan

ANSWER—The operative treatment of chronic recurring sacro-iliac pain is surgical fusion and is generally accepted. However, the surgeon should exclude such possibilities as arthritis of the lumbar spine, cord tumor and spondylolisthesis before resorting to this operation.

CHANCROIDS

To the Editor—In *Queries and Minor Notes* in THE JOURNAL January 20 page 231, Dr H B Taylor of Anking China asks for the latest and best treatment for chancroids. I have my own method, used since 1907 and I believe it is much better than any treatment you mention in your reply. It consists of ordinary cleansing and the application of one of the following solutions: (1) 25 per cent thymol iodine in ether; (2) 25 per cent iodoform in ether. Solution 2 is the stronger and more effective but the odor of the iodoform often precludes its use in society in which case I use solution 1 which is slower and not as good as solution 2. The ether vehicle is the successful keynote to its effectiveness as it carries the drugs quickly into the deeper tissues and ulcerated hidden recesses before the ether evaporates thus leaving the drug in direct concentrated contact all over the involved areas. The slight pain at the time of application lasts only a few seconds. It gives instant relief. As it quickly flows into all involved areas it is seldom necessary with its use to perform dorsal slits or circumcisions if syphilis is not also present. Both solutions are simple quick sure always available, cleansing soothing and easy of application and save many patients from the necessity of going to bed. They are also far superior to Merciere's solution even in buboes. The first day or two a few drops should be poured on the involved areas three or four times and as healing progresses and pain decreases the number of applications can be reduced to once or twice a day as indicated. The patient will soon tell of the relief obtained and will ask for it in preference to all other forms of treatment. I perfected these solutions while on duty on the Asiatic Station in 1907 and have used them ever since. Once tried all other methods of treatment for this painful and distressing disease will be discarded.

PAUL RANDOLPH STALNAKER M D, Houston, Texas
Captain Medical Corps U S Navy Retired

LIVER GROWN

To the Editor—In *Queries and Minor Notes* in THE JOURNAL Oct 28 1933 p 1414 there was an inquiry as to the term 'liver grown' as used in the Pennsylvania Dutch counties of Pennsylvania and in the issue of Feb 24 1934 a reply by Dr Yoder. The term as I have heard it used refers to enlarged abdomens particularly those that occur in rachitic children. A physician with whom I worked a number of years ago when rachitis was seen in more advanced stages than it is seen now and whose early years had been spent in the Dutch counties often referred to the pot bellied child as 'liver grown'. His explanation of the term was that no one among the natives realized the actual etiology of the condition but knowing that the liver was the largest abdominal organ believed that the pot belly was the result of liver enlargement. He further stated that individuals with abdominal neoplasms and at times dropsical persons were referred to in the same manner. In corroboration of his explanation I have since heard the natives of the Dutch counties refer to enlarged abdomens as 'liver grown'.

ARTHUR D. KURTZ M D Philadelphia

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD OF DERMATOLOGY AND SYPHILIGOLOGY. Written examinations will be held in various cities April 30. Oral Cleveland June 11-12. See Dr. C. Guy Lane, 110 Marlboro St. Boston.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY. Oral (all candidates) Cleveland June 12. See Dr. Paul Titus, 1015 Highland Bldg. Pittsburgh.

AMERICAN BOARD OF OPHTHALMOLOGY. Cleveland June 11 and 12. Written July 11. Application must be filed at least 60 days prior to date of examination. See Dr. William H. Wilder, 122 S. Michigan Blvd. Chicago.

AMERICAN BOARD OF OTOLARYNGOLOGY. Cleveland June 11. See Dr. W. I. Wherry, 1500 Medical Arts Bldg. Omaha.

ARIZONA. Basic Science. Little Rock May 7. See Mr. Louis I. Gelander, 701 Main St. Little Rock. Regular. Little Rock May 14-15. See Dr. A. S. Buchanan, Prescott. Homeopathic. Little Rock May 14-15. See Dr. A. S. Buchanan, Prescott. Eclectic. Little Rock May 14-15. See Dr. I. J. Marshall, 820 W. 11th St. Little Rock.

CALIFORNIA. Acupuncture. San Francisco May 16. See Dr. Charles H. Franklin, 470 State Office Bldg. Sacramento.

ILLINOIS. Chicago April 10-12. Subject of Reiss. Dept. of Reiss and Ed. Mr. Eugene R. Schwartz, Springfield.

MISSISSIPPI. Minneapolis April 17-19. See Dr. I. J. Embury, 150 St. Peter St. St. Paul.

NATIONAL BOARD OF MEDICAL EXAMINERS. The examinations in Parts I and II will be held at centers in the United States where there are five or more candidates. May 7-9 (limited to a few centers) June 25-27 and Sept. 1-4. See Mr. Everett S. Howard, 225 S. 15th St. Philadelphia.

NEBRASKA. Basic Science. Omaha May 12. Application must be filed at least 15 days prior to date of examination. Dr. Bureau of Examining Boards, Mrs. Carl Perkins, State House, Lincoln.

NEVADA. Carson City May 7. See Dr. Edward I. Hamer, Carson City.

NEW MEXICO. Santa Fe April 2-10. See Dr. I. G. Cornish, Jr., 221 W. Central Ave. Albuquerque.

Missouri October Report

Dr. E. T. McGrath, state health commissioner, reports the written examination held in Kansas City Oct. 17-19, 1933. The examination covered 14 subjects and included 81 questions. An average of 75 per cent was required to pass. Seven candidates were examined, all of whom passed. Nine physicians were licensed by reciprocity and 2 by endorsement. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
University of Kansas School of Medicine	(1913)	85.2	
St. Louis University School of Medicine	(1913)	87.1	
Creighton University School of Medicine	(1910)	89	
University of Nebraska College of Medicine	(1913)	87.8	
University of Pennsylvania School of Medicine	(1912)	88.5	
National University of Ireland	(1921)	89	
University of Edinburgh Faculty of Medicine	(1921)	86.1	

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas School of Medicine	(1912)	Arkansas	
University of Illinois College of Medicine	(1930)	Texas	
University of Kansas School of Medicine	(1913)	Kansas	
University of Louisville Medical Department	(1896)	Kansas	
University of Maryland School of Medicine	(1908)	Maryland	
University of Tennessee College of Medicine	(1931)	Tennessee	
Baylor University College of Medicine	(1912)	Texas	
McGill University Faculty of Medicine	(1922)	Michigan	

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Washington University School of Medicine	(1929)	N. B. M. I. x	
Jefferson Medical College of Philadelphia	(1932)	N. B. M. I. x	

Michigan Endorsement Report

Dr. J. Earl McIntyre, secretary, Michigan State Board of Registration in Medicine, reports 48 physicians licensed by endorsement during 1933. The following schools were represented:

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
College of Medical Evangelists (1915) (1929) (1932)	(1933)	California	
University of Colorado School of Medicine (1931)	(1931)	Colorado	
Howard University College of Medicine (1930)	(1930)	Maryland	
Loyola University School of Medicine (1927)	(1928)	Illinois	
Northwestern University Medical School (1928) (1932) (1933) Illinois	(1912)	Nebraska	
Rush Medical College (1926)	(1926)	Ohio	
(1928) (1932) (1933) Illinois	(1926)	S. Dakota	
University of Illinois College of Medicine (1933) Illinois	(1931)	Indiana	
Indiana University School of Medicine (1932)	(1932)	Iowa	
State University of Iowa College of Medicine (1931)	(1919)	Maryland	
Johns Hopkins University School of Medicine (1926)	(1926)	Mass.	
College of Physicians and Surgeons Boston			

University of Michigan Dept. of Medicine and Surgery (1893)	N. Dakota
University of Minnesota Medical School (1924) (1930) Minnesota	Alaska
Barnes Medical College, Missouri (1904)	Missouri
St. Louis University School of Medicine (1927)	Missouri
Creighton University School of Medicine (1931)	Penn.
University of Nebraska College of Medicine (1924)	Nebraska
University of Buffalo School of Medicine (1932)	New York
Ohio State University College of Medicine (1917)	Ohio
Toledo Medical College (1913)	Ohio
University of Cincinnati College of Medicine (1929)	Ohio
Western Reserve University School of Medicine (1930)	Ohio
Temple University School of Medicine (1931)	New Jersey
University of Pennsylvania Department of Medicine (1908)	Penn.
University of Pittsburgh School of Medicine (1929)	Penn.
Meharry Medical College (1932)	Tennessee
University of Texas School of Medicine (1926)	Texas
Marquette University School of Medicine (1932)	Wisconsin
University of Wisconsin Medical School (1929)	Oklahoma
(1911) Illinois	
University of Toronto Faculty of Medicine (1925)	Maryland
McGill University Faculty of Medicine (1925)	Maine

Maryland December Report

Dr. Henry M. Fitzhugh, secretary, Board of Medical Examiners of Maryland, reports the written examination held in Baltimore Dec. 12-15, 1933. The examination covered 9 subjects and included 90 questions. An average of 75 per cent was required to pass. Thirty-nine candidates were examined, all of whom passed. Four physicians were licensed by reciprocity. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
George Washington University School of Medicine (1913) 8.1 91.8	(1930)	83.3	
Georgetown University School of Medicine (1932) 4.3 85.1 88.7 89.9 88.6 89.3 92.9 (1933) 80.8 87.4 85.8 86.6 86.7 85.1 88.6 88.6 88.6	(1931)	83.2	
Howard University College of Medicine (1912) 9.0	(1931)	83.3	
Emory University School of Medicine (1929)	84.6		
Louisiana University School of Medicine (1933)	86.1		
Johns Hopkins University School of Medicine (1933)	7.3		
45.8 91.4			
University of Maryland School of Medicine and College of Physicians and Surgeons (1933)	89.8		
Washington University School of Medicine (1924)	90.7		
University of Nebraska College of Medicine (1933)	89.3		
University of Rochester School of Medicine (1932)	80.9		
Duke University School of Medicine (1933) 86.7, 87.1	(1933)	85.1	
Medical College of Virginia (1933)			
Medizinische Fakultät der Friedrich Wilhelm Universität Berlin (1912)	83.6		

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Fort Wayne College of Medicine, Indiana (1892)	(1892)	Ohio	
Indiana University School of Medicine (1911)	(1911)	Indiana	
University of Pennsylvania School of Medicine (1932)	(1932)	Penn.	
Medical College of the State of South Carolina (1931)	(1931)	S. Carolina	

Mississippi Reciprocity and Endorsement Report

Dr. Felix J. Underwood, secretary, Mississippi State Board of Health, reports 7 physicians licensed by reciprocity and 1 by endorsement at a meeting held in Jackson Dec. 7, 1933. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Tulane University of Louisiana School of Medicine (1930)	(1930)	Louisiana	
Columbia University College of Physicians and Surgeons (1932)	(1932)	Louisiana	
Memphis Hospital Medical College (1899)	(1899)	Tennessee	
University of Tennessee College of Medicine (1929-30)	(1929-30)	Tennessee	
Vanderbilt University School of Medicine (1930)	(1930)	Tennessee	

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
University of Virginia Department of Medicine (1926)	(1926)	N. B. M. I. x	

Tennessee December Examination

Dr. H. W. Qualls, secretary, Tennessee State Board of Medical Examiners, reports the written examination held in Memphis, Dec. 21-22, 1933. The examination covered 8 subjects. An average of 75 per cent was required to pass. Eleven candidates were examined, all of whom passed. The following school was represented:

School	PASSED	Year Grad.
University of Tennessee College of Medicine (1933 11)		

Two physicians were licensed by endorsement during December. The following schools were represented:

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
George Washington University School of Medicine (1928)	(1928)	Mississippi	
Louisville Medical College (1903)	(1903)	Mississippi	

Book Notices

Principles and Practice of Physical Therapy Edited by Harry E. Mook, BS MD DSc Chairman of the Editorial Board Associate Professor of Surgery Northwestern University Medical School, Ralph Pemberton MS MD FACP Professor of Medicine in the Graduate School of the University of Pennsylvania and John S. Coulter MD DTM FACS Assistant Professor of Physical Therapy at Northwestern University Medical School In three volumes. Fabrikoid. Price \$35.00 per set. Various pagination Hagerstown W. F. Prior Company Inc. 1934

It is significant that a topic which was on the borderland of scientific medicine in a previous generation should have advanced so greatly in the past twenty years as to require the development of a three-volume system for the presentation of the available data and the scientific considerations involved in its practice. A survey of the available books in this field indicates the need for a work of this type, since present-day physical therapy represents for the most part a combination of empiricisms of the past with the scientific dictums of the present. Because of the unsettled state of our knowledge in this field the American Medical Association established the Council on Physical Therapy. The present system, edited by three members of the Council, represents some of the order that has been brought into the field by the Council's work.

Volume I, entitled "Medicine," discusses physical therapy in various medical fields but is concerned also with such basic subjects as physiology of muscular action, posture, the history of physical therapy, the bases and the uses of exercise, heat and massage in medical conditions, the use of hyperpyrexia, and many similar topics. There are twenty-four chapters in the volume, all of them exhaustive, authoritative and practical.

The second volume is concerned more particularly with surgery. Here there are twenty-five chapters discussing fractures, traumatic injuries to the joints, nerve injuries, plastic surgery, obstetric paralysis, cancer of the skin, gynecologic conditions, and other topics.

The final volume, on the technic of physical therapy, is no doubt the volume most needed by general practitioners as well as by specialists and technicians in this field. It is essentially a book of directions. However, the instructions are supplemented in each instance by a statement as to the basis for the technic employed, the indications and the dangers.

The books are well printed in the form already tested as to its popularity by the systems of surgery and of medicine issued by the same publisher. The loose-leaf system offers an opportunity for keeping abreast of the times in a work in which progress is so rapid that only the loose-leaf system would seem to offer any guarantee against obsolescence at an early date.

Handbuch der Biochemie des Menschen und der Tiere Herausgegeben von Prof. Dr. phil. et med. Carl Oppenheimer. Ergänzungswerk. Band I (Ergänzung zu Band I III des Hauptwerkes). Halbband I Die Baustoffe der tierischen Substanz. Halbband II Biochemie der Zelle. Second Edition. Paper. Price 74 marks. Pp. 1154 with 40 illustrations. Jena. Gustav Fischer. 1933.

These supplements cover the literature up to 1932 in three parts: first, on building stones in animal tissues, second, on biochemistry of the cell and, third, on specific binding power and antibodies. These sections are subdivided on nearly the same basis as the original work. Several new subdivisions were necessary and several new contributors have been added or substituted. The first part is presented as follows: the inorganic constituents of the animal body, by Hans Aaron, Karl Klinke and K. Scharrer, four sections on simple nitrogen-free combinations up to five carbon compounds, carbohydrates and derivatives, benzene derivatives of nitrogen-free cyclic compounds, and amino sugars, by Heinz Ohle, two sections on the animal fats and waxes and the fatty acids and higher alcohols, by Egon Eichwald, carotinoids and vitamin A, by Paul Karrer, cyclohexane bile acids, sapotoxins, cantharidin and sex hormones, by A. Butenandt, sterols and vitamin D, by A. Lüttringhaus, two sections on amino acids and the structure and degradation of proteins, by Emil Abderhalden, three sections on acid amides, urea and guanidine, nitrogenous bases and pyrroles, imidazole and vitamin B, by F. A. Hoppe-Seivler, phosphatides and cerebroside, by E. Klink, sulphur-containing compounds, glutathione and insulin, by W. Dürschel, iodine-containing compounds, by Karl Junkmann, two sections on

pyrimidins, purines, nucleic acids and nucleases, by H. Steudel and O. Flössner, pigments containing pyrrole nuclei, by Hans Fischer and Karl Zeile, structure of high molecular weight combinations, by A. J. van der Wijk, polysaccharides, by Hans Pringsheim, general chemistry of proteins, by Hans Handovsky, two sections on special chemistry of proteins and degradation and derivatives of proteins, by E. Strauss and K. Burschikies, chromoproteins (respiratory pigments), by Felix Haurowitz, general treatment of animal enzymes and desmolases, by Carl Oppenheimer, esterases, phosphatases and sulphatases, by Eugen Bamann, carbohydrases, by Rudolf Weidenhagen, acylamidases, purinamidases and proteases, by W. Grossmann, arginase and histidase, by S. Edlbacher, aldehydases and alcoholhydrases, by C. Neuberg and E. Simon, dehydrases, by T. Thunberg, tyrosinases, by L. Pincussen, heavy metal containing animal oxidases, by Karl Zeile, nonenzymic intermediary catalyzers, by B. Kisch, animal toxins, by H. Schlossberger and F. Koch, and animal pigments of unknown nature, by O. Furth.

The second part includes three sections on Donnan equilibrium, surface tension phenomena and the colloidal state, by H. Handovsky, the biologic oxidation-reduction potential, by T. Thunberg, temperature control of living processes, by T. A. Maass, two sections on physical chemistry of enzymes and theory of the specificity of enzymes, by Karl Josephson, the mechanism of oxygen activation, by K. Zeile, mechanism of hydrogen activation, by Alfred Bertho, active iron, by O. Baudisch, two sections on energy exchange of living tissue and the general treatment of energy-liberating cell reactions, by C. Oppenheimer, descriptive chemistry of the cell, by S. Edlbacher, analytic studies on pigments, by A. Nagel, the exchange of cell constituents, by E. Gellhorn, three sections on autolysis, detoxification and influence of radiations on the cell, by L. Pincussen, three sections on the Pasteur-Meyerhoff reaction, synthesis and degradation of the phosphates and carbohydrate degradation in the animal cell, by K. Lohmann, the role of glutathione, by E. Bumm, three sections on general treatment of carbohydrate degradation, fermentation and endo-oxidation, by Carl Neuberg with Maria Kobel and Ernst Simon, insulin and tissue metabolism, by H. Blaschko, two sections on degradation of fatty acids and degradation of amino acids, by H. A. Krebs, and the degradation of nucleic acid, by H. Steudel and O. Flössner.

The third part presents two sections on antigens and antibodies, with especial reference to toxin action and antitoxic immunity and the general principles of chemotherapy, by H. Sachs, antitoxins and toxins, by H. Schlossberger and R. Krumeich, anaphylaxis and related phenomena, by Max Frankel, four sections on agglutination, antibodies against biocolloids, serodiagnostics of syphilis, and immunity against bacteria and protozoa, by Erich Putter, bacteriophages, by R. Otto, hemolysis, by Georg Blumenthal. The division adopted for the subject matter is such that considerable repetition is certain to result. It appears that in some cases this could have been avoided to advantage. On the whole, the reviews have been made quite international in scope. Undoubtedly certain subjects not included, such as vitamin E, pituitary hormones, cortical hormone, secretin, blood chemistry and essential amino acids, will be treated in the supplements to the other volumes of the original work. The reviews as presented are valuable indeed, as one might expect in view of the international reputation of many of the specialists chosen as contributors.

Diseases of the Nervous System By W. Russell Brain MA FRCP Assistant Physician to the London Hospital and the Royal London Ophthalmic Hospital. Cloth. Price \$8.75. Pp. 899 with 51 illustrations. London. Oxford University Press. 1933.

In a book of about 900 pages there is a discussion of the whole nervous system, including the neuroses. The book has an unusual feature in that there is a discussion of diseases of the nervous system in relation to life insurance. Necessarily the discussions are short, although some of the subjects are adequately covered while many are not. The book first discusses disorders of function in the light of anatomy and physiology. It is interesting in this connection that in a discussion on pyramidal syndromes the author follows the outline of Hughlings Jackson in discussing positive and negative symp-

Anleitung zur Vornahme von Leichenöffnungen Von Prof Dr R Maresch Vorstand und Priv Doz Dr H Chlari Assistent des Pathologisch anatomischen Institutes der Universität in Wien Cloth Price 3.20 marks Pp 144 with 17 illustrations Berlin & Vienna Urban & Schwarzenberg 1933

This is a memorial to Carl Rokitsky, who in 1834 became professor of pathologic anatomy in Vienna and contains an excellent photograph of him as the frontispiece. The authors are director and assistant, respectively, in the same institution. The technic of postmortem examinations which they describe is essentially that instituted by Rokitsky himself. The principle of this method is to conduct the examination so as to disturb the "physiologic" relations of the organs as little as possible and, as far as is feasible, to examine each organ in situ. This method has the advantage of doing the least amount of violence to one's esthetic sensibilities. The several chapters furnish detailed instructions for the proper examination of the external features of the body for opening the head and the investigation of its contents including the nose and its sinuses, the orbital cavity and the middle and internal ear, for removal of the spinal cord for examination of the organs in the thoracic and abdominal cavities, including Rokitsky's special technic for opening the heart, and for section of the extremities. A special chapter deals with the method of examining the bodies of the newly born, and another with the preparation of the body after the examination is completed. In an appendix the weights and sizes of the more important organs are tabulated according to age and sex. The authors begin their incision for opening the body at the larynx. There is no mention of the technic employed by most American pathologists of beginning the incision below the sternal notch with cross incisions below and parallel to the clavicles, or, in the case of female bodies, of beginning the longitudinal incision over the nuchoid process with a second connecting incision extending from axilla to axilla downward below the breasts. Nor is there any mention of the method of evisceration described by Le Count. But these newer methods would hardly be in place in a book which describes the technic that has been employed in one famous institution for a century. The authors' descriptions of the various procedures are clear. Many are illustrated by line drawings that are sketchy but adequate for their purpose. The volume is an excellent guide in the technic of postmortem examination but obviously cannot supply the experience necessary to the correct interpretation of the pathologic changes revealed. It emphasizes the desirability of complete necropsies properly performed.

Bentley and Driver's Text Book of Pharmaceutical Chemistry Revised by John Edmund Driver Ph.D. M.Sc. A.I.C. Lecturer on Chemistry in the University College of Nottingham Second edition Cloth Price \$7 Pp 538 with 41 illustrations New York & London Oxford University Press 1933

The first edition of this book was reviewed in *THE JOURNAL*, June 12, 1926, page 1858. The review pointed out that the volume took up substances described in the British Pharmacopoeia and was not based on the U. S. P. X. and so would be of little value in this country. The present volume appears to be carefully revised and a new section added but the criticism made in the review of the original volume is just as applicable to this book.

Weitere Beiträge zur Pathologie der traumatischen Gehirnblutungen Von O. Berner Pathologisches Laboratorium Lillerål Sykehus Oslo. Skrifter utgitt av Det Norske Videnskaps Akademi i Oslo. I. Mat. Naturv. Klasse 1933. No. 5. Udgitt for Oslo Kommunes Fond. Paper. Price 12.00 Kr. Pp. 106 with 88 illustrations Oslo Jacob Dybwad 1933

In this brief monograph the author presents the clinical and postmortem observations in forty-two cases in which death occurred subsequent to head injuries. The report is chiefly concerned with demonstrating that bleeding in the floor of the fourth ventricle and about the aqueduct of Sylvius occurs in such a high percentage of these cases as to be the rule. It is the author's opinion that such hemorrhages are the cause of death and he goes on to state that if such bleeding is absent death is in all probability due to some cause other than traumatic injury of the head. Any well considered contribution to the present inadequate knowledge of the pathology of head injuries is always welcome. There are however two major criticisms of this monograph that seem justifiable. This particular study might have advantageously been greatly condensed

especially the case reports, which constitute the major part, so that it would be suitable for publication in one of the current periodicals dealing with pathology or neurology. All readers familiar with the subject must entertain sincere doubts that such hemorrhage into the brain stem as the author describes is responsible for death in all cases in which death occurs as a direct result of cerebral trauma. It would seem from the author's presentation that this may readily be an important factor, but that it is the almost universal cause seems unlikely. The illustrations are for the most part satisfactory. There is no index, but in a work consisting almost entirely of case reports one is hardly necessary.

The Biology of the Protozoa By Gary N. Collins Ph.D. Sc.D. Professor of Protozoology, Columbia University Second edition Cloth Price \$7.50 Pp 607 with 225 illustrations Philadelphia Lea & Febiger 1933

The author has not attempted to give a complete account of the protozoa, which number about 15,000 but rather to tell the story of the biology of unicellular organisms with emphasis on such phenomena as cell division, maturity, sex differentiation and fertilization. Physicians will be especially interested in the chapter on parasitism and disease, which has been added in this edition, wherein are discussed the several hundred trypanosomes found in man and animals, the amebas, which have suddenly assumed unusual significance in the United States, and the sporozoa, of which the malaria parasite is an example. Besides a large bibliography at the end of the book there is a special bibliography at the end of each chapter. The illustrations, which are profuse, are mainly of free living forms.

Medicolegal

Medical Practice Acts—Electrical Treatments Administered by a Chiropractor—Mary Miller, a licensed chiropractor, and her assistant, Nancy Kehoe, were convicted of violating the medical practice act of New Jersey. They appealed to the Supreme Court of New Jersey. The evidence disclosed that Mrs. Miller had a sign, "Dr. Miller," on the window of her office and the words "Dr. Miller" on the door mat. She diagnosed the ailments of patients, prescribed a diet of food and soda as a medicine, and administered electrical treatments, which treatments were also given by Nancy Kehoe. In one instance at least Mrs. Miller directed the administration of opiates at the direction of a physician she called on the telephone. Mrs. Miller advertised herself as "Dr. Miller" under the classified list of physicians in the city directory. It is needless to say, said the Supreme Court of New Jersey, that such activities constitute the practice of medicine. The defendants contended, however, that because the act of 1920 (Pamphlet Laws, 1920 p. 15), which defined "chiropractic," was repealed, there was now no legal definition of the word, and inferentially that the scope of chiropractic practice was not limited. Even though the legislature has not since defined chiropractic, answered the Supreme Court, this fact does not deprive it of all meaning. The dictionary definition (Webster's New International) is "The practice of adjusting the joints, especially of the spine, by hand, for the curing of disease." The judgments of conviction were affirmed—*Miller v. New Jersey State Board of Medical Examiners (N. J.) 167 A 740* *Kehoe v. New Jersey State Board of Medical Examiners (N. J.) 167 A 740*

Malpractice—Hypodermic Needle Broken in Patient's Gum—The defendant, a dentist, inserted a hypodermic needle into the plaintiff's gum, to administer an anesthetic. The needle broke and about one inch of it remained in the tissues. Operations to remove the fragment were unsuccessful, and the embedded needle, according to the patient, caused her to suffer severe pain, headaches and nervousness. The patient and her husband sued the dentist and obtained judgment. The defendant thereupon appealed to the district court of appeals third district California.

Over objection by the defendant the trial court admitted testimony to prove an alleged conversation, in which the patient

her husband and the defendant participated and in which the defendant admitted he had made a mistake and promised to take up with his insurance carrier the matter of indemnity. Generally said the appellate court reference to the fact that a defendant is indemnified by a policy of insurance is prejudicial error, which cannot be cured by striking out the testimony or by an admonition to the jury to disregard it. This rule however does not prevent the introduction of evidence to prove a conversation such as was testified to in the present instance that contains an admission of responsibility along with reference to the existence of insurance. Because the evidence of this conversation was properly admitted there was no prejudicial error in referring to it in the argument to the jury.

The appellant dentist contended further that the trial court erred in permitting lay witnesses to testify concerning medical matters that properly could be testified to only by experts. The patient's husband was permitted over objection to testify that before the accident his wife was in good health physically and mentally. The lay evidence was properly admitted and the court citing 10 California Jurisprudence 978.

Under one of the exceptions to the federal ruling excluding the opinion of nonexperts the opinion of such a witness derived from observation may be received in connection with his statement of the facts of which it is based. It is said that this exception applies to questions of sickness and health.

The refusal of the trial court to instruct the jury that a licensed dentist is presumed to have the skill and learning and to exercise the judgment required by law and that this presumption can be refuted only by the testimony of expert witnesses was deemed proper, because the proposed instruction ignored the right of the jury to consider the testimony of lay witnesses on matters of common knowledge in determining the question of the defendant's negligence.

The judgment of the trial court in favor of the patient and her husband was affirmed—*Walker v. Luskland (Calif.) 24 P. (2d) 930*.

Medical Practice Acts Discretion of Board in Granting Licenses by Reciprocity—Walker was graduated by the St. Louis College of Physicians and Surgeons in June 1922 after a four years course of instruction. At any time between the date of his graduation and June 25, 1923, when the Missouri medical practice act was amended his professional qualifications would have entitled him to an examination by the Missouri State Board of Health with a view to his being licensed to practice medicine in the state. He understood, however, that he would not pass the Missouri examination and determined to apply to the Arkansas eclectic state medical board for a license to practice in Arkansas. To do so it was necessary for him to have been graduated by an eclectic medical school. In April 1923, he therefore enrolled in the Kansas City College of Medicine and Surgery. On October 12 of the same year he was granted a diploma and three days later, after an examination, he was duly licensed to practice in Arkansas. He practiced there for not less than a year.

Some time later he applied to the Missouri State Board of Health for a license to practice medicine in Missouri, to be issued by virtue of his Arkansas eclectic license, without examination. The state board of health in March, 1929, refused to grant him a license on that basis. He sought to compel it to do so by mandamus. The trial court refused to grant his petition and Walker appealed to the Supreme Court of Missouri, division No. 2. The Supreme Court found that the state board of health acted within its sound discretion in refusing a license. Persons licensed by reciprocity are granted a privilege not of right but of good will, and in the exercise of the board's sound discretion. Walker contended that the board rejected his application arbitrarily, unreasonably and capriciously, because in January, 1929, it had granted licenses without examination to four beneficiaries of the Arkansas eclectic state medical board. That fact, said the court, is evidence rather of an exercise of rational discrimination such as should mark the policy of the board in the observance of the comity declared by the statute. The applications of the Arkansas physicians who were licensed by the board showed that their experience and their recommendations by Missouri physicians differed from those of Walker. Walker's testimony warranted the inference that he

took the supplementary course in Kansas City only in order to be licensed in Arkansas and later to take advantage of the Missouri reciprocity statute. Reciprocity, said the court, does not countenance subterfuge.

The judgment of the trial court, denying the writ of mandamus was affirmed—*State ex rel Walker v. State Board of Health (Mo.), 61 S. W. (2d) 925*.

Society Proceedings

COMING MEETINGS

- Ala. Medical Association of the State of Birmingham April 10-13
Dr. D. I. Carr 519 Dexter Avenue Montgomery Secretary
American Association of Gravidary Surgeons Hot Springs, Ark., May 14-16 Dr. Henry J. Santo 1621 Euclid Avenue Cleveland Secretary
American Association on Mental Deficiency New York May 26-29 Dr. Lewis B. South Beverly Farms Lodtery Ill. Secretary
American Clinical and Climatological Association Toronto Canada May 1-3 Dr. Francis M. Rackemann 263 Beacon Street Boston Secretary
American College of Physicians Chicago April 16-20 Mr. E. R. Loomis 133 South Wabash Street Philadelphia Executive Secretary
American Gynecological Association Atlantic City April 30-May 1 Dr. Roy H. S. Poles The Rittenhouse Plaza Philadelphia Secretary
American Gynecological Society White Sulphur Springs W. Va. May 21-23 Dr. Otto H. Schwarz 610 South Kingshighway, St. Louis Secretary
American Laryngeal Association New York May 2-June 2 Dr. William C. Smith State Education Building Harrisburg Pa. Secretary
American Society for Clinical Investigation Atlantic City April 31-May 1 Dr. H. J. Illigant 310 Buckline Avenue Boston Secretary
American Urological Association Atlantic City May 21-24 Dr. Gilbert J. H. 1610 S. 10th Avenue Minneapolis Secretary
Arkansas Medical Society Little Rock April 16-18 Dr. W. R. Brock 1010 10th Avenue Fort Smith Secretary
Association of American Physicians Atlantic City May 1-2 Dr. J. H. Mean 300 South Main Street General Hospital Boston Secretary
California Medical Association Riverside April 30-May 1 Dr. E. W. Lipe 400 Sutter Street San Francisco Secretary
Connecticut State Medical Society Bridgeport May 23-24 Dr. C. H. Corbett Jr. 70 Elm Street New Haven Secretary
District of Columbia Medical Society of the Washington May 7-9 Dr. C. B. Graham 1715 M Street N.W. Washington Secretary
Florida Medical Association Jacksonville April 8-May 2 Dr. C. H. Richardson 111 West Adams Street Jacksonville Secretary
Georgia Medical Association of Augusta May 8-11 Dr. Allen R. Hunter 139 Terrace Avenue N.E. Atlanta Secretary
Illinois State Medical Society Springfield May 15-17 Dr. Harold M. Cary 1414 Building Menomonee Secretary
Iowa State Medical Society Des Moines May 9-11 Dr. Robert L. Parker 3510 Sixth Avenue Des Moines Secretary
Kansas Medical Society Wichita May 9-11 Dr. J. F. Haase 14 Huron Building Kansas City Secretary
Louisiana State Medical Society Shreveport April 9-12 Dr. P. T. Talbot 140 Tulane Avenue New Orleans Secretary
Maine Medical Association Bangor May 28-29 Miss Kebekeh Gardner 22 Arsenal Street Portland Secretary
Maryland Medical and Chiropractic Faculty of Baltimore April 24-26 Dr. Walter Dent Wise 1211 Cathedral Street Baltimore Secretary
Medical Library Association Baltimore May 21-23 Miss Marjorie J. Harrach 645 Mullett Street Detroit Secretary
Mississippi State Medical Association Natchez May 8-10 Dr. T. M. Dye McWilliams Building Clarksdale Secretary
Missouri State Medical Association St. Joseph May 7-10 Dr. E. J. Goodwin 134 North Grand Boulevard St. Louis Secretary
National Tuberculosis Association Cincinnati May 14-17 Dr. Chas. J. Hatfield Henry J. Hupp Institute Philadelphia Secretary
Nebraska State Medical Association Lincoln May 22-24 Dr. R. B. Adams Center McKinley Building Lincoln Secretary
New Hampshire Medical Society Manchester May 15-16 Dr. Metcalf 5 South State Street Concord Secretary
New York Medical Society of the State of Utica May 14-16 Dr. D. S. Dougherty 21st 103d Street New York Secretary
North Carolina Medical Society of the State of Pinehurst April 30-May 2 Dr. L. B. McBrayer Southern Pines Secretary
North Dakota State Medical Association Fargo May 28-29 Dr. Albert W. Skelley 204 Broadway Fargo Secretary
Northern Tri State Medical Association Flint Mich. April 10-12 Dr. Herbert F. Randall 503 South Saginaw Street Flint Mich. Secretary
Oklahoma State Medical Association Tulsa May 21-23 Dr. L. C. Willoughby Anisworth Building McAlester Secretary
Society for the Study of Asthma and Allied Conditions Atlantic City N. J. April 28 Dr. W. C. Spain 116 East 53d Street New York Secretary
South Carolina Medical Association Charleston May 13 Dr. E. A. Hines Seneca Secretary
South Dakota State Medical Association Mitchell May 14-16 Dr. John I. D. Cook Langford Secretary
Tennessee State Medical Association Chattanooga April 10-12 Dr. H. J. Sholders 706 Church Street Nashville Secretary
Texas State Medical Association of San Antonio May 7-10 Dr. Holman Taylor Medical Arts Building Fort Worth Secretary
Western Branch Society American Urological Association Los Angeles April 27-29 Dr. George W. Hartman 999 Sutter Street San Francisco Secretary
West Virginia State Medical Association Huntington May 14-16 Mr. Joe W. Savage Public Library Building Charleston Executive Secretary

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below

American Journal of Public Health, New York

23 1223 1342 (Dec) 1933

- The Physician and Public Health Officialdom M Fishbein Chicago —p 1223
- Proposed Federal Food and Drugs Act Its Public Health Features W S Frisbie, Washington D C—p 1232
- The Roentgenogram in So-Called Acute Silicosis H L Sampson Trudeau, N Y—p 1237
- Pathology of So-Called Acute Silicosis L U Gardner Saranac Lake N Y—p 1240
- Silica Content of the Lungs of a Group of Tunnel Workers C S Smith and Helen L Wikoff, Columbus Ohio—p 1250
- Some Factors Involved in the Use of Chloramines for Disinfection of Swimming Pools A H Fletcher and E C Lunk, Memphis, Tenn—p 1255
- Hemolytic Properties of Mastitis Streptococcus P A Hansen, G J Hucker and Marion A Snyder Geneva N Y—p 1262
- Outbreak of Erythema Infectiosum in Elmsford N Y Phyllis Schuyler Kerr New York and E H Marsh White Plains N Y—p 1271
- Pulmonary Asbestosis J Donnelly, Huntersville N C—p 1275
- Has Diabetes Become More Prevalent? C Bolduan New York—p 1282
- Significance of Copper and Iron in Blood Restoration C A Elvehjem Madison Wis—p 1285
- Rapid Agglutination Technic Applied to Bacillus Pertussis Agglutination Pearl L Kendrick Grand Rapids Mich—p 1310

American Review of Tuberculosis, New York

28 711 910 (Dec) 1933

- Diagnosis of Carcinoma of the Lung L Hamman Baltimore—p 711
- Sarcoid of Boeck (Benign Miliary Lupoid) and Tuberculin Anergy Report of Case and General Remarks Marion B Sulzberger New York—p 734
- Treatment of Inoperable and Postoperative Urogenital Tuberculosis S L Wang New York—p 746
- *Treatment of Pulmonary Tuberculosis by Hyperpyrexia Preliminary Report G R Duncan E P K Fenger and A B Greene, Oak Terrace Minn—p 752
- Collapse Therapy of Pulmonary Tuberculosis in Negroes H D Chadwick Newton Mass R C L Markoe Detroit and J T Thomas Cleveland—p 759
- Comparative Results of Artificial Pneumothorax in the White and Negro Races B L Brock, Waverly Hills, Ky—p 767
- Collapse Therapy of Pulmonary Tuberculosis in Negroes A R Games and P E Keller Denver—p 779
- Contralateral Hemoptysis in Artificial Pneumothorax Report of Case J Kaminsky Waltham Mass—p 785
- Unusual Observation Following Artificial Pneumothorax S Simon and H S Abrams St Louis—p 788
- Mechanical Thorax for Experimental Study J J Singer St Louis—p 791
- First Infection and Reinfection Types of Tuberculosis J A Myers Minneapolis—p 793
- Significance of Tuberculous Lesions Found in Adolescent Children in a School Survey H W Hetherington Philadelphia—p 827
- Statistical Study of Patients Readmitted to Glen Lake Sanatorium 1916 1931 Frances Nemec and A E Treloar—p 838
- Study of Growth in Area of Intracutaneous Tuberculin Reactions C A Stewart, Minneapolis—p 844
- Viability and Virulence of Old Cultures of Tubercle Bacilli Studies on Twelve Year Broth Cultures Maintained at Incubator Temperature H J Corper and M L Cohn Denver—p 856
- Tubercle Bacilli in Blood Stream of Rabbits Following Subcutaneous and Intraperitoneal Inoculation Lucy Misbulow and W H Park, New York assisted by Nathalie Dillont—p 875
- Inhibitory Effect of Normal Blood on Growth of Tubercle Bacilli at Incubator Temperature H J Corper and C B Vidal Denver—p 878
- Effect of Animal Passage on Virulence of Tubercle Bacilli H S Willis Northville Mich—p 884

Treatment of Tuberculosis by Hyperpyrexia—Of the five patients suffering from tuberculosis who were treated by hyperpyrexia Duncan and his associates observed resolution over a period of from ten to eleven days in three sixteen days in one, and seventeen days in the other one. The usual rise of the patient's temperature was to 104 F or higher by mouth. The patients submitted to this treatment presented a poor

prognosis. The authors state that in those patients who show improvement the treatment should be continued with rest periods intervening and, when the patient's condition warrants, at higher temperatures for a longer time. They conclude that because of their patients' poor outlook at the beginning of treatment there is some definite value in hyperpyrexia as applied to pulmonary tuberculosis and that it is possible by hyperpyrexia to show roentgen and clinical improvement in pulmonary tuberculosis in a period as short as ten days.

Annals of Medical History, New York

6 194 (Jan) 1934

- Galen's Writings and Influences Inspiring Them J Walsb, Philadelphia—p 1
- Withering on Digitalis 1785 W T Dawson Galveston, Texas and J Chapman Osawatome Kan—p 31
- Rabanus Maurus 'De Sermonum Proprietate Seu De Universo' E C Jessup, Roslyn, Long Island N Y—p 35
- Assyriobabylonian Ophthalmology A C Krause Baltimore—p 42
- Medicine in Horace Walpole's Letters R Hutchison London England—p 56
- Johann Peter Frank and His System Einer Vollstandigen Medicin ischen Polizey' Leona Baumgartner and Elizabeth Mapelsden Ramsey New Haven, Conn—p 69

Archives of Ophthalmology, Chicago

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- Operative Treatment of Retinal Detachment with Electrocoagulation A Knapp, New York—p 733
- *Kahn Reaction in Aqueous Humor Its Relation to Syphilis of the Eye F B Frahm Ann Arbor Mich—p 745
- Retinal Detachment in Toxemia of Pregnancy Report of a Case M Jaffe New York—p 754
- Mydriatic Glaucoma Statistical Study S V Abraham Los Angeles—p 757
- *Use of Nupercaine in Ophthalmology M K Bochner Toronto—p 763
- Visual Results in Cases of Intraocular Foreign Body Study of Two Hundred and Seventy Cases W F Duggan New York—p 768
- Chemistry of the Lens V Relation of Anatomic Distribution of Lenticular Proteins to Their Chemical Composition A C Krause, Baltimore—p 788
- Hole in the Macula Report of Case in a Patient Under Observation J W Crawford, San Francisco—p 793
- Rodent or Mooren's Ulcer of Cornea Report of Three Cases with Healing S R Gifford Chicago—p 800
- Leukemic Retinitis L J Goldbach Baltimore—p 808

Kahn Reaction in Aqueous Humor—Frahm presents the hypothesis that a positive Kahn reaction in the aqueous humor may be expected when the tissues from which that fluid is derived are syphilitic and that a negative reaction may be expected with a nonsyphilitic involvement of these tissues. He subjected forty-seven patients to puncture of the anterior chamber and determined the Kahn reactions in the aqueous humor, the blood and the spinal fluid. His observations substantiate the hypothesis. The most interesting exception to these observations can be expected in inadequately treated syphilitic patients showing iridocyclitis in whom the reaction of the aqueous may be positive and that of the blood and of the spinal fluid negative. From the cases investigated which showed involvement of the posterior part of the uvea or of the optic nerve the author could evolve no means of prediction as to the Kahn reaction in the aqueous humor. He observed no correlation between the Kahn reactions of the spinal fluid and those of the aqueous humor. He states that the Kahn test of the aqueous humor might be used as a differential diagnostic procedure in certain cases of uveitis of obscure etiology.

Use of Nupercaine in Ophthalmology—Bochner gives a summary of his experiences with nupercaine ophthalmology over a period of three years. On the basis of his results he concludes that nupercaine is a most satisfactory anesthetic for both instillation and infiltration anesthesia in ophthalmologic practice. The maximal strength should never exceed 1 per cent for instillation and 1,000 for infiltration. The maximal effect does not take place for at least ten minutes after the injection or instillation, and for operations involving traction on the iris an interval of half an hour should elapse between the instillation of the first drop and the operation, unless the instillation is supplemented by a retrobulbar injection. For instillation at least from 15 to 20 drops of epinephrine hydrochloride per ounce (30 cc) should be added to overcome the vasodilator effect. The epinephrine does not appear to increase the anesthetic action. There is only slight drying of the corneal epithelium, and no alteration in the tension or the influ-

ence on the pupal results. The action is much more prolonged than that of any other anesthetic and the drug is relatively less toxic. In more than 2000 cases no toxic reaction was observed when the drug was used in the strength mentioned. As a non-narcotic it lends itself readily to prescription in combination with other drugs, in the form of solutions or ointments.

Archives of Pathology, Chicago

16:769-901 (Dec.) 1933

- *Atypical Form of Paget's Disease Appearing as Generalized Osteosclerosis H. I. Jaffe New York p. 769
- *Leiomyosarcoma of the Duodenum Dorothy H. Andersen and H. I. Jaffe New York p. 795
- Primary Malignant Lymphocytoma of the Testis Daniel H. G. Mason Portland Ore.—p. 803
- Adenomatosis XVI Production of Gastric Ulcers in the Albino Rat as a Result of Specific Influence of Deficiency of Vitamin B. H. Surr Fayetteville Ark. and H. S. Fletcher Little Rock Ark.—p. 809
- Latent Portal Cirrhosis of the Liver J. S. McCartney Minneapolis—p. 817
- *Effect of Roentgen Irradiation on the Healing of Wounds G. Ritchie Madison Wis.—p. 819
- Calcification of the Skin in Diabetes Mellitus A. H. Davis and S. Warren Boston p. 85
- Anatomic Mechanism in the Production of the Histiocytoma M. Rosenthal Brooklyn—p. 87

Atypical Form of Paget's Disease Appearing as Generalized Osteosclerosis—Jaffe studied the bones from a man aged 55 which showed advanced osteosclerosis markedly intense in certain areas. The pelvis and spine minute bones, sternum and ribs were investigated. The long tubular bones could not be examined. Although Paget's disease was not plainly suggested in the gross except possibly in the ribs the microscopic studies led to the conclusion that the changes in the bones were those of Paget's disease. The histologic appearances were not similar to the typical mosaic arrangement of florid Paget's disease. The author concluded that the slow evolution of the pathologic changes was the reason for the absence of a mosaic arrangement such as appears in typically florid areas of Paget's disease. The slow progress of the disease permitted healing to keep almost abreast with its evolution. Furthermore the slow progress of the evolution of the disease and the concomitantly rapid healing led to the production of osteosclerosis rather than to the usual gross changes of Paget's disease. A somewhat similar case was described by Schmidt but was erroneously interpreted as osteosclerotic anemia. The relation of this condition to Pick's endosteal Paget's disease is not clear. Thus, Paget's disease may appear in atypical form the bones, in the gross, evidencing generalized osteosclerosis.

Leiomyosarcoma of the Duodenum—Andersen and Jaffe report a case of duodenal leiomyosarcoma with symptoms referable to repeated hemorrhage into the intestine for five years compression of the inferior vena cava for seven weeks and a palpable tumor in the right side of the abdomen for six weeks. The tumor compressed the inferior vena cava and thrombi were formed in the common iliac veins. Death resulted from pulmonary embolism. The authors analyze this case and the eighteen other cases of leiomyosarcoma of the small intestine that have been reported in the literature.

Roentgen Irradiation and the Healing of Wounds—Ritchie presents the results of an experimental investigation of the effect of roentgen rays on the healing of wounds with a brief review of the experimental and clinical literature on the subject. The early histologic features found in such irradiated wound tissue are (1) sluggishness of fibroblastic growth, (2) the presence of anomalous giant fibroblasts and (3) the persistence of a fibrin network for a varying period. The first of these is considered to be most important from a practical point of view and is most consistently seen when irradiation follows incision by approximately twenty-four hours. The second is the most constant characteristic, and, since it has been noted also in human tissues subjected to roentgen and radium treatment, the author thinks that its presence in inflammatory tissue is highly suggestive of a reaction to roentgen rays. It is obviously improper to carry the results of animal experimental work bodily and in detail over into clinical practice such an investigation can be seen in its true light only when thoroughly checked by clinical observation. Nevertheless enough evidence

has accumulated to warrant the statement that roentgen irradiation in doses ordinarily used for the treatment of malignant tumors administered within forty-eight hours after incision may definitely retard healing but has no bad effect as far as ultimate results are concerned.

Iowa State Medical Society Journal, Des Moines

27:497-606 (Dec.) 1933

- Surgical Clinic H. M. Richter Chicago—p. 649
- Appendicitis Its Increasing Mortality G. M. Crabbe Mars Cr.—p. 657
- How Can the Present Mortality from Appendicitis Be Lowered? C. L. Heald Secretary—p. 656
- The Perforated Appendix J. W. Minkow Cedar Rapids—p. 660
- Reliability of Earlier Diagnosis and Treatment of Hepatic Carcinoma M. Stoll Rochester Minn.—p. 671
- Epilepsy in Childhood M. J. Foster Cedar Rapids—p. 663
- Bronchitis M. I. Floyd Iowa City—p. 668
- Branches (by) J. A. D. Young Des Moines—p. 669

Journal of Immunology, Baltimore

27:461-511 (Dec.) 1933

- Species Specificity of Tuberculin H. B. Kention Chicago—p. 461
- Survival of Non-tropic Yellow Fever Virus in Testicular Tissue W. Floyd and A. J. Mahaffy Lagos Nigeria Africa—p. 471
- Comparative Value of Tuberculin (MVA 100) and Old Tuberculin with Especial Reference to Sensitization J. D. Aronson and R. A. Nicholas Indianapolis—p. 481
- Specificity of Leucocidin E. P. Gay and Florence Oam New York—p. 501

Comparative Value of Tuberculinoprotein and Old Tuberculin—The results that Aronson and Nicholas obtained with small amounts of freshly diluted old tuberculin and tuberculinoprotein (MVA 100) show a close agreement but with larger amounts a larger percentage reacted to the old tuberculin than to tuberculinoprotein. When those who failed to react to old tuberculin and to tuberculinoprotein were retested approximately three months later a small proportion reacted to the old tuberculin but a larger proportion reacted to tuberculinoprotein. In a high percentage of those retested with tuberculinoprotein, evidence of sensitization was given by the appearance of the specific inflammatory reaction (Arthus phenomenon) at the site of injection.

Journal of Pharmacology & Experimental Therap., Baltimore

40:387-592 (Dec.) 1933 Partial Index

- Question of Elimination of Barbituric Acid Derivatives in the Liver with Special Reference to Iso Amyl Ethyl Barbituric Acid (Sodium Amytal) and 1-Methyl-2-ethyl Barbituric Acid (Pentobarbital Sodium) H. A. Shonle A. K. Kelich G. F. Kempf and E. E. Swanson Indianapolis—p. 393
- Studies of Effect of Ultraviolet Rays on Nicotine A. A. Gant Chicago—p. 408
- Bradycardia Caused by Sympathomimetic Drugs L. Terry and H. C. Peters Chicago—p. 428
- Studies of Chronic Morphine Poisoning in Dogs A. Recovery of Morphine from Tissues of Tolerant and Nontolerant Animals O. H. Plant and I. H. Pierce Iowa City—p. 432
- Absorption of Insulin from Intestinal Tract D. Campbell and T. A. Morgan Aberdeen Scotland—p. 450
- Hyperkalemic Action of Certain Drugs D. Campbell and T. A. Morgan Aberdeen Scotland—p. 456
- Influence of Caffeine on Effects of Acetanilid J. A. Higgins and H. A. McCaig Chicago—p. 466
- Studies on Calcium IX Further Observations on Acute Thrombophlebitis Edema A. I. Lieberman and N. R. Cooperman Chicago—p. 479
- Experimental Investigation on Treatment of Toxemia Part II G. A. Myers Cambridge England—p. 483

Absorption of Insulin from Intestinal Tract—Campbell and Morgan demonstrated that once insulin gets into the portal circulation it is just as active as when given into the systemic circulation. This fact taken along with the observation that insulin is not rapidly destroyed in the intestine, indicates that the main reason for the failure of insulin to act when administered orally is that it is not absorbed from the intestine. The difficulty appears to lie in the selective absorptive power of the intestinal mucosa. The authors attempted to facilitate the absorption of insulin by combining it with lecithin. The compound formed is soluble in ether, is presumably of the nature of an adsorption compound, is active on subcutaneous injection, but is not absorbed from the alimentary canal either of the rabbit or of man.

Kansas Medical Society Journal, Topeka

71 457 492 (Dec) 1933

- The Health Officer and the General Practitioner W H Young Topeka—p 457
Some Experimental Work with Rabies G F Finkle Canton—p 460
*Results of Treatment of Intermittent Claudication and Thrombo Angitis Obliterans with Parathormone Report of Four Cases Preliminary Report D V Conwell, Halstead—p 465

Treatment of Intermittent Claudication and Thrombo-Angitis Obliterans with Parathyroid Extract—Conwell treated two patients having intermittent claudication and two having thrombo-angitis obliterans with parathyroid extract-Collip. The indications for its trial were no improvement with other forms of treatment employed previously and the presence of a hypocalcemia suggesting a metabolic disturbance with possible vasoconstrictor hyperirritability. Two of the patients were facing certain amputation. The parathyroid extract was given in amounts of 0.5 cc or 10 units subcutaneously every other day for ten injections. The improvement was relatively rapid and uniform. The attacks of intermittent claudication were controlled, permitting at least a temporary return to normal activity. The circulatory changes in the patients having thrombo-angitis obliterans were prompt and there was a complete control of the pain that had necessitated morphine. Return of warmth, moisture, diffuse reddish hue on elevation of the foot, loss of tenderness, improved sensation and motion of the toes, disappearance of the ecchymoses and deeper discoloration and there was a return of the pulse in the dorsalis pedis and the posterior tibial arteries. There were no untoward reactions. Calcium gluconate was given by mouth to two patients and not given to the other two but their responses appeared to be equal. The calcium of the blood plasma dropped slowly in one case.

Kentucky Medical Journal, Bowling Green

31 549 588 (Dec) 1933

- Indications for Cesarean Section from Surgeon's Point of View D P Hall Louisville—p 551
Cancer of the Breast W O Bullock Lexington—p 555
Hernia into the Paraduodenal Fossa with Large Biliary Calculus Report of Case I A Arnold Louisville—p 561
Cancer of the Colon F W Rankin Lexington—p 563
Medical Preparation of a Patient for Urologic Surgery T M Stutes Jr Louisville—p 567
Acute Suppurative Otitis Media and Its Complications G W White Henderson—p 569
Use of the Roger Anderson Well Leg Counter Traction Splint in Fractures of the Neck of the Femur O R Miller Louisville—p 573
Treatment of Burns C Baron Covington—p 579
Jaundice J D Hancock Louisville—p 580

Medical Annals of District of Columbia, Washington

3 128 (Jan) 1934

- Accidents and Injuries Comparative Study of Their Causes Among Various Groups J P H Murphy Washington—p 1
Volubus Review with an Illustrative Case W B Marbury and E M Pickford Washington—p 7
Cleidocranial Dysostosis Report of Case J R Cavanagh Washington—p 11
Fundamentals of Internal Medicine Diseases of the Heart W M Yater Washington—p 13

Medical Bull of Veterans' Adm, Washington, D C

10 79 172 (Oct) 1933

- Residual Effects of Warfare Gases Use of Arsenical Compounds with Report of Cases H L Gilchrist and P B Maiz—p 79
Thrombo Angitis Obliterans Report of Fifty Two Cases E T Evans and A G Dumas—p 99
Triorthocresol Phosphate Poisoning Due to Ingestion of Adulterated Jamaica Ginger O P Goodwin—p 110
Intracranial Pressure Its Diagnosis by Roentgen Method B A Moxness—p 115
Heart Block R S E Murray—p 120
Group Flood Pressures H Caldwell—p 124
Pulmonary Asbestosis G A Stock—p 126
Premale Psychoses W M Bevis—p 130
Pleurisy with Effusion and Its Relation to Tuberculosis E D Hatch—p 133
Treatment of Pleurisy with Effusion in Pulmonary Tuberculosis J L Lewis—p 138
Critical Review of Use of Cod Liver Oil and Irradiated Ergosterol in Treatment of Tuberculosis G D Cumber—p 141
Bronchial Asthma E A Montague—p 148
Suggestions for Effecting Economies in Medical Procedures G W Phillips—p 149
Review of Forty Edemulous Cases C S Lister—p 151

Medicine, Baltimore

12 355 446 (Dec) 1933

- *Porphyrins in Human Disease V R Mason C Courville and E Ziskind Los Angeles—p 355

Porphyrins in Human Disease—Mason and his associates base their study on the clinical observations of four patients presenting the acute, idiopathic type of hematorporphyria, and also on the postmortem examination of the tissues of two of these patients who died from involvement of the nervous system with symptoms closely resembling acute ascending paralysis of the peripheral nerve type. They discuss the distribution and the chemical properties of the porphyrins and their relation to disease in human beings. No specific therapeutic measures have been found. Patients having the dermal type of the disease should be protected from the injurious rays of the sun and those having the acute toxic or acute idiopathic type of the disease must be treated symptomatically. Since the porphyrins form insoluble salts with calcium this element should be given in some form, although its therapeutic value is not yet known. The authors discuss the chemistry of porphyrins, the clinical features, symptomatology, pathologic anatomy, pathogenesis and so on as they pertain to porphyrins in the human being.

New England Journal of Medicine, Boston

209 1191 1254 (Dec 14) 1933

- Pelvic Inflammation Course and Treatment and Elliott Treatment F C Holden New York—p 1191
Placenta Praevia Review of Four Hundred and Thirty Seven Cases from the Boston Lying In Hospital F S Kellogg Boston—p 1201
*The Use of Pituitary Extract in Obstetrics C R Alden Boston—p 1211
Malignancy of the Colon C L Smart Laconia N H—p 1216
Latest Developments of the Tonsil Problem A J Provost Manchester N H—p 1221
Management of Congestive Cardiac Failure C H Beecher Burlington Vt—p 1226
Varicose Veins and the Injection Treatment G P Pennoyer New York—p 1228
Studies of Reproduction in the Rat III Vitamin E—Neutralized When Mixed with Lard D Macomber Boston—p 1235

209 1255 1314 (Dec 21) 1933

- Appendices Epiploicae Their Surgical Significance with Report of Three Cases D C Patterson Bridgeport Conn—p 1255
Physiology of Pulmonary Circulation H L Blumgart Boston—p 1259
Pathologic and Clinical Aspects of Pulmonary Circulation P D White Boston and O Brenner Birmingham England—p 1261
Pulmonary Embolotomy E C Cutler Boston—p 1265
Types of Edema and Their Treatment H A Christian Boston—p 1267
Gastric Syphilis Simulating Carcinoma of Stomach Case B Kaplan New Bedford Mass—p 1270
Observations on Use of Paraffin Oil Preparations R L Patterson and C M Jones Boston—p 1275
Studies of Reproduction in the Rat IV Occurrence of Spontaneous Amputation in Young Growing Rats Whose Mothers Were on Certain Diets D Macomber Boston—p 1277
Amebic Abscess of the Liver Without Preceding Diarrhea Case Report L S McKittrick Boston—p 1280
Toxemias of Pregnancy Critical Review of Recent Literature D Hurwitz Boston—p 1281

Use of Solution of Pituitary in Obstetrics—In discussing the use of solution of pituitary in obstetrics, Alden refers to the solution that contains 10 international units per cubic centimeter. In multiparas when slight contractions have been established 2 ounces (60 cc) of castor oil and 15 grains (1 Gm) of guinine bisulphate are given. Half an hour later 5 grains (0.3 Gm) of guinine bisulphate is given followed in half an hour by a hot soapsuds enema and in half an hour by the intramuscular injection of 2 minims (0.12 cc) of solution of pituitary which is repeated at half hourly intervals for six doses provided labor does not start in the meantime. The administration of solution of pituitary is stopped as soon as the patient is in labor. In primiparas the amount of solution of pituitary is reduced to 1 minim (0.06 cc). For uterine inertia during the first stage of labor solution of pituitary may be given in doses of 1 minim. Excessive use of solution of pituitary during the first stage of labor will result in tetanic contraction of the uterus and may rupture the body of the uterus the lower uterine segment or the cervix. A hot bath will often relieve the tetanic contraction or deep etherization may be instituted. During the second stage of labor solution of pituitary may be used in doses of from 0.5 to 1 cc. Repetition of the dose may

cause a distinct shutting down of the uterine musculature about the child. Once the placenta is expelled the routine intra-muscular injection of the full dose of 1 cc. of solution of pituitary is indicated, followed by, or coincident with, an injection of ergot. When bleeding is not controlled by one dose or when there is late relaxation of the uterus a 1 cc. dose of solution of pituitary may be repeated the possibility of a so-called pituitary reaction being kept in mind. In cesarean sections, solution of pituitary is of value in causing the uterus to shut down and in controlling bleeding after the extraction of the baby. Intramuscular or intravenous injection is employed chiefly. The intramuscular injection is made at the moment of incision into the uterus. If intravenous injection is used it should be decided on in the beginning and not given on top of one or two intramuscular injections. It should not be given before and not too long after the extraction of the baby. It may be diluted with from 5 to 10 cc. of physiologic solution of sodium chloride and should be given slowly. Solution of pituitary in conjunction with ergot is of value in cases of sub-involution of the puerperium when from 4 to 8 minims (0.25 to 0.5 cc.) is given three times a day. Solution of pituitary stimulates the unstriated muscle fibers of the intestine and bladder in atonic conditions. In postoperative distention following cesarean sections it may be administered every four hours in full doses. An intramuscular injection of solution of pituitary given half an hour previously will increase the efficiency of enemas in intestinal paresis. Retention of urine during the puerperium due to atony of the traumatized bladder is often favorably influenced by repeated injections of solution of pituitary intramuscularly three times a day. Solution of pituitary is contraindicated in cases of toxemia with high blood pressure, nephritis, myocarditis and arteriosclerosis.

New Jersey Medical Society Journal, Orange

70 517-528 (Dec.) 1933

- Recurrent Vomiting—Clinical Study. J. J. Kraus & Chalmers—p. 517
 Carcinoma of the Small Intestine. S. A. Goldberg, Newark—p. 525
 Newer Radiologic Methods of Gastrointestinal Examination—Critical Evaluation and Practical Survey Based on Personal Experience. R. Pomeroy, Newark—p. 531
 Conservative Management of Chronic Middle Ear Suppuration. O. R. Kline, Camden—p. 537
 Genito-Urinary Infection. S. R. Woodruff, Jersey City—p. 541
 Surgery of Kidney and Ureter in Infants and Children. M. I. Campbell, Montclair—p. 545
 Fetal Absorption and Fetal Poisoning—Clinical and Pathologic Analysis of One Hundred Cases. O. Lewis and I. J. Levinson, Newark—p. 549
 Preoperative Treatment in Gynecology. W. J. Carrington, Atlantic City—p. 554
 Scarlet Fever Immunization by Inunction—Preliminary Report. M. L. Ripps, Elizabeth—p. 558
 Death Rates of New Jersey State Hospital at Marlboro, Fiscal Year Ending June 30, 1933. H. C. Borden, Marlboro—p. 561

Recurrent Vomiting—Recurrent vomiting, in childhood according to Kraus, is usually of a neuropathic origin and should be treated primarily by a study of the constitution of the child. Avoidance of physical and especially nervous fatigue is most important. Change in dietary habits with a reduction in the amount of pure carbohydrates and starches and with a relative increase in the amount of fats predisposes, in a certain type of child, to an accumulative, periodic toxemia characterized by persistent vomiting and prostration. It is most common in children from 2 to 7 years of age and is seldom seen after the age of 10. As the child grows older the mother becomes less insistent on the quantity of milk taken and more pure carbohydrates are allowed. This automatically corrects the tendency to recurrent toxemia, which these patients possess. Other predisposing causes are physical defects in the intestinal tract and chronic infection, especially in the tonsils. Attacks are precipitated by acute infections and by physical and mental exhaustion. Treatment of the metabolic imbalance by reduction of the fat and increase of the carbohydrates will clinically cure the majority of the cases. The acute attack, if severe, demands the liberal injection of fluids, preferably physiologic solution of sodium chloride or dextrose solution, until vomiting is controlled and diuresis is well established.

Scarlet Fever Immunization by Inunction—Ripps states that, of 112 Dick positive children completing treatment, fifty-seven were rendered negative from eighteen to nineteen weeks

after the last inunction. Cold cream inunction proved superior to hydrous wool fat in that it was quicker to absorb and produced a larger percentage of immunizations. The children who gave the most marked reactions to the Dick test were the most difficult to immunize. In children from 1 to 4 years of age the results were poor, only 33 per cent of the subjects in this group having been rendered negative. A higher percentage of immunization may perhaps be obtained with increasing dosage. As much as a 90,000 I.U. test dose of toxin has been given to a group without any reaction. Because of the ease of administration and lack of reaction, a continued study of this method of immunization should be made.

Northwest Medicine, Seattle

72 491-547 (Dec.) 1933

- Legal Aspects of the Sex Organization. A. F. McKay, Portland, Ore.—p. 491
 New Deal in Relationship of the Physician to Organizations. D. C. J. Free, Portland, Ore.—p. 495
 Free or Part-Time Medical Service. S. G. Henick, Portland, Ore.—p. 497
 Experiences in Hospital Insurance. P. W. Nelson, Portland, Ore.—p. 497
 The American Organization and Organization of Professional Colleges. City of Health Association. F. L. Ower, Portland, Ore.—p. 501
 Treatment of Catarrh and Rectum. A. T. Jarrow, Montreal—p. 507
 Sexes, Parasites (Hill's Disease). Treatment by Peppermint Oil. Dr. W. W. Clark, Seattle—p. 507
 Artificial Urinary Treatment. W. F. Caldwell, Portland, Ore.—p. 511
 Artificial Urinary Treatment. W. F. Caldwell, Portland, Ore.—p. 511

Treatment of Spastic Paraplegia by Repeated Cisternal Drainage—Clem performed repeated cisternal drainage in ten cases of spastic paraplegia. The infants have shown sufficient benefits to warrant a continuation of this type of treatment. Four were hopeless automatons and drainages were performed merely to relieve distressing symptoms. Of the remaining six, one child now 4 years of age walks runs and talks almost as well as other children of his age. When 22 months old he could not sit up, talk or recognize people or objects. His condition can be made much worse in a few days time by increasing his fluid intake from 10 to 25 or 30 cc. He becomes restless and nervous and he tires easily. He urinates larger quantities, he improves otherwise he remains listless and dull. Cerebrospinal fluid drainage and limitation of his fluids result in marked improvement within a few days. Improvement seems more rapid in the few cases in which treatment was begun at the age of from 15 to 24 months than in those of from 8 to 15 months. The author does not wish to leave the impression that this method of treatment is a cure for Little's disease but that it has greatly improved several children and relieved others of distressing symptoms.

Philippine Islands Medical Association Journal, Manila

17 541-586 (Dec.) 1933

- Tetralogy of Fallot. Report of Case with Necropsy. A. Ibarra and J. S. Hilario, Manila—p. 541
 Intracutaneous Absorption of Iodized Ethyl Esters of Nigella Oil by Intracutaneous Injection. J. O. Nolaseo, Cebu—p. 547
 Morbid Mental Trends of the Major Psychoses Among Filipinos. T. Joann, Iloilo—p. 557
 Cirrhosis of the Liver Among Filipinos. Notes. H. Barrera, Manila—p. 562

Public Health Reports, Washington, D. C.

18 1543-1584 (Dec. 29) 1933

- Experimental Studies on Acute Mercurial Poisoning. S. M. Rothenthal—p. 1543

Science, New York

70 115 (Jan. 5) 1934

- Method for Studying Drought Resistance in Plants. H. L. Shirley—p. 115
 Modified Sabouraud Medium Suitable for Cultivation of Acid Fast Actinomycetes. Sara A. Scudder, New York—p. 116

Modified Sabouraud Medium for Cultivation of Acid Fast Actinomycetes—Scudder isolated an acid fast strain of actinomycetes from the blood in a case of acute mastoiditis complicated by sinus thrombosis, septicemia and arthritis by means of a modified formula of French proof agar. This strain was non acid fast on such mediums as the standard Bordet Gengou potato synthetic phosphate and Difco Sabouraud. The formula that the author employs consists of 4 per cent maltose, 1 per cent Difco peptone and 1.8 per cent flaked agar dissolved

in unfiltered beef heart or veal infusion instead of water. No adjustment in reaction is made. Glycerin and other carbohydrates may be added if desired. Slanted agar favors development of acid fastness in about four days. A grayish brown powdery substance develops on the upper portion of the slant simultaneously with the appearance of the acid-fast portions of growth. The acid-fast component appeared in young cultures (seventy-two hours) on this medium as branching non-acid fast mycelia containing acid-fast pleomorphic portions. Old cultures consisted of non acid-fast oval components and mycelia interspersed with acid fast oval components. The acid-fast characteristic was inhibited on all other mediums.

South Carolina Medical Assn Journal, Greenville

29 269 296 (Dec.) 1933

- Cataract I J Mikell Columbia—p 273
Treatment of Traumatic Tetanus Report of Six Cases C O Bates, Greenville—p 276
Interesting Problem in After Care of Hemorrhoidectomies T Brockman and S Cain, Jr Greenville—p 281

Southern Surgeon, Atlanta, Ga.

2 196 (March) 1933

- Central or Intracapsular Fractures of Neck of Femur W C Campbell, Memphis Tenn—p 1
Treatment of Infections and Carbuncles of Face and Lips H A Gamble Greenville Miss—p 24
Treatment of Bartholin's Gland Abscess W S Dorrough Atlanta Ga.—p 29
Endothelial Sarcoma of Lymph Nodes Report of Case W L A Wellbrock Rochester Minn—p 31
Consideration of Causes of High Mortality in Cesarean Section J W Bourland Dallas Texas—p 34
Multiple Primary Malignant Growths I Abell Louisville Ky—p 39
Surgical Care of Infantile Paralysis E L Scott, Birmingham Ala—p 47
Electrosurgical Unit as an Aid in the Removal of Brain Tumors and in Drainage of Brain Abscesses C Bagley, Jr, Baltimore—p 51
Benign Tumors of the Kidney H E Simon Birmingham Ala—p 67
Use of Perfringens Antitoxin in Treatment of Paralytic Ileus J K Quattlebaum Savannah Ga—p 74
Surgery of the Larynx M Eguen, Atlanta Ga—p 79

Treatment of Abscess of Bartholin's Gland—Dorough, in treating abscesses of the glands of Bartholin, exposes the gland by traction after the field of operation is made ready by the usual preparation and use of antiseptics and applies a drop of phenol to the mucous membrane just inside the mucocutaneous margin. As the area is tender, a few drops of a 1 per cent solution of procaine hydrochloride are injected into the tissue overlying the abscess by means of a fine hypodermic needle, entering through the anesthetized spot. This needle is then withdrawn and a large caliber one is inserted through the anesthetized area into the cavity of the abscess. With a syringe attached, the pus is withdrawn from the cavity and the amount removed is noted. By placing the gloved finger within the vaginal orifice and exerting gentle pressure, the operator is able to evacuate the cavity almost entirely. The syringe is detached and replaced by another syringe containing hexylresorcinol. The equivalent of one-half the amount of pus removed is injected into the cavity. This may be injected and then aspirated, washing out the cavity, but in all cases this amount is left in the cavity. The patient is then instructed to sit in hot water for a few minutes as soon as convenient and to repeat this each morning and night for two or three days. A preparation of foreign protein is then injected into the gluteal muscle. The next day the inflammation has markedly subsided and it may not be necessary to repeat the procedure. If the procedure is repeated it is rarely necessary to use any anesthetic for the insertion of the needle. As soon as tenderness subsides, the usual hot antiseptic douches are begun.

Western J Surg, Obst & Gynecology, Portland, Ore

41 663 718 (Dec.) 1933

- Factor of Spasm in Etiology of Peptic Ulcerations M E Steinberg Portland Ore—p 663
End to End Reduction in Fractures of the Lower Extremity R Anderson Seattle—p 671
Simple and Efficient Pneumatic Tourniquet C F Eikenbary and J F LeCocq Seattle—p 679
Obstetric Shock Following Delivery R A Bartholomew Atlanta Ga.—p 681
Tumors of the Neck J E Else Portland Ore—p 68
Twelve Years Experience in Organized Group Practice Plan in Action R Brown Santa Barbara Calif—p 695

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Radiology, London

6 705 768 (Dec.) 1933

- Physiologic Leukocyte Counts and Detection of Small Deviations from the Normal R H Simpson—p 705
Radiology of Heart Disease (A) Technique of Cardiology J V Sparks—p 723
Id (B) Telerradiographic Mensuration of the Heart F G Wood—p 732
Addison's Disease Radiographically Confirmed Three Cases A E Payne—p 747

British Medical Journal, London

2 1103 1152 (Dec 16) 1933

- So Called Acidosis in Children R Miller—p 1103
*Clinical Recognition of Structural Disease of Peripheral Vessels G W Pickering—p 1106
*Studies on Etiology of Blood Diseases Pathogenic Agent in Normal Human Bone Marrow U Friedemann and A Elkeles—p 1110
Addison's Disease Case H S Stannus—p 1112
*Treatment and Control of Essential Hypertension New Therapeutic Measure H O Gunewardene—p 1114

Clinical Recognition of Disease of Peripheral Vessels—Pickering believes that an essential step in understanding most disorders of the peripheral circulation is first to determine whether any structural lesion of the vessels is present. The author discusses the methods that he has found most serviceable in identifying structural disease of the vessels. In the absence of severe anemia, abnormal pallor of an extremity indicates emptiness of the minute vessels. Increased depth of color is due to a dilatation of the capillaries and venules of the skin as a result of injury. Postural changes in skin color are common in structural disease of the vessels but are by no means confined to these. Conspicuous pallor of the skin when a limb is raised and maintained for a few minutes above the level of the heart is strongly suggestive of a structural lesion of the vessels, and the height at which such pallor occurs is used by Buerger as an index of the degree of disease. The rate at which color returns to skin that has been blanched by pressure is frequently used as an index of the rate of the cutaneous blood flow. It is an unreliable test because the return of color is often from the surrounding venous plexuses rather than from arteries, and the rate of return then depends chiefly on the pressure in those plexuses. An important indication of the adequacy of the blood flow through a limb is the temperature of the surface of the limb, but skin temperature has wide fluctuations in health. The air temperature necessary to produce vasodilatation and warm extremities varies from subject to subject. Coldness of the extremities does not suffice for the diagnosis of arterial disease or arterial spasm. Of greater significance is an inequality of temperature between two symmetrical limbs similarly treated and exposed for the same length of time. Although it is the rule for a limb more affected by structural vascular disease to be persistently colder than its fellow the reverse is occasionally found. When the limb having the more affected vessels is the warmer, some other factor must be called to account for this. Pulsation may be retained in one or more of the main vessels of the foot or hand after the smaller arteries have become extensively diseased and the circulation to a limb may be almost normal in the absence of pulsation in its vessels, as is the case in the legs of patients with coarctation of the aorta. Allen has described a simple method for recognizing an organic obstruction of the ulnar or radial artery at, or distal to the wrist. In extremities that have been warmed by immersion in water at from 42 to 45 C (107.6 to 113 F) for ten minutes, it is usually possible in normal subjects to elicit capillary pulsation in the palmar surfaces of the hands and plantar surfaces of the feet by light pressure with a glass slide. The presence of capillary pulsation indicates that the arteries and arterioles supplying the corresponding area of skin are patent. The veins share in the general vascular relaxation produced by warmth, and the most satisfactory method of demonstrating the superficial venous plexus is to immerse the foot for ten minutes in water at from 35 to 40 C (95 to 104 F) and then to distend the veins by obstructing them in the leg with pneumatic pressure of from 60 to 70 mm of mercury.

Etiology of Blood Diseases Pathogenic Agent in Human Bone Marrow—The experiments of Friedemann and Eikeles demonstrated that in normal human bone marrow there is an agent which causes an encephalitis if injected intrathecally into rabbits. This agent cannot be one of the common bacteria, since all sterility tests have proved negative. The fact that the agent was present in all specimens of normal human bone marrow tested demonstrates that generally the agent is non-pathogenic for man, but this does not exclude the possibility that under some special conditions this agent may become pathogenic for man and cause disease. Their attempts to transmit the encephalitis from rabbit to rabbit through an indefinite series have had indifferent success.

Essential Hypertension—Although unwilling to accept the theory on which the treatment of Curya in cases of moderately high blood pressure was based, Gunewardene modified his method by substituting electrical stimulation of the skeletal muscles and submitting patients with high grades of pressure to treatment on these lines. As a preliminary, the patients were tested to see what effect the resulting muscular contractions had on the pulse rate, particularly as some of them were on the verge of cardiac failure. In every case the pulse rate dropped, sometimes by eight beats to the minute. The results indicate that in some cases of hyperpiesia the blood pressure drops to normal figures without rest or medicinal aid, there is also relief from distressing symptoms. In other cases there is relief from symptoms but pressures will not fall. These cases show impaired renal function as gauged by the urea concentration test. It is difficult to give an explanation of the mechanism by which the reduction of pressure is brought about.

Irish Journal of Medical Science, Dublin

No. 66 643 698 (Dec.) 1933

- Hodgkin's Disease J. McGrath—p. 643
 Novissimus Idea de Febribus of Jacobus Sylvius T. P. C. Kirkpatrick—p. 667
 Pulmonary Tuberculosis Among Outpatients G. Newley—p. 679

Medical Journal of Australia, Sydney

2 777 808 (Dec. 9) 1933

- Medical Evidence, Certificates and Fees Under the Workers Compensation Act R. M. Mackay—p. 777
 Diabetes Mellitus E. Downie—p. 784

2 809 836 (Dec. 16) 1933

- Tubal Block and Other Adnexal Lesions from Aspect of Sterility S. C. Fitzpatrick—p. 809
 Lead Poisoning G. C. Willecock—p. 813
 *Basophilia and Lead Excretion in Lead Poisoning C. Bradham—p. 816
 Queen Charlotte's Hospital Report on Puerperal Fever Summary with Some Comments F. A. Njulu—p. 821
 Position of Urinary Bladder H. Fischer—p. 823

Basophilia and Lead Excretion in Lead Poisoning—According to Bradham, lead poisoning is present when the first pathologic sign of the action of lead can be detected, and this is the presence of stippled red cells. Lead poisoning with disability is present when there is anemia in mild or severe degree, evidenced by a reduction of the red cells and hemoglobin and the presence of stippled red cells with or without symptoms of lead poisoning, such as malaise, constipation, joint pains and abdominal pains. If the patient is examined in the critical period for making a diagnosis of lead poisoning, that is, when lead anemia is present, punctate basophilia is always found, and this sign is practically specific for lead poisoning. Before making a diagnosis of lead poisoning, evidence of a lead intake should be sought, and this is to be found in a knowledge of industrial processes or in the amount of lead in the urine, or from the presence of a blue line.

South African Medical Journal, Cape Town

7 811 846 (Dec. 23) 1933

- Reflections A. F. Stewart—p. 811
 Matters of Opinion T. Wooldridge—p. 812
 Cancer I. Significance of Study of Neoplasms in Animals G. de Kock—p. 817
 Id II Early Diagnosis of Cancer C. G. L. van Dyk—p. 820
 Id III Early Treatment of Cancer Surgical and Nonsurgical W. Welchman—p. 821
 Id IV Statistics of Cancer E. H. Cluver—p. 825
 Id V The Problem of Cancer J. A. Orenstein—p. 827

Presse Medicale, Paris

42 185 208 (Feb. 3) 1934

- Allergy to Tuberculin and to Tuberculous Ultravirus Filtrates, Compared G. Puisseau, J. Valtis and F. Van Deuse—p. 183
 *My Method of Spinal Anesthesia with Nupercaine B. Quarella—p. 187
 Glandular Chelitis Precancerous State of the Lower Lip Touraine and Solente—p. 191

Spinal Anesthesia with Nupercaine—Quarella describes the technique that he uses for spinal anesthesia with nupercaine. Patients are prepared one hour before the operation by an injection of a freshly prepared ampule containing 0.0006 Gm of scopolamine hydrobromide, 0.015 Gm of morphine hydrochloride and 1 cc of a 10-100 aqueous solution of mannite. The dose may be adjusted depending on the age and condition of the individual patient. Fifteen minutes before the anesthesia the patient is given one or two ampules of ephedrine (each containing 0.05 Gm) subcutaneously, the dose depending on the blood pressure of the patient and the level of anesthesia to be obtained. The technique of anesthesia involves the following steps: drawing into the syringe of from 1.4 to 2 cc of a 1-200 solution of anesthetic, the amount depending on the general condition of the patient and the level of anesthesia to be obtained, spinal puncture of the patient in a sitting position and at a level between the twelfth thoracic and fifth lumbar vertebra, removal of from 5 to 10 cc of spinal fluid depending on the pressure and level of anesthesia to be attained, aspiration into the syringe containing the anesthetic of from 6 to 8 cc of spinal fluid, slow subarachnoid injection of the contents of the syringe, in cases of high spinal anesthesia, repetition of the aspiration of spinal fluid and reinjection, but with a lesser quantity, putting the patient quickly flat on the table with the head raised on a cushion in a more or less inclined position depending on the level of anesthesia to be reached, and waiting fifteen minutes at least, and twenty or twenty-five in cases of high anesthesia for the effect to be profound before starting the operation. The author believes that this technique compares favorably with other methods and other anesthetics. One of the special advantages of nupercaine rests in its short period of activity when introduced into the subarachnoid space, which limits its danger due to excessive diffusion.

Policlinico, Rome

11 57 120 (Feb. 3) 1934 Medical Section

- Effects of Venesection on Chemical and Physicochemical Constitution of Blood P. Steffanutti—p. 57
 *Action of Hydrochloric Acid on Glycemia of Hepatic Patients A. M. Micheluzzi—p. 78
 Research on Chronaxia of Muscles and Peripheral Nerves in Cardiac Patients G. Borruo—p. 96

Action of Hydrochloric Acid on Glycemia of Hepatic Patients—Micheluzzi studied the effect of hydrochloric acid on the glycemic curves of patients presenting hepatic lesions. He made four separate glycemic curves, after administration of dextrose of dextrose and hydrochloric acid, of water and of hydrochloric acid alone. The dosages were 100 Gm of dextrose and 80 drops of the official solution of hydrochloric acid. The dextrose was dissolved in 200 cc of water and given to the patient on a fasting stomach. The hydrochloric acid was diluted in small quantities of water and given by mouth. The author found that the administration of hydrochloric acid causes a marked diminution in glycemia. This diminution is not uniform as to quantity but is always demonstrable and may attain high values. In one case there was a maximum rise of the glycemic curve to 63 mg per hundred cubic centimeters of blood, as compared to the curve obtained with dextrose only, while in another case the glycemic curve was lowered 70 mg. In all cases the lowering of the glycemic curve was more intense and more constant in the alimentary curves than in those obtained during fasting. In one patient the maximum glycemic diminution was 22 mg during fasting and after administration of hydrochloric acid and dextrose rose to 63 mg. The hypoglycemia due to hydrochloric acid may be explained by the synergistic action of internal and external secretion of the pancreas. The hydrochloric acid, which physiologically stimulates the pancreatic secretion may cause a formation of secretin, once it comes in contact with the duodenal wall, this in time may induce an excitation of the function of the pancreatic acini which may be followed by the passage into circulation of

a larger amount of insulin. The action of insulin, activating the enzymic secretion of the stomach and of the pancreas, the action of acid gastric juice on the pancreatic function and vice versa, and the belief that there exists in diabetic patients a gastric hypo-acidity and pancreatic hypofunction have convinced the author that the mechanics of direct stimulation of insulin secretion is the most probable explanation of the hypoglycemic action of hydrochloric acid.

Prensa Médica Argentina, Buenos Aires

21 113 154 (Jan 17) 1934

Prolonged Priapism Caused by Myelogenous Leukemia. Case C Bonorino Udaondo J E Carulla and F Cabarro—p 113

Abscesses of Lungs R Finocchio—p 116

Aneurysmal Dilatation of Left Auricle C Rodrigue—p 118

*Posterior Route in Apicolysis Without Muscular Section. Technique A J Pavlosky—p 139

Painful External Tibial Bone A Lago Garcia and A L Masucci—p 142

Apicolysis Without Muscular Section—Pavlosky performs apicolysis and filling without muscular section by means of a vertical incision 8 cm long beginning at the level of the transverse apophysis of the eighth cervical vertebra and proceeding downward to the specified length. This incision is made midway between the spinal apophyses and the border of the scapula. The skin, subcutaneous cellular tissue and superficial fascia are incised and drawn sideways 3 or 4 cm. The aponeurosis is cut transversely and the muscle is separated following the direction of its fibers. The muscle is retracted, exposing the bundles of the rhomboideus, the fibers of which are separated in the center of the incision by the same maneuver used for the trapezius. The serratus minor posterior superior is then in view and its fibers appear in an oblique direction from above downward and from inside outward. The fibers are separated in the same direction and in the manner used for the other muscles. The three muscles (which cover the third and fourth ribs) are retracted. The resection of the third rib, the apicolysis and the filling are performed according to the usual technique. The muscular planes are reconstructed by approximating the muscles with small No. 00 catgut sutures. Perfect anatomic restitution is thus obtained. The operation is performed under local anesthesia by infiltration.

Deutsche medizinische Wochenschrift, Leipzig

60 123 158 (Jan 26) 1934 Partial Index

*Leanness and Tendency to Emaciation G von Bergmann—p 123

Biologic Action of Roentgen and Radium Rays and Their Practical Effect in Combat of Cancer Englmann—p 127

Prognosis of Laryngeal Carcinoma C von Eicken—p 130

Is Roentgen Irradiation of Cancerous Bone Metastases Justified? A Pichkan—p 132

*Treatment of Allergic Disturbances with Skin Extract Annemarie Kohler—p 136

Practical Aspects of Most Important Infectious Diseases C Hegler—p 138

Necessity of Bacteriologic Control Examinations of Raw Milk to Be Pasteurized W Pfannenstiel and H J Juszatz—p 141

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*Leanness and Tendency to Emaciation G von Bergmann—p 159

Fate of Patients During Crisis Following Gastric Resection F W Lapp and H Neuffer—p 164

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Problem of Acquired and Hereditary Hypersusceptibility to Specific Poisons R Otto—p 169

Epidemic (Lethargic) Encephalitis Following Influenza Case Schmidt—p 171

Inhalation Therapy in Bronchial Asthma A Welzel—p 172

Fractures of Spinous Processes Bofinger—p 173

Emaciation—Von Bergmann considers the most important and most frequent form of emaciation a condition that has been referred to as 'hypophyseal emaciation'. He admits that the anterior lobe of the hypophysis may seem intact but points out that its internal secretion may be deficient, that there may be a pluriglandular disturbance and that the entire regulatory system may be impaired. He is convinced that the anterior hypophysis and the adjoining mesencephalic region are the most important factors in this form of emaciation. The patients lack appetite. Pain in the epigastric region and vomiting are often present, but the latter often yields to treatment with preparations of the anterior hypophysis. The pain in the epigastric region may lead to erroneous diagnoses and even to laparotomy. The basal metabolism is often reduced so that if the food intake should be normal obesity might be the result.

The intermediate metabolism is likewise subnormal. The administration of small amounts of insulin may produce severe hypoglycemic conditions. Forced feeding with insulin and dextrose is inadvisable, but dextrose alone may be given. The blood pressure is generally reduced. The majority of the author's patients were young women, in many of whom the menarche was belated. Psychic difficulties set in, lack of appetite led to emaciation and often menstruation ceased. He also observed that the temperature is frequently below normal and the pulse slow. Hair growth, particularly the axillary and the pubic is generally normal and there are no disturbances in the libido. Although there is a lack of appetite the patients often have an abnormal craving for sour and piquant foods, particularly raw cucumbers, tomatoes and sour fruits. The author thinks that such appetites may indicate a hunger for vitamin C. A sojourn in high altitudes may be helpful. The author considers endocrine preparations most effective particularly the extracts of the anterior hypophysis.

Treatment of Allergic Disturbances with Skin Extract—The preparation used by Kohler is an aqueous extract of the skin. The treatment was first suggested by Milbradt. It has a specific character and does not involve any danger. As indicated in a number of case reports, the author employed it successfully in bronchial asthma, hay fever and urticaria, but the treatment failed in a case of cold urticaria. The author administered by intravenous injection up to 10 cc daily. Later the doses may be decreased and the intervals prolonged. During the administration of the maximal doses attention should be given to focal reactions (increased allergic reaction to irritation). The treatment with skin extract is contraindicated in patients with exophthalmic goiter, because the maximal doses of skin extract increase the action of the thyroid. The treatment should be individualized carefully. The author admits that the material in which she tried this method is rather small, but she thinks that the favorable results justify further trials.

Klinische Wochenschrift, Berlin

13 161 200 (Feb 3) 1934

Lipoidoses S J Thannhauser—p 161

*Spring Eosinophilia. Contribution to Bioclimatology of Winter Spring

Relation B de Rudder—p 167

Do Liver and Lung Function as Blood Depots? T Sjostrand—p 169

Acute Anterior Poliomyelitis. Pathology of Cerebrospinal Fluid O Rehm—p 173

*Relations of Secretion of Gastric Juice to Localization of Zones of Hyperesthesia F Winkler—p 174

Problem of Derivation of Urinary Pigment from Hemoglobin and

Hematin R Nothhaas—p 176

*Simple Method for Determination of Fructose in Blood R Stohr—p 179

Sodium Citrate in Hemophilia E Kaufmann—p 179

Color Reaction for Demonstration of Glutathione in Crystalline Lens F P Fischer and V Fischl—p 180

Determination of Carbon Dioxide on Thermochemical Basis A Thurnherr—p 180

Meteorological Physical Problems of Meteoropathology E Flach—p 181

Spring Eosinophilia—It is pointed out by de Rudder that Moro ascribed the action of spring on the organism primarily to the increased sympathetic sensitivity. This heightened sensitivity of the sympathetic nervous system during spring seems more understandable in view of certain factors that play a part in the pathogenesis of rickets and tetany. The author calls attention to the lack of a certain portion of the ultraviolet rays, the Dorno rays, in the pathogenesis of rickets. In normal persons the sensitivity of the sympathetic nervous system can hardly be measured directly, but it seemed reasonable to investigate whether these changes in the irritability might perhaps be detectable in the number of eosinophils in the blood, since it is this type of cell that apparently has the closest relation to the sympathetic nervous system. The author studied the number of eosinophils in thirty-three normal persons. He found that the January values of from 0 to 2 per cent had advanced by March to from 2 to 4 per cent, and in the succeeding months, when the irritating action of spring had subsided again, the values decreased once more to those present during the winter. In experiments on guinea-pigs it could be shown that the spring eosinophilia is the result of the renewed exposure to the Dorno radiation after a prolonged existence in the absence of ultraviolet rays. The author thinks that the reappearance of the Dorno rays after their prolonged absence during the winter months probably play the most important part in the bioclima-

tology of sprang, for they produce an "irritation," to which even the healthy organism responds in various ways

Secretion of Gastric Juice and Localization of Zones of Hyperesthesia—Winkler calls attention to the observations of Heud, Mackenzie and others that visceral disorders produce hyperalgesia in the cutaneous areas that are innervated by the same segments as the diseased organ. Porges was able to observe in subacidity and anacidity, which he ascribes to gastritis of the body of the stomach, that the zone of hyperalgesia is on the left side, whereas in hyperacidity, which he ascribes to gastritis of the antrum, the sensitive points are on the right side. Since the localization of the hyperalgesic zones may have a certain diagnostic significance for the secretory action of the stomach, the author decided to compare the zones of hyperalgesia with the results of the examination of the gastric juice in a large number of patients with gastritis. He was able to corroborate the observations of Porges, for he found that reduced gastric secretion is accompanied by hyperesthesia on the left side and hypersecretion by hyperalgesia on the right side, in the region of the first thoracic segments. This indicates that in hyposecreta the body of the stomach (innervation from the left side) and in hyperacidity the antrum (innervation from the right side) is diseased. He thinks that exceptions to this rule are indicative of complicating disturbances in the region of the segments adjoining the zone of hyperesthesia.

Determination of Fructose in Blood—Stolir describes a simple titrimetric method for the determination of fructose for which 0.2 cc of blood or 2 cc of Folin-Wu filtrate is necessary. Fructose in contradistinction to dextrose, reduces the phosphorus-molybdic acid reagent, prepared according to Folin-Wu or Folin to a blue compound which in turn is titrated stainless in the cold with hundredth normal potassium permanganate. The test is made on the deproteinized blood filtrate, which is prepared either according to Folin-Wu or according to Hagedorn-Jensen in the modification of Stemitz and Riesen. The reduction of the phosphorus-molybdic acid reagent is proportional to the fructose concentration. The process is not strictly specific since diospyracetone methylglyoxal, glycerin aldehyde, ketol and acetol likewise have a reducing effect on phosphorus-molybdic acid. However, since these compounds do not occur in the blood under normal conditions, they do not interfere with the determination of fructose in experimental fructosemia. Dextrose produces only a minimal reduction, which in the computation is given consideration as the 'blind value'. The author gives the formulas of the equations that are used for the computation.

Medizinische Klinik, Berlin

30 149 184 (Feb 2) 1934

- Diagnosis and Therapy of Extramenstrual Genital Hemorrhages H Siebke—p 149
- *Carbohydrate Metabolism in Essential Hypertension, Acromegaly and Simmond's Disease (Hypophyseal Cachexia) E Kylin—p 153
- Therapy of Dermal Leishmaniasis H Lohse—p 158
- Radium Treatment of Cerebral Keloids H Fuhs—p 160
- Experiences with Pain Reducing Measures During Delivery O Wallis—p 161
- *Value of Kauffmann's Test for Determination of Cardiac Function E E Bruke—p 163
- Intra Urethral Tuberculin Reaction F Marquardt—p 164
- Early Diagnosis of Malignant Tumors R Links—p 165
- Fracture of Head of Femur or Myositis Ossificans? H Engel and G Seefisch—p 168

Carbohydrate Metabolism in Hypertension, Acromegaly and Simmond's Disease—According to Kylin, sugar tolerance tests show that the blood sugar content increases more in diabetes without hypertension than in normal persons, whereas the increase in hypertension diabetes is about the same as in normal persons. Diabetes without hypertension reacts to insulin tolerance tests with a more pronounced reduction than is the case in diabetes with hypertension. A blood sugar increasing counter reaction develops much earlier in diabetes with than without hypertension. As two different hormonal actions regulate the blood sugar content, namely, a reducing factor (insulin action) and an increasing factor (action of anterior hypophysis and of suprarenals), it appears that in the diabetes with hypertension the counterinsular hormones exert the stronger influence. The demonstration of the counterinsular, prehypophyseal hormone (Lucke-Houssay, Evans) seems to make possible an explanation of the differences in

the reactions in diabetic patients with and without hypertension. The author assumes that the form of diabetes found in essential hypertension is generally caused by a prehypophyseal hyperfunction. He does not deny the possibility that in some cases of essential hypertension with diabetes the latter may be the result of arteriosclerotic processes in the pancreas. He calls attention to research that indicates the presence of a special type of diabetes in acromegaly, which is ascribed to overproduction of a blood pressure increasing hormone of the anterior hypophysis. In Simmond's disease, however, in which there exists an atrophy of the pituitary body, the blood sugar values are generally subnormal.

Kauffmann's Water Test for Determination of Cardiac Function—Bauke disagrees with Zimmermann's complete rejection of Kauffmann's water test (described in the *Medizinische Klinik* 29 1437 [Oct 20] 1933, and abstracted in THE JOURNAL, Dec 23, 1933, p 2088). The author shows that Heilbronner's modification of Kauffmann's original technic gives much more reliable results. Heilbronner administers the first 150 cc of fluid not at 7 a. m., but rather at 9 or even 10 a. m. However, even with the improved technic the outcome of the water test alone should never be considered sufficient evidence for a cardiac or circulatory insufficiency but should be considered so only in the presence of other clinical symptoms. The water test should be judged with the same caution and criticism as an electrocardiographic record, which alone would never be considered sufficient evidence of a cardiac lesion. The author recommends the combined use of electrocardiography and the Kauffmann-Heilbronner water test.

Monatsschrift f Geburtshilfe u Gynakologie, Berlin

96 183 246 (Feb) 1934

- Abortion and Sterility L I Bublitschenko—p 183
- *Cerebral Pressure in Eclampsia. Etiology of Convulsions G Spoljansky and A Juzelevsky—p 190
- Acute Hemorrhagic Myositis F Sommer—p 200
- *Microscopic Observation of Blood Sedimentation (Kriele). Its Utilization in Prognosis and Differential Prognosis of Septic Infections of Genital Origin W Thierfeldt—p 204
- Differential Diagnosis of Narrow Pelvis I Kühbacher—p 216

Cerebral Pressure and Convulsions in Eclampsia—Spoljansky and Juzelevsky employed an especially constructed manometer to determine the pressure of the cerebrospinal fluid in patients with eclampsia and found it to be within normal limits. The normal pressure in the region of the cisterna magna is +150 mm of water if the person is lying down. If the person sits up, the pressure is negative. An increase in the lumbar pressure is not always accompanied by an increase in the cerebral pressure. Since nearly all the patients were under chloroform anesthesia while the pressure was tested, the authors determined the influence of chloroform anesthesia on the pressure of the cerebrospinal fluid and found that it effects no reduction in the pressure. Withdrawal of cerebrospinal fluid reduces the pressure in the subarachnoid space, no matter at what level the fluid is withdrawn. The authors conclude that their observations did not corroborate the theory that eclamptic convulsions are the result of increased intracranial pressure.

Microscopic Observation of Sedimentation—Thierfeldt der points out that the microscopic observation of sedimentation by means of Kriele's chamber gave hope that it would permit a reliable prognosis in septic infections. According to Kriele the prognosis is unfavorable (1) if the leukocytes show either conglomeration or increased adhesion or (2) if the thrombocytes show either conglomeration or are reduced to less than 120,000. The author shows that the behavior of the leukocytes in microscopic sedimentation cannot be utilized for the prognosis. With regard to the thrombocytes he agrees with Kriele in that he considers a reduction to less than 120,000 unfavorable, but he considers conglomeration a favorable sign rather than an unfavorable one as Kriele did. The author further discusses the differential diagnostic possibilities of the microscopic observation of sedimentation. He found that lymphogenic sepsis is readily differentiated with the method. In the eleven cases studied he always observed thrombocyte numbers of over 180,000 and in most instances of over 200,000. The leukocytes were diffused in the plasma column and never showed a pronounced conglomeration. Observations on six patients with thrombo-

phlebotic sepsis convinced the author that in this condition Kriele's method does not come up to expectations. For the early diagnosis of puerperal peritonitis, Kriele's method is important. In this condition the symptomatology is usually not clear in the beginning, and by the time the typical symptoms appear the process has advanced so far that surgical intervention comes too late to be of any value, but the author was able to corroborate Kriele's observation of thrombocytosis, the thrombocytes reaching values of over 400,000. However, he does not agree with Kriele on the sedimentation of the thrombocytes in puerperal peritonitis, for he often noted that the thrombocytes were more dense in the upper layers. There are three points that are important in order to obtain correct results: 1. The chamber must be exactly filled and no blood cells should escape over the rim. 2. The blood should not stand longer than two hours. 3. The blood should not be withdrawn during anesthesia, and pipets and syringes should never be cleaned with ether or alcohol. The correct estimation of the sedimentation picture requires a certain amount of experience.

Munchener medizinische Wochenschrift, Munich

81 117 156 (Jan 26) 1934

- History and Epidemiology of Influenza H Reichel—p 117
- *Present Aspects of Influenza W Berger H Seemayer and J Schneitz—p 119
- Pathologic Anatomy of Influenza H Beitzke—p 125
- Influenza and Campaign Against It During Childhood A Reuss—p 127
- *Encephalitis and Influenza M de Crinis—p 130
- Surgery and Influenza E Seifert—p 133
- Herpes Zoster and Herpetic Diseases in Region of Ear L Haymann—p 137
- Significance of Orthopedics for Public Health F Lange—p 140
- Technic of Tanning of Living Tissues F Hausstein and R Jager—p 143
- Sealing of Containers Used for Transportation of Specimens of Blood and Cerebrospinal Fluid R Krumeich—p 144

Present Aspects of Influenza—From observations on influenza cases that occurred in Graz during 1933, Berger and his associates conclude that the clinical aspects of influenza today differ only quantitatively from those that were observed during the influenza pandemic of 1918, in that the symptoms are less severe. However, in the various smaller influenza epidemics that have occurred since 1918, the symptomatology has reached considerable degrees of severity more frequently than was the case after 1889-1890. As before 1918, the greater danger to the higher age groups has now again taken the place of the life threatening, hyperergic disease of the younger persons, which predominated in 1918. The hemorrhagic tendency and the involvement of the lungs, pleurae and sinuses are subject to regional differences during the same epidemic, but on the whole, they are now considerably milder than in 1918. The qualitative differences of the symptomatology (neuralgias, dyspepsias and so on) when compared to the pandemic are hardly greater than the regional differences within the same epidemic. The tendency to leukopenia increases proportionately to the degree of contagiousity. Rare forms of influenza, such as arterial thromboses, gastro-intestinal influenza or encephalitis, occur, provided there is a sufficiently large number of cases. Considering the symptomatology, there is not the least doubt that the disorder that occurred in greater and smaller epidemics since 1918 is the same disease entity as that of the pandemic of 1918.

Encephalitis and Influenza—De Crinis discusses the general nervous symptoms that begin or accompany an attack of influenza which, he thinks are largely manifestations of serous meningitic irritations. However if in the course of an influenza there develop manifestations that indicate disturbances in the cerebral parenchyma, the condition is designated influenzal encephalitis. The latter begins with general symptoms, occasionally with delirium or comatose conditions. According to the different locations of the foci monoplegia hemiplegia or aphasia may occur alone or in combination. The author points out that influenza may involve the peripheral nervous system in the form of a neuritis which may appear without signs of encephalitis being present and may develop during the acute phase of the disease as well as during the period of convalescence. The relations between influenza and epidemic encephalitis have not been completely explained as yet, but the author emphasizes that epidemic encephalitis differs from influ-

enzal encephalitis clinically, in its pathologic anatomic aspects and in its mode of dissemination. The treatment of influenzal encephalitis should be directed against the influenza. He recommends treatment with convalescent serum. Autohemotherapy in combination with antipyretics and with milk injections should be tried. Intravenous injections of methenamine have also been found helpful.

Zeitschrift für Tuberkulose, Leipzig

69 321 400 (Feb) 1934

- Specific Prophylaxis and Therapy of Tuberculosis M Klimmer—p 325
- *Klimmer's Tuberculosis Vaccine M 44 in Treatment of Tuberculosis of Bones and Joints B Koppe—p 339
- *Experiences with Klimmer's Tuberculosis Vaccine M 44 in Prophylaxis of Tuberculosis G Hebel—p 355
- Practical Suggestions for Exact Determination of Therapeutic Results in Tuberculosis C Coerper—p 358

Treatment of Tuberculosis of Bones and Joints—Koppe treated nineteen cases of tuberculosis of the bones and joints with Klimmer's vaccine. In eleven cases he gained the impression that the vaccination produced a decisive turn in the course of the treatment. In six cases it was not certain whether the vaccinations exerted an influence, and two were not suitable for the estimation of the treatment, but not a single case was unfavorably influenced.

Klimmer's Vaccine in Prophylaxis of Tuberculosis—According to Hebel's experience, Klimmer's tuberculosis vaccine is harmless. Of forty-eight children whom he vaccinated forty-seven remained free from tuberculosis in spite of the fact that they were exposed to tuberculous infection. In four instances one each of the nonvaccinated parents developed tuberculosis while the vaccinated children remained free from the disease. Of three children who, as controls, were not vaccinated, one contracted tuberculosis of the bones, while the five siblings, who were exposed to the same extent but had been vaccinated, remained free from tuberculosis. The author realizes that the material is too small to arrive at a definite conclusion about the prophylactic value of the vaccine, and he thinks that the specific immunization should never be the ground for the neglect and omission of the methods that have proved their worth such as isolation of the patients, whenever it is possible, correct treatment of the sputum and improvement of the general condition by better nourishment. However, a specific remedy is nevertheless desirable, provided it is harmless.

Zentralblatt für Gynäkologie, Leipzig

58 303 368 (Feb 10) 1934

- Treatment of Carcinoma of Neck of Uterus H Martius—p 305
- *Technic of Extraperitoneal Cesarean Section G Kaboth—p 310
- Rapid Delivery According to Delmas and Modification of This Method A Ostrol—p 325
- Course of Delivery in Old Primiparas E Redenz—p 331
- Weight and Length of Twins F Lüdi—p 344
- *Etiology of Cervicovaginal Laqueate Fistulas K Welsch—p 347
- Obstetric Complications in Velamentous Placenta H Noldeke—p 351

Extraperitoneal Cesarean Section—In the last five years, 308 extraperitoneal and 160 intraperitoneal cesarean operations were performed at Kaboth's clinic. He gives a detailed description of the procedure that he follows in the extraperitoneal method. In opening the abdominal wall, the attainment of a secure cicatrization should be kept in mind. The cutaneous incision and the division of the fascia are in the longitudinal direction but the cutaneous incision is higher up toward the umbilicus, while the fascial section is made lower down toward the symphysis. The author describes the exposure of the neck of the uterus in an area large enough to permit the passage of the head. The lower pole of the peritoneal sac must be pushed upward and the bladder toward the side. Because of the frequent deversion of the uterus, the entire intervention is best made to the left of the median line so that the bladder can be shifted toward the right. The cervical incision, delivery and uterine suture are the same as in case of the intraperitoneal procedure. Following completion of the uterine suture and after the removal of the blood clots, the peritoneal sac and the bladder fall into place. Drainage of the pre-cervical space should be done through a special opening. A dressing forceps is pushed forward from the inside and where it reaches the abdominal wall an incision is made (2 cm) and a strip of gauze is introduced into the pre-cervical space. The drainage

opening is at the external rim of the abdominal rectus. Thus the abdominal incision proper is not used for the drainage. In discussing the results of the extraperitoneal method the author emphasizes that the maternal mortality was smaller than in the intraperitoneal method in spite of the fact that the material in which the extraperitoneal procedure was followed had more unfavorable cases. He considers the extraperitoneal method the least trying for the mother and he recommends it for all cases in which delivery by abdominal section is necessary.

Etiology of Cervicovaginal Liquefactive Fistulas.—Welsch relates two clinical histories that illustrate how cervicovaginal liquefactive fistulas may be caused by the introduction of laminaria bougies. In one case the laminaria were introduced for the purpose of completing an abortion. They slipped into the uterus and because of an anteversion their external ends pressed against the posterior cervical wall. A pressure necrosis developed, rectal tenesmus set in and led to severe straining and finally the posterior cervical wall was perforated and the bougies protruded into the posterior vaginal vault. A cervicovaginal liquefactive fistula would have developed but the bridge between the perforation and the external uterine os was divided immediately after the uterus had been evacuated. The second patient was a woman in whom laminaria bougies were introduced for the treatment of dysmenorrhea. The fistula was not discovered until four years later when she asked advice because of sterility. The author cites three other cases from the literature in which laminaria bougies caused liquefactive fistulas in the cervix. He advises against the ambulatory use of laminaria bougies.

Sovetskaya Psikhonevrologia, Kharkov

№ 1148 (No. 5) 1933 Partial Index

- Diagnosis of Scapuloperoneal Amyotrophy. S. N. Davidenko —p. 9
 Substitution of Hallucinations in Meningo Encephalitis. V. N. Ruskikh —p. 12
 Brain Tumors with Rapid Course. D. A. Rukhovich and P. Ya. Shindel'man —p. 18
 *Acute Febrile Syphilis of Brain. N. A. Popov and G. D. Aronovich —p. 27
 *Tuberculous Meningitis of Adults. A. I. Rosenboym —p. 36
 Material for Study of Aphasia. M. E. Sobol —p. 45

Acute Febrile Syphilis of Brain.—Popov and Aronovich report six cases of acute febrile syphilis of the brain. They believe that it deserves consideration as a special form of neurosyphilis. The disease is characterized by an acute or subacute onset followed by exacerbation of symptoms. The symptoms in the beginning are grave but the response to antisyphilitic treatment is prompt. The development of the disease is not dependent on the duration of the syphilitic infection. It occurs predominantly within the first few years and even months of the syphilitic infection. Clinically two types may be distinguished: the purely meningeal and the meningo-encephalitic. The specific etiology is recognized from the history and the presence of humoral reactions in the blood and the cerebrospinal fluid. The Wassermann reaction was sharply positive in their cases. The pleocytosis of the cerebrospinal fluid may be pronounced, with a predominance of polymorphonuclear neutrophils. The histopathologic picture is one of meningo-encephalitis with a predominance of meningeal alterations. The entire process may be regarded as a flare up of a chronic meningeal syphilis.

Tuberculous Meningitis of Adults.—Rosenboym reports twenty-two cases of tuberculous meningitis of adults verified at necropsy. He concludes that tuberculous meningitis may occur at any age. The incidence of the disease was most pronounced in February and in May. The peculiarity of the tuberculous meningitis of the adults consists in the prominence of the symptoms of headache and vomiting. Other signs of meningeal irritation, particularly that of Kernig, are less pronounced. In adults, tuberculous meningitis is more frequently associated (68 per cent of the author's material) with general miliary tuberculosis. The isolated form was seen in 22 per cent of the cases. The author has not seen an isolated form in children. Tuberculous meningitis both in adults and in children is a secondary disease. The primary focus in childhood is seen most frequently in the lymph nodes while in adults it may be found in the various organs, but most frequently in the lungs. The spread of infection in adults takes place most probably by the hematogenous route.

Norsk Magasin for Lægevidenskapen, Oslo

№ 129 240 (Feb.) 1934

- *Technic of Cautey of Endopleural Adhesions According to Jacobson with Short Report on Results. A. Tuxen —p. 129
 *Hemolysis in Pregnancy and Abortion (Pregnancy Toxicosis? Quinine Intoxication?) I. Hartzitz —p. 152
 *Pathologic Significance of Asymmetrical Sacralization of Fifth Lumbar Vertebra. R. Ingebrigtsen —p. 161
 Malignant Granulocytopenia (Agranulocytosis Schultz Type) Casuistic Report. R. Opsahl —p. 164
 *Microsedimentation Reaction with Landau's Pipet. S. Frostad —p. 170
 Case of Hypochloremia with Azotemia. O. I. Olsen —p. 178

Cautey of Endopleural Adhesions.—Tuxen says that endopleural adhesions are present in three fourths of all cases of pneumothorax. Moderately extensive adhesions or adhesions over the stronger part of the lung may offer so slight an obstacle to collapse that the pneumothorax does become effective with extensive unfavorably situated adhesions, a partial pneumothorax results. Thoracocauterization is indicated on clinical roentgenologic signs of ineffective pneumothorax, and even in clinically effective pneumothorax roentgenologic adhesions over the cauter or preventing selective collapse constitute a strong indication for cauterization. With intended or performed bilateral pneumothorax, cauterization of every fairly easily divided adhesion is called for. Roentgen examination does not give exact information as to location, extent or character of the adhesions and the feasibility of thoracocauterization must be determined by thoracoscopy. Thinner threads and strands and membranes at a good distance from the lung are easily operated on; thick pedicles, membranes close to the lung, hour-glass adhesions and thin finger-like pedicles with short or no fibrous transition to the chest wall are difficult to operate on. Difficult adhesions are divided only on strict clinical roentgenologic indication. If the grave finger-like pedicles cannot be divided pneumothorax should be discontinued and thoracoplasty done instead. Flat adhesions cannot be operated on. The time of operation should not be earlier than two months after pneumothorax, with too long delay, exudation may render the procedure more difficult. Long, thin, solitary threads should be divided early. In ninety-two cases of thoracoscopy in Tuxen's material, follow-up information was available. In the seventy-nine cases of ineffective pneumothorax thoracocauterization was done, with complete success in forty-two and improvement in twelve and in the thirteen cases of effective pneumothorax thoracocauterization was successful in twelve with adhesion-free collapse in one and considerable loosening in nine. All types of adhesions were seen. The worst complication, spontaneous pneumothorax due to rupture of the lung occurred in five, two being fatal. These five together with four illustrating the value and the limitation of the method and one of unusually grave lung pedicle, are described.

Hemolysis in Pregnancy and Abortion.—Hartzitz thinks that in his case with abortion before admission there had been a tendency to hemolysis probably due to the pregnancy and the quinine taken by the patient to induce abortion had increased the hemolysis, which developed into a pure hemoglobinemia and hemoglobinuria, methemoglobinemia and methemoglobinuria finally causing a fatal uremia. The acute glaucoma with which the disturbance set in and which passed into a panophthalmia is regarded as secondary and ascribed either to increased secretion and changes in the aqueous humor or to action of the quinine directly on the blood vessels. Microscopically, brown and reddish brown masses were seen almost to block the renal canals, there was no glomerulonephritis and but little degeneration of the renal epithelium.

Asymmetrical Sacralization of Fifth Lumbar Vertebra.—Ingebrigtsen sees in his third case of operative asymmetrical sacralization with recovery here reported, added support for the conception of this disorder as a clinical entity, because the anatomically established sacralization is really the cause of the pain syndrome.

Microsedimentation Reaction with Landau's Pipet.—Frostad says that he found the results of microsedimentation to be as reliable as those of Westergren's sedimentation reaction while the apparatus and the technic are simpler. The method has many advantages when venipuncture is difficult especially in pediatrics.

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PULMONARY TUBERCULOSIS

RECENT TYPES OF OPERATION

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NEW YORK

Tuberculosis is a disease that begins locally and is followed by general dissemination. In this respect it resembles many other infectious diseases as, for example, syphilis, and, like syphilis, it destroys tissue, leaving scars or fibrosis when the infection has been overcome. The local destruction by either tuberculosis or syphilis may produce mechanical conditions that are permanent even though the disease itself is no longer active. One example is stricture of a hollow viscus. These residual disturbances may require operations for relief or even to save life.

Since the discovery of reliable methods of killing the spirochete, the need for operations in syphilitic disease is seldom felt. On the contrary, deformities left by tuberculosis of the lungs are still frequently encountered and form the principal group that calls for operative therapy. The cure of tuberculous cavities with their dangers of locally spreading the infection, of septic absorption or of mixed bacterial contamination and of further destruction of pulmonary tissue is the chief object of operative procedure.

I feel that the day must come when a direct biologic attack on the bacillus of tuberculosis will result in the control and, perhaps, in the final disappearance of the disease, but at present one can hope only for an arrest of progress with cicatrization with or without calcification or ossification, which in ordinary circumstances prevents the continued advance of the malady.

Dr. William Charles White¹ recently delivered an absorbingly interesting lecture at the New York Academy of Medicine. It is an index of what is going on in the investigation of the biologic aspect of the disease. Every physician should read this paper. In the very first paragraph the modern concept of tuberculosis is made so clear that it raises the fire of prophecy in the reader's mind.²

Methods employed in the treatment of this disease may be divided into three main groups:

- A. Medical treatment so called which might better be described as the nonoperative treatment by hygiene.
- B. Operative treatment.

Both of these have for their object the resulting "cure" by rest and by scar formation of the least harmful character.

The third method, which is now under intensive investigation, is

C. Biologic treatment

Since this paper will deal solely with operations most of them comparatively new, I will not discuss the medical treatment including hygiene, voluntary rest, and the like, nor will I touch on the biologic therapy of the future.

I will also not report on the work of predecessors from which the therapy of today has arisen. So quotations from Hippocrates will not be given nor even from Carson³ (all credit to him and his 1822 prophetic suggestions).

Surgery in this paper is intended to signify treatment by mechanical means with or without a cutting operation.

I assume that the reader has a good working idea of what surgery is supposed to accomplish in pulmonary tuberculosis, so I will merely enumerate its four main divisions, which may be practiced singly or in combination:

1. Extrathoracic procedures.
2. Operations on the thoracic wall.
3. Transpleural operations not on the lung.
4. Attacks on the lung itself.

EXTRATHORACIC PROCEDURES

Of the extrathoracic procedures, the most common is that of paralyzing the diaphragm on either one side or both sides by interrupting its nerve supply.

There has been some question concerning the inhibition of the act of expectoration because of the phrenic paralysis. I have not found this to be the case but rather the opposite, since the paralyzed diaphragm in coughing is pushed violently upward by the compressed abdominal viscera. Burrell⁴ takes the opposite view and states that "phrenic avulsion and thoracoplasty are contraindicated" in tuberculous abscesses with much expectoration. It is almost needless to say that Burrell's conclusions will not be upheld by most observers.

Paralysis of the diaphragm, by attacking the phrenic nerve, may be brought about by (1) contusion, (2) injection,⁵ (3) division, (4) resection and (5) avulsion.

³ Caron, James. Essays. Physiological and Practical. Liverpool. F. B. Wright. 1822.

⁴ Burrell, L. S. T. Lancet 1: 356 (Feb. 18) 1933.

⁵ A. Rodet (Paris med 30: 100 [July 29] 1933) abstr. J. A. M. A. 101: 1115 [Sept. 30] 1933) describes an injection made by inserting a needle 5 cc below the base of the xiphoid process and 5 mm to the side of the median line and directing it obliquely upward so that it reaches the insertions of the diaphragm behind the cartilage of the seventh and eighth ribs. There is characteristic neck and shoulder pain after the injection which indicates that a phrenic nerve has been reached. This method seems unnecessarily complicated and perhaps even dangerous.

Read before the First District Branch of the Medical Society of the State of New York, Graslands, Oct. 11, 1933.

¹ White, W. C. Bull. New York Acad. Med. 9: 433 (July) 1933.

² The tuberculous process involves the living together of two independent organisms: the tubercle bacillus and the monocyte amebic cell.

If the temporary effects of the contusion of the phrenic nerve by crushing with forceps wears off too quickly, Douglass⁶ states that a second contusion may be performed with little difficulty through the scar of the former incision. He has also affirmed⁷ that phrenic neurectomy can be regarded as successful only "when the x-ray film no longer reveals a cavity and when the sputum has been negative on concentration for at least three successive months." This definition of the success of phrenicectomy seems rather rigid when one con-

siders that tubercle bacilli in the sputum may come from a lesion, perhaps a very small one, in the opposite lung.

In general, the sole method by which the permanent arrest of the disease can be demonstrated is by roentgenograms. I agree with Miles⁹ that if after six months of roentgenologic observation there is no vis-

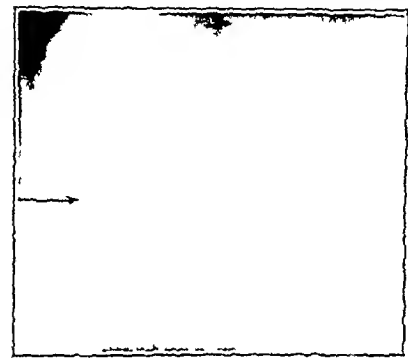


Fig. 1 (Matthew S.)—Transverse position of stomach with kinking of pylorus as a result of right phrenic neurectomy.

ible activity or change, the disease may be regarded as stationary or arrested.

In considering these valuable procedures on the phrenic nerve, much has been said regarding their harmlessness and perhaps too little concerning untoward effects that are occasionally though rarely observed. Truesdale⁸ of Fall River referred to the effects of gastric dysfunction by dislocation of the stomach. This had usually been noted after left-sided operations, but recently disturbances on the right side have also been observed.¹⁰ In one of my own cases in which posterior symplectomy had been preceded for some months by phrenic neurectomy, the patient had serious abdominal symptoms with vomiting which necessitated attempts at gastric lavage. Four surgeons and one gastrologist attempted to pass the stomach tube, in every case without success. The tube entered the stomach cavity only once and was instantly expelled. All other attempts were futile both with the ordinary stomach tube and with the intranasal Levine tube. Later on when the patient was convalescent (without lavage) a roentgen examination of the esophagus and stomach revealed no abnormality of the former but a transverse position of the stomach and with the rising of the right diaphragm, apparently an angulation of the pyloric region, which probably accounted for the acute dilatation with vomiting, regurgitation and belching (fig. 1).¹¹

Phrenic nerve avulsion is the most radical method and on the whole is the most generally applicable. The approach that is oftenest employed is through a transverse incision about an inch or more above the clavicle, where the nerve, when normally situated, can be easily

found as it passes downward and inward across the anterior scalene muscle. The exposure which I employ has the advantage that the resulting scar is almost invisible and that identification of the nerve is easy.¹² Dr. H. Ryerson Decker of Pittsburgh has stated that he employs the method as a routine.¹³ The incision is made through the skin on the clavicle—not above it—and it extends from the external attachment of the sternocleidomastoid muscle along the clavicle for an inch or even two, for I find it advisable sometimes to carry the inner portion of the approach a little mesial to the edge of the muscle. With careful blunt dissection and resection, the subclavian triangle is exposed. One retractor above and one mesial are necessary but no retraction is required below because the clavicle is, of course, immovable. The nerve will be seen on the anterior scalene muscle running downward and inward. It should be bluntly raised and a few drops of the anesthetic solution injected into it. I usually follow this injection with a few drops of alcohol. The alcohol is injected in order to infiltrate as much as possible the nerve below the point of section in case too short a piece should be removed by avulsion, so that there will be at least an interruption of a considerable part of the nerve. The nerve is then divided in the upper part of the wound, and the lower part is caught in the usual manner and twisted out. The skin is closed with a few metal clips or fine sutures, and if there has not been rough dissection no drain is required. If, however, there has been hemorrhage or if considerable manipulation has been necessary, I use a temporary drain with a split rubber tube to be removed in forty-eight hours. My dressing is a light pad of gauze over the wound itself and a thick pad in the supraclavicular fossa. This is held in place with a strip of adhesive plaster running from the front of the chest obliquely across the shoulder almost to the spine. If elastic adhesive plaster is at



Fig. 2—An anomaly of the phrenic nerve which might endanger the subclavian vein on attempted avulsion.

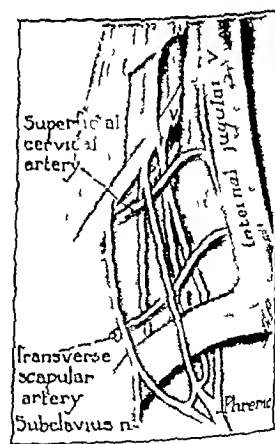


Fig. 3—Complex type of phrenic nerve with four main stems. Dangerous relations with cervical arteries and subclavian vein. Difficult or impossible of avulsion.

hand, it will assure a springy dressing, comfortable and safe.

To those who are interested in the variations of this nerve I would recommend studying the paper by Matson¹⁴ with its beautiful drawings, two of which

6 Douglass, Richmond. *Ann Surg* 97: 508 (April) 1933.
7 Douglass, Richmond. Personal communication to the author, paper to be published.

8 Tates, L. H. *Am Rev Tuberc* 27: 101 (Jan.) 1933.

9 Truesdale, P. E. Paper read before the New York Medico-Surgical Society in 1932.

10 Lichtenstein, H. *Beitr z Klin d Tuberk* 80: 509 (Aug 22) 1932. *abstr J A M A* 99: 1815 (Nov. 19) 1932.

11 The administration of an anesthetic for the purpose of inserting a duodenal tube seems radical but would be preferable to jejunostomy in cases of tuberculosis.

12 Lilienthal. *Howard Northwest Med* 25: 457 (Sept.) 1926.

13 Decker, H. R. *American Society for Thoracic Surgery* 1933.

14 Matson, R. W. *Excision of Phrenic Nerve in Treatment of Pulmonary Tuberculosis*, *Am Rev Tuberc* 22: 1 (July) 1930.

are here reproduced by permission of Dr Matson (figs 2 and 3)

In addition to the anomalies that have been described in the literature, there is one that I have twice encountered, namely, the situation of the nerve far beneath the fascia covering the muscle and between the deeper fibers of the scalenus itself

The size of the phrenic nerve varies much. I have seen it as small as a thick horsehair and in one instance so large that had I not been able to identify it by the patient's subjective sensations I might have thought I was dealing with another nerve, in spite of its characteristic location

This is not the place to discuss the details of therapeutic effects of the operation, it would take too much time and space. I may state, however, that the low approach to the nerve which I have described makes it less likely that accessory nerve connections will be ignored even though these branches are not seen

By examining Dr Matson's pictures it is quite evi-

dent that no matter what operation is done there are opportunities for failure or accident, the most serious one being injury to the subclavian vein. The low exposure that I advise has made it possible to see this vessel and form an idea of what is happening to it during the avulsion of the nerve

I have three times injured the thoracic duct where it enters the subclavian or internal jugular vein, but in none of these cases was there the slightest trouble because of leakage. A small packing firmly compressed by the subsequent dressing was removed in two days with no further leakage. It should be mentioned here that in the cases in which violation of the thoracic duct has been followed by leakage and starvation there has been malignant or inflammatory disease, with dense infiltration of the surrounding tissues, preventing the collapse of the injured duct

Recently an attempt has been made to produce a depression of the first and other ribs by section of the scalene muscles. I mention this merely because it is a modern operation and comes under the title of this paper. It does not appear to me to be of any real value when compared with the other methods at our disposal, especially the later forms of apicolysis. Brown and Atkinson¹⁵ in a recent estimate of the value of this procedure are of the opinion which I have just expressed and the conclusion they have reached is that "although scalenotomy is relatively simple and feasible, the clinical results obtained thereby do not warrant its performance"

After all, it must be remembered that when the first rib has been resected posteriorly, even though only a small part of the bone has been taken away, there is tremendous dropping and rotation of the remainder of the rib so that it becomes almost parallel with the long axis of the body (figs 4 and 5)

¹⁵ Brown A L and Atkinson Kathleen. *Am Rev Tuberc* 28: 176 (Aug) 1933

Another extrathoracic method for lessening the capacity of the pleural space is the production of pneumoperitoneum by which both diaphragms are pushed upward. This is particularly applicable in bilateral disease¹⁶

It has been noted that in tuberculous women when the terminal months of pregnancy have filled the abdomen and forced the diaphragm upward there is improvement in the pulmonary condition and that after the confinement the return of the phrenic domes to their normal position has been followed by manifestations of recrudescence of tuberculosis

I have not made use of pneumoperitoneum for this purpose although I have frequently employed it in the roentgen diagnosis of diaphragmatic hernia. I am therefore unable to speak from personal observation

I have found it prudent not to paralyze the diaphragm before the induction of pneumothorax and have been able to demonstrate clearly by roentgenograms that the paralyzed diaphragm is pushed downward by a moderately tense pneumothorax, until it reaches the normal level¹⁷

Alexander¹⁸ has devised a method for lessening the excursion of the ribs in respiration by dividing (or otherwise blocking) the intercostal nerves. He does not necessarily reserve this procedure for patients who are so feeble that they cannot withstand thoracoplasty, although he has performed it in cases of this kind. The suggestion is interesting but it does not appeal to me, since it is intended to produce rest alone, with only a minimal lessening of the capacity of the pleura. It probably has its application but the cases must be rare. Then, too, there follows a disagreeable numbing of the



Fig 4 (Mrs Bessie S.)—Before operation: cavitation of right upper chest



Fig 5 (same case as in figure 4)—After thoracoplasty, illustrating good apical compression although the first rib has been merely divided, not resected. Observe its almost vertical position

cutaneous sensations in the distribution of the divided nerves which is not encountered in thoracoplasty, for no nerves are here blocked or divided. Alexander makes no mention of hemiparalysis of the abdominal muscles, which are supplied by the six lower intercostal

¹⁶ Vajda Ludwig. *Pneumoperitoneum in Bilateral Pulmonary Tuberculosis*. *Ztschr f Tuberk*. 67: 371 1933

¹⁷ Lilienthal Howard. *Am J Surg* 14: 326 (Oct) 1931

¹⁸ Alexander John. *Multiple Intercostal Neurectomy for Pulmonary Tuberculosis*. *Am Rev Tuberc*. 20: 637 (Nov) 1929

nerves. Were these nerves merely cut, the muscular function might return, but with resection or even avulsion this would seem impossible. It is difficult for me to conceive of a patient so ill that when an operation of any kind is considered he could not endure a carc-



Fig. 6—Maurer's incision beginning below the spine of the scapula. Application of Elastikon to compress lower resected ribs.

fully graded thoracoplasty in local anesthesia. After all, there must be a well functioning contralateral lung to secure success. Here again it is hardly fair for me to express an opinion, since I have never performed the operation. It is mentioned merely for the sake of completeness and because of the important experimental quality of the work.

OPERATIONS ON THE BONY THORACIC WALL

The standard methods of Estlander, Bruer, Sauerbruch and others will be discussed here only in their recent modifications. First, as to the skin incision in paravertebral thoracoplasty. One of the disadvantages, especially in the case of a female patient, has been the extension of the scar high up on the shoulder. Recently Maurer¹⁹ has changed this so that the upper limit of the scar is below the spine of the scapula. By proper retraction upward it is perfectly feasible to resect the upper ribs, including the first. This leaves a space of unmarked skin, permitting the patient to wear a gown with a V shaped neck (fig. 6).

Probably the most frequent cause of early postoperative death, though the accident may not always have been recognized, has been the impairment of respiratory and cardiac function in the contralateral lung by bandages that encircle the chest. No bandage or binder, no matter how loose, should be permitted to envelop both sides of the chest.²⁰ The surgeon himself should apply the dressing immediately after the operation by holding a narrow gauze covering in place with adhesive plaster, which should not pass farther on the well side than the spine and in front to the distal edge of the sternum. The lower half of the thoracoplasty

may, however, be held firmly by adhesive plaster, passing from the midthoracic spine obliquely downward and forward across the abdomen to the opposite bony pelvic region (fig. 6). Compression of the diseased side can thus be secured without the slightest impediment of the motion of the opposite hemithorax. For this purpose I use a wide strip of the heavy adhesive strongly elastic material known by the trade name of Elastikon. To the ends of this material pieces of ordinary adhesive plaster of equal width should be stitched to prevent the edges from curling up. A support of this kind may be left in place for many days and the dressings can be changed by lifting the plaster away from the gauze beneath.²¹

The various splints and braces that have been recommended for this purpose are to my mind too complicated and uncomfortable.

In posterior thoracoplasty, a few points worth remembering are the following:

Occasionally the compression or collapse may not appear to have been successful even after a few months, the ribs uniting by bony bridges from end to end instead of dropping downward as they should. Hedblom, Alexander and others have advised that in these cases other resections be made through a longitudinal anterior axillary wound (fig. 7). I have made use of this method a number of times with success and a paper on the subject was almost ready for publication when Alexander's²² article appeared. The method is a good one but the second incision is not necessary as a routine. Years ago I operated in several cases by incisions through the original posterior scar, an almost bloodless procedure. The anterior parts of the ribs

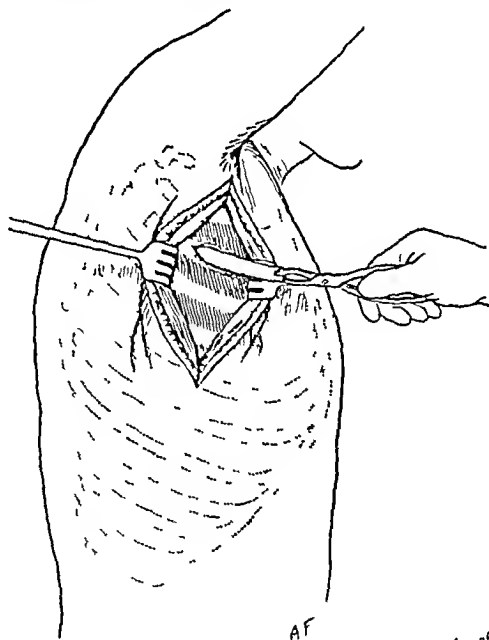


Fig. 7—Axillary incision for removing more rib anteriorly after paravertebral thoracoplasty.

were thus easily found by dissection and anterior retraction. It has not been difficult for me to take away as much bone as I desire, even to the costal cartilages, without the complication of a second incision.

²¹ The part of the plaster next to the gauze may be prevented from sticking by powdering before it is applied.

²² Alexander, John. Special Considerations Relating to Surgical Closure of Large Upper Lobe Tuberculous Cavities. *J. Thoracic Surg.* 2: 1 (Oct.) 1932.

¹⁹ Maurer, A. Le thoracoplastie dans le traitement de la tuberculose pulmonaire. *J. de chir.* 36: 857 (Dec.) 1930.

²⁰ This matter will again be referred to in the discussion of apicolysis.

and with complete mechanical success (figs 8 and 9) Since I have not seen this secondary procedure elsewhere described, it is probably original

Sometimes there is striking improvement and even disappearance of bacilli after an operative result not anatomically perfect This is doubtless brought about by a stiffening of the thoracic walls with consequent rest Further thoracoplasty may be considered if symptoms of disease recur

Another procedure that I find to be a decided improvement on the older methods is the combination of posterior apicolysis with first stage thoracoplasty,



Fig 8—Insufficient collapse because of too rapid bone formation from periosteum between rib ends



Fig 9—Same case Three years after further resection of anterior portions of ribs through the scar of the thoracoplasty Unfortunately the patient now has disease in her other lung (The sides of this illustration have been reversed)

the anterior and axillary routes being avoided I now regularly perform posterior apicolysis at the first session in thoracoplasty I make the original incision downward and then around the scapula, which is finally mobilized (figs 10 and 11) The operator can carefully strip away the apical parietal pleura, push the lung downward and effect the compression of any ordinary cavity in this region Those with calcified walls will be referred to later

Rather than use a wax, paraffin or other rigid filling for this extrapleural cavity, I much prefer a method, which I have several times described, namely, packing with crumpled rubber dam (Not rubber tissue, erroneously ascribed to me by Casper and Bruns²³) One end of the rubber dam packing is led out at the lower angle of the wound, the rhomboid muscles are firmly sutured and the skin is closed over all except the drainage opening below In from three to five days or longer, if the packing is well tolerated, the dam may be removed and replaced by a soft rubber tube of good size (about 30 French) There will be discharge for some time, but gradually healing of the extrapleural cavity by granulation will occur and the walls will be drawn in permanently obliterating the cavity There is no tendency for the lung to rise to its original place in the thorax Should thoracoplasty of the lower part of the chest be necessary, this can be done at another time through an incision connecting with the mesial part of the first one (fig 10)

In any operation for collapse or even compression of the whole or a part of a lung, signs of cardiac distress may appear because of dislocation of the mediastinum with its contained vital parts Cyanosis dyspnea or other alarming symptoms should be the signal for

removal of the packings or of the pressure from without Relief will almost certainly follow

The rubber dam packing will increase the volume of the extrapleural cavity in four days, from double to treble the size that was present at the end of the operation (figs 12 and 13)

TRANSPLEURAL OPERATIONS NOT ON THE LUNG

The commonest transpleural operation not on the lung is of course the induction of artificial pneumothorax This procedure is so well known that it is unnecessary to go into details The value of this therapy has been greatly enhanced by the brilliant invention of the operating thoracoscope by Jacobæus, with its comparatively safe division of adhesions which would otherwise nullify the effects of the pneumothorax The section of these adhesions by the electric cautery with its obscuring smoke and danger of infection or hemorrhage when pulmonary tissue happens to form a part of the adhesion has been largely supplanted by operating with a coagulation current, which is smokeless and which will minimize the hazard Several new instruments of this type have been devised, but the one that has impressed me most is that of Dr Louis R Davidson of New York It requires but a single opening through the chest wall instead of two (one for observation and one for the cautery)

It has been stated that adhesions in the posterior part of the pleural space are difficult to reach, especially those which are wide and flat I question that it is worth while to try to divide adhesions of this kind, and yet occasions may arise in which it may be justifiable When this cannot be carried out through a single thoracoscopic opening in the chest I would suggest that, as in Jacobæus's original operation, another opening more advantageously placed can be made for the purpose of dividing the adhesions under the guidance of the eye at the telescope in the original thoracic wall perforation Eloesser of San Francisco has gone so far as to divide adhesions, using the approach of actual wide thoracotomy

and closing the chest after the adhesions have been divided between ligatures It has always appeared to me that thoracoplastic procedures would perhaps be safer than this method and yet I can understand how even this radical step may eventually

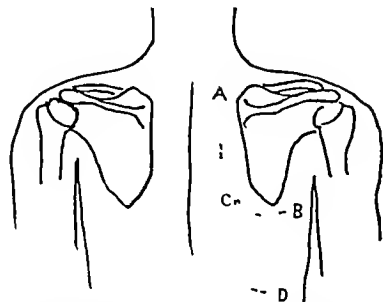


Fig 10—A B incision for posterior apicolysis C D incision of continuation for lower thoracoplasty

prevent permanent loss of function in healthy lung, which might otherwise be sacrificed in destroying the function of the diseased part

The tendency of modern surgery is to conserve the breathing space of a lung when only part of it is hopelessly diseased

To return to the discussion of uncomplicated artificial pneumothorax, a special danger may be here mentioned I refer to dislocation of the mediastinum, to which I have already referred

A means for combating this annoying complication was recently called to my attention by Dr Herben of Loomis Sanatorium If deviation appears after the

²³ Bruns E H and Casper Joseph *Nat Surgeon* 68 311 (March) 1931

induction of pneumothorax of a comparatively low tension, it should be regarded as a danger signal and measures should be taken to stiffen the mediastinum before proceeding with any further collapse therapy. Berck²¹ has gone so far as to make experiments on the mediastinal space itself to produce rigidity, but this seems to be an operation of too great magnitude and peril. Dr Herben has shown that the injection into



Fig 11—After posterior apicectomy

the pleural sac of an aseptic irritating substance, such as gomenol and oil or liquid petrolatum alone, later to be withdrawn has a tendency to produce pleural thickening and the much to be desired rigidity.

Two contrasting cases of my own have impressed this strongly on me. The first patient, operated on years ago by thoracoplasty immediately after the procedure became cyanotic and in danger of death, loosening the adhesive plaster dressings relieved the condition, but

immediate perfect collapse was thereby prevented.

The other patient was a young woman on whom thoracoplasty had been contemplated but in whose chest Dr Herben recognized dangerous mediastinal mobility after only moderately tense pneumothorax. This was overcome by temporary oleothorax with gomenol. When the mediastinum became rigid I succeeded in achieving good thoracoplastic obliteration of the diseased lung, with final disappearance of all symptoms and with absence of bacilli from the sputum.

OPERATION ON THE LUNG ITSELF

I now come to the consideration of the more radical intrapleural measures. These are mainly operations on the lung itself and I shall mention first the direct drainage of cavities. There are two principal reasons why this should be performed. First it should be performed when the cavity harbors mixed infection which becomes dangerous to life. The mere presence of tuberculosis as a primary factor should not prevent the treatment of such a cavity as if it were a nontuberculous or even a putrid lung abscess. The first case in which I had recourse to this operation occurred a number of years ago. The patient had a large cavity in the upper central part of the right lung, and after the first stage of thoracoplasty there was high fever and great distress because, apparently, the compression of the thoracic wall had impeded emptying by way of a bronchus. Nearly three weeks later I realized that unless direct drainage was accomplished my patient would lose her life. Therefore, with considerable misgiving, I performed pneumonotomy and drained the cavity fearing, as was the general belief, that because of the tuberculosis the resulting fistula would become permanent. There was immediate relief and in due time the thoracoplasty was completed. Contrary to my fears the fistula closed and the cavity has had to be opened twice since then, the last time only a few

months ago when the entire roof was removed and the wound treated by packing. So long as the cavity is open the patient is comfortable but if it closes there is cough with distressing asthma. At the present writing the hollow seems to be obliterating naturally and I have great hope that this troublesome case will eventually terminate happily. At any rate the woman is alive and active nearly ten years after the original operation.

Since then I have opened other similar cavities and feel convinced that, when there is a great quantity of sputum and the surgical compression from without can not be attained, it is far safer in the presence of a healthy contralateral lung to drain freely through the chest wall rather than to subject the individual to the dangers of cough and probably spill-over infection.

In another instance, also years ago, there was an upper cavity with a tuberculous empyema with cough and profuse expectoration. Dr Amberson suggested that it might be worth while to drain the pulmonary cavity into the pleura. This was done with immediate improvement, but for other reasons this case has been a difficult one and I fear that the unfortunate patient is doomed to a sanatorium existence.

In contrast with these cases is the following:

L. Z., a man, aged 49, with glycosuria,²² which was under control with insulin, complained of a large right upper abscess of the lung. He had been treated by endoscopy and otherwise with no success and the abscess seemed to be rapidly progressing. Immediate drainage through the chest wall seemed urgent and I referred the patient to a hospital where he was out of my control, although I sent a note suggesting the

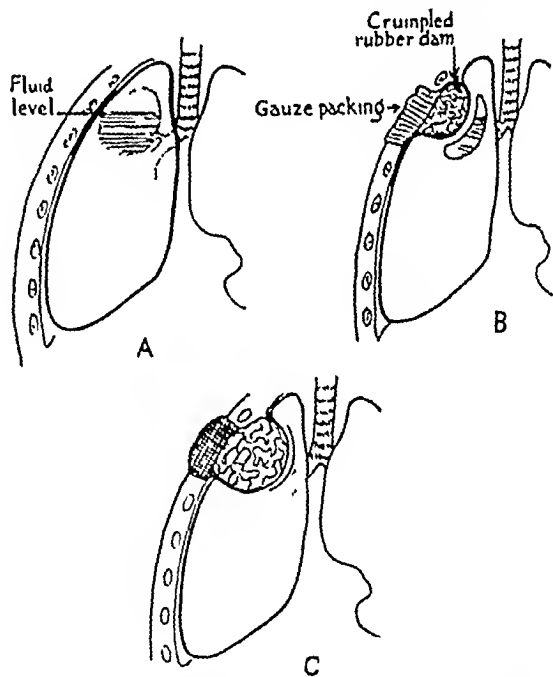


Fig 12—Diagram of action of apicectomy (in this case axillary). A cavity with a fluid level is compressed into a slit. A before operation. B immediately after operation. C four days after operation. The cavity is now obliterated and the extrapleural space much larger.

advisability of early operation. He was admitted to the medical service and on repeated bronchoscopic examinations tuberculosis was diagnosed and there was a delay of two weeks, after which spontaneous pneumothorax occurred. Operation was then performed and the cavity drained, but death occurred soon afterward.

²⁵ An interesting paper on the coincidence of diabetes and tuberculosis is that by Wessler and Hennell (*Am Rev Tuberc* 27:47 [Jan] 1933).

While I do not maintain that the fatality would have been avoided by earlier drainage, I do believe that delay in a case of this kind contributes to the danger and that the mere diagnosis of tuberculosis as a complication in abscess of the lung was of no importance in deciding on the character of the treatment to be adopted

Cavities with calcified or ossified walls but with large secreting surfaces with profuse expectoration, whether bronchiectatic, multiple or single, form a very serious and difficult class. The usual extrapleural operations are inadequate, and drainage through the chest wall may leave permanent disability.

At the 1933 meeting of the American Society for Thoracic Surgery, Dr. Harold Neuhoof presented a method for the collapse of those cavities in which it can be demonstrated that there is no free space between the two pleural layers. He incises the layers covering the abscess until he reaches a cleavage plane beneath which there is a collapsible wall. Then with careful manipulation he obliterates the cavity and holds the compression by packings, covering these with mobilized periosteum as well. While I have not attempted this procedure, I believe it may have an important place in thoracic surgery.

As a last resort, especially in the bronchiectatic cases, it seems to me that resection of the rigid walled cavity should be done either at one sitting or in divided stages according to the conditions encountered. Indeed, I feel that eventually resection of the lung will become one of the operations of recognized worth in certain cases of localized pulmonary tuberculosis. Thus far, though I have resected many pulmonary lobes for suppurative disease, I have not had the opportunity to apply the principle in cases of phthisis.²⁶

ELECTROSURGERY

Another new and important adjunct in operations on the chest wall is electrosurgery. When properly carried out the electric incision of the skin insures aseptic conditions unobtainable by the ordinary instruments. The tissues must be divided with a quick sure stroke, so that cell destruction along the walls of the wound may not be so great that healing will be delayed. There is another distinct advantage in the small number of hemostatic ligatures, the blood flow from vessels of small size being checked by coagulation through hemostatic clamps. I have performed a secondary complete paravertebral thoracoplasty with resection of ten ribs

without the application of a single ligature. There was primary union throughout. Those who are interested may care to read a recent article which I contributed on this subject.²⁷

Electrosurgery in thoracic disease should be confined to the chest wall, for if it is employed within the pleura and especially near the heart there is danger that the muscle of that organ may be made to contract abnormally, with fatal result.

EMBOLISM AND MASSIVE COLLAPSE

Among the dangers always to be considered in any operations on the chest for tuberculosis, two are outstanding. They are massive collapse of the better lung and cerebral air embolism. Bacterial embolism with metastasis to the brain is, of course, always possible, and there is no way in which this can be prevented. The danger of air embolism can be greatly diminished by keeping the patient's head lower than his chest during any operative procedure on the wall or cavities of the thorax. Massive atelectasis in thoracic surgery can be treated, but the accident cannot at present be prevented.

ANESTHESIA

With the appearance of tribrom-ethanol as a powerful preoperative hypnotic, a valuable agent is available which relieves the patient of mental anxiety and excitement and which, when properly given as an adjunct and not as a true anesthetic, becomes a genuine blessing in many operations on the chest. But there is one important contraindication, namely, the habitual expulsion of a large amount of sputum, for, in spite of the precaution of pharyngeal suction during operation, the long-continued sleep afterward is liable to be accompanied by aspiration into the better lung. Therefore I do not use tribrom-ethanol in any case when there is profuse expectoration.

SUMMARY

1 Tuberculosis as a disease is not amenable to surgical treatment. Anatomic conditions of a pathologic and threatening nature resulting from the disease may be treated by surgical procedures.

2 The chief object is the obliteration of tuberculous cavities and the conservation of healthy lung.

3 Operative procedures are divided into (1) extra-thoracic, (2) operations on the chest wall, (3) transpleural operations not on the lung, and (4) operations on the lung itself.

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²⁷ Lilienthal, Howard. Electrosurgery. *Ann Surg* 97: 801 (June) 1933.



Fig. 13.—Posterior apicolysis five days after operation. Observe balloon with sodium iodide solution as a contrast medium for roentgenologic purposes. Tube emerges from lower angle of wound through which balloon may be filled, emptied and withdrawn.

²⁶ In 1913 Tuffier demonstrated to me the case of a young woman whose right apex he had resected by drawing it with its parietal pleura through the anterior chest wall, ligating its base, ablating the extruded part and dropping the stump back into the chest. When I saw her the woman had fully recovered.

Always a Sign of Syphilis—From a study of the literature and an examination of numerous cases of so-called non-syphilitic Argyll Robertson pupils, one can safely say that a real Argyll Robertson pupil is always a sign of syphilis until it is proved otherwise. If one holds that the true Argyll Robertson pupil has certain definite characteristics besides the loss of the light reaction many of these cases can be excluded because they do not come under the classification of a real Argyll Robertson pupil. In many of these reported cases the pupils were dilated and the convergence reaction was retarded. The reason for publication of these reports was the loss of the light reflex. Most writers on this subject hold that a real Argyll Robertson pupil has certain definite features besides the absence of the light reflex and agree with Bumke and Behr that such a pupil is always a sign of syphilis of the central nervous system—McAndrews, L. F. Argyll Robertson Pupil, *Arch Ophth* 10: 520 (Oct) 1933.

NICKEL CARBONYL POISONING

REPORT OF A CASE

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Intoxication with nickel carbonyl has been of rare occurrence. A number of cases that occurred in England, where the Mond process for obtaining pure nickel was first used, were reported some years ago.¹ Richter² reported a case of poisoning with metallic nickel, with recovery. Gron³ reviewed the subject of nickel rash and reported a case. Stewart⁴ recently has reported a case of dermatitis due to nickel and cobalt.

Armit⁵ some years ago studied the toxicity of nickel carbonyl and other nickel compounds on experimental animals and found that the nickel was the toxic element and not the carbon monoxide formed. The amount of carbon monoxide liberated on dissociation from a minimal lethal dose of nickel carbonyl was sufficient to give only a 5 per cent hemoglobin saturation, which is well below the lethal level for carbon monoxide.

Nickel carbonyl is prepared by passing a current of carbon monoxide over finely divided metallic nickel. A gaseous compound is formed with the composition of $\text{Ni}(\text{CO})_4$. The gas can be condensed into a mobile liquid, which boils at 43 C and volatilizes at room temperature.

Characteristic changes found in the cases reported were hemorrhages especially in the white matter of the brain and in the lungs, fatty degeneration of the walls of blood vessels, and edema of the lungs. In experimental animals hemorrhages were always found in the lungs, in the suprarenal glands in more than 50 per cent of cases and frequently in the brain. At

nickel are deposited on the respiratory epithelium and are absorbed by the blood stream, causing degenerative changes in the vessel walls. The nickel is gradually removed from the lungs and some of it, at least, is excreted by the kidney, since it has been found in the urine.

The outstanding clinical features were a transient malaise with rapid recovery when brought into fresh air. At times nausea and vomiting occurred early. After from twelve to thirty-six hours cyanosis and dyspnea developed and progressively increased in

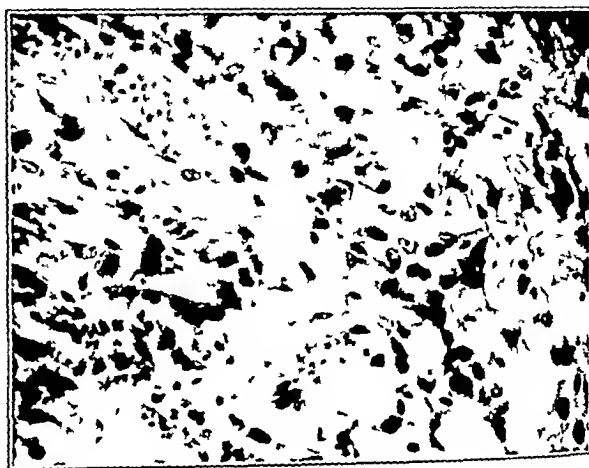


Fig. 2.—Same area of lung as in figure 1 under high power. Disintegration, fusion and proliferation of alveolar epithelium are seen more clearly. Hematoxylin and eosin stain.

severity. A productive cough with blood stained sputum was frequently observed. Death occurred between the fourth and eleventh days.

REPORT OF CASE

C. B., a white man, aged 49, complained of dyspnea, orthopnea, nausea, vomiting, insomnia, pain in the right side of the thorax, headache and a metallic taste in the mouth. A chemist by profession, he had been working on a problem of developing a method of "cracking gasoline," in which process nickel carbonyl was used. The present trouble developed five days previous to admission to the hospital. At that time he had poured nickel carbonyl from one container to another and immediately thereafter experienced some dyspnea from which he recovered after a brief interval. About twenty-four hours later, dyspnea recurred. He became orthopneic and cyanotic, so that at times he would "turn black." By the fourth day he became nauseated, vomiting occurred, which became increasingly severe, so that very little food could be retained. Several of his associates had mild attacks of dyspnea but quickly and completely recovered.

The physical examination revealed marked cyanosis and great respiratory difficulty. The pupils reacted normally. The tongue had a grayish coating. A firm nodular movable mass 4 by 5 cm was palpated on the right side of the neck, below the ear. Expansion of the right side of the thorax was limited and moist rales could be heard in the middle and lower lobes anteriorly and posteriorly. Tactile and vocal fremitus were increased in these areas. The heart was within normal limits, the pulse was regular and the rate was 100. The liver edge could be felt 4 cm below the costal border. It was slightly tender. The extremities were normal, except that the reflexes were hyperactive.

Laboratory reports revealed that the blood count was 5,100,000 red cells, hemoglobin (Tallqvist) 100 per cent, and the white cell count 15,800, with 92 per cent polymorphonuclears, of which 21 per cent were band forms. The plasma carbon dioxide combining power was 60.5 volumes per cent. Sputum was blood streaked and tenacious in character. The urine contained a few hyaline casts and a trace of albumin.

6 Patient of Dr. Lee Hudson.



Fig. 1.—Area of lung demonstrating the degenerative and desquamative changes in the alveoli. Also mild infiltration with neutrophils and mononuclear cells. Hematoxylin and eosin stain.

times they were present in all organs. In the presence of moisture and at body temperature the inhaled nickel carbonyl is dissociated, and finely divided particles of

From the Department of Pathology Baylor University College of Medicine.

- 1 Mott F. W. Carbon Monoxide and Nickel Carbonyl Poisoning. Path. Lab. London County Asylums Chisbury Essex 3: 246 (1907).
- 2 Richter George. A Case of Poisoning by Metallic Nickel. J. A. M. A. 49: 1606 (Nov. 9) 1907.
- 3 Gron K. Nickelplaters' Rash, Urol. & Cutan. Rev. 33: 606 (Sept.) 1929.
- 4 Stewart S. G. Inherent Sensitivity of the Skin to Nickel and Cobalt (Allied Elements in Group VIII Periodic System). Arch. Int. Med. 51: 427 (March) 1933.
- 5 Armit H. W. The Toxicology of Nickel Carbonyl. J. Hyg. 7: 525 1907. S. 565, 1908.

The patient had great respiratory difficulty, was very restless became comatose and died on the seventh day after exposure to the nickel carbonyl.

At necropsy there was slight icterus of the sclerae and a faint greenish yellow tinge to the skin of the face, neck and anterior thorax. The lips and oral mucosa were deeply cyanotic. Below the right ear was a nodular mass 3 by 5 cm that was freely movable. In the skin of the back were numerous dull reddish areas from 1 to 5 mm in diameter. The pleural cavities contained about 15 cc of clear fluid, their linings were everywhere smooth and glistening. Numerous dark red areas measuring from less than 1 to 5 mm in diameter could be seen through the pleurae of both lungs. The left lung was voluminous and heavy, a reddish gray, and mottled with numerous darker red areas scattered throughout. The main bronchus and larger branches contained a frothy reddish fluid, and the lining was bluish red. Large amounts of blood-stained fluid escaped from the sectioned surfaces of the lungs. The greater portion of the left lung was noncrepitant. The right lobe similarly was heavy and dark reddish gray. The cut surfaces were very wet. The greater portion of this lung was also noncrepitant. The pericardial cavity contained about 15 cc of clear fluid, and the lining was smooth and glistening. The right heart chambers were distended with partially clotted dark venous blood. The endothelial surfaces were smooth throughout. The apex of the left ventricle was slightly sacculated. Several small plaques of yellowish thickening were present in the bases of the aortic and mitral valve cusps. The myocardium was grayish red with small yellowish red and dark red widely scattered areas in it. The heart weighed 480 Gm. The proximal 2 cm of the right coronary artery showed a diffuse yellow thickening of the intima with slight narrowing of the lumen. The first portion of the aorta had small areas of yellowish thickening of the intima, which increased to a moderate degree along the course of the vessel.

The liver weighed 2100 Gm, its capsule was smooth and the edges were slightly rounded. On sectioned surface the lobular markings were accentuated. The peripheral portions

most numerous in the white matter, especially of the corpus callosum. They varied in size from those barely visible to a centimeter in greatest dimension. The majority were dark red, a few were brownish red. Some were elongated in outline. These small areas could be seen in the pons and the basal nuclei, and several small indefinite darker grayish areas were present in the medulla.



Fig 4—Higher magnification to show degenerative changes in ganglion cells and neuronophagia. Cresyl violet stain.



Fig 3—Demyelinated areas in the base of the brain. One has a vessel in the center. Weil's myelin sheath stain.

of the lobules were yellowish gray. The kidneys together weighed 380 Gm. The surfaces, after stripping of the capsules were finely granular. The cortex was of average width. The pyramids were dark red. The spleen was slate blue and its capsule was smooth. Sectioned surface revealed scattered throughout irregular dark red areas. Other viscera showed general passive hyperemia and small widely scattered areas of hemorrhage.

No changes were seen in the dura. The spinal fluid was clear. The meningeal veins were prominent. The dural sinuses contained dark venous blood and had smooth linings. The cerebral ventricles were not noticeably dilated. They contained a few cubic centimeters of faintly blood-tinged fluid. On multiple transverse sections numerous dark red areas were present

Histologic examination revealed that the changes in the lungs and brain were most marked and most important in this case. Sections taken from the noncrepitant areas in the lungs (fig 1) revealed a marked edema, hyperemia, multiple hemorrhages and marked changes in the cells lining the alveoli. A slight to moderate infiltration with polymorphonuclear cells was seen. The alveoli were distorted and many to most of the lining cells had become desquamated. Many were markedly swollen and had granular cytoplasm, and others showed fragmentation. Some of the alveoli contained large cytoplasmic masses with multiple nuclei and nuclear fragments (fig 2). These masses seemed to be fused degenerated lining cells. Some of the alveolar epithelial cells stained deeply, and mitotic figures were fairly frequent in some areas. A number of small blood vessels contained fibrin thrombi in their lumens, and their walls were indistinct. There was a large amount of granular vacuolated precipitated albuminous material in the interstitial tissues and in the alveoli. The epithelium of the bronchi and bronchioles also showed degenerative changes. They were swollen and some desquamation had occurred. Many of the mucosal glands were distended with secretion.

Histologic examination of the brain revealed multiple small hemorrhages scattered throughout but most numerous in the white substance. The majority were small and in perivascular areas. Aside from the hemorrhages multiple small areas of degeneration were scattered throughout, which showed demyelination with a myelin sheath stain (fig 3). These at times were about capillaries and arterioles. In some of these areas, moderate numbers of polymorphonuclear and large mononuclear cells could be seen. The hemorrhages varied somewhat in that in some the red blood cells were intact, whereas in others they were partly disintegrated. In a fair number of capillaries and arterioles hyaline and fibrin thrombi were seen. The walls of some of the arterioles were indistinct and more or less homogeneous and hyaline-like in structure. Ordinary fat stain did not show an increase in fat. With cresyl violet stain degenerative changes were well demonstrated in many ganglion cells. Some of these were greatly swollen. In others

the Nissl granules had disappeared, especially in the perinuclear areas, and the nucleus in some was eccentric in position. Neuronophagia of some of these cells could be seen (fig 4).

Thrombi were also found in the myocardial vessels (fig 5). Other viscera, such as the liver, kidney and spleen, showed passive hyperemia and rather marbled parenchyomatous and fatty degeneration (liver) but no distinctive changes. The mass in the neck proved to be a mixed tumor of the parotid gland type.

Specimens of tissue from the brain and lung were examined for nickel, dimethylglyoxime being used for the development of a color reaction.⁷ This test is of sufficient sensitivity to demonstrate the presence of 0.001 mg. of nickel. The extract from 3 Gm. of lung gave a strong test, bright red. Three grams of brain tissue gave a much weaker but a very definite pink red. The same method was used in testing 4 Gm. of tissue from the brain in a case of meningitis which gave no color change, the solution remaining colorless by contrast. Blood examined post mortem failed to give a test for carbon monoxide.

SUMMARY

The clinical and pathologic features of this case correspond closely with those of the cases previously reported. The histologic changes in the lung are quite

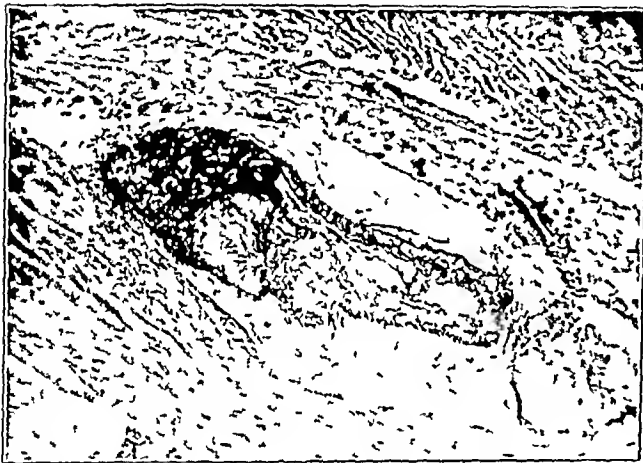


Fig 5.—Thrombus in a vein in the myocardium. Hematoxylin and eosin stain.

unusual and correspond more nearly with descriptions of observations in the lungs damaged by irritating substances such as phosgene. The changes in the capillaries and arterioles explain the presence of multiple small hemorrhages, also the degenerative changes and areas of anemic necrosis in the brain. That these changes are due to the nickel is indicated by the presence of this metal in relatively large amounts in the tissues analyzed. The lesions were not the result of carbon monoxide present, since at that early stage, seven days, sufficient carbon monoxide should have been present to give a positive test if it were the substance that had caused the widespread lesions. Furthermore, carbon monoxide does not cause the type of lesion in the lung present in this case. Armit⁸ demonstrated that the nickel appeared to be transported in the blood in a condition of colloidal solution. The metal is gradually absorbed from the lung in animals poisoned with nickel carbonyl, to such a degree that recovery is possible. The symptoms of extreme dyspnea, nausea and vomiting, restlessness and hyperactivity of reflexes may in part at least have been due to the cerebral lesions.

⁷ Armit, H. W. and Harden, A. Quantitative Estimation of Small Quantities of Nickel in Organic Substances. *Proc. Roy. Soc. London* 77: 420, 1906.

OSTEITIS TUBERCULOSA MULTIPLEX CYSTICA OF FIBULA AND TIBIA

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AND

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Following its introduction by Jungling¹ in 1920, the term "osteitis tuberculosa multiplex cystica" was applied to cystlike degeneration of the bones without joint involvement, characterized by the gradual onset of mild pain and swelling of the affected parts, distinctive roentgenographic observations and a chronic benign course. Not infrequently associated were lupus pernio and Boeck's sarcoid. Histologically, the bone showed epithelioid and giant cell tubercles, with little or no caseation. Tubercle bacilli were rarely demonstrated in examined tissue, guinea-pig inoculation occasionally gave positive results for tuberculosis.

In the past year Van Alstyne and Gowen,² reviewing the literature on osteitis tuberculosa multiplex cystica, stated that in all the reported cases the condition was restricted to the small bones of the hands or feet. There was the first authentic case presenting typical lesions in the long bones. They presented a white man, aged 32, who exhibited destructive changes in the left ulna, the left radius, and both humeri. A tuberculous etiology was proved by histologic and bacteriologic methods, and by guinea-pig inoculation. Because of its rarity, verified histopathology and diagnostic support, we record an additional case of osteitis tuberculosa multiplex cystica of the long bones.

REPORT OF CASE

E. S., a white American woman married aged 56, admitted in the service of Dr. W. W. Plummer, Sept. 2, 1932, complained of pain and swelling of both lower legs of three months' duration. At the age of 30 the patient had had typhoid. Her father and daughter had died of pulmonary tuberculosis, one brother was suffering from the same disease.

During July, 1932, the patient had noted swelling and pain in both lower legs. In a short time the symptoms in the left leg subsided appreciably. The pain in the right leg, however, persisted as a dull ache, which was intensified when the patient was walking or when the leg was bumped. There was no history of trauma or loss of weight. The chest was clear. The inguinal lymph nodes were not enlarged. Slight swelling and tenderness were found over the lower end of the right fibula. The right ankle showed no pain or limitation of motion.

The left leg was not remarkable. The temperature ranged between 98 and 99 F., the pulse was 80 and the respiration rate was 20. Laboratory examination showed hemoglobin 90 per cent, leukocytes, 9,700 per cubic millimeter, urine normal. The Kahn test was negative. Roentgen examination (Dr. E. C. Koenig) of the lower legs and feet revealed in the right fibula about one-half inch above the top of the astragalus decreased density of the bone tissue with a more or less oval excavation, which was cystlike in appearance. There was a thickening of the periosteum on the outer side of this cystlike excavation. Otherwise the bone tissue of the right tibia and fibula was well within average limits. The right foot, left foot and ankle did not show any evidence of bone disease comparable to that in the right fibula. Examination of the chest indicated increased density of lung markings, especially in the right interscapular region, with small calcareous deposits.

At operation (Dr. F. N. Potts), September 25, a small area of destruction was found in the lower end of the right fibula.

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¹ Jungling, Otto. *Fortschr. a. d. Geb. d. Röntgenstrahlen* 27: 3, 1920.
² Van Alstyne, G. S., and Gowen, G. H. *J. Bone & Joint Surg.* 15: 193 (Jan.) 1933.

filled with an abundance of red granulation tissue. The soft tissues appeared normal, no joint involvement could be made out.

The surgical specimen was decalcified and examined in paraffin sections by hematoxylin-eosin, Van Gieson, Ziehl-Neelsen, and Gram-Weigert stains. Only a few remnants of fat marrow bordering bone trabeculae were noted. The medullary cavity was replaced by chronic granulation tissue composed of solitary and conglomerate epithelioid and giant cell tubercles. Extensive lymphocytic and plasma cellular infiltration was present. A few tubercles showed necrosis, in places, fibrosis was taking place. The haversian canals were enlarged. Bone trabeculae were atrophic and fragmented. The endosteal surfaces were not smooth and intact but showed everywhere shallow and deep lacunae, apparently eroded by the spread of vascular granulation tissue. Osteoclasts were not seen. The bone itself was also perforated by canals with a central vessel and ragged borders. Here and there small sequestrums lay free with no special reaction about them. No new bone formation was made out. There was no definite cyst wall. Tubercle bacilli could not be demonstrated by bacterial stain. The histologic diagnosis was tuberculous osteomyelitis with inflammatory osteoporosis (caries).

Postoperatively, two roentgen treatments were given to the right leg. On the patient's discharge, October 30, the operative wound was healed, clean and dry.

After the patient had been home for a week, distinct swelling and pain appeared in the left lower leg. On admission to the hospital, November 18, swelling and tenderness were elicited over the left internal malleolus. Except for a healed scar, the right lower leg was not remarkable. Roentgen examination of both feet and ankles showed in the left tibia decided reduction in the density of bone of the internal malleolus in several circumscribed irregular areas. The overlying periosteum was distinctly thickened. The bone tissue of the left foot and ankle was well within average limits. The right fibula showed that the former cystlike cavity had smooth walls and a clean cut outline. December 9, an incision was made over the internal malleolus of the left tibia. The subcutaneous tissue and periosteum were injected. In the bone of the lower end of the tibia was a small cavity filled with soft, hyperemic spongy material. The adjacent joint was free. Histologically, the excised soft tissue and bone showed chronic granulations with

so-called osteitis tuberculosa multiplex cystica of the long bones. Mild pain and swelling, which developed gradually in both legs, were the chief complaints. A definite family history of tuberculosis, and indicative manifestations of old pulmonary tuberculosis in the patient were present. The temperature reached 99 F in the afternoon. Destructive cystlike changes in the right fibula and left tibia, of outspoken character in the former, were demonstrated by roentgen examination. In neither leg were the ankle joints, the small bones of the feet or the skin involved. Operation



Fig 3—Epithelioid and giant cell tubercles atrophic and fragmented bone

revealed in both fibula and tibia small "cavities" filled with spongy granulation tissue, in the left leg, the periosteum and the soft tissue were hyperemic. Excised bone showed histologically tuberculous osteomyelitis with epithelioid and giant cell tubercles, but with practically no caseation. Tubercle bacilli were not found by bacterial stains.

Analysis of its anatomic and pathogenic features suggests that the condition here cited might more accurately be designated "osteomyelitis tuberculosa multiplex cystoides." The primary lesion is a tuberculous osteomyelitis. From a focus elsewhere in the body, infecting organisms are carried to the bone marrow by the blood stream. Regressive changes in bone trabeculae occur secondarily to the spread of granulation tissue in the marrow cavity and haversian canals. Before bone destruction and resorption can be demonstrated roentgenographically, considerable time must elapse. For example, our patient complained of definite symptoms in the left leg four months before periodic roentgenograms first showed decreased density of the bone. It may be further reasoned that even a longer time must ensue before regressive bone changes become extensive enough to produce roentgenographically distinct cystlike excavation. So-called osteitis tuberculosa multiplex cystica represents, then, merely a late phase of chronic localized tuberculous osteomyelitis, the diagnosis of which, as of acute nonspecific osteomyelitis, may be suspected before roentgen signs are evident. The term "cystica" appropriately describes the roentgen picture alone. The actual lesion is a circumscribed area of soft granulation tissue and degenerated bone which only on curettement is converted into a cystlike cavity. A definite capsule cannot be made out. With the absence of marked caseation no pseudocyst or cavity can be said to form. In fact Jungling³ in his last studies abandoned his original term "cystica" for "cystoides."



Fig 1—Cystlike cavity in right fibula before operation



Fig 2—A right fibula after operation B decreased density in circumscribed areas of left tibia

epithelioid and giant cell tubercles, also present were several small abscess-like foci made up of polymorphonuclear leukocytes, many of which showed pyknotic nuclei. Giant cell tubercles seemed fewer than in the first specimen. The wound healed within twelve days but broke down three weeks later draining thin serous fluid. Three roentgen treatments were given to the left leg. The patient was discharged to the Charity Hospital, Washington, D C.

COMMENT

From a clinical roentgenographic and pathologic basis this case can be justly considered as one of

Opposed to the benign circumscribed, fungoid type of bone tuberculosis with practically no erosion, here described must be placed that form with diffuse spread and extensive caseation, sometimes necessitating the surgical removal of an entire long bone.⁴ Among the causes of chronic destructive bone lesions of multiple and focal character such as syphilis, leprosy, osteitis fibrosa cystica, giant cell sarcoma, coccidiosis, echinococci, cysts, nonspecific osteomyelitis, multiple myeloma and metastatic malignancy, so-called osteitis tuberculosa multiplex cystica should be considered.

Because of the benign course and tendency to spontaneous recovery, no definite treatment has been recommended for the disease in question with the exception of symptomatic measures and immobilization. Jungling⁵ entertained the possibility of surgical excision of cystlike areas but made no application of this method. It is too early to evaluate the results of surgical and roentgen therapy in our case.

PULMONARY MONILIASIS

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ROSTON

Three cases of pulmonary moniliasis came under observation in the Fifth Medical Service of the Boston City Hospital during November 1932. One was an infection secondary to pulmonary tuberculosis, the other two were primary infections. Because of the confusing symptomatology the excellent results obtained with treatment and the sparseness of cases in American literature, it is believed that this report is warranted.

Castellani's¹ early description of bronchomoniliasis was that of a disease closely simulating the clinical picture of pulmonary tuberculosis. Subsequent papers by various authors, however, described several other clinical manifestations of monilia infections of the lungs and bronchi. In addition to the often stressed resemblance to pulmonary tuberculosis—also tracheobronchitis,² lobar pneumonia,³ bronchopneumonia and bronchial

asthma⁴ have been reported as the result of monilia infections of the respiratory organs. Although Castellani first focused attention on the fact that monilia may be the primary etiologic agent in bronchopulmonary disease, it is also well recognized that this organism may be a secondary invader in the air passages of individuals infected with some primary bacterial agent.⁵

Primary bronchopulmonary moniliasis has been divided into three clinical types⁶ a classification based chiefly on the severity of the infection. The mild type is associated with cough and mucopurulent sputum. Examination of the chest in these cases is often negative, but it is not unusual to find a few scattered rales. The clinical course frequently extends over a period of several months at the end of which time these patients may recover spontaneously or the case may go on to the severe type. The intermediate or moderate type presents the picture of bronchial catarrh. Fever, cough, paroxysmal dyspnea and blood-streaked sputum are commonly observed. On physical examination, signs consistent with chronic bronchitis are usually found. Cases of this sort may persist in showing signs of activity for years or may go on to the severe type. This third type often has a history which strongly resembles that of pulmonary tuberculosis. Fever, loss of weight, night sweats, fatigue, chest pains, cough, hemoptysis, dyspnea and anemia are usually present. Examination of the chest may reveal signs of pleural thickening or consolidation. These cases, frequently, are fatal.

The acute case may have a sudden onset of symptoms with a rapid progression to a fatal termination. The chronic case is usually insidious in its onset and tends to follow a protracted course with frequent remissions and exacerbations.⁷ Cases of this type have been followed over a period of ten years.¹⁰

Bronchopulmonary moniliasis has been reported from practically all parts of the world.¹¹ It seems, however, that the maximum incidence is found in warm moist climates.¹² It is a disease that occurs chiefly in adult life, more often in males than in females.¹³

The association of monilia infection with chronic debilitating diseases has often been noted.¹⁴ The organisms have been found frequently as secondary invaders in pulmonary tuberculosis¹⁵ and neoplasms of the lung.¹¹

Monilia is usually found as a saprophyte. It is present frequently on putrescent wood, dead leaves and decayed fruit. It is thought by some¹⁶ that under

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favorable conditions, this organism can become pathogenic for either man or animals. Primary infection in man is generally attributed to direct contact or inhalation.¹⁶ In debilitated individuals infection may result from the extension of oral or cutaneous lesions.¹⁶

The variations in the clinical picture have already been presented. The signs on physical examination are similarly variable except for the important fact that monilia infections tend to leave the apexes clear.¹² The

chest may appear normal, scattered râles may be present and frequently there are the physical signs of pleural thickening or consolidation.¹⁷ Fever may be absent, slight or moderate.¹⁸ There is usually some degree of anorexia and loss of weight.¹² A slight leukocytosis with an increase in eosinophils is common and there may be a relative lymphocytosis.¹⁹ A secondary anemia is a usual feature.¹² Roentgenologic studies may be negative or



Fig 1 (case 1)—Density in the left mid chest on admission

may reveal the presence of nodules, peribronchial thickening, areas of infiltration, consolidation, fibrosis or pleural thickening.²⁰ Usually the lesions are located in the bases of the lungs.^{11a}

For the treatment of pulmonary moniliasis, Castellani²¹ suggested the use of potassium iodide in large doses, from 30 to 60 grains (2 to 4 Gm) daily, in conjunction with creosote and glycerophosphates. Subsequent investigators have varied the treatment in resistant cases by modifying the form of iodide used and have achieved satisfactory results.²² Thymol by mouth,²³ gentian violet²³ and methylene blue intravenously²⁴ have also been used with fair results. Roentgen therapy is reported to be of considerable benefit.²⁵ Certain types of cases, however, apparently do not improve with any of these suggested methods of treatment. In such cases, the use of a vaccine has been recommended.²⁴ Insulin has been used to improve the appetite and to obtain a gain in weight.^{11a}

REPORT OF CASES

CASE 1—A white woman aged 21 single admitted to the Boston City Hospital Nov 10 1932 complained of a cough and increasing weakness for the preceding eight months. The cough was frequently productive of a blood streaked greenish or yellowish sputum. Three months after the onset of the cough she experienced frequent drenching night sweats and chills. She often felt warm and feverish late in the afternoon

or early in the evening. The menstrual flow, usually not remarkable, was definitely scanty during the two months previous to her admission to the hospital. For about the same period, she noted a distinct loss of appetite and, in the month previous to her entry, she lost 8 pounds (3.6 Kg). She fainted twice during the week preceding her admission.

The family and social history were essentially negative. No contact or association with tuberculosis could be established.

She had had the usual childhood diseases. At the age of 13, a physician advised her removal from school because she was 'run down' and her lungs had a few spots.²⁶ For three years afterward, her condition was followed at the outpatient department of a tuberculosis sanatorium for a question of early tuberculosis. For the next five years, until the onset of her present illness, she felt entirely well.

On admission to the Boston City Hospital, she was fairly well developed and well nourished but pale. Her chest showed diminished expansion on the left with slight dullness to percussion of the middle third posteriorly and inconstant crackling râles. Breath sounds were not remarkable. The right side of the chest was apparently normal. The heart was normal except for an apical systolic murmur. The systolic blood pressure was 90 and the diastolic 50. Examination of the urine was essentially negative. The hemoglobin was 70 per cent (Sahli) and the white blood cells numbered 10,800 per cubic millimeter of blood. A smear showed polymorphonuclear neutrophils, 64 per cent, lymphocytes, 25 per cent, and eosinophils 2 per cent, with no monocytes. The Kahn test was negative.

Of the twenty-six smears of sputum studied, none were positive for acid-fast bacilli, but thirteen were positive for yeastlike organisms. Cultures of the fungus were obtained from all of three sputum specimens after the mouth was carefully and thoroughly cleaned. Five blood cultures yielded no growth and one yielded a diphtheroid bacillus contamination.

A roentgenogram of the chest, on admission, revealed a mottled density in the left midchest, which was reported as either atypical tuberculosis or a fungous infection. Eight days later, a roentgenogram still showed slight density in the left midchest. December 6 thirty-seven days after admission, the lung fields were within normal limits.

A skin test with monilia antigen was performed, December 2, the fungus isolated from the patient's sputum being used, and 0.1 cc of a solution containing 500,000 heat-killed organisms per cubic centimeter being injected intracutaneously. An area of erythema, 1 cm in diameter, appeared in a few minutes, reached its height in an hour and disappeared at the end of three hours.

The patient's temperature was not remarkable except for an occasional afternoon rise to 99 F, except for December 20, when it rose sharply to 100.4 F and dropped to normal the next morning. The pulse rate was essentially normal and the respiratory rate varied from 20 to 25 a minute.

The patient was given a high caloric diet, elixir of terpin hydrate and codeine 15 grains (1 Gm) of potassium iodide three times a day and 5 grains (0.3 Gm) of creosote once a day.

At the end of about six weeks she showed considerable subjective and objective improvement but was not entirely well. Although examination of the chest revealed no positive



Fig 2 (case 1)—Lesion in chest entirely cleared four months after discharge

16 Farah⁴ Joels and Simpson²⁶
17 Farah⁴ Castellani²¹
18 Castellani²¹ Stovall and Greeley²²
19 Steinfield¹⁹ Bronchomycosis M Clin North America 15 403
20 Castellani²¹ Warr⁸ Steinfield¹⁹
21 Castellani Aldo Notes on Certain Bronchomycoses Which May Simulate Pulmonary Tuberculosis Am Rev Tuberc 16 541-574 (Nov) 1927
22 Joels and Simpson²⁶ Pijper²³ Steinfield¹⁹
23 Stovall and Greeley²² Steinfield¹⁹
24 Gro²⁴ and Balog²⁴ Pijper²³ Stovall and Greeley²² Pijper²³
A Bronchomycosis M J South Africa 12 129 1917

changes, she still had a slight cough and was moderately apathetic and listless, and the yeastlike organisms persisted in the sputum.

She was discharged, December 24, and after three days returned for vaccine therapy. On her second entry, the stools and urine were normal. The hemoglobin measured 80 per cent (Sahli) and the white blood cells numbered 8000 per cubic millimeter of blood. Yeastlike organisms were still present in the sputum.

The vaccine consisted of a suspension of a loopful of a pure culture of the monilia isolated from the patient's sputum in 3 cc of saline solution heated at 65 C for one hour. Therapy was instituted by injecting 0.1 cc of the vaccine subcutaneously. Thereafter the dose was increased by 0.1 cc and was given subcutaneously at intervals of three or four days. No general reactions were encountered but the local reactions were fairly constant. These consisted of an area of erythema from 2 to 5 cm in diameter which reached its maximum between twenty-four and forty-eight hours after injection and soon after this began to fade. The reactions were accompanied by considerable induration, pain and tenderness.

Agglutinations performed before vaccine therapy showed a positive reaction with a serum dilution of 1:20 and a negative one with 1:40. During the middle of the course of vaccine treatment a positive reaction was obtained at 1:80. At the end of the vaccine therapy agglutination was positive at 1:20 and negative at 1:40. Intracutaneous injection, at this time of 0.1 cc of a nucleoprotein fraction of the monilia recovered from the patient's sputum produced an area of erythema 2.5 cm in diameter in five hours, which disappeared twenty-four hours later.

The patient was discharged during the last week of January 1933. She has been seen four times at monthly intervals since her discharge and has continued to feel entirely well. The cough has been absent and



Fig. 3 (case 1)—Clumps of Monilia in the sputum showing thick hyaline coats and single and budding forms. (The photomicrograph was made by Dr. Frank B. Mallory.)

examination of the chest has been negative. Yeastlike organisms have been absent from the sputum. A roentgenogram of the chest, taken five months after discharge, was negative.

CASE 2—A white woman, aged 60, married, admitted to the Boston City Hospital, Nov. 24, 1932, complained of cough and shortness of breath for the preceding ten days. November 14, the patient suddenly noted the onset of chills, fever and cough. The cough at first was harsh, rasping and nonproductive, but at the time of entry to the hospital it was definitely productive of a thick greenish, mucopurulent sputum. The shortness of breath was definitely worse for the four or five days preceding admission. The patient felt most comfortable at night when sleeping sitting upright in bed. No history of hemoptysis or pain in the chest was obtained.

The family history, occupation and habits were not remarkable.

The past history was essentially negative except for an attack of bronchitis, sixteen years before admission.

On entry to the hospital, physical examination showed that she was well developed and well nourished, was uncomfortable lying in bed, and was markedly dyspneic. The lips were

cyanotic. The mouth showed no ulcerations or exudate. The tongue was red and dry and the pharynx moderately injected. Examination of the lung showed coarse crackling rales, moderately impaired resonance and increased breath sounds in the lower third of both sides of the chest. The peripheral vessels showed slight arterial thickening. The systolic blood pressure was 145 and the diastolic pressure 82.

The urine was not remarkable, except for a very slight trace of albumin and many white cells in one specimen. Culture of a catheter specimen of the urine showed no growth. Examination of the stools was negative.

The hemoglobin was 80 per cent (Sahli) and the white blood cells, on entry, numbered 11,900 per cubic millimeter of blood. A differential count showed polymorphonuclear neutrophils 76 per cent, lymphocytes 20 per cent, monocytes 4 per cent, and eosinophils 0 per cent. Five blood cultures were taken, three of which showed no growth, one was contaminated with *Bacillus subtilis* and another with diphtheroid bacilli. The Kahn test was negative.

Twenty-one specimens of the sputum were examined. The material was seromucoid to purulent in character. No acid-fast bacilli were found on smear. Polymorphonuclears were fairly frequent and eleven specimens showed the presence of yeastlike organisms. Cultures taken from three carefully obtained specimens of the sputum all showed the fungus.

December 2 a skin test was done with organisms obtained from cultures in case 1 and killed by heating to 65 C for one hour. One-tenth cubic centimeter of a suspension containing 500,000 organisms per cubic centimeter was injected intracutaneously. This resulted in a painful wheal at the site of inoculation 2 cm in diameter with an erythematous base 4.5 cm in diameter which reached its maximum intensity at the end of two hours.

An agglutination reaction carried out with the patient's serum was markedly positive with a serum dilution of 1:160 and was questionably positive at 1:320.

Although the patient was practically moribund for the first three weeks in the hospital, the temperature tended to be low grade, varying from normal to 101 F. The pulse rate fluctuated with the temperature from 80 to 130 per minute. The respiratory rate for the first three weeks usually varied between 30 and 60 per minute.

The patient was given ammonium chloride syrup of hydriodic acid and codeine. Iodide therapy was instituted with 15 grams of potassium iodide three times a day and, in addition, 5 grams of creosote daily. This treatment was supplemented a week later by the use of daily doses of 1½ grains (0.1 Gm.) of sodium iodide intramuscularly.

After three weeks of treatment, the patient began to show a marked and progressive improvement, which resulted in her discharge from the hospital six weeks after admission. She was seen by request four months after discharge, at which time she showed slight evidences of myocardial weakness that were attributed to the presence of a considerable degree of arteriosclerosis. An intensive search could bring forth no evidence of monilia infection. Sputum, blood, urine and stool examinations were negative. A slight cough and crepitant rales at both lung bases disappeared on digitalization and the patient again felt entirely well.

Intracutaneous administration one month after discharge of 0.1 cc of a nucleoprotein fraction of the monilia recovered from the sputum of patient 1 produced no reaction.

CASE 3—An American born housewife, aged 30, admitted to the Boston City Hospital Nov. 28, 1932, complained of pain in the right side of the chest. Five years before entry she was told that she had pulmonary tuberculosis and was sent to a sanatorium. The patient left that institution against advice about a year before her admission to the Boston City Hospital but promised to continue the therapy with her own physician. Two weeks before entry she began to experience sharp stabbing pains in the right side of the chest, associated with difficulty in respiration.

The family and marital history were not remarkable. A communication from the sanatorium stated that, before pneumothorax therapy (1930), a roentgenogram of the chest showed infiltration of the left lung field and cavity formation.

Density at the right apex was also noted. Sept 10, 1931, a roentgen study revealed a left pneumothorax with good collapse and infiltration of the right apex. The 1st sputum positive for *Bacillus tuberculosis* was obtained Oct 9 1930. The weight on discharge, in November 1931, was 127 pounds (57.6 Kg). The sputum was negative for acid-fast bacilli.

On admission to the Boston City Hospital, the patient was emaciated. The throat was moderately injected. The trachea was deviated to the right and the chest showed diminished expansion on the left. The right apex was dull to percussion, with increased breath sounds and increased whispered voice. No rales were heard. The left side of the chest exhibited flatness to percussion posteriorly below the level of the fifth rib. Breath sounds and rictile fremitus were markedly diminished over the area of flatness. The right cardiac border was found to be 2 cm outside the right sternal border. Examination of the abdomen revealed slight epigastric tenderness. The systolic blood pressure was 80 and the diastolic pressure 54. She weighed 116 pounds (52.6 Kg).

The urine varied in specific gravity from 1.012 to 1.015, with a slight to a large trace of albumin. The sediment centrifugated, showed occasional red cells, white cells and granular casts.

The hemoglobin was 70 per cent (Sahli). The white blood cells numbered 16,100 per cubic millimeter of blood with a differential count of polymorphonuclear neutrophils 70 per cent, lymphocytes 26 per cent, monocytes 4 per cent, and eosinophils 0 per cent. The Kahn test was negative.

Seven blood cultures were taken, five of which were negative; one showed *Streptococcus viridans* and one *Staphylococcus aureus*, obviously a contamination.

The sputum was seromucoid to purulent in character. Fifteen smears of the sputum were examined, one of which was positive for acid-fast bacilli and twelve showing large numbers of yeastlike organisms. On three occasions the sputum was carefully collected for culture and all specimens showed the fungus.

A roentgenogram of the chest on entry showed a left pneumothorax with no free fluid and an infiltration of the right infraclavicular region. The latter was thought to be due to tuberculosis. Roentgenologic studies made a few days later revealed the presence of free fluid in the left side of the chest.

Agglutination reactions carried out with the patient's serum and the organism isolated from the sputum showed a positive reaction with a 1:80 dilution of the serum and a questionable reaction at 1:160.

The patient remained in the hospital one month, showing essentially no change for the first three weeks. The temperature showed a diurnal fluctuation although not always with an afternoon peak. It frequently rose to 102 F as the maximum and often dropped as low as 98 F. The respiratory rate during the first three weeks varied from 15 to 30 and the pulse rate fluctuated markedly with the temperature from 88 to 128.

The cough was controlled with elixir of terpin hydrate and codeine. The addition of a chest swathe with complete rest in bed and pneumothorax therapy afforded marked relief for the pain in the chest.

As the patient began to improve symptomatically, she showed a marked disinclination to remain in the hospital for continued therapy and was discharged against advice at the end of the fourth week in the hospital. During this last week, the temperature varied from 98.6 to 99 F, the pulse rate was between 80 and 90 and the respiratory rate was 20. She coughed slightly and had slight pains in the chest. There were still signs of fluid in the left side of the chest and the sputum showed large numbers of yeastlike organisms with no acid-fast bacilli.

MICROLOGY

The organisms in the sputums in all the cases of this report were identified first in routine stained smears for *Bacillus tuberculosis* in which they were observed as numerous clumps of single and budding cells and mycelia stained by the methylene blue counterstain. Subsequently they were demonstrated as deep violet staining organisms when stained by the method of Gram. In each instance specimens for culture were collected only after the most superficial organisms had

been removed from the mouth by several rinsings with saline solution, after which a deep cough usually furnished abundant material for examination. Cultures of three specimens of sputum were made in each case on Sabouraud's maltose agar. The most abundant growth was obtained by streaking the characteristic white flakes in the sputum on plates and incubating at 37.5 C for four days, at the end of which time numerous round, somewhat conical, ivory white colonies, from 0.3 to 0.5 cm in diameter, were found.

The classification of each organism was based on studies of cell morphology, mycelia and ascospore production, cultural characteristics, sugar fermentations and virulence for animals. The organisms from all three cases were identical.

Cell Morphology—Hanging drop preparations of cultures from Sabouraud's slants and in plain bouillon were utilized in these studies. After forty-eight hours' incubation at 37.5 C, the fungus appeared, chiefly as single cells and budding forms with a few short thick hyphae. The cells measured from 4 to 12 microns in diameter and buds varied from a fraction of this to the same size as the parent. Hyphae showed marked variation in length and were from 15 to 20 microns in thickness. After longer periods of incubation, the hyphae increased markedly in number and in length and showed definite segmentation with oval conidia, from 2 to 5 microns in greatest diameter.

Mycelia Production—Isolated colonies on Sabouraud's maltose agar plates at the end of six days' incubation at 37.5 C showed a narrow fringe of mycelia. This widened to a band from 0.5 to 1.0 cm in width on about the fifteenth day of incubation, at which time the colonies had become brown and dry, and growth had ceased. Gelatin stabs were made and incubated at room temperature for seven days, at which time a marked lateral outgrowth appeared along the line of stab, greatest in extent at the surface and gradually decreasing to less than 1 mm in width in the depths of the tube, thus growing in the typical inverted "pine tree" arrangement. No liquefaction occurred. Microscopic studies of the mycelia were made by fixing the gelatin stab culture in 10 per cent neutral solution of formaldehyde for twenty-four hours, cutting it in thin slices and mounting it on slides in glycerin jelly. The mycelial threads began in a mass of cells in the line of the stab and extended outward with clusters of from ten to twenty conidiophores arranged at intervals of 30 microns or less along the thread. The largest clusters were found in the distal portions and an occasional segmented branch arose from the clusters and extended outward for from 150 to 200 microns, with a few round or oval conidia arranged at the points of segmentation and terminally.

Ascospore Production—The surface growth on gelatin stabs was examined after seven days' incubation for the presence of ascospores.²⁵ In no instance could any be demonstrated.

Cultural Characteristics—The colonies on Sabouraud's agar at the end of four days' incubation at 37.5 C were as described in cultures of the sputums. In plain bouillon, growth was abundant in the bottom of the tube with clear fluid above. No ring or pellicle was formed.

Sugar Fermentations—A base was used, consisting of 1 per cent peptone and 0.5 per cent sodium chloride,

²⁵ See R. N. Zerkas, L. G. and Cornwell, M. A. The Presence and Importance of Yeastlike Fungi in the Gastrointestinal Tract in Pernicious Anemia in Other Diseases and in Normal Individuals. *Am J M S* 175: 153-174 (Feb) 1928.

with 1 per cent Andrade's indicator added and so adjusted as to be light pink when hot and colorless when cold. This was autoclaved for twenty minutes at 15 pounds pressure. To each tube, 1 per cent of chemically pure sugar was added the latter having been sterilized in 10 per cent solution previously, by heating in the Arnold steam sterilizer for twenty minutes on each of three successive days. Control tubes consisted of the peptone water base inoculated with the fungus. Dextrose, levulose, maltose, saccharose, galactose, lactose, mannose, rhamnose and raffinose were used in the determinations. Inoculants were made from the growth on plain agar slants after forty-eight hours' incubation at 37.5 C. Gas formation was shown by the use of Durham tubes. Readings were made at the end of two, three, five and seven days' incubation at 37.5 C. These were the same on the fifth and seventh days, and this was accepted as the characteristic fermentation. Results were as follows with organisms from each of the three cases: acid and gas production in dextrose, levulose, mannose and maltose, acid in saccharose and galactose, no acid or gas in lactose, raffinose and rhamnose.

Milk—A special milk medium containing 0.5 per cent calcium lactate was prepared, according to the method described by Stovall and Bubolz.²⁶ This was inoculated with 0.1 cc of a salt solution suspension, obtained by washing a forty-eight hour growth from a Sabouraud agar slant. The cultures were incubated at 37.5 C for one week. No coagulation was observed.

Virulence—Virulence tests were carried out, rabbits being used. Approximately 100×10^6 organisms were injected into an ear vein. Each of the three fungi caused death in from four to six days. Autopsy revealed numerous small abscesses in the kidneys, from which cultures yielded organisms identical with those injected. Blood cultures were negative. Microscopic studies confirmed the gross diagnosis and yeastlike fungi, occurring chiefly as single and budding forms, but with a few hyphae, were demonstrated in the lesions. Intrapulmonary injection of 50×10^6 organisms in 1 cc of saline solution was made. One rabbit injected with the organism from patient 2 died in six days with macroscopic lesions in the kidneys as already described, and with nodules at the point of injection in the lung and fibrin deposit on the pleural surface. Microscopic studies showed kidney lesions as described previously. Sections through the nodules in the lungs showed extensive necrosis of the parenchyma, collections of polymorphonuclear neutrophils and numerous yeastlike organisms with short thick hyphae. The other rabbits were killed six weeks after injection and presented marked adhesions between the pleural surfaces in the region of injection and nodules from 0.3 to 0.5 cm in diameter with soft yellow centers in the adjacent lung tissue. Cultures yielded the same organisms as described previously. Microscopic examination showed these lesions to consist of a central necrotic zone, containing numerous single and budding cells and masses of mycelia, surrounded by a zone of connective tissue.

Organisms from the sputums of each case (1) were yeastlike in structure, (2) produced segmented mycelia readily in culture mediums, (3) did not form ascospores, (4) fermented certain sugars with gas as well as acid formation, (5) did not coagulate milk, and (6) were pathogenic for rabbits. On the basis of the first four of these characteristics, the organisms are identified as belonging to the genus *Monilia* or *Parasaccharomyces*.

Because of the pathogenicity for rabbits, as well as the sugar fermentations, all three fungi can be placed in the group *Parasaccharomyces* A, described by Nye.² Except for the fact that no gas formation was observed in galactose these organisms might be positively identified as *Monilia* type II, recently described by Stovall and Bubolz,²⁰ which includes, among other species *Monilia albicans* Craik, *Monilia psilosis* Ashford and *Monilia pinovi* Castellani. Since the most characteristic biochemical reactions are obtained in maltose and saccharose the organisms from these three cases would seem to belong to *Monilia* type II, in spite of their failure to form gas in galactose.

COMMENT

Three cases of pulmonary moniliasis have been presented, in two of which the yeastlike fungus was the primary etiologic agent and in one a secondary invader. The clinical pictures varied markedly and it can be readily seen that symptoms and physical signs alone cannot be used as dependable criteria in the diagnosis of the disease. The establishment of the diagnosis of pulmonary moniliasis requires certain definite evidence in addition to a suitable clinical picture. The presence of typical organisms in the absence of acid-fast bacilli, in a carefully obtained specimen of the sputum is of utmost importance.²⁷ Although it has been maintained that these organisms can be found in the sputums of normal individuals,²⁸ most observers feel that monilia is an unusual mouth organism.²⁹ Consequently, its presence in any sputum deserves careful consideration.

It has also been maintained that an absolute diagnosis of pulmonary moniliasis depends on the demonstration of the pathogenicity of the isolated organism for laboratory animals.³⁰ Against this point of view, however, it has been shown that moniliasis causing similar bronchial reactions may vary greatly as regards their pathogenicity.³¹ The fact that yeastlike fungi may be pathogenic for man and not for laboratory animals has been a repeated observation.³² Also, moniliasis that are fairly common inhabitants of the normal gastro-intestinal tract in man have been found by Nye³¹ to cause death in rabbits when administered intravenously. Peckham³³ has shown that monilia, saprophytic in the human being in other locations is pathogenic for guinea-pigs. Hence it would seem that the animal pathogenicity of this group of fungi is no criterion for proof of etiologic relationship to disease in man. Many investigators have come to the conclusion that the mere presence of *Monilia* in large numbers in the sputum of a patient suffering from bronchopulmonary disease indicates that these organisms are primary etiologic agents or secondary invaders.³⁴

Although much has been written concerning the value of complement fixations and agglutination reactions these observations have not been consistent enough to be of sufficient value to establish the diagnosis.³⁵

- 27 Wallace and Turner²⁰ Castellani⁷ Mendelson²⁵
- 28 Stovall²⁰ Piper¹¹
- 29 Warr⁸ Grossi^{11a} Redaelli¹
- 30 Wallace and Tanner¹ Stovall³ Stovall and Greeley¹³ Castellani⁷ Bronchomycoses Mil Surgeon 57 113 133 (Aug) 1925
- 31 Nye R N Zervas I G and Cornwell M A The Pathogenicity of Yeastlike Fungi Isolated from the Human Gastro-Intestinal Tract Am J M Sc 178 515 528 (Oct) 1929
- 32 Peckham J F Study of Yeasts from Human Sources J Infect Dis 37 53 61 (July) 1925
- 33 Wallace and Tanner²⁰ Stovall³ Castellani⁷ Joekes and Simpson¹⁰ Piper^{11b} Stovall and Greeley¹³ Steinfield¹⁰ Buchanan J A Bronchomycosis Significance of Yeasts in Sputum Internat Clin 2 65 70 (June) 1930
- 34 Farah⁴ Joekes and Simpson¹⁰ Piper^{11b} Steinfield¹⁰ McKinney M J Yeastlike Organisms of Human Origin J Infect Dis 44 47 55 (Jan) 1929 Hofstad R E and Langenfelder J S Pulmonary Infection Caused by *Monilia* Balcanica (Castellani) Am J Trop Med 9 461 469 (Nov.) 1929 Kurochkin T J and Chu C K Bronchomycosis Serological Studies on a Case Nat M J China 15 403 409 (Aug) 1929

Agglutination reactions with monilia strains from the cases reported in this paper and twenty-six serums from patients with no evidence of monilia infection showed negative results in only nine instances. The other serums showed agglutinin titers ranging from 1:5 to 1:80 only one, however, showing this rather high value. Skin tests have been more valuable. Balog and Grossi³⁵ report nonspecific reactions with killed monilia cultures, but accurate specific reactions with living organisms of the species *Monilia pinoyi*. The results with the intradermal injection of killed cultures recorded here agree with theirs. Living cultures of *Monilia pinoyi* were not utilized. The results with a monilia nucleoprotein fraction, prepared by Dr R. N. Nye and so diluted as to give negative reactions when administered intracutaneously to thirteen controls, showed a specific reaction in case 1 after vaccine therapy but was negative in case 2 one month after discharge from the hospital. One control subsequently showed a positive reaction.

So, at present, it seems necessary to base a positive diagnosis of primary monilia infection on the presence of large numbers of the organism in the sputum in the absence of *Bacillus tuberculosis* and with additional evidence that may be obtained from roentgenologic observations, therapeutic tests with iodides and, possibly, skin tests performed with living organisms of the species *Monilia pinoyi*. The possibility of inducing infection of the skin by use of the latter organism would seem to be a factor that would make this test undesirable. Balog and Grossi, however, with the strain used by them, in no instance observed such a result. Perhaps further studies with a nucleoprotein fraction from monilia may give as good a result and yet offer a less dangerous means of demonstrating the relationship existing between the isolated yeastlike organism and the lesion in the patient.

It is important to bear in mind that no characteristic clinical picture is found in pulmonary infections with *Monilia*. Although most cases may have a striking similarity to pulmonary tuberculosis, it is not unusual to find cases of pulmonary moniliasis with an acute onset. The diagnosis of moniliasis should be borne in mind in any case of pulmonary disease in which the etiology is questionable.

SUMMARY

In three cases of monilia infection of the lungs, the organism was the primary agent in two and in one an invader secondary to *Bacillus tuberculosis*.

A marked variation in the clinical picture of pulmonary moniliasis was observed in the cases presented.

Excellent results were obtained with the use of iodides and with iodides supplemented by vaccine in the treatment of the cases of primary infection.

There are means of demonstrating the relationship of *Monilia* recovered from the sputum to the disease process in the patient. Agglutination reactions proved to be of uncertain value in the establishment of a diagnosis.

It is important to consider a diagnosis of pulmonary moniliasis in cases of unproved and atypical tuberculosis.

It is suggested that, in the wide group of cases clinically classified as chronic bronchitis, *Monilia* should be considered as one of the many possible etiologic agents.

NEUTROPENIA FOLLOWING AMIDOPYRINE

PRELIMINARY REPORT

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LOS ANGELES

The increasing number of cases reported in recent years presenting the syndrome of agranulocytic angina or malignant neutropenia has excited comment from many observers. Numerous drugs, organisms and toxins have been connected with the disease entity but definite confirmatory clinical and experimental data have been lacking.

Kracke¹ in 1932 was able to induce the characteristic blood picture in rabbits with small subcutaneous injections of benzene following the lead of Selling² in 1916 in demonstrating the leukotoxic effects of benzene on myeloblastic tissues. Kracke also produced a marked leukopenia with subcutaneous injections of ortho-oxybenzoic acid and by the intravenous injections of hydroquinone. He was unsuccessful in depressing the leukocyte count with a group of other substances, as acetphenatidin, peralga (barbituric acid and amidopyrine), dial, resorcinol, pyrocatechin, orthocresol, para and meta-oxybenzoic acid and 50 per cent alcohol. To one rabbit he administered from 5 to 10 grains (0.3 to 0.65 Gm.) of amidopyrine daily by mouth for forty-five days. A persistent leukocytosis was obtained.

During the past six to eight years, one of us (A. M. H.) has had occasion to treat fourteen consecutive cases of agranulocytic angina. Thirteen of the patients died—some before the advent of pentnucleotide therapy and several since. In August 1933 one patient developed the clinical picture after two weeks' ingestion of dinitrophenol, which she took on her own behest for reduction purposes. Following roentgen therapy and the administration of pentnucleotide, she recovered. Her illness prompted us to review all the preceding cases of agranulocytic angina we had observed and, to our astonishment, we noted that the only common factor in the twelve cases seen to that date had been the ingestion of amidopyrine. All of these patients had received amidopyrine alone or in conjunction with codeine for the pain of arthritis, sciatica, bone tumor, and so on. A few had received some barbitol products, as phenobarbital, pentobarbital or iso-amylethyl barbituric acid. None had been given allylisopropylbarbituric acid combined with amidopyrine (allonal).

We therefore determined to investigate the possibility of the experimental production of the neutropenic state by means of amidopyrine.

Oct. 27, 1933, Madison and Squier³ reported before the Central Society for Clinical Research their experiences concerning thirteen cases of agranulocytic angina,

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¹ Kracke, R. R. "The Experimental Production of Agranulocytosis," *Am. J. Clin. Path.* 2: 11 (Jan.) 1932.

² Selling, L. "Benzol as a Leukotoxin," *Johns Hopkins Hosp. Rep.* 17: 83-143, 1916.

³ Madison, F. W. and Squier, L. L. "Primary Granulocytopenia After Administration of Benzene Chain Derivatives," *abstr. J. A. M. A.* 101: 2076 (Dec. 23) 1933. "The Etiology of Primary Granulocytopenia (Agranulocytic Angina)," *ibid.* 102: 755 (March 10) 1934.

³⁵ Balog, P. and Grossi, G. "Allergie der Haut bei Lungen Moniliasis," *Arch. f. Dermat. u. Syph.* 157: 549-554, 1929.

in all of which various barbiturates, usually in combination with amidopyrine, had been administered. They gave allylisopropylbarbituric acid with amidopyrine (allonal) to eleven rabbits. One rabbit showed an abrupt drop in the granulocyte count on the twenty-sixth day and died on the thirtieth day. There was no effect on the remaining rabbits.

In November 1933, Watkins⁴ commented on the possible role of barbiturates and amidopyrine in the causation of leukopenic states in a series of thirty-two cases seen at the Mayo Clinic. Of this group of patients, "twenty-four had taken amidopyrine or a derivative of barbituric acid for varying periods before the onset of the granulocytopenia." In the remaining eight cases no record could be found that any drug had been used before the onset of the illness, but all had been under medical observation for chronic complaints or had been hospitalized for surgical procedures. It is possible that these patients may have received barbiturates or amidopyrine."

Subsequent to the publication of these observations, from personal communications at least four other patients have been noted to develop malignant neutropenia following the use of amidopyrine.

Under our very eyes, our fourteenth patient recently developed the disease.

A man, aged 58, was admitted to the Santa Fe Hospital for an otitis media, Nov. 27, 1933. The temperature was normal. The white blood corpuscles numbered 6000, with 58 per cent polymorphonuclear leukocytes. A suppurating mastoid developed, and on December 18 a mastoidectomy was done. During the following thirty-six days he received a total of 75 grams (4.9 Gm.) of amidopyrine for headache. Jan. 23, 1934 he developed a sore throat and temperature to 103.4. His leukocyte count on that day was 1,500, with 3 per cent polymorphonuclear cells. He died January 27, in spite of vigorous therapy with penicillins and liver extract. His leukocytes dropped to 450 cells with an entire absence of neutrophils, before death.

The remainder of our cases practically duplicate this. All but one of the patients had received amidopyrine in doses of from 5 to 25 grams (0.3 to 1.6 Gm.) a day—often in association with half grain (0.03 Gm.) doses of codeine for relief of pain of varied origin. One patient had two attacks six months apart, dying in the second. In the one exception in our series of fourteen cases, only dinitrophenol, 100 mg. four times a day for two weeks, was administered. The patient did not take any other medication whatever and is certain that no amidopyrine or barbiturates were available in her home. She is the only patient in the series who is alive.

Commencing in December 1933, our experimental work on rabbits was carried on. Amidopyrine alone was used in contrast to the combination of Madison and Squier of amidopyrine with allylisopropylbarbituric acid, because amidopyrine was the only drug used in thirteen of the fourteen cases we had observed.

The results of our animal experiments will be given in detail in a later report. At the present time we have definitely shown that amidopyrine has an effect on the hematopoietic system of rabbits. Doses of this drug varying from 0.2 to 0.9 Gm. per kilogram given by mouth produce a definite leukocytosis followed in a few weeks by a depression of the total white count. In some of the rabbits the proportion of polymorphonuclear leukocytes has been reduced to as low as 8 per cent, while in all the rabbits the granulocytes have been

below 20 per cent during the depression of the total counts. The controls remained unchanged.

COMMENT

The common factor in amidopyrine, dinitrophenol, benzene, arsphenamine, ortho-oxybenzoic acid and hydroquinone, all of which have produced neutropenia experimentally or clinically, is the benzene ring. Whether the latter is the actual toxic agent in the production of neutropenia needs further experimentation, part of which we are now undertaking. Our work points to amidopyrine as having a definite effect on myeloblastic tissue similar in man and in rabbit. Whether this is an individual susceptibility of the nature of an allergic reaction, as suggested by Pepper,⁵ remains to be determined. Until it is, the use certainly of amidopyrine alone or in combination with other drugs should be restricted to patients having leukocyte counts several times a week.

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TUBERCULOUS CERVICAL ADENITIS

A STUDY OF POSTOPERATIVE END RESULTS

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The data presented in this paper are based on a series of 115 cases of tuberculosis of the cervical lymph nodes in which operations were performed by one of us (Stanton) over a period of twenty-six years. One hundred and seven of these cases have been followed for a total of 1,348 years, or an average of 12.5 years each. In all but two or three perfectly typical cases, the diagnosis was confirmed by histologic examination of tissues removed at operation.

This group consisted of 56 males and 59 females. The age distribution when these cases came under our observation is given in table 1.

The duration of the glandular involvement before surgical intervention was sought is given in ninety-four histories. Forty-five or 48 per cent, came to operation within six months after the enlarged glands were first noted, nineteen, or 22 per cent, between six months and a year, eleven during the second year, nine during the third year, and ten after more than three years.

The previous treatment as recorded in the histories is given in table 2.

When these patients came under our observation, they presented pathologic lesions varying from multiple involvement of the great majority of nodes on one or both sides of the neck to involvement of only a few nodes or involvement of one or more caseous nodes associated with localized abscesses. Of the 115 cases 41 were described before operation as presenting abscesses or fluctuating masses in the neck. In twelve additional cases there were sinuses. Thus the abscess and sinus cases comprised nearly half the total cases. Eight patients—all adults—presented at the time of their first visit definite clinical evidences of pulmonary tuberculosis.

The treatment given these patients while under our observation was almost entirely surgical and hygienic. X-rays, radium, special lights and vaccines were

⁴ Watkins, C. H. The Possible Role of Barbiturates and Amidopyrine in the Causation of Leukopenic States. Proc. Staff Meet. Mayo Clin. 8: 713 (Nov. 22) 1933.

⁵ Pepper, O. H. P. Leukopenia. A Review with Special Reference to Agranulocytic Angina. California & West Med. 35: 173 (Sept.) 1931.

scarcely used at all. The same may be said of the various local injections such as Beck's paste.

The surgical treatment in the cases covered by this study varied according to the type of lesion from complete excisions involving entire chains of glands to the

TABLE 1—Age of Patients When They Came Under Observation

At 5 years or under	15
From 6 to 10 years	21
From 11 to 15 years	16
From 16 to 20 years	16
From 21 to 25 years	10
From 26 to 30 years	9
From 31 to 40 years	6
Over 40 years	5
No age given in histories	10

simple incision of localized abscesses with the simultaneous removal of the node or nodes responsible for the abscess. The importance of removing the causative node is illustrated by the fact that in this series there were thirteen cases in which abscesses had been previously drained without removal of the gland and all of them had continued to drain constantly or intermittently until the causative focus was removed, after which they promptly healed.

The time required for healing, the duration of drainage and sinus formation were noted in fifty-eight of the histories. For the most part, healing was by primary intention except at drainage sites. Prolonged drainage is noted in a number of cases. Two patients said that it took two months, three said that it required four months. Drainage continued for three months in

TABLE 2—Previous Treatment

Incision and drainage once before	12
Incision and drainage twice before	1
Incision and drainage plus excision	1
Excision of glands on same side	4
Excision on same side twice before	1
Previous excision of glands on opposite side	3
Previous excision on one side now present on both sides	3
Excision 15 injections of therapeutic tuberculin and 3 radium treatments	1
Excision plus iodoform injections	1
Iodoform injections	2
Radium	1
Light treatment	1
Various medicines plus tuberculin	1
Incision and drainage excision and x-ray treatment	1

one case, about one year in five cases and for three years in one case. This patient had become pregnant shortly after operation and this was considered a factor in continuing the drainage. Two patients in whom healing had been good subsequently had a secondary breaking down of tissue with sinus formation when they became pregnant. Both of these pregnancies were within a year of operation.

Postoperative care was largely directed along hygienic lines, including fresh air, rest and diet. Most of the patients returned to their usual occupations as soon as their incisions were healed. Therapeutic injections of tuberculin were used postoperatively in only one case. No patient was given roentgen or radium treatments postoperatively although one patient subsequently had roentgen treatments for a recurrence.

At the end of one year following the date when these patients came under our observation approximately 73 per cent had apparently recovered and were described as being in excellent or good health. Eight are known to have pulmonary tuberculosis as shown on admission and approximately 20 per cent still present evidences of nonpulmonary tuberculous infection

in the form of sinuses or demonstrable glandular enlargements in some part of the body. In the course of time all of the patients without pulmonary involvement not yet cured at the end of the first year have recovered as far as any evidence of active tuberculosis was concerned at the time when they were last observed.

At the end of the first year, six patients presented complaints directly referable to the operation itself. The complications may be listed as in table 3.

All of these minor complications cleared up in the course of time.

The data as to the period elapsing before operation the repeated operations and long-continued treatment in some cases, and the fact that one year after radical surgical treatment between 20 and 30 per cent of the patients still had symptoms relative to the disease is simply in line with the well known chronicity of tuberculosis.

It is only when these cases are followed for relatively long periods that the remarkably good ultimate prognosis of this disease becomes apparent.

TABLE 3—Complications in Six Operative Cases

Itching in scar when tired	1
Tension distress in shoulder	1
Drooping shoulder with difficulty in raising arm to level of opposite shoulder	1
Numbness on side of face	1
Increased sensitivity on side of face	1
Face crooked since operation (partial involvement of inframaxillary branch of facial nerve)	1

Of the 103 patients traced for periods longer than one year and averaging thirteen years each, none had died of a nontuberculous disease and only four have died of pulmonary tuberculosis.

Among the ninety-nine survivors, at the time of their last examination only one presented a small but definite tuberculous gland in the neck. In the remaining ninety-eight, all evidences of active tuberculosis have disappeared.

During the time these patients have been under observation, their nontuberculous morbidities have been about what might be expected for a similar age group over a like period of time. Among the observations noted in the histories may be listed the conditions presented in table 4.

TABLE 4—Complications Noted in the Histories

Acute appendicitis	3
Drainage of apical abscess	1
Tonsillectomy	7
Treatment of chronic pulmonary tuberculosis	4
Hypertensive heart disease	1
General weakness no cause found	1
Breast abscess tuberculous drained	1
Choreaform twitches	1
Positive Wassermann reaction	1
Typhoid	1
Weak ankles	1
Asthma still present	1
Drainage of tuberculous abscess of upper margin of trapezius	1
Phlyctenular conjunctivitis of eye cured following tonsillectomy	1
Cystitis attack also removal of benign tumor of breast	1
Bilateral encephalomyelitis and oophorectomy	1
Bilateral encephalomyelitis and hysterectomy for atrophy plus one urinary frequency	1

Only four of the 107 traced patients have subsequently died of pulmonary tuberculosis. These deaths all occurred in adults who were known to have some degree of active pulmonary tuberculosis at the time they were operated on. The shortest duration was one year and two months and the longest ten years and four months after operation. The other two lived two

years and three months and four years, respectively. Two were men and two were women. The ages at the time of operation were 22, 27, 35 and 19 years and at the time of death 23, 31, 37 and 29 years, respectively. Four other patients with active pulmonary tuberculosis at the time of operation were aged 22, 23, 23 and 43 years, respectively. One was lost track of within the first year but the other three have been followed twelve, sixteen and twenty-one years, respectively. They all report in excellent health at the present time. One child, aged 2 years at the time of operation, was sent to a tuberculosis camp for a while but now, fourteen years later, is in excellent health. It is of interest to note that this boy is a son of one of the adults who died of pulmonary tuberculosis.

During the period these cases have been under observation, the general mortality rate for tuberculosis in this and other countries has been changing so rapidly that it is impossible to calculate the expected mortality from pulmonary tuberculosis for a similar sex and age group without lymph gland tuberculosis. However, in the group under observation, not one of the ninety-nine patients who came for treatment of tuberculous cervical lymph nodes without demonstrable active pulmonary tuberculosis has ever developed any serious form of pulmonary tuberculosis during the aggregate of 1,279 years they have been under observation.

Such observations seem to point definitely to the conclusions:

First, tuberculous cervical adenitis occurring in children and young adolescents when properly treated does not subject these individuals to a more than usual subsequent death rate from pulmonary tuberculosis.

Second, it is difficult to escape the conclusion that lymph node tuberculosis occurring in early life is a clinically observable phase of a form of tuberculosis that serves as an immunizing process, actually protecting the individual against lethal forms of tuberculosis.

We feel that the series of cases analyzed in this study is large enough numerically and that the follow-up period has been sufficiently long so that in all probability the concept regarding the prognosis of this disease as herein presented is correct for the period under consideration.

We can find no similar end result reports covering a period of high tuberculosis mortality such as the late nineties or early years of this century. Certainly our results have been much more favorable than those reported by most surgeons and especially those of a slightly earlier period.

Raymond Pearl and others have shown that the enormous drop in the death rate from tuberculosis that has occurred in recent years is a world-wide phenomenon but doubtfully influenced by local or even country-wide crusades against the disease.

Twenty-five years ago lymph gland tuberculosis was a common disease seen frequently in all communities. Today it is a rare disease encountered only occasionally in even the largest clinics. It is just possible that the highly favorable prognosis as shown in our series may be in part at least the result of some great biologic phenomenon associated with this disease little understood at this time. It is quite certain, however, that no facts observed in association with this series can be interpreted as an indication that lymph gland tuberculosis occurring in children or young adults is particularly liable to develop later into pulmonary or other serious forms of tuberculosis.

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ALLERGIC-LIKE REACTIONS FROM SODIUM MORRHUATE

IN OBLITERATION OF VARICOSE VEINS

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The search for a perfect sclerosing agent for the obliteration of varicose veins has been marked by the adoption and subsequent neglect of one solution after another. The requirements for an ideal solution are that it be effective, safe and painless. These requirements have largely been fulfilled by sodium morrhuate, and this preparation has been widely accepted as the closest available approach to the ideal medium. Its freedom from danger of local and general reaction has been particularly emphasized. My experience with sodium morrhuate, like that of many others, has been extremely satisfactory, and in both private and clinic work it has largely supplanted all the other agents used. In the absence of any fear of general reaction, I have not hesitated to use it and to advocate it freely. Several recent experiences, however, have indicated that sodium morrhuate may give rise to allergic reactions in sensitized persons. I am unable to find any mention of this possibility in the literature, and it is my purpose in this communication to call attention to it in order that adequate measures may be taken to avoid it.

REPORT OF CASES

CASE 1—Mrs. J. N., aged 49, with a negative allergic history, had had sphenous vein ligation followed by a series of sodium morrhuate injections at intervals of from one to two weeks, with no systemic reaction of any type. When the veins were almost entirely obliterated, an interval of seven weeks was permitted to elapse between treatments, following which two injections of 1 cc each were given. About twenty minutes after the second injection the patient complained of extreme weakness and dizziness. Consciousness was retained and there was no cough, pain in the chest, or expectoration. The expression was anxious but there was no cyanosis. There was no detectable pulsation of the radial or other arteries and auscultation revealed an absence of heart tones over the precordium. The head of the table on which the patient was lying was lowered and 1 cc of epinephrine was administered hypodermically. After several minutes the patient stated that she felt better but she was still pulseless, and the systolic blood pressure was found to be 70. When ephedrine was given the blood pressure gradually returned toward normal, and the patient was permitted to go home. On the following day she seemed completely recovered.

Dr. S. M. Feinberg saw the patient during the attack and termed it an anaphylactoid reaction. He subsequently made skin tests for sensitization to sodium morrhuate. The scratch test was negative but a positive reaction was obtained on intradermal injection. The patient apparently was not sensitive to sodium morrhuate when the treatments were begun. She became sensitized, however, during the course of treatment, and an injection after an interval resulted in a severe reaction, which resembled an anaphylactic shock.

CASE 2—Mrs. M. G., aged 36, with a negative allergic history, received an initial injection of 0.5 cc of sodium morrhuate. One week later two injections of 1 cc each were given. On the following day a severely itching eruption appeared on the neck and chest. She then recalled a milder irritation of the skin of the chest following the first injection. Examination revealed an intense dermatitis involving the chest, neck, face and arms. A dermatologist consulted by the patient considered the lesion a toxic erythema of a papular and urticarial type and thought it might well be allergic in origin. Intradermal skin tests were again positive.

From the Peripheral Circulatory Clinic of the Department of Surgery, Northwestern University Medical School.

CASE 3—Mrs H F had a previous history of urticaria, for which sensitization tests were being made. She had received a number of dextrose and salt injections in the varicose vein clinic of the department of surgery of Northwestern University Medical School with no untoward effect. Following her initial injection with 4 cc of sodium morrhuate, however, a severe systemic reaction occurred. It began about fifteen minutes after the injection and was characterized by faintness, weakness and rapidity of the pulse and repeated vomiting. The symptoms lasted for over an hour and then gradually disappeared.

CASE 4—Miss I B had a severe urticarial reaction following the initial injection with sodium morrhuate.

COMMENT

The last three patients mentioned were apparently sensitive to sodium morrhuate and developed reactions following the initial injections. The first patient had received numerous injections, during the course of which apparently, sensitization appeared. That such reactions are not uncommon is evidenced by the fact that other clinicians with whom I have spoken have had similar experiences. I am indebted to Dr Geza de Takats for the following statement regarding his material:

I have observed to date seven cases of sensitization to sodium morrhuate, occurring during the injection treatment of varicose veins. In the first patient, from three to four injections of sodium morrhuate were given at weekly intervals. Following the third treatment, large blotches of urticaria developed around all the sites of previous injection, followed by a generalized itching and rash. In the second patient, treatment was given every third or fourth day, but she missed one treatment, permitting a week to elapse between injections. Following the last treatment, an enormous edema and rash of the entire extremity appeared, with high temperature and a white count of 17,000 with 35 per cent eosinophils. A generalized, confluent rash completed the picture. The third patient behaved very similarly to the first. The fourth patient was remarkable in that she only received one injection after which an extensive rash on both lower extremities developed. The fifth patient was known to have had hay fever. The sixth patient also showed an unusual picture. She had had biweekly injections for three weeks. Three weeks after the last treatment she developed localized, badly itching patches at all sites of previous injections. She had eaten fish the night before which was the only sensitizing factor she could think of. The seventh patient, a woman with very thin transparent skin and red hair developed a very severe weeping eczema over both lower extremities following weekly injections of sodium morrhuate.

In none of these patients was there an immediate anaphylactic shock. Scratch tests made *after* the allergic reactions had subsided were usually negative. Whether a scratch test during treatment would be of any help is now being determined. Of interest is an eighth case in which 5 per cent potassium oleate was used and very severe eruptions observed. There is no morrhuate acid at all in this preparation nor is this oil aromatic.

The source of the allergic reaction to sodium morrhuate is questionable. Sodium morrhuate is an aqueous solution of saponified cod liver oil. Whether the saponified fatty acids themselves are capable of producing an allergic type of reaction or whether it is due to an admixture with liver proteins is as yet unknown. A third possible explanation is that the hemolysis from contact of the patient's blood with the solution may result in the liberation of protein substances that are responsible for the reaction. An experimental answer to this problem is being sought.

It will be seen from the reported cases that scratch tests for sensitization to sodium morrhuate have been uniformly negative. Intradermal injections on the other hand gave positive reactions in several of the patients who exhibited sensitization phenomena. Unfortunately, similarly positive results were obtained

on intradermal injection in some normal controls, and the possibility of a nonspecific irritative reaction is difficult to rule out. To minimize the dangers of sensitization reactions, it is my practice never to exceed an initial dose of 0.5 cc of the solution. In patients in whom an interval has elapsed between injections, during which sensitization may have developed, I make a preliminary intradermal injection. If no local reaction occurs, the intravenous treatment is resumed. If a positive reaction develops, the further use of sodium morrhuate is discontinued and another sclerosing agent employed in its stead. Since these precautions were initiated, no further reactions have been observed.

SUMMARY

Sodium morrhuate has been widely accepted as the solution of choice for the obliteration of varicose veins. My experience in general has been extremely favorable. In certain cases, however, sensitization to the solution may exist or may develop. In two of the reported cases this sensitization manifested itself in a severe general shocklike reaction. In two others, skin manifestations occurred. It is urged that the possibility of such a reaction be kept in mind, just as in all other intravenous injections of possibly allergic substances, and that, particularly in patients who have received morrhuate injections followed by a rest period of several weeks or more, intracutaneous skin tests be made to preclude the danger of a serious anaphylactic response.

185 North Wabash Avenue

TRICHINOSIS OF MAN A COMMON INFECTION

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AND

CHARLES H. SCHEIFLEY, B A

MINNEAPOLIS

For years past the senior author has stated to his students in parasitology that trichinosis in man was very far from being a rare disease in the United States. This statement was based on the number of serious cases that come to the attention of medical men and parasitologists, and on the well known fact that diagnosis of typhoid, rheumatism and malaria is not infrequently made when the symptoms are actually due to the presence of trichinae.

In order to obtain more definite data relative to the incidence of trichinosis, a project was outlined involving the examination of diaphragm muscles from the cadavers used in the dissecting rooms of the University of Minnesota Medical School, similar examination of autopsies representing a more normal population, and extension of earlier studies on the occurrence of the encysted worms in local hogs, rats and other animals. Only during the past year through the active participation of the junior author, have studies on the first sub-project been feasible. The results obtained are so strikingly out of line with current conceptions that they should be brought to the attention of the medical profession.

For his ready cooperation in making material available for this study we are under obligation to Dr C M Jackson head of the Institute of Anatomy. Assistance was rendered also by Dr R O Christenson and Miss Mildred King.

From the University of Minnesota

More than a century ago the calcified cysts of trichina worms were noted, in the dissecting rooms of Europe, as gritty particles which turned the edges of scalpels. Nevertheless, data regarding their presence in the human body are surprisingly meager and those on record are of but little value. The cysts are invisible to the naked eye unless they are calcified and even then they would be overlooked unless present in enormous numbers. For this reason they would be overlooked altogether in routine postmortems. Ransom¹ considering "only those series of autopsies in which it appears that trichinae were looked for in at least some of the autopsies" presents the accompanying tabular statement for the United States:

The figures given by the last two workers have been completely disregarded in the past, on the natural basis that they were chance observations in series too small to be of any significance. Those of Williams² have been accorded more weight but have often been discounted on the ground that the subjects were largely institutional.

Our own examinations of 117 carcasses in the anatomic laboratories of the University of Minnesota at Minneapolis revealed twenty cases of trichinosis, in

Infestation with Trichinae in the United States

Reporter	Place	Number of Autopsies	Number Infected	Per Cent Infected
Ginzler 1881	New York	10	3	30
Ginzler 1881	Newark, N. J.	100	1	1
Ginzler 1881	Philadelphia	40	1	2.5
Williams 1901	Buffalo, Philadelphia, Baltimore, Denver, and elsewhere	700	27	3.86
Owler, 1895	Baltimore and elsewhere	1,000	6	0.6
Simonds 1910	St. Louis	100	2	2
Whelpley 1891	St. Louis	20	1	5
Thorburn 1891	Buffalo	21	3	14.3

subjects who were never recorded as exhibiting any symptoms of the infection. This makes for the group an incidence of 17.9 per cent. One series of fifty showed ten positives or 20 per cent. Only two workers since Ransom's report have noted anything comparable to our results and hence we have not brought his tabulation down to date.

Koen³ says "Dr. T. B. Pate of Washington University, St. Louis, has been conducting rather extensive research of trichina during the past years. His findings are almost sensational in that they indicate a prevalence of trichinosis in this section of approximately 10 per cent, which is far greater than is reported elsewhere." He had overlooked as had we, the fact that Dr. F. B. Queen⁴ had reported at the New Orleans meeting of the American Society of Parasitologists on 344 consecutive necropsies in Rochester, N. Y., in which artificial digestion of approximately 50 Gm. portions of muscle revealed fifty-nine, or 7.5 per cent, positives. In another series of fifty-nine diaphragms from necropsies in Boston, sixteen, or 27.6 per cent, were positive. The total of seventy-five positives out of 402 examinations gives a percentage of 18.6.

Our series from autopsies is as yet too limited to be significant. However, there is little reason to suppose that the group which reached the dissecting room would

have been exposed to trichina infestation any more than would the average of the population. The habit of eating imperfectly cooked pork is not one peculiar to any social stratum. Neither is the quality of the eating place one that insures safety. On the other hand it is probable that by the artificial digestion of muscle samples as large as those used by Dr. Queen we would have obtained a considerably larger number of positives. Our specimens were sliced thin and mounted in the trichina compressors of the general type of those used by the federal Bureau of Animal Industry during the period when microscopic inspection of pork was carried out.

A rough classification on the basis of severity of the infestation was made. Using on the average 5 square centimeters of the compressed muscle to a slide we classed those cases in which less than ten cysts were found as "light," from ten to fifty cysts as "moderate" and over fifty to a slide as "severe." The classification is not intended as an index of clinical symptoms, although it is certain that there must have been very definite illness in the half dozen cases classed as "severe." In no instance was there any information to indicate that there had been any suspicion of trichinosis. The most heavy infestation, exhibiting some 350 cysts to the slide, was that of an Irishman, 86 years of age who died of arteriosclerosis. The cysts were heavily calcified.

That light infestations should be overlooked during the lifetime of the host is to be expected. On the other hand, the fact that serious and even fatal cases not infrequently escape diagnosis was well illustrated during the 1924-1925 outbreaks of typhoid due to eating raw contaminated oysters. In attempting to trace the sources of all reported typhoid cases, the city health department of Boston discovered some twenty cases of active trichinosis, which had been diagnosed and reported as typhoid. Similar results were obtained in Chicago and doubtless, in other cities. Under usual conditions all of these cases would have remained charged against typhoid.

Two serious fallacies tending to an underestimation of the danger from eating imperfectly cooked pork persist and are widespread. The first is that government inspected meat is free from trichinae. As a matter of fact microscopic examination of pork for trichinae was discontinued in 1907. Since then no attempt has been made to carry on such examinations of pork in any part of the United States.

A second fallacy is the peculiar idea that, since federal examinations of millions of hogs showed a trichina incidence of only about 2 per cent, the danger of infection is slight. It would seem unnecessary to point out that the average for millions of examinations are wholly inapplicable to any given community. In such a case there might be practically no infested animals or there might be almost any ratio dependent on local and temporary conditions.

Since no adequate treatment for the disease is known, it is evident that there is still abundant need for educating the public regarding the source of trichinosis and the simple means of protection that may be taken against the infection. Much would be gained also by the extension to small plants of the federal regulations regarding the preparation of sausages and other pork products of a kind that are customarily consumed without being cooked.

1. Ransom, B. H. *Trichinosis*. Rept. 18th Ann. Meet. U. S. Live Stock Sanitary Assn. 1915, pp. 147-165.

2. Williams, H. U. *The Frequency of Trichinosis in the United States*. J. M. Research 6: 64-83 (July) 1901.

3. Koen, J. A. *Parasites Transmissible to Man by Eating Meat*. North America Veterinarian 14: 14-16 (Sept.) 1933.

4. Queen, F. B. *The Prevalence of Human Infection with Trichinella Spiralis*. J. Parasitol. 18: 128 (Dec.) 1931.

ALLERGIC REACTION TO DINITROPHENOL

REPORT OF CASE

GERALD M. FRUMESS, M.D.

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Dinitrophenol has been introduced recently as a therapeutic agent in obesity,¹ its effectiveness arising by virtue of its ability, in small doses, to increase the basal metabolic rate. It is claimed that use of the drug is not accompanied by the unpleasant and dangerous side actions inherent in the use of thyroid gland extract, but its proponents state^{1b} that

The most important side action encountered was a skin rash, observed in eight patients, or 7 per cent of the entire series. This was manifested, usually after a one day prodrome of mild itching, by a maculopapular or urticarial type of rash. The itching was rather intense and with the urticaria there was considerable swelling. If the drug was withdrawn, the reaction subsided in from two to five days. In three of the patients, dinitrophenol treatment was successfully resumed after the skin reaction subsided without recurrence. This type of reaction is similar to the dermatitis medicamentosa of many agents but appears to occur somewhat more often with dinitrophenol in the dosage used than it does with some other common remedies. It seems to be the chief disadvantage in the use of the drug.

Anderson, Reed and Emerson² describe a case of toxicity from dinitrophenol resulting in a maculopapular erythematous eruption, pruritus, edema, and pain on motion of the joints. They pertinently suggest that this was an instance of "alpha-dinitrophenol allergy," since "it is apparently not an instance of small therapeutic amounts of the drug producing symptoms described for the known toxic effects of large doses." This suggestion is in keeping with the case I intend to describe, in which I believe I have shown a reaction to dinitrophenol to have been definitely allergic.

REPORT OF CASE

Mrs. S. K., aged 26, was put on a regimen of dinitrophenol by her physician, Jan. 16, 1934. The dosage was 1½ grains (0.1 Gm.) of the sodium salt twice daily. No untoward symptoms developed except increased sweating. In two and a half weeks she lost 2 pounds (0.9 Kg.) in weight. None of the toxic symptoms described by Tainter and his co-workers from overdosage resulted. The past history was negative except for the fact that the patient is definitely allergic. Ingestion of various foodstuffs has at times given rise to one or two urticarial wheals of a transitory character. The foods indicted are among those commonly blamed for allergic manifestations—celery, strawberries and sea food.

I first saw her on the afternoon of February 4, seventeen days after she had started taking dinitrophenol. At this time she presented giant urticarial wheals the largest I had ever seen. Some were fully 8 cm. in diameter. They occurred on the trunk, buttocks, thighs and upper part of the arms. The face, hands and feet were almost free from wheals. The pruritus was intense. Careful questioning elicited two possible etiologic factors—beets, which she had eaten the previous night and dinitrophenol. I suggested that she stop the drug at once and report my suggestion to the physician who had prescribed it.

An injection of epinephrine (1 cc. of 1:1000) and the use of ephedrine sulphate, three eighths grain (0.024 Gm.) by mouth every three hours brought instant but only partial relief. The rest of the treatment consisted of saline catharsis and ingestion

of large quantities of fluids and alkalis. The diet was restricted to beef and rice, these articles being practically always non-antigenic.

Twenty-four hours later typical wheals still persisted, and there was intense angioneurotic edema of the hands and wrists, some swelling of the lips and eyelids, and pains in the joints. Suspecting from the presence of the urticaria and Quincke's edema, that the symptoms were allergic I withdrew 10 cc. of blood from a cubital vein of the patient, permitted it to coagulate, and injected 0.1 cc. of her serum intracutaneously into the back of her brother, S. G., a nonallergic individual at two different sites.

On the following day I elicited a positive Prausnitz-Kustner reaction. My technique and method of control were as follows. On one of the two treated sites I made a scratch and applied a small amount of dinitrophenol in powdered form, rubbing it into the scratch with physiologic solution of sodium chloride. Within three minutes a typical wheal and flare reaction resulted. On the other treated site I made a similar scratch and rubbed into it physiologic solution of sodium chloride without the drug. On an untreated site of skin I made a third scratch and here applied powdered dinitrophenol; neither of the last two scratch tests produced any reaction whatever.

At this time, forty-eight hours after the onset of the eruption the characteristics had altered markedly. Instead of the pruritic urticarial wheals there were large dusky erythematous blotches, tending to coalesce, distributed over the arms, legs and face. These patches were nonelevated and nonpruritic. The edema of the extremities and face had increased. I made a scratch on the forearm of the patient and applied a small amount of dinitrophenol diluting it with saline solution. A small wheal was produced at the site of inoculation, and there was immediately a generalized focal response. The dusky erythematous patches became bright red and were elevated above the surface of the surrounding skin and an intense itching commenced. This focal exacerbation persisted for about three hours. The reaction was somewhat reminiscent of the response of fixed phenolphthalein and antipyrine eruptions to ingestion of further quantities of those drugs.

Ninety-six hours after the onset of symptoms the eruption had disappeared with the exception of a few diffuse, purplish patches on the chin. A scratch test with dinitrophenol at this time again produced a local wheal and a recurrence of the erythema multiforme-like eruption on the face and the extremities.

Except for an intense yellow, presumably imparted by the drug dye, the urine was normal.

COMMENT

In addition to the case described, I saw one other case of urticaria following the use of dinitrophenol. The course of this case was identical day by day, with that of the one described. No passive-transfer (Prausnitz-Kustner) test was performed on this individual. Proof of the allergic nature of this eruption is therefore, wanting. Within the past week I have heard of at least six other cases of skin eruptions following the administration of dinitrophenol. I do not know how many of them were of the urticarial type. How numerous are the other instances in this community is a matter for conjecture. Certainly great quantities of dinitrophenol are being dispensed, judiciously and injudiciously, with and without a physician's prescription.

I believe I have definitely proved that my case of dinitrophenol eruption was allergic. The evidence afforded by the passive transfer of the antibodies in the patient's serum to a normal subject and their subsequent demonstration by the Prausnitz-Kustner method is incontrovertible. In addition to this the local and focal response of the skin of the patient to applications of the drug by the scratch method quite definitely indict the drug as the cause of the eruption. I do not maintain that every eruption following the use of dinitrophenol is allergic in character. But any drug

1 (a) Cutting W. C., Mehrtens H. G. and Tainter M. L. *Actions and Uses of Dinitrophenol* J. A. M. A. 101: 193 (July 15) 1933. (b) Tainter M. L., Stockton A. B. and Cutting W. C. *Use of Dinitrophenol in Obesity and Related Conditions* *ibid.* 101: 1472 (Nov. 4) 1933.

2 Anderson H. H., Reed A. C. and Emerson G. A. *Toxicity of Alpha Dinitrophenol* J. A. M. A. 101: 103 (Sept. 30) 1933.

which produces pathologic skin manifestations in 7 per cent of those to whom it is administered must be used with caution.

Tamiet and his associates maintain that the use of the drug may be renewed with impunity after the skin reaction has subsided. I, for one, would not take the responsibility of telling my patient that it is safe for her to resume the use of dinitrophenol after her skin is again normal, any more than an allergist would tell an asthmatic patient who is allergic to egg white that he might eat eggs again after his asthmatic spasm has subsided.

SUMMARY

1. Alpha-dinitrophenol produces skin eruptions in a large percentage (at least 7 per cent) of those to whom the drug is administered.

2. These eruptions occur when nontoxic amounts of the drug are used.

3. Some of these eruptions are definitely allergic, specific antibodies being produced in some individuals by ingestion of the drug.

4. In at least one case these antibodies were demonstrable by the Prausnitz-Kustner passive transfer test.

5. It is theoretically dangerous to resume the use of the drug after a skin reaction from its ingestion has subsided.

332 Republic Building

Clinical Notes, Suggestions and New Instruments

TRICHINOSIS DEMONSTRATION OF THE PARASITES IN THE BRAIN

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This fatal case of trichinosis is worthy of report for several reasons. At autopsy the parasites were found in the brain. Symptoms of encephalitis began three weeks after vaccination against smallpox. Eosinophilia was absent; the patient was a child, aged 11 years, and incidentally the child also had sickle-cell anemia. A clinical diagnosis was made of encephalitis of unknown etiology, possibly a delayed postvaccinal complication. Unfortunately, trichinosis was considered neither at the bedside nor in the morgue and the correct diagnosis was made from a study of the microscopic sections of tissues removed at autopsy only by chance was a small piece of voluntary muscle included in the sections.

REPORT OF CASE

History.—W. A., a Negro boy, aged 11 years, entered the hospital Jan. 3, 1933, with an admitting diagnosis of encephalitis of unknown etiology. There was a past history of mumps, whooping cough and chills and fever. Three weeks prior to the onset of the present illness he had been vaccinated against smallpox, and other than slight discomfort from the vaccination there was no untoward reaction. It was noted by the parents that he did not "play very well" during the Christmas holidays. For three days prior to admission he had complained of stiffness of the right thigh and left elbow and of pain in the abdomen. On the first day of his illness he had vomited twice. There was no noticeable fever. On admission he complained of pain on motion of both arms and legs.

Physical Examination.—The patient was fairly well developed. He lay quietly in bed in no pain or distress unless moved. He appeared drowsy. Movement of the limbs produced intense pain. There was moderate hypertonicity of all muscles, particularly in the extremities. There was slight generalized edema which was more pronounced in the dependent parts of the body. He could not open his mouth sufficiently wide for an examination

of the pharynx. The tongue was moved with difficulty, he was unable to extend it from the mouth and its surface was heavily coated. The cervical and inguinal lymph nodes were palpable. The eyes had a dull appearance, the pupillary reflex to light was a little sluggish and there was some edema of the eyelids. Inspiration was limited and respiration was of a costal type. The abdomen was slightly distended, tenderness could be elicited along the costal margins and slight rigidity was noted in the abdominal muscles. The spleen was not palpable. Dorsally there was considerable tenderness over the kidneys. The shoulder, hip and knee joints were tender to touch and all movement elicited pain. The arms were held flexed at the elbows and could not be extended. There was such hyper-tonicity of the muscles of the lower extremities, especially of the flexor groups that he was unable to stand or walk. The reflexes were much diminished or absent, Kernig's sign was absent.

Course.—On admission his temperature was 101.6 F. and continued during the course generally between 99 and 102. On one day only did the temperature reach a height of 103 F. His respiration varied from 24 to 32 per minute and the pulse rate from 112 to 128. The leukocyte count was always elevated; the lowest of six counts was 12,200 and the highest 16,800 cells per cubic millimeter. The erythrocyte count was 4,600,000 soon after admission and 3,900,000 three days prior to death, and the hemoglobin estimate was 75 per cent and 70 per cent respectively. On the fourth day in the hospital the differential count was polymorphonuclear neutrophils, 88 per cent, large lymphocytes, 3 per cent, small lymphocytes, 9 per cent. Four days before death it was polymorphonuclear neutrophils, 79 per cent, large lymphocytes, 6 per cent, small lymphocytes, 13 per cent, transitionals, 1 per cent, eosinophils, 1 per cent. Examination of the urine was persistently negative. On the third day of admission the spinal fluid pressure was 6 mm. of mercury, the fluid was clear, the cell count was 35, globulin tests (Pandy and Ross-Jones) were negative, and the Wassermann reaction was negative. One week later the pressure was 8 mm. of mercury and the fluid was bloody (traumatic). The spasticity of the muscles improved gradually and in two weeks the patient was able to open his mouth, could use his arms, and frequently expressed a desire to sit up. The drowsiness and fever continued despite the improvement in the condition of the muscles. On the eighteenth day he seemed more drowsy than usual. The following day he became delirious and from the delirium passed into coma and died on the twentieth day after admission which was the twenty-third day of his illness. An autopsy was performed three hours after death.

Autopsy.—The body was wasted, it was 140 cm. long and weighed about 25 Kg. There were no gross structural changes in the brain except diffuse congestion. Routine sections from the cortex, basal ganglia, medulla and cerebellum were examined and in all sections minute inflammatory foci were observed. Glial cells and a few plasma cells, lymphocytes and polymorphonuclear leukocytes with an occasional endothelial leukocyte were the cellular constituents of these foci. Very rarely there was seen a syncytial mass with five or six nuclei which resembled the nuclei of the glial cells. In the center of many of these foci a granular wormlike parasite was seen, the embryo of the trichina, one of which is shown in the accompanying illustration. A few parasites were fragmented, but most of them were well preserved and intact. The foci were irregularly distributed in both the white and gray matter and sometimes were near a capillary. They were more numerous in the basal ganglia, medulla and cerebellum than in the cortex. The pia of the cortex and medulla was diffusely infiltrated with a few lymphocytes, plasma cells and polymorphonuclear leukocytes, and a like infiltration occurred around and in the adventitia of the larger blood vessels of the cortex and of the basal ganglia. The infiltration about the vessels was unevenly distributed, with a tendency to be focal. All of the blood vessels were engorged. Many of the neurons in all sections exhibited chromatolysis, pyknosis and sometimes neuronophagia. Of the choroid plexus there was nothing unusual.

The peritoneal cavity contained about 100 cc. of slightly turbid fluid. Each pleural cavity contained about 200 cc. of clear fluid and the pericardial fluid was in excess. The thymus was wasted. The lungs were small, the lower lobes were not

well distended, and early suppuration was noted. An incidental finding was a small tracheal cyst the size of a grape attached to the trachea at the bifurcation. The heart weighed 120 Gm. The chambers were dilated and the myocardium was pale and flabby. Microscopically there were scattered irregular foci of degenerated fibers, and these areas were infiltrated with a few lymphocytes, plasma cells and an occasional polymorphonuclear leukocyte. In a few foci, slight fibroblastic activity was evident. The liver weighed 985 Gm. The hepatic cells were cloudy and contained an excess of visible fat. The spleen weighed 50 Gm. In a section from one suprarenal gland a microscopic focus of necrosis infiltrated with polymorphonuclear leukocytes was seen in the reticular and the inner half of the fascicular zones. The kidneys, weighing 180 Gm, were in a state of cloudy swelling. The gastro-intestinal tract showed nothing unusual. A section from a mesenteric lymph node revealed no unusual changes. Trichinosis was not suspected in the morgue and unfortunately no specimens of voluntary muscle were selected for microscopic study, but a small tab of voluntary muscle was adherent to the section of the prostate. In this minute tab, about the size of the microscopic field of the two-thirds objective, six encysted trichinae were seen and about these there were a few lymphocytes, plasma cells and polymorphonuclear leukocytes. The erythrocytes in all sections were sickle shaped.

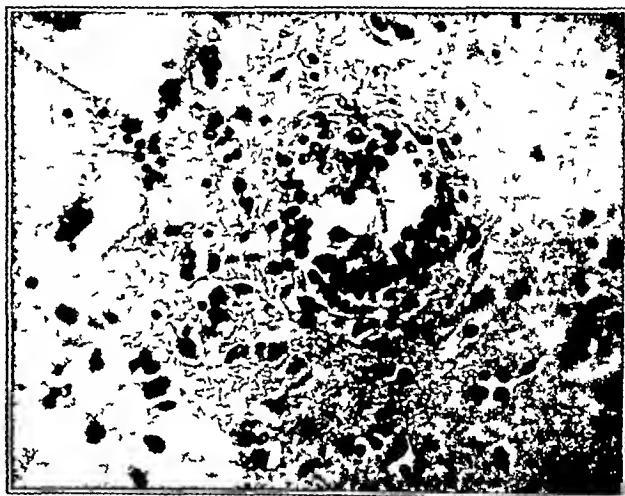
COMMENT

It is rare to find the trichinae in the brain, and although our search in the literature was not complete we could find only four reports. In 1906 Channing¹ stated that in an autopsy at the Boston City Hospital he had found in the cerebrum a few areas of cellular infiltration chiefly of endothelial and neuroglial cells with an occasional leukocyte or lymphocyte, and in some of these foci a part of a trichina embryo was seen. In 1916, from a study of fourteen cases of trichinosis, Salzer² wrote "Trichinae occurred abundantly in the brain and on injection of such tissue into animals the disease can be produced, the eosinophilia being more marked than in any other form of production of the disease." He did not describe the lesion nor did he state whether he saw the parasites or only recovered them by animal transmission. Hassin and Diamond³ in 1926 described what they termed the second case in the literature in which the invasion of the brain by trichina larvae had been demonstrated. Their case was similar in many respects to ours, a boy, aged 14 years, dying twenty-two days after the onset of symptoms. They reported, however, an eosinophilia of 21 per cent and at autopsy trichinae were found in the meninges, around the vessels of the brain and in the choroid plexus as well as in the substance of the brain. Besides the focal areas they noted toxic changes in the brain neuronophagia, satellitosis and focal encephalomalacia. They considered these changes the more dangerous condition because they were found without the presence of parasites in the brain of another fatal case of trichinosis. There was also hyperplasia of the spleen. In 1927 Gruber and Gramper⁴ reported a case in which they found glial nodules in the brain and cord containing young trichinellae and infiltration of the meninges and about the vessels.

In acute trichinosis the larvae are carried throughout the body by the blood stream and in 1909 the parasites were first demonstrated in the blood of a patient by Herrick and Janeway.⁵ MacCallum⁶ states that the trichinae lodge in every other tissue but appear to find conditions unsuitable and never develop there, indeed, they are rarely found anywhere else than in the skeletal muscles. However, besides in the brain blood

and meninges the larvae have been found in the placenta, milk of a nursing woman, excised mammary gland, pleural fluid, retina, peritoneal fluid, pus of a furuncle, heart, lungs, bile, pancreas, kidneys, and mesenteric lymph nodes. And Gruber⁷ thinks that the histologically demonstrable effect of straying trichinae in the pathologic picture in trichinosis has perhaps not been considered enough, probably because the picture has been eclipsed by the predominating disorder of the muscles. In this respect it should be noted that in our case there was a degenerative and exudative myocarditis, which was probably responsible for the transudate in the serous cavities. Because the exudate in the myocardium was similar to that seen about the parasites, it is possible that the myocarditis was caused by the presence of parasites that had degenerated and disappeared. Such a lesion in the myocardium associated with the presence of the trichinae was observed by Horlich and Bicknell.⁸ In the cases reported by Gruber and Gramper⁴ and Hassin and Diamond,³ in which the trichinae were found in the brain, similar myocardial lesions were found.

A number of observers have particularly noted encephalitic and meningitic symptoms in cases of trichinosis, and in 1914 Van Cott and Lintz⁹ first demonstrated the trichinae in the cerebrospinal fluid. Our case was of particular interest because the onset of the illness followed vaccination against smallpox and it was thought to be possibly a case of postvaccinal encephalitis. Because of the attention attracted by various kinds of



Section from the lenticular nucleus, showing a nodule with a trichina in the center slightly reduced from a photomicrograph with a magnification of 500 diameters

encephalitis today, in the differential diagnosis it is well to bear in mind meningo-encephalitis caused by the trichina.

The third point of interest is the absence of eosinophilia. Brown¹⁰ in 1898 first called attention to the presence of eosinophilia in cases of trichinosis and this sign is commonly considered of diagnostic importance. Adamy¹¹ states that the conclusive symptom in differential diagnosis is a marked eosinophilia. Chasanow¹² considers eosinophilia the most important characteristic of trichinosis, and Conner¹³ states that an absence of eosinophilia throughout the entire course seems to be very rare. On the other hand, many observers have noted the absence of eosinophilia especially in severe and fatal cases.

1 Channing Frothingham. A Contribution to the Knowledge of the Lesions Caused by Trichina Spiralis in Man. *J. M. Research* 15: 487, 1906.

2 Salzer B. F. A Study of an Epidemic of Fourteen Cases of Trichinosis with Cures by Serum Therapy. *J. A. M. A.* 67: 579 (Aug. 19) 1916.

3 Hassin G. B. and Diamond I. B. Trichinosis Encephalitis. *Arch. Neurol. & Psychiat.* 15: 34 (Jan.) 1926.

4 Gruber G. B. and Gramper E. Ueber Gehirnveränderungen bei menschlicher Trichinose. *Verhandl. d. deutsch. path. Gesellsch.* 22: 219, 1927.

5 Herrick W. W. and Janeway T. C. Demonstration of Trichinella Spiralis in the Circulating Blood in Man. *Arch. Int. Med.* 3: 263 (April) 1909.

6 MacCallum W. G. A Text Book of Pathology, ed. 5 Philadelphia W. B. Saunders Company, 1932, p. 508.

7 Gruber G. B. Trichinose und ihre Belämpfung. *Wien. klin. Wchnschr.* 40: 1629 (Dec. 29) 1927.

8 Horlich S. S. and Bicknell R. E. Trichinosis with Widespread Infestation of Many Tissues. *New England J. Med.* 201: 816 (Oct. 24) 1929.

9 Van Cott J. M. and Lintz William. Trichinosis. *J. A. M. A.* 62: 680 (Feb. 26) 1914.

10 Brown T. R. Studies on Trichinosis with Especial Reference to the Increase of the Eosinophilic Cells in the Blood and Muscle: the Origin of these Cells and their Diagnostic Importance. *J. Exper. Med.* 3: 315, 1898.

11 Adamy G. Sporadische Trichinoseerkrankungen des Menschen. *München med. Wchnschr.* 75: 1391 (Sept. 14) 1928.

12 Chasanow M. Meningitis bei Trichinose. *Deutsche Ztschr. f. Nerven.* 103: 197, 1928.

13 Conner J. A. Atypical Clinical Forms of Trichinosis. *Ann. Int. Med.* 3: 353 (Oct.) 1929.

of trichinosis. According to Pepper,¹⁴ eosinophilia is present in almost every case but may be absent in extremely severe or fatal cases. Reifstein and his associates¹ in a review of the literature state that those cases failing to exhibit an eosinophilia at all times during the acute states are to be regarded as the ones in which recovery is most unlikely. Hickling¹⁶ and Walker¹⁷ report that eosinophilia may be absent in the acute phase and later develop in the convalescent period. Aldridge¹⁸ finds that an overwhelming infection may show no eosinophilia, and the one fatal case of twenty reported by Willett and Pfau¹⁹ did not present eosinophilia.

It has been noted by Gruber,² Pepper¹⁴ and Messner²⁰ that trichinosis in children usually runs a milder course than in adults and according to Pepper¹⁴ diarrhea is more marked in the cases occurring in children and this probably explains the lack of severity of these cases. It is interesting to note that there was no history of diarrhea in our case nor did the patient suffer from diarrhea while in the hospital.

A final point of interest is the development of trichinosis in a case of sickle cell anemia. The degree of sickling of the erythrocytes was not determined during life, so that it cannot be stated whether this patient was an active or latent sickler. At autopsy it was observed that the greater part of the erythrocytes were sickle shaped and the spleen presented the characteristic picture of sickle cell anemia, that is the congestion and pooling of the blood about the lymph nodes. It is possible that this condition played no part in the fatal outcome of the disease, yet in our experience patients with sickle cell anemia have a poor resistance to all types of infection.

SUMMARY

In a fatal case of trichinosis the larvae were demonstrated in the brain.

The onset with symptoms of encephalitis followed vaccination against smallpox.

During the course there was no diarrhea and no eosinophilia.

The patient was a child with sickle cell anemia.

A METHOD OF CONTROLLING POLLEN REACTIONS

RAYMOND M. RICE, M.D., COUNCIL BLUFFS, IOWA

Pollen reactions in the early days of pollen therapy were so frequent and so severe as actually to menace continuance of this method of therapy in the treatment of pollen hay fever and asthma. Many physicians discontinued pollen therapy on this account. The danger and frequency of reaction have been reduced in several ways so that at the present time they rarely occur unless some gross error in technique is made.

Cooke¹ suggested a most effective method of controlling reactions after they occur through the use of a tourniquet applied above the site of injection of the extract.

Duke² decided that a great many violent reactions after pollen injections, given with flawless technique were due to extract getting into veins, capillaries, arterioles or lymph spaces, and he devised a method that seems practically perfect so far as danger to the patient or severe sudden reaction is concerned. The method amounts to adding epinephrine and

ephedrine to the pollen extract and adding diluting fluid to make a total volume of 1 cc. The mixture is then injected subcutaneously distal to a tourniquet around the arm, which prevents any chance of rapid entry of pollen material into the general circulation. The tourniquet is left in place several moments to give the epinephrine and ephedrine sufficient time to constrict the vessels around the pollen extract so that absorption becomes of necessity slow and gradual. He mentioned delayed reactions, which may occur rarely after several hours. These were mild and could easily be controlled by reapplications of the tourniquet.

Insley³ reported a case similar to mine and applied Cooke's idea to the treatment for overdosage of epinephrine. I have followed Duke's method of therapy for two years and have had no reactions of importance except in the case reported here in which a patient by accident was given a gross overdose of extract. Also the only ill effect that I have observed from epinephrine mixed with pollen is an occasional patient who feels nervous and has palpitation after its use. This can be controlled within a matter of seconds by light constriction above the point of injection of the extract.

The gross overdose in pollen extract to which I referred was in a man aged 24, whom I was treating coseasonally with very tiny doses of extract, such as 0.02 cc of a 1:10,000 solution of round pigweed and short and giant ragweed. After obtaining relief for from one to three days after each injection he was given by mistake 0.04 cc of a 1:10 dilution. He immediately complained of an intense burning at the site of injection which led to a quick detection of the error.

Although a tourniquet was in place above the area a blood pressure cuff was substituted to give more complete control of absorption. Epinephrine was then injected surrounding the extract site. For the next hour the pressure in the cuff was released for only a few seconds at a time, the patient experiencing uncomfortable epinephrine symptoms with the longer periods. The palm of the hand and the arm itched severely and the area surrounding the extract became red, hot and swollen. As the epinephrine became less bothersome the cuff was allowed to remain open for a period of about forty seconds. Immediate and violent hay fever symptoms followed. The nose closed completely and the conjunctivae became injected.

Epinephrine was given in the opposite arm and another cuff was applied to control any discomfort that might follow. One side of the nose partially opened when it became necessary to close the cuff because of heart pound.

The pollen cuff was again released and absorption allowed until the skin over the shoulder began to itch. The resultant increase in symptoms was then relieved by release of epinephrine from the opposite arm.

The period of pollen release varied between thirty seconds and one and one-half minutes for the next three hours, each interval being followed by release of epinephrine. The patient experienced little discomfort other than the nasal stoppage and itching of the skin due to a mild urticaria. He had no evidence of asthma at any time.

Four hours after the administration of the extract, release of the pollen cuff resulted in no increase in symptoms. After another half hour of observation the patient was allowed to go home. He felt perfectly well, his nose and eyes were symptom free and only a few itching wheals remained. That evening while he was at home a mild urticaria appeared but it faded completely without treatment. His arm was very sore for two days but symptoms of general reaction were absent. After three days his hay fever recurred so that pollen in correct dosage was resumed and continued throughout the remainder of the season, producing satisfactory relief.

SUMMARY

Vasoconstrictors added to pollen mixtures and given distal to a tourniquet make possible a controlled dose.

Epinephrine given in the opposite arm with the absorption rate controlled by a tourniquet combined with tightening and release of the tourniquet over the pollen site gives a very effective treatment method for pollen overdosage.

Clinic Building

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20 Messner, H. Zur Frage der Häufigkeit von Trichineninfektionen beim Menschen. Med. Klin. 22: 1750 (Nov. 12) 1926.

21 Pepper, O. H. P. Trichinosis. M. Clin. North America. 15: 271 (Sept.) 1931.

From the Department of Medicine, Division of Allergy, University of Nebraska College of Medicine.

1 Cooke, R. A. Studies in Specific Hypersensitiveness. The Dangers of the Diagnostic Cutaneous Test and Therapeutic Injections of Allergens. J. Immunol. 7: 119 (March) 1922.

2 Duke, W. W. A New Method of Administering Pollen Extract for the Purpose of Preventing Reactions. J. A. M. A. 94: 767 (March 15) 1930.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING ARTICLE. IT IS THE FIRST OF A SERIES OF ARTICLES PRELIMINARY TO THE COUNCIL'S INVESTIGATION OF OPHTHALMOLOGIC APPLIANCES.

H A CARTER Secretary

TINTED LENSES THE PRESENT DEAL

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WASHINGTON, D C

At the request of the Council on Physical Therapy, I have inquired into the recent production of tinted lenses and the advertising claims made for them. At the outset it may be stated that, while during the past two years there has been some improvement in the fairness of the claims made in the advertising literature, there is still a long way to go in the presentation of relevant facts as distinguished from unproved theories.

It is a safe guess that these advertisements are not seen by many indiscriminating laymen but are read mainly by trained ophthalmologists. It would therefore be a sad reflection on the intelligence of such readers to assume that they accept the "ballyhoo" part of the advertising as proved facts of importance in their profession.

Two years ago, when the advertising situation in connection with and preparatory to the presentation of data on the transmissive properties of tinted lenses was reviewed,¹ the advertising literature regarding tinted lenses was replete with claims, some of which were evidently the result of ignorance, while others were based on unproved theories. It was then a common occurrence to read "They increase visual acuity," "they eliminate glare," "they do not distort colors," "they are non-habit forming," and so on.

One kind of tinted lens advertised at that time was supposed to let in light but shut out glare just as though glare was not a function of the intensity of the incident visible radiation light and that the lens was some sort of "one way" light path or, to be more nearly exact, an automatic shutter capable of regulating the light intensity to meet the need for clear vision.

Another advertisement recommended dark glasses for night driving, apparently overlooking the fact that if the glass was sufficiently dark to protect the eye from the glare of an oncoming automobile headlight it would be impossible for the wearer to see in driving, particularly on a black-top road on a cloudy night.

Still another advertiser introduced a little farce by citing the serial number of the patent supposed to contain the formula used in the manufacture of his glass. The patent cited related to a "composition of matter" which was claimed to be "productive of a brilliant glass of a transparent beautifully red color," whereas the advertised product was sky blue.

In contrast with conditions two years ago, at present the advertising situation seems to be somewhat improved. Perhaps this is because some of the incipient claims with alluring advertising possibilities have died in embryo. Take for example the question of eyestrain induced in long-distance automobile driving. This cannot be eliminated by a special laminated windshield, which was the dream of at least one inventor. For, aside from the fatigue caused by strong sunlight reflected from a light-colored road or from snow (which is easily eliminated by dark sky shade 3 lenses), probably, the chief cause of painful eyestrain

and subsequent headache is a difference in refraction of the unaided eyes. Judging from personal experience, relief from the latter type of eyestrain is obtained by wearing suitably corrected spectacle lenses that give clear vision at a suitable distance ahead of the motor car, without serious impairment of the clearness of vision of far distant objects.

Following the recent vogue, from the cosmetic side, the spectacle advertisements are up to date. Like the child's go-cart, the spectacle frames are now "streamlined," and some are made in colors to match the gowns.

Judging from recent advertisements, the production of new tints in lenses has run its course, at least temporarily. Some of the old standbys are still mentioned, one "cerulean blue," apparently under a new trade name. Just how the light-tinted lenses can reduce real glare² is not made clear, granting that they do mitigate a "little glare." Lenses in which the tint is invisible, except when viewed edge-on, are no more useful in reducing glare than common window glass. If there is one question that needs debunking it is the "increase of vision" and the elimination of "eyestraining glare" by wearing light-tinted lenses.

Another question that needs "debunking" and clarification is the extent to which the eye is irritated or kept healthy by wearing lenses that either admit or exclude (depending on the particular product that is being promoted) short wavelength ultraviolet radiation, known to prevent rickets, and hence by inference effective in "vision vitality." When one considers that most objects are viewed in reflected light and that, as a general property, they (except snow) highly absorb the ultraviolet relative to the visible rays, the presence or absence of the ultraviolet rays seems to be of minor importance physiologically and for promoting the sale of lenses. As pointed out in the previous paper, ophthalmologic research will serve a useful purpose in clarifying these questions.

With this temporary let up in the exploitation of tinted lenses, the merits of new types of wide-vision lenses (the "Punktals" and so on) are being extolled. According to recent investigations, the importance of this improvement appears to be greatly overestimated. Just how this type of lens will benefit the average wearer, and just why he should be put to the extra expense of procuring a pair, is questionable. It is true that such a glass may aid a little in the clearness of perception by indirect vision, but once the attention is called to an object on the sideline, the average person will turn the head and hence will profit but little by the use of such a lens in viewing an object in straight ahead vision. In other words, for a reading lens that may have to be changed frequently and that is used only in a sedentary occupation, it is not clear why the many wearers should be put to the expense of procuring a special lens that may perhaps be necessary only for the unfortunate few. For constant wear, in vehicular traffic such a lens should serve a useful purpose.

European optometric journals carry advertisements of new laminated, nonshatterable, splinterless, safety lenses claiming absolute and constant clarity, guaranteed for a year. Apparently these are plane lenses of clear glass (unless otherwise ordered) for protection in motoring. At any rate but little is said regarding corrected lenses (though to "correct and protect" is mentioned). Perhaps this is to be expected, in view of

² The question of the elimination of glare is discussed in THE JOURNAL AUG 23 1930 p 593. It is shown that only dark shades can eliminate high intensity.

the probable difficulties that may be experienced in grinding a complicated prescription lens on a compound, three-piece medium, consisting of two pieces of glass and an intervening, flexible, lamination of a cellulose material that is subject to changes in dimensions as a result of variations in temperature and by evaporation of the plasticizer.

Without desiring to dispute the importance of eye protection as a general proposition, nevertheless, lest the introduction in this country of such laminated glasses be accompanied by the foregoing exploitation now somewhat in abeyance, it would be desirable to have statistics on the frequency of eye injury in motor-ing and in other similar pursuits which are subject to infrequent hazards, as distinguished from the occupational hazards from relatively large flying particles, such as are encountered by machinists, stone cutters and foundry workers.

For protection from flying particles a single rather thick (3 mm.), clear glass lens is prescribed (Federal Specifications for Chippers Goggles, G G G—G-501). In addition to the extra thickness, extra strength is obtained by a special heat treatment which results in a uniform radial fracture when the lens is broken by sudden impact. Apparently preference is given to a single piece lens to insure clearness of vision, instead of a laminated lens of uncertain performances. However, it would be a pessimistic view to assume that a laminated lens, having the optical properties of a single lens cannot be made. Whether the newly developed laminated glass is the utopian product sought awaits further investigation.

Council on Pharmacy and Chemistry

PRELIMINARY REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING
PRELIMINARY REPORT PAUL NICHOLAS IFFCH, Secretary

PHENYLMERCURIC NITRATE AND PHENYLMERCURIC CHLORIDE

Phenylmercuric nitrate and phenylmercuric chloride were first prepared by R. Otto in 1870. Although these substances have been known for more than sixty years, their effects on animals, bacteria and fungi, their so-called "biological characteristics," seem not to have been studied until Weed began to investigate them at Iowa State College in 1927 and 1928. In his thesis, Weed¹ states that Kharasch also investigated at about this time a related group of compounds as possible agents for the control of seed and plant diseases. The investigations of Weed were continued in association with Dr. Ecker in the Institute of Pathology at the Western Reserve Medical School in Cleveland. Methods of preparation of the compounds were perfected, the compounds were found to be strongly bactericidal and fungicidal, and indications of their possible clinical usefulness were obtained.²

Steps to make the compounds available to physicians were begun by Dr. Weed in 1932. The J. H. R. Sales Corporation, Chicago, has presented phenylmercuric nitrate and phenylmercuric chloride for the consideration of the Council. The following dosage forms were submitted:

1. Phenylmercuric nitrate 1:2,000 in a mixture of water 90 per cent and diethyleneglycol 10 per cent by weight.

1. Weed, L. A. The Biological Properties of Certain Organic Mercury Salts. thesis, Department of Pathology, Western Reserve University, May 15, 1932.

2. Weed, L. A., and Ecker, E. E. (a) The Utility of Phenyl Mercury Nitrate as a Disinfectant. *J. Infect. Dis.* 49:440-449 (Nov.) 1931. (b) Bactericidal Action of Phenyl Mercury Nitrate. *ibid.* 51:309-314 (Sept-Oct.) 1932. (c) Phenyl Mercury Compounds—Their Action on Animals and Their Preservative Values. *ibid.* 52:354-363 (May-June) 1933.

2. Phenylmercuric nitrate 1 per cent, diethyleneglycol 99 per cent by weight.

3. Phenylmercuric nitrate 1/10 per cent, remainder glycerin by weight.

4. Ointment containing phenylmercuric nitrate 1 part in 1,500 parts by weight of an odorless absorption (oxycholesterin) base.

5. Jelly containing 1 part of phenylmercuric nitrate in 1,500 parts by weight of a mixture of gum tragacanth, glycerin and water.

6. Phenylmercuric chloride 1:30,000 in 0.85 per cent solution of sodium chloride.

Each of these compounds is described by the manufacturer as 'a very potent bactericide and fungicide of extremely low toxicity' and is recommended for "general disinfection and for the treatment of bacterial and fungal diseases." Some of the dosage forms have been devised for special uses.

Phenylmercuric nitrate is said to be $C_6H_5HgNO_3$ and phenylmercuric chloride, C_6H_5HgCl . Weed and Ecker have repeatedly emphasized the need of preparing these compounds according to the method perfected by them in order to obtain products of maximum antiseptic power and minimum toxicity for man and animals. In a letter to the Council's secretary, May 15, 1933, Weed expressed the opinion that these compounds obtainable from several manufacturers are not as satisfactory as the compounds prepared by him or according to his method under the supervision of himself and Ecker. Weed has stated for example, that the preparations of phenylmercuric nitrate obtained from one manufacturer in 1932 were unstable, did not have the same melting points as his preparation and were irritating, that preparations of phenylmercuric nitrate obtained by Weed and Ecker from another manufacturer were more granular, had different melting points, and were more irritating than Weed's preparations and that phenylmercuric nitrate obtained by Weed and Ecker from still another manufacturer was more like their own product but was less germicidal. It is evident that, if different brands of these compounds are to be considered by the Council, it will be necessary to determine the special properties of each brand and that reports on their clinical use should contain information on the brand used.

The methods of preparation of phenylmercuric nitrate and phenylmercuric chloride set forth in the presentation to the Council for the products of the J. H. R. Sales Corporation are the same as those published by Weed and Ecker.³ On the basis of molecular conductivity measurements these authors concluded that phenylmercuric nitrate is highly dissociated in water. The surface tension of a saturated aqueous solution of phenylmercuric nitrate is that of distilled water⁴ and the solution is neutral to litmus.

TOXICITY FOR MAN AND ANIMALS

Gunter-pigs, rats and mice were given a saturated solution (1:1,250) of phenylmercuric nitrate as their only source of water during periods of two to three weeks. Only a few animals in several large series showed ill effects as the result of ingestion of the compounds.⁵ One series of 10 mice was maintained on a 1:2,000 solution of phenylmercuric nitrate as the sole source of water for ten weeks without apparent ill effect (Birkhaug).

Ten cubic centimeters of a 1:1,250 dilution (0.008 Gm. of phenylmercuric nitrate) injected intraperitoneally into rabbits did not produce any symptoms of poisoning. In an occasional animal this solution injected intravenously into rabbits produced edema of the ear but no other symptoms of intoxication.⁶

Later Weed and Ecker^{2c} determined that the "immediate" minimal lethal dose of phenylmercuric nitrate for rabbits when injected intravenously was 1 cc. of the saturated aqueous solution (1:1,250)⁴ per hundred grams of body weight. The chief lesion produced was 'acute nephrosis, typical of mercury poisoning.' The "cumulative" lethal dose was not accurately determined. Irrigations of the bladders of rabbits with a 1:50,000 solution of phenylmercuric chloride in physiologic solution of sodium chloride did not produce inflammation.

Birkhaug⁵ found that the minimal lethal dose for rabbits on intravenous injections was 0.01 Gm. of phenylmercuric nitrate.

3. Weed and Ecker footnotes 2a and 2c.

4. The Council has been informed by the firm that the solubility of phenylmercuric nitrate as now marketed is about 1:870 and that of phenylmercuric chloride about 1:20,000.

5. Birkhaug, K. E. Phenylmercuric Nitrate. *J. Infect. Dis.* 53:250-261 (Sept-Oct.) 1933.

(calculated mercury content 0.0059 Gm) per kilogram, less than one half the intravenous lethal dose found for inctaphen which contains about the same amount of mercury. Birkhaug determined also that the minimal lethal dose of phenylmercuric nitrate for rabbits, when administered by stomach tube was approximately 48 cc of a 0.067 per cent solution per kilogram—approximately three times the lethal intravenous dose. The convoluted tubules of the kidney were especially damaged. Injection of the compound into the tissues caused edema and pain.

The effect of these compounds on man are of special interest. Weed and Ecker^{2a} stated in their first paper in 1931. When phenylmercuric nitrate was applied to the human skin it had no effect. When it was used on the mucous membrane of the mouth a definite astringent action was felt. One person received 250 cc of the saturated solution 1:1,250 by mouth, with no signs of intoxication. Only a rise of 20 points in the pulse rate was noted.

Birkhaug,⁵ using two commercial preparations of phenylmercuric nitrate, ingested four 0.04 Gm doses of the crystalline product in enteric coated capsules within twenty-four hours. 'Slight abdominal pain and loose passages occurred about thirty hours from the beginning of medication.' No albuminuria was noted. Birkhaug ingested "repeated series of tablets containing 0.01 Gm of the crystalline compound twice or thrice daily for periods of one week without inflicting untoward symptoms and signs of mercurial toxicity."

It is apparent from these studies that phenylmercuric nitrate is a mercurial of relatively low toxicity for man and animals. Phenylmercuric chloride appears to have the same low toxicity. On the other hand, Biskind⁶ noted that while application of a 1:1,250 solution of phenylmercuric nitrate to the vagina did not cause irritation, a 1:750 solution in 10 per cent alcohol produced a "chemical burn". Levine⁷ found seven patients who developed "mercurial burns" from applications of these compounds to the skin. Biskind and Levine used products prepared by Weed and Ecker.

Although the toxicity of these compounds is less than that of some other mercurials, it is obvious that claims based on this property must be advanced with caution. It is to be expected that different brands of the products may show greater toxicity and capacity to irritate the skin than others and that some sensitive individuals may be poisoned or "burned" by doses that do not produce disturbance in others.

EXCRETION

There is little or no published information on the excretion of mercury following the ingestion or injection of phenylmercuric nitrate or phenylmercuric chloride. The chief contribution to knowledge of the distribution of phenylmercuric nitrate in the body which is probably converted to the chloride in the body fluids and its excretion in the urine is the paper by Birkhaug,⁵ published late in 1933. The evidence presented by Birkhaug is not chemical but indirect based on the determination of the bactericidal action of blood, bile, body fluids and urine of rabbits, dogs and man after the ingestion or injection of phenylmercuric nitrate. He found that within thirty minutes after the oral administration of the compound in rabbits the urine began to show antiseptic action (bacteriostatic action). Finally, after the oral administration of 20 cc of the 0.067 per cent solution of phenylmercuric nitrate every two hours for fourteen hours to a rabbit weighing 2.160 Gm the antiseptic (bacterial inhibition) values for the urine were against *Staphylococcus aureus* 1:10,240 against *B. coli* 1:160 against *Streptococcus haemolyticus* 1:20,480. Antiseptic concentrations obtained in the blood of this animal reached 1:640 for *Staphylococcus aureus*, 1:1,280 for *Streptococcus haemolyticus*, and 1:12 for *B. coli*. When this animal (and other animals) was killed twenty-four hours after the beginning of the experiment the urine, cerebrospinal fluid, fecal fluid in the cecum and bile were found to have noteworthy antiseptic properties. Bile obtained by fistula drainage from two dogs

were found to have high antiseptic capacity after oral administration of 50 cc of the 0.067 per cent solution of phenylmercuric nitrate. Infections of the biliary tract in these animals, one due to streptococci and the other due to colon bacilli, cleared up on the sixth day. Following intravenous injection of phenylmercuric nitrate in rabbits, Birkhaug⁵ found the blood antiseptic for staphylococci, streptococci, pneumococci and colon bacilli in significant titers. His own urine and blood had antiseptic property following the doses of phenylmercuric nitrate which he took by mouth.

Three points are brought forward prominently by these studies of Birkhaug: (1) The injected or ingested compound is widely distributed in the blood and body fluids (as determined by antiseptic tests); (2) the actively germicidal and bacteriostatic material is excreted in the bile and urine, and (3) oral or intravenous administration of phenylmercuric nitrate gives the blood, cerebrospinal fluid, bile, urine and intestinal contents antiseptic and germicidal properties.

Biskind⁶ reports the following data on the excretion of mercury in the urine after application of phenylmercuric nitrate solution to the vagina. The determinations were made by Miss N. E. Schreiber of the Department of Pharmacology, Western Reserve University. Twenty-four hour collections of urine obtained twenty-four hours after cessation of all treatment, from three women who had been taking daily douches of 1:25,000 solution of phenylmercuric nitrate for six weeks, showed total mercury contents (obtained as the free metal) of a trace (about 0.008 mg), 0.022 mg and 0.104 mg respectively.

It is pointed out by Biskind that these data are inconclusive, in that no information is available as to the quantity retained in the body or as to the fecal excretion. On general grounds, these figures are regarded as a "negligible output." Biskind states that in antisyphilitic therapy, where quantities of ionized mercury are absorbed, 'the urinary excretion of the metal is very much greater than that reported.'

BACTERICIDAL ACTION

The tests of the action of phenylmercuric nitrate and phenylmercuric chloride on bacteria *in vitro* in mixtures in salt solution, broth, and serum which have been made by Weed and Ecker⁸ and by Birkhaug⁵ were carried out by adequate methods with adequate controls. The details need not be repeated here. Examples of the results are as follows: Bacteriostatic or growth inhibiting power ranges up to 1:10,000,000 but usually operates best in dilutions of between 1:125,000 and 1:1,000,000. Birkhaug found it inhibitory against *Streptococcus haemolyticus* in a dilution as high as 1:150,000,000, it inhibited spore-bearing *B. subtilis* in a dilution of 1:12,000,000. *Staphylococci*, streptococci, gonococci, *B. coli*, *B. typhosus* and *B. subtilis* have been used in these tests. No reports on its action on tubercle bacilli have been published.

The bactericidal action determined according to the method of Reddish has been reported by these investigators to be unusually high. The phenol coefficient of phenylmercuric nitrate against *B. typhosus* was found by Weed and Ecker to be 625. Birkhaug⁵ found the following phenol coefficients against *Staphylococcus aureus*, 2,259, against *Streptococcus haemolyticus* 1,440, against *pneumococcus* 1,067, against *B. coli*, 640, against *gonococcus* 889, against *B. subtilis* 801. The presence of 50 per cent human serum reduces these values about 10 per cent for vegetative pathogens and about 40 per cent for the spore bearing *B. subtilis*. Birkhaug⁵ on the basis of his experiments makes the following comparison: Phenylmercuric nitrate surpasses the other disinfectants in the following order: merthiolate 1.6 times, metaphen 1.4 times, mercuric chloride 5.7 times, hexylresorcinol 9.6 times, mercurochrome, 43.4 times and phenol 120.2 times.

Weed and Ecker^{2b} showed that phenylmercuric nitrate in concentrations of from 1 part in 12,500 to 1 part in 37,500 killed various sporulating anaerobes in ten minutes. The organisms used in the tests were *Vibrio septique*, *B. histolyticus*, *B. chauvoei*, *B. welchii*, *B. tetani* and *B. sporogenes*.

FUNGICIDAL PROPERTIES

Weed¹ and Weed and Ecker^{2b} have shown that phenylmercuric nitrate inhibited the growth of most of the fungi that

6 Biskind I. H. Phenylmercuric Nitrate. Its Chemical Uses in Gynecology. 24. Preliminary Report Surg. Gynec. & Obst. 57: 261 264 (Aug.) 1933.
7 Levine Benjamin. Use of Phenylmercuric Nitrate in Tinea and Yeast Infections of the Skin. J. A. M. A. 101: 109 (Dec. 30) 1913.

8 Weed and Ecker footnote 21 and 2b.

cause epidermophytosis when 1 to 5 per cent of the saturated (1:1,250) solution was added to the medium (dilutions of from about 1:125,000 to about 1:25,000). *Achorion violaceum* was more resistant than other fungi. On the basis of the results of these studies the compound has been used in the treatment of tinea and yeast infections of the skin with apparently good results, as will be noted in a subsequent paragraph on clinical applications.

The fungicidal properties of these compounds appear to have been clearly demonstrated by the results of tests with wood-destroying fungi. Weed's² studies have been confirmed by Hatfield.³ The use of these substances as preservatives of wood and as possible therapeutic agents in the treatment of fungous diseases of seeds and plants do not come within the scope of the Council. These investigations are mentioned because they give additional evidence on the toxicity of phenylmercuric nitrate for fungi.

PRESERVATIVE ACTION

Weed and Ecker²⁴ have published the results of experiments showing that enzymes, toxins and antigens are not interfered with nor destroyed by phenylmercuric nitrate or phenylmercuric chloride in concentrations that are capable of inhibiting bacterial growth. These tests were made with pepsin, trypsin, lysozyme, bacterial vaccines, precipitins, complement, diphtheria toxin and snake venoms. As has been stated, proteins are not precipitated by solutions of the nitrate or chloride.

NONCORROSIVENESS

Weed and Ecker²⁴ and Birkhaug⁵ have reported that phenylmercuric nitrate is not corrosive to metals (except aluminum) and that surgical instruments can be rapidly sterilized in aqueous solutions of it.²⁵ The data on which these conclusions are based are not presented in these papers. There is no reason, however, for doubting the general truth of the statement. On account of the physical peculiarities of surgical instruments with their hinges, joints, slots, tubes and crevices the Council believes that exploitation of the claim should not be allowed unless tests are made with each type of instrument.

SKIN STERILIZATION

Birkhaug,⁵ using the methods developed in his studies of skin sterilization by metaphen and other disinfectants, found that an acetone-alcohol-aqueous solution of phenylmercuric nitrate (0.034 per cent) disinfected the skin in three minutes. Tests were made with pinch grafts of rabbit skin and scrapings of human skin. This phenylmercuric nitrate solution was found to be more effective than similar solutions of mercurochrome, metaphen or tincture of iodine.

CLINICAL USE

Only two papers on the clinical use were available to the Council's referee at the time this report was made: one is by L. H. Biskind,⁶ the other that of Levine.⁷

Biskind⁶ reports on the results of the use of phenylmercuric nitrate in 100 cases of infection of the vagina and cervix (seventy cases in the first series, thirty cases in a second series). No attempt was made to select certain types of cases and all consecutive patients seen by the author showing a vaginal or cervical discharge were treated with phenylmercuric nitrate.

After preliminary examination, the taking of material for smears and cleansing the vagina and cervix with dry cotton pledgets, phenylmercuric nitrate solution was instilled into the cervical canal and applied to the vagina.

A tampon soaked with the solution was left in the vagina for twenty-four hours. A 1:1,250 solution of phenylmercuric nitrate was found finally to be most satisfactory and did not cause irritation. Daily douches with this material in a dilution of 1:25,000 were used also in many cases.

The cases treated were diagnosed as follows:

Thirty-two cases, gonococcic endocervicitis (positive for gonococcus).

Nineteen cases, gonococcic endocervicitis (not confirmed by laboratory examination).

One case, gonococcic vaginitis in a child.

Two cases, vaginitis following trauma of pessary or her douches.

Two cases, vaginitis due to *Trichomonas vaginalis*.

One case, abscess of Bartholin's gland, incision and drainage.

One case, postoperative rectovaginal fistula.

Forty-two cases, various forms of nongonorrheal endocervicitis, with a host of other conditions referable to the pelvis.

Among the cases of gonococcic endocervicitis, numerous patients had been resistant to various forms of treatment. When phenylmercuric nitrate was used, the discharge was reduced in from three to seven days. Biskind states that "phenylmercuric nitrate was used to clean up the secondary infection to eradicate the primary infection and then to maintain the cervix clinically free from infection while other treatment was used to heal associated conditions, e.g. silver nitrate or the actual cautery for cervical erosions." The Council's referee could not find in this paper any proof that the primary gonococcic infection was eradicated. The evidence indicates that these patients were observed during a period too short to determine whether or not permanent cures had been achieved.

All the other conditions were likewise greatly improved or cured except two cases of *Trichomonas* infection of the vagina, which were not affected by phenylmercuric nitrate. The rectovaginal fistula in one case closed rapidly under the influence of this antiseptic.

Biskind's report is highly favorable to phenylmercuric nitrate. It is to be noted that it is a "preliminary report." It is necessary to view these results and conclusions as Dr. Biskind does himself with caution, waiting for the results of more trials and longer periods of observation.

A typewritten report has been received from a physician, describing three cases of gonorrhea and four cases of leukorrhea treated with phenylmercuric nitrate. All the cases were cured in from one quarter to one half the time required by other germicides or in other words, instead of taking four to six months to cure the ordinary case, these cases have been cured in from six weeks to two months.

Other letters from physicians report favorable results of the treatment of peritoneal tuberculosis with a sinus tract and cases of osteomyelitis. In addition the Council has been supplied with a list of twenty-six physicians and three dentists who have used phenylmercuric nitrate in their practice.

Levine's report⁷ is an account of unusually favorable results in the treatment of "tinea and yeast infections of the skin" with phenylmercuric nitrate.

A lotion containing 1:1,000 phenylmercuric nitrate in an emulsion of gum tragacanth was found to irritate the skin. A 1:1,250 solution of phenylmercuric nitrate in a gum tragacanth lotion was decidedly "less irritating." (The referee noted that these irritating effects occurred with a preparation supplied by Weed and Ecker.) Finally, an ointment containing phenylmercuric nitrate in a concentration of 1:1,500 with 10 per cent glycerin in an oxycholesterin base, was found to be nonirritant and most satisfactory for the treatment of a variety of dermatomycoses.

Levine says: "Of 262 cases treated 205 were carefully followed up and the patients discharged as cured. The remaining 57 patients were seen but once after the beginning of treatment and the data in these cases remained incomplete. Of the 205 patients 193 had tinea and 12 had interdigital saccharomycosis. All the 193 cases of tinea were cured. The types of fungous infections were not specified according to the micro organisms but mention is made of tinea of the feet, tinea cruris, tinea of the axillae, tinea circumata of the glabrous skin, tinea versicolor and tinea of the scalp and face. In interdigital saccharomycosis usually a very refractory infection, Levine asserts, the length of time necessary to effect the cure varied from two days to four weeks, with an average of two weeks." In some cases recurrence was not observed within ten months. Levine concluded that phenylmercuric nitrate proved highly efficacious in the treatment of tinea and yeast infections of the skin "producing cures when other standard medicaments had failed."

Although the Council's referee has not seen these cases and has not had an opportunity to observe the treatment of ring worm infections with phenylmercuric nitrate, he thinks that the

evidence is not yet sufficient to warrant acceptance of the claim that this compound cures fungous infections of the skin so readily. Levine's paper presents considerable evidence that the drug may be very useful in these conditions.

DENTAL USES

There are no published reports on the use of these compounds in dentistry and stomatologic practice. According to the firm, Prof. T. J. Hill of the School of Dentistry and of the Institute of Pathology, Western Reserve University, has succeeded in incorporating phenylmercuric nitrate in dental cement, making the cement highly bactericidal and bacteriostatic, higher in these respects than any cement so far known. Dr. Hill has reported his observations at the Dental Association meetings at New York. The compounds are said also to have proved their effectiveness in the treatment of various forms of dental infections.

The Council wishes to secure close cooperation with the Council on Dental Therapeutics of the American Dental Association in reaching conclusions on the permissible dental and stomatologic claims for these products. They should, no doubt, be submitted by the manufacturer or distributor to the Council on Dental Therapeutics.

SUMMARY

Test-tube experiments have shown that phenylmercuric nitrate is a powerful germicide and fungicide of wide ranging effect and relatively low toxicity. Fewer tests have been made with phenylmercuric chloride, but it seems likely that the two compounds are equally active.

Experiments with animals indicate that the ingestion of phenylmercuric nitrate may lead to strong bacteriostatic and bactericidal effect in the blood, cerebrospinal fluid, bile, feces and urine.

It seems to be clearly indicated that phenylmercuric nitrate can disinfect the skin, disinfect instruments without corroding them and preserve biologic products against bacterial growth without destroying their specific properties and actions.

The few preliminary clinical reports available indicate that phenylmercuric nitrate and phenylmercuric chloride may prove to be useful chemotherapeutic agents for the treatment of some bacterial and fungous infections and are applicable to the treatment of a variety of disease conditions due to infection. This clinical evidence needs extension, confirmation and the test of time before it can be accepted as conclusive.

Phenylmercuric nitrate appears to be useful in dentistry and in stomatologic practice, but there is not sufficient clinical evidence covering these uses at the present time.

It is evident that many questions remain to be answered satisfactorily by the manufacturer who desires to have these products and their exploitation conform to the requirements of the Council.

Although phenylmercuric nitrate and phenylmercuric chloride seem to have great promise as germicides and as agents useful in bacterial chemotherapy, the Council's referee pointed out that the clinical studies, admittedly difficult to carry out conclusively, must afford the material on which the therapeutic efficacy of these compounds is to be determined.

The Council adopted the report of the referee to be published as a preliminary report on its consideration of phenylmercuric nitrate and phenylmercuric chloride. The Council voted further that the J. H. R. Sales Corporation be informed that its brands of phenylmercuric chloride and phenylmercuric nitrate will unless further conflicts arise be accepted for inclusion in N. N. R. (1) when acceptable evidence is submitted for every claim advanced (2) when acceptable advertising and labels are received and (3) when the A. M. A. Chemical Laboratory reports favorably on the tests standards and other chemical questions involved.

Since the statement of the Council's consideration was sent to the J. H. R. Sales Corporation the office of the Council's secretary has been informed that the entire patent manufacturing and sales rights of this firm on these phenylmercuric compounds have been acquired by a new corporation in Hamilton, Ohio organized under the laws of Delaware and named The Hamilton Laboratories, Inc.

Committee on Foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG, Secretary

LIGHT'S FAIRY QUEEN CAKE FLOUR (BLEACHED)

Manufacturer—The Light Grain and Milling Company, Liberal, Kan.

Description—Hard winter wheat short patent flour, bleached.

Manufacture—Selected hard winter wheat is cleaned, scoured, tempered and milled by essentially the same procedure as described in THE JOURNAL, June 18 1932, p. 2210. Chosen flour streams are blended and bleached with nitrogen trichloride (one-seventh ounce per barrel).

WHITE SWAN BRAND EVAPORATED MILK

Distributor—Waples Platter Company, Fort Worth, Texas.

Packer—The Page Milk Company, Merrill, Wis.

Description—Canned unsweetened sterilized evaporated milk the same as Page Brand Evaporated Milk (Sterilized, Unsweetened), THE JOURNAL, May 30, 1931, page 1872.

GOLDEN KEY WHEAT FARINA

Distributor—The Great American Tea Company, New York.

Packer—The Quaker Maid Company, Inc., New York.

Description—Hard wheat 'flour middlings' or farina the same as Mello-Wheat Breakfast Food. The Heart of the Wheat (THE JOURNAL, Oct. 1, 1932, p. 1175).

FAIRWAY BRAND FREE RUNNING TABLE SALT

Distributor—Twin City Wholesale Grocer Co., St. Paul and Minneapolis.

Packer—Morton Salt Company, Chicago.

Description—Table salt containing 0.7 per cent of added magnesium carbonate. Same as Morton's Free Running Salt. THE JOURNAL, May 14 1932, page 1745.

Claims of Manufacturer—This salt is for all table and cooking uses of salt. The added magnesium carbonate tends to preserve its free running qualities.

HEIMAN'S SPARKLING GOLDEN SYRUP

Distributor—Heiman Grocery Co., Trenton, Mo.

Packer—Bliss Syrup & Preserving Co., Kansas City, Mo.

Description—A table syrup, corn syrup flavored with refiners' syrup, the same as Bliss Pancake Golden Brand Syrup (THE JOURNAL, Oct. 28, 1933, p. 1393).

ACME-EVANS COMPANY WHITE PLUME BEST PATENT FLOUR (BLEACHED)

Manufacturer—Acme-Evans Company, Indianapolis.

Description—Short patent cake flour milled from soft winter wheat, bleached.

Manufacture—Selected soft winter wheat is cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18 1932, page 2210. Chosen flour streams are blended and bleached with nitrogen trichloride (one-seventh ounce per barrel).

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SATURDAY, APRIL 14, 1934

BODY BUILD AND METABOLISM

The influence of body build has long been of concern in the design and operation of motor cars. In the performance of the human body the possible significance of peculiarities in the physique of the individual—in unusual interrelations of body size and proportion—have only lately awakened serious interest. Today the claims of constitutional differences receive a respectful hearing. A recent writer¹ has remarked that the almost uncanny agreements found in applying the surface area formulas to basal metabolism of individuals of widely different body form, widely different proportions of body fat, and so on, have served to inhibit rather than stimulate interest in the effects of minor differences.

Structural form results from processes of unequal growth. This has been well expressed by Stockard² in an essay on human types and growth reactions. Equal growth, he states, in all directions from the original spherical egg would result in a sphere. Spheres may differ in size, but all are alike in form. Should the growth processes be exactly the same in two specimens, their final structures will also be exactly alike. Whenever the growth processes of the two differ, the resemblance is modified. Thus the problem of human types is a problem of growth and all individuals that may be grouped together under one type are individuals with closely similar growth histories. Stockard has further defined the consequences of unequal growth in relation to types of body build. There is a primary tendency to form an axis or line of growth. Following this, lateral growth takes place. Crudely stated, there is a tendency to attain length first and width later. Secondly, there is a certain degree of competition between these two tendencies so that as a rule the growth in width expresses itself only after the growth in length has worn itself down and become slower.

¹ White House Conference on Child Health and Protection, Growth and Development of the Child, Part III, Nutrition, New York, Century Company, 1932, p. 352.

² Stockard, C. R., Human Types and Growth Reactions, Am J Anat, 31: 261 (Jan.) 1923.

A corollary of such considerations naturally relates to unlike activities of organs, notably the thyroid, which regulate both the rate of metabolism and the rate of development. An interrelationship between physique and basal metabolic rate at once is suggested. It now seems to have been demonstrated by the recent investigations of Lucas and Pryor³ in San Francisco, from careful measurements of nearly 600 children. Slender-built children normally have higher basal rates than broad-built children of the same age sex group. High basal metabolic rates as measured by the conventional standards are the rule for the linear type group, whose width-length indexes of body build are well below average. The width-length index is an expression of the relationship of the width to the length of the body. It is obtained by measuring the diameter of the crest of the ilium and the standing height. The crest measurement is divided by the height to give the relative breadth of the body, or width-length index. This index represents width in percentage of standing height. Weight does not enter into the calculation. The size of the index increases with the relative breadth of the body.

It has been remarked that constitutional influences on basal metabolism may be of at least four kinds: those hereditary factors which affect body size and proportion; those which affect nervous organization; those which produce a tendency to leanness or fatness; aside from the endocrine functions and the endocrine factors themselves. The first of these, certainly, and probably others, may be traced to the chromosomes of the germ cells. No certain method is at hand of determining where chromosomal influences per se leave off and endocrine influences begin. The great varieties of body size and shape possessing perfectly normal and well balanced endocrine functions, different proportions of muscle mass, visceral mass, weight of skeleton, skin, and other connective tissue structures must produce considerable differences in the rate of basal heat production. The San Francisco study is a notable contribution to the perplexing problems of body build and metabolism.

THE CARE OF THE PREMATURE INFANT

In the deliberations of the White House Conference on Child Health and Protection, it was pointed out¹ that the handling of premature infants is so complicated that it is hard to decide which of their problems are nutritional, environmental, infectious or due to actual congenital anomalies or birth injury. In the past, more attention has probably been devoted to the nutritional aspects of the baby's regimen than to any other features of its management. Every one is aware that the heat regulatory mechanism at the beginning of extra

³ Lucas, W. P. and Pryor, Helen B., The Body Build Factor in the Basal Metabolism of Children, Am J Dis Child, 46: 941 (Nov.) 1933.

¹ White House Conference on Child Health and Protection, Growth and Development of the Child, Part III, Nutrition, New York, Century Company, 1932, p. 72.

uterine life is far from adequate in most species. In the case of the premature human infant it is by no means fully developed at birth, consequently, unless the infants are kept warm by the application of external heat the body temperature gradually falls, in some instances it fails to rise again, with detrimental or fatal consequences. The inability of the premature infant to regulate and maintain a normal body temperature is attributed largely to incomplete development of the nervous system, as a result of which there is an imperfect balance between loss of heat and production of heat. Talbot² has observed that there is generally a lack of subcutaneous fat, which favors escape of heat from the more vital tissues of the body, the normally low production of heat by the organism itself, and the failure to increase this production by shivering, crying and other forms of exercise when the environmental temperature falls below that optimal for the child. Furthermore, the sweat glands do not function as efficiently as they do in the fully developed or "mature" new-born infant, and sometimes they do not act at all.

In view of these environmental problems, the department of pediatrics at the Harvard Medical School has been engaged for several years in attempting to improve atmospheric conditions in hospital nurseries for premature infants and in observing the effects on the growth and development of the young. Blackfan and his associates,³ who have been responsible for this laborious undertaking, have not been indifferent to the factors other than immediate environment that are involved in the successful rearing of the premature infant. They confess at the outset that it depends primarily on four basic principles: (a) stabilization of body temperature, (b) adequate and proper nutriment, (c) prophylaxis against infection and (d) intelligent nursing and medical care. The stabilization of body temperature through accurate control of environmental conditions has been least adequately dealt with.

A special part of the November 1933 issue of the *American Journal of Diseases of Children* was devoted to detailed, technical descriptions of the "air conditioned" nursery rooms at the Infants' Hospital in Boston, where the investigations have continued for seven years. In order to reduce to a minimum those influences which would interfere with the drawing of valid conclusions, special consideration was given to keeping uniform such variables as type of subject, hygiene and clothing, nutriment, and medical and nursing care. For the purpose of securing data with which to contrast the results of the study in the conditioned nurseries, an analysis was made of the hospital records of infants treated over a period of three years in the old unconditioned nursery, before the installation of

the air conditioning apparatus. Humidity has proved to be a significant feature in lowering mortality and in promoting growth. The humidity best suited to stabilizing the body temperature of premature infants appears to be about 65 per cent, with a temperature ranging from 75 to 100 F, depending to some extent on the general constitutional state of the infant and the body weight. A humidity of 30 per cent induced instability of body temperature and other untoward effects, often leading to serious consequences. The body temperature of the premature infant can be controlled much more regularly in rooms in which the temperature, humidity and ventilation rate are adequately managed than in rooms in which these physical factors are allowed to fluctuate.

A surprising outcome relates to the alimentary functions. Air conditions in general and low humidity in particular exerted a conspicuous influence in initiating symptoms referable to the digestive tract. The incidence, as estimated according to an arbitrary index, was at a minimum when the humidity was high and at a maximum when humidity was low. The Harvard studies show that when premature infants live in an environment of low humidity, particularly for a week or more at a time, clinical manifestations of disturbed bodily function are prone to develop, whereas in a relatively high humidity the incidence, severity and duration of the concomitant symptoms are reduced. Furthermore, air conditioning with high humidity notably reduced the mortality from infections, a frequent cause of death in the past. According to Blackfan, the body weight is the most important single criterion for judging the environmental requirements of premature infants. This index has been found to be more reliable than the estimated fetal age, chronological age or body length. From his studies Blackfan modestly concludes that the importance of optimal temperature, humidity and ventilation conditions in the growth and development of premature infants is demonstrable. The research is destined to affect profoundly the future management of the premature infant.

THE HUMORAL THEORY OF NERVOUS FUNCTION

The humoral theory of nervous function owes its inception largely to the ingenious investigations of the pharmacologist Prof. Otto Loewi of Graz. In 1921 he reported his conclusion that the stimulation of autonomic nerves leads to the liberation of definite chemical substances. He noted that, when the vagus nerve that supplies branches to the cardiac tissue is stimulated so that the heart stops, the fluid in the latter acquires the surprising property, when introduced into another heart, of producing typical vagal effects, that is, heart slowing or standstill. On the other hand, when the heart is stimulated under comparable conditions through

² Talbot, F. B., Sisson, W. R., Moriarty, Margaret E. and Dalrymple, Alice J. The Basal Metabolism of Prematurity. III. Metabolism Findings in Twenty One Premature Infants. *Am. J. Dis. Child.* 26: 29 (July) 1923. Talbot, F. B., Bates, Velma, Bates, Eleanor and Dalrymple, Alice J. Skin Temperature of Children. *ibid.* 42: 965 (Oct.) 1931.

³ Blackfan, K. D. and Laglou, C. P. The Premature Infant. *Am. J. Dis. Child.* 46: 1175 (Nov.) 1931.

the cardio-accelerator nerves, the fluid becomes endowed with typical accelerating potencies. In other words, when certain structures, such as cardiac muscles, are stimulated by specific nerves, compounds are liberated into the surrounding medium that mimic the usual functions of the nerves involved.¹ A new view in the conception of the mechanism of nerve stimulation—the conception of chemical mediators—has thus come into vogue. Physiologists are at present busily engaged in establishing a firm foundation for this fundamentally important principle. There are fairly well founded surmises as to the nature of the potent excitatory and inhibitory principles. They seem to be related to, if they are not actually identical with, epinephrine and acetylcholine, respectively. These are substances that have at least one characteristic of many known hormones. They act in extremely minute concentrations in the body—in a few parts per million. Recently Gellhorn and Northup² of the College of Medicine of the University of Illinois at Chicago have endeavored to test in a somewhat new way the Loewi theory of the humoral action of nerve stimulation. These investigators devised experiments in which the intestine is perfused with isotonic dextrose and the blood vessels supplying the intestine with Ringer's solution and the perfusion rate kept constant. Under such conditions the absorption of dextrose is regularly altered by stimulation of the autonomic nerves. Administration of acetylcholine and epinephrine also induces comparable effects under suitable conditions. In fact, the outcome is exactly what one might anticipate if relatively large concentrations of acetylcholine and epinephrine are liberated after vagus and sympathetic stimulation, respectively. These results are in favor of the humoral theory of the action of autonomic nerves. Furthermore, they prove that autonomic nerves alter cellular permeability, at any rate, according to Gellhorn and Northup, assuming the validity of the humoral theory of nervous action and taking into account that the preparation used in these experiments consists chiefly of a part of the intestine and the blood vessels and nerves supplying these tissues, the effect of nervous stimulation on sugar absorption must be due to the liberation of chemical substances which alter the permeability of the intestine if present in minute concentrations. With respect to the mechanisms involved, it has been noted that changes in the inorganic ions in the perfusing fluids may alter the permeability and thus affect absorption. For example, according to Gellhorn and Skupa,³ slight changes in the concentration of potassium chloride and calcium chloride in the artificial solutions with which the blood vessels supplying the

intestine are perfused lead to changes in the permeability of the intestinal wall to dextrose. The absorption of dextrose is increased by potassium and decreased by calcium. The effects were observed even with solutions containing only 0.0075 per cent of potassium chloride and 0.001 per cent of calcium chloride. Hence the influence of organic hormones and specific ions may be interrelated in physiologic functions.

UREA AS A FIBRIN SOLVENT

Thirty years ago it was shown by Limbourg and afterward confirmed by Ramsden¹ and others that saturated solutions of urea dissolve fibrin in vitro. Other proteolytic effects of urea were discovered later, such as its solvent action on casein² and its prevention of the precipitation of certain serum proteins.³ The possibility of therapeutic use of urea as a local fibrin solvent, however, has been generally overlooked, pathologic research stressing the possibilities of preventing surgical adhesions by the use of certain proteolytic plant extracts. Menkin's⁴ recent study of the in vivo fibrinolytic action of urea, therefore, offers a suggestion of clinical interest.

Menkin approached the problem of therapeutic fibrinolysis after a series of preliminary studies of the mechanical role of fibrin in local inflammatory reactions. He found, for example, that, within one hour after subcutaneous injection of staphylococci, physiologic encapsulation of the infected area is effective in rabbits, largely as a result of local lymphatic and interstitial fibrin blockade. Foreign proteins, dyes and particulate matter injected in the blocked area are fixed in the local tissues and fail to drain into the tributary lymphatics. As a second preliminary, Menkin reconfirmed the long neglected observation of the solvent effects of urea in vitro. He found, for example, that exudates withdrawn from aleuronat peritonitis (rabbits) are dissolved in about fifteen minutes if mixed with two volumes of 50 per cent urea solutions. Both fibrin and leukocytes are liquefied by this technique. Strips of fibrinous exudate of human origin were also dissolved, though less promptly, if suspended in concentrated urea solutions, control strips showing no tendency toward liquefaction. Added to uncoagulated peritoneal exudate, urea prevents clotting.

Applying these techniques to living animals, Menkin found that from 10 to 15 cc of 30 or 50 per cent urea solution, injected into the peritoneal cavity of a rabbit, prevents local interstitial and lymphatic fibrin blockade from simultaneously injected aleuronat. Subsequently injected graphite particles drain normally to the regional lymph nodes. In untreated control aleuronat peritonitis, the locally injected graphite particles are

1 A discussion of the subject is presented by Cannon W B *Chemical Mediators of Autonomic Nerve Impulses* Science **78** 43 (July 21) 1933

2 Gellhorn Ernst and Northup David The Influence of Nervous Stimulation on Absorption from the Intestine *Am J Physiol* **106** 283 (Nov.) 1933

3 Gellhorn Ernst and Skupa Arthur The K Ca Antagonism in Regard to Absorption from the Intestine, *Am J Physiol* **106** 318 (Nov.) 1933

1 Ramsden W B *J Physiol* **28** xxiii 1902
2 Burk N F and Greenberg D M *Proc Soc. Exper. Biol & Med* **25** 271 (Jan.) 1928
3 Shear M J and Offner M M *J Biol Chem* **91** 291 (April) 1931
4 Menkin Valy *J Exper Med* **56** 157 (Aug.) 1932

fixed in the peritoneal tissues. Applying similar tests to previously established peritoneal blockade, the Boston pathologists found that a single local urea injection is an effective solvent of this blockade, subsequently injected graphite particles draining normally from this inflamed peritoneum. Local prevention of fibrin formation and local therapeutic resolution of previously established fibrinous blockades are also effective in subcutaneous tissues.

Whether or not concentrated urea solutions would be lytically effective if applied as surgical dressings to ulcerative surfaces, however, has not yet been determined. Nor, as yet, have the presumptive secondary toxic reactions from therapeutic fibrinolysis been studied. Menkin's only reference to toxicity is one sentence: "Out of a large series of experimental animals, a few died several hours after intraperitoneal injection of 50 per cent urea."

Current Comment

THE BACTERICIDAL ACTION OF KETONIC URINE

A somewhat new possibility in the management of pyelitis was inaugurated through the application of the ketogenic diet to control the objectionable bacteria in the urine. The colon bacillus is the most frequent cause of infection of the urinary bladder and pelvis of the kidney. The plan of treatment originated with Helmholtz and his collaborators¹ at the Mayo Clinic. Fuller,² of Queen Charlotte's Hospital, London, has pointed out that, provided a sufficiently intense ketosis can be obtained, the bacteria and pus often disappear from the urine within a few days, even in chronic cases. At first it was thought possible that the increased acidity alone caused the sterilization, but it soon became evident that there was another factor, for Helmholtz and Clark succeeded in producing sterile urines at p_H 5.5 by means of the ketogenic diet in cases in which the use of acidifying salts yielding a urine of p_H 5.0 had been without effect. This was shown also by experiments on the bactericidal properties of the urines in vitro at 37 C. Helmholtz demonstrated that acidity alone, or in combination with 0.5 per cent of acetoacetic acid, was not responsible for the bactericidal effect of ketonic urine and concluded that some other bactericidal substance was present. Dick³ obtained similar results showing that, while normal urine at p_H 5.5 allowed a free outgrowth of *Bacillus coli*, ketonic urines at this reaction were bacteriostatic, that is, they prevented an increase in the numbers of bacteria without necessarily killing them completely. A solution of the problem of the bactericidal or at least the bacteriostatic potency of the urine in ketosis seems to have been reached by Fuller, who observed that in those cases

in which a rapid cure was obtained, the urine had a pronounced bacteriostatic action in vitro and contained a high concentration of acetoacetic acid, but this is inadequate to account for the striking therapeutic effects. The principal factor inhibiting the growth of bacteria in the urine from patients receiving the ketogenic diet is *l*- β -hydroxybutyric acid. The activity of this substance increases in proportion to the acidity of the urine. Acetoacetic acid and acetone, according to Fuller, are much weaker in their action than β -hydroxybutyric acid and, since they are present in ketonic urine to a much smaller extent than the latter acid, they contribute only a small portion of the total activity.

Association News

MEDICAL BROADCASTS

National Broadcasting Company

The American Medical Association broadcasts on a coast to coast network each Monday afternoon from 4 to 4:15 Central standard time (5 o'clock Eastern standard time, 3 o'clock Mountain standard time and 2 o'clock Pacific standard time). The next three broadcasts will be as follows:

- April 16 Bird with a White Breast W. W. Bauer, M.D.
- April 23 Sanitation Goes Modern W. W. Bauer, M.D.
- April 30 Science Saves Babies Morris Fishbein, M.D.

Columbia Broadcasting System

The Association broadcasts on a Western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4:30 to 4:45 Central standard time. The next three broadcasts will be as follows:

- April 19 More Health Delusions W. W. Bauer, M.D.
- April 26 Million Murdering Death W. W. Bauer, M.D.
- May 3 Facts or Fallacies W. W. Bauer, M.D.

ANNUAL CONGRESS ON MEDICAL EDUCATION, LICENSURE AND HOSPITALS

Thirtieth Annual Meeting held in Chicago Feb. 12 and 13, 1934

(Continued from page 1163)

DR. REGINALD FITZ, Boston, in the Chair

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

The Importance of Introducing Psychiatry into the General Internship

DR. FRANKLIN G. EBAUGH, Denver. This article appeared in full in THE JOURNAL, March 31, page 982.

DISCUSSION

DR. C. C. BURLINGAME, Hartford, Conn. I believe that the other branches of medicine do not know what is going on in psychiatry today. They think of psychiatrists still as metaphysicians who are dealing with things entirely detached from the other branches of medicine. As a matter of fact, in the present-day psychiatric hospital the best in physical medicine is practiced. When the good general hospitals are as well equipped in mental medicine and psychiatry as the good psychiatric hospitals are equipped in physical medicine, they will both be a good deal further along. In every surgical and medical and pediatric service there are psychiatric problems. It is somebody's job to recognize them. The rather casual way in which the intern in a service in which a suicide occurred took that matter would lead one to believe that every intern is entitled to a certain amount of fundamental knowledge of psychiatry. How are they going to get this training? There are some state hospitals that would be a splendid place to offer psychiatric

1 Helmholtz, H. F. and Clark, A. L. Proc. Staff Meet. Mayo Clin. 605, 609, 1933. Clark, A. L. Bacilluria Under Ketogenic Treatment J. A. M. A. 95, 1710 (May 14), 1932.
2 Fuller, A. T. The Nature of the Bactericidal Substance in the Urine of Patients Receiving a Ketogenic Diet. Biochem. J. 27, 976, 1933.
3 Dick. Proc. Roy. Soc. Med. 26, 227, 1933.

training. But there are some state hospitals where the custodial type of psychiatry still obtains. Modern psychiatry is not synonymous with the care of cases of psychosis or insanity. A large part antedates any frank breakdown. Psychiatry is suffering from its ancestors. They came from poorhouses and jails, instead of coming from medical schools and general hospitals. If we can only forget our ancestry in psychiatry, and think of ourselves in terms of general medicine, surgery and pediatrics, a lot of our old traditions will drop from us. The leadership is going to come from that type of thinking, and it is our responsibility to furnish that leadership through the general internship and from there on.

DR C. W. McPONTRE, Omaha. It seems to me that if it can be instilled in the mind of the intern to begin with that even a thing as simple as a fracture of a leg contains a functional element and if that can be made to permeate the staff of the institution, they will realize the function of the organic. If we are to move forward with this program of mental hygiene and the problem of the psychologic mind, it will be necessary to introduce that thing all along the line. The man will come out impregnated with the idea that he cannot deal adequately with any case if he is not aware of its sociological ramifications.

DR A. S. BRICE, Boston. We have attempted in Boston University to emphasize the functional side all the way through. We have felt that there is something that is to be known as common sense in medicine and we have been trying to develop that in our students. We begin in the first year with the course in anatomy of the nervous system. We proceed in the latter part of the first year with the work in physiology which has a functional bearing on the nervous system. We then go into the second year where the courses in neuropathology and the beginnings of psychiatry are laid down. We next have a course in formal lectures in psychiatry with demonstrations and following that we have the experiment that Dr. Ebaugh has referred to of sending our students to state hospitals for a residency of four weeks. The way we got this was to add four weeks of training to the senior year so that our senior students have thirty-six instead of thirty-two weeks. So far we have had nothing but commendation for the change.

DR E. S. RYANSON, Toronto. At the University of Toronto as the result of the attitude toward psychiatry, it was decided two years ago to make psychology a compulsory study in the second year and there is now a compulsory course of sixty hours, with lectures in psychology, for all medical students. It is obligatory for everybody. It is on the same standing as anatomy and physiology, not a minor subject. When a student has completed that course he has an opportunity in his third year of going into a more restricted class of psychology in a laboratory form of teaching. In the fourth year there is a still further elective course over and above the courses which begin at that time in psychiatry, spoken of as abnormal psychiatry. In the fifth year the men who have taken that course take an elective course in psychiatry itself, along with the clinical course in psychology. As the result, we feel that the students are getting the point of view which Dr. Ebaugh has pointed out. We have fully recognized this point of view of the importance not only of psychiatry but also of psychology in the training of men who are going out into the general practice of medicine, and at the same time are carrying on along with that a more adequate training for men who are thinking of going into psychiatry. This is the only course in which a student can begin to specialize before he graduates. He cannot take an elective in any of the clinical subjects during his undergraduate course other than psychology.

The Incorporation of the Principles of Preventive Medicine in Clinical Teaching

DR WILSON G. SMILLIE, Boston. In the consideration of every disease entity there are three facets which transmit and reflect the brilliance of clinical analysis: diagnosis, treatment and prevention. The student must know all three if he is to secure a true picture of disease as it is related to the social and economic structure of society. The importance of a consideration of this subject at this particular time is patent. While various, almost revolutionary, social changes have been going

on the relationship of the practitioner of medicine to the community has not changed fundamentally during the past fifty years. There is some evidence that the organized medical profession has not been alert to changing public sentiment in regard to medical practice. One bit of evidence is the widening breach of misunderstanding in many parts of the nation between the official health departments and the medical profession. These two groups should have a common interest and should be working toward the same ultimate goal. Their chief difference is in point of view and method of approach. The health officer's primary interest is promotion of the health of the community as a collective unit, the primary interest of the physician is the promotion of the health and welfare of the individuals of that unit.

In recent years, official health departments have established immunization clinics for smallpox, typhoid, scarlet fever, measles and tuberculosis. Diagnostic and treatment clinics have been established for tuberculosis and for venereal disease, as well as child hygiene clinics, well baby clinics, dental clinics, tonsil and adenoid clinics, eye clinics and clinics for periodic physical examinations. All these essentially clinical activities are, in theory at least, the province of the private practitioner, rather than the health department. It is generally agreed, of course, that these services should be rendered by public or quasipublic organizations for those in the community who are too poor to pay for these necessary services. But then these services become a matter of public welfare, rather than a public health function. The intelligent health officer realizes his position, and will I believe turn these clinical activities back to the physicians as rapidly as they will assume responsibility for them, but he must have due assurance that the work will be carried out speedily and efficiently, and at reasonable cost.

I feel that I state the convictions of the intelligent, foresighted health officials in the proposition that the clinical aspects of preventive medicine should be the function of the private practitioners of the community. The Commission on Medical Education 1930 stresses this feeling, as follows:

Emphasis must be kept constantly upon the fact that only through a sufficient number of properly trained physicians can a community expect to meet its responsibility for the care and prevention of illness and the protection of health. There is no substitute for this essential feature. The Commission on Medical Education states, further: "Present methods of [medical] training in some places are those of a generation ago. The present curriculum in some schools are hampered by a largely useless burden of traditional subject matter and ought to be reorganized. There should be a diffusion throughout the preparation of physicians and especially the clinical department, of the social and preventive aspects of modern medicine. The medical graduate unfamiliar with the newer conditions of practice is at a great disadvantage."

At Harvard University, in addition to formal courses the student absorbs the preventive point of view through unconscious practice of it. The health service for the students is organized on a base similar to a health department of a community. There is a small faculty committee which has supervision of the environmental sanitation of the school, the recreational facilities of the students and the preventive and clinical activities that are planned for the direct benefit of the student body. Each student is given a complete annual physical examination, and facilities are provided for the correction of any defects that may be discovered. The upper classmen examine one another under the supervision of Dr. Fitz. Special attention is directed to the early diagnosis of pulmonary tuberculosis. Each first year student is given a Mantoux test and roentgen examination of the chest on entrance to the school. The same procedures are carried out with each fourth year student as he leaves the school to begin his internship. Each student is given an opportunity to perform and interpret the various specific immunity tests and immunization procedures, the Shick test, the Pirquet and Mantoux tests, the Dick test, smallpox, diphtheria and typhoid immunization, the use of convalescent serum in measles and scarlet fever, and so on.

I hope that I have not given the impression that we believe that the methods we have employed in training our own students in preventive medicine are highly satisfactory to us.

This is far from the case. I can only justify myself in presenting our own methods by returning to the final report of the Commission on Medical Education. It says "The training of students adequately to meet the new philosophy of medical responsibility can only be brought about through a shift in the interests and the point of view of those in charge of medical education who must be convinced of the vital importance of these new influences. This cannot be brought about merely by adding new courses or supplementing existing efforts to call attention to these problems, but only by the awakening of an interest and a stimulation of a fresh viewpoint in the faculties."

DISCUSSION

DR C SIDNEY BURWELL, Nashville, Tenn. If the desirability of infiltrating clinical teaching with the principles of preventive medicine is granted, how are clinical teachers to do it? I am not a strong advocate of setting aside exercises and labeling them "preventive medicine." I prefer to utilize in the practice of medicine the principles of preventive medicine. This type of program may be emphasized in various ways, most of them obvious, but because I have been asked to mention them, here they are: 1 The care of patients with infectious disease in the teaching hospital should be an example of methods of isolation. The care of patients with infectious or other diseases with public health relationships in the hospital or teaching clinics should be examples of cooperation with local health authorities. 2 The students health service should be a demonstration of the point of view and methods of preventive medicine. 3 Routines, such as the history outlines in the hospital, should give due emphasis to environmental factors such as occupation, diet, exposure to infection, and the various prophylactic procedures such as vaccination. 4 To demonstrate the management of disease problems usually requires some method of following up patients after they have left the hospital. In the weekly medical clinic for the third and fourth year classes, periodic "round ups" are held, at which patients previously seen are reviewed. The clinical clerks discuss not only the evolution of the disease process and the influence of treatment but particularly the social implications and public health relationships. 5 Joint teaching clinics in which representatives from the department of preventive medicine may join with the clinical teachers constitute another example of that cooperation between the departments of preventive medicine and the clinical departments. The thing which I believe to be very important is to set in the medical service of the university hospital an example of the practice of preventive medicine and to exhibit an enlightened view with regard to the position of preventive methods in modern medicine. These observations apply as well to the teaching of interns as to the teaching of undergraduate students.

DR ALLEN GREGG, New York. The effectiveness of the public health worker of preventive medicine is directly related to the thoroughness of knowledge that exists about disease. If one goes over the fields in which public health has been particularly successful in various countries, it will be found that prevention of disease has been most effective in those instances in which the etiology of the disease and its handling, its management, are most clearly known. If a physician really knows a disease, knows its exact etiology, there is not much excuse for waiting until the disease has established itself and then being called in. I do not have very brilliant hopes at present of what can be done in the way of preventive medicine in diseases about which relatively little is known. Isn't it better to leave those diseases to the care of those who are still students of them, who are willing to do what they can but not to assume a rather magistral attitude that the preventive position is the only one that can be taken? The real axis around which this discussion revolves seem to me to be a thorough knowledge of disease. It is in direct proportion to our thorough knowledge of disease that the public health man will be effective in his measures against it. For the diseases for whose ignorance we are not to be held entirely responsible the better attitude is to say that we do not know our way completely but will do the best we can. Let the people choose their physicians to take care of them in these diseases in which every one is still relatively speaking, in the dark and save the position

of preventive medicine from criticism. I have seen many examples in many countries of extreme fervor to get something done from the public health angle, being done on a basis of knowledge which experience showed to be inadequate, and the upshot of all of that is a certain amount of discredit. Honestly, do we know that what we advocate as a preventive measure is actually sufficient, or are we simply eager to have as much done as possible and willing to pontificate beyond our actual knowledge? It is precisely in relation to the accumulation of solid, provable, indisputable knowledge about diseases that the field will be opened up to a kind of preventive attitude against which no one will take exception.

The Function of the Physician in Public Health Education

DR W W BAUER, Chicago. The medical activity of today, looking toward instruction of the public, is merely a reawakening and not an initial incursion into a new field. The doctor has been a health educator ever since there were doctors, at least until the time when changes in medical practice began to crowd the family doctor out of the picture in favor of the specialist. The family doctor felt it his duty to instruct his patients about such matters as smallpox, vaccination and other necessary steps to preserve their health. His relationship was informal but effective. Even in the face of official endorsement of the periodic health examination by a number of organizations there are many who hold that the less formal but more intimate relations between the family doctor and his patients were more desirable and effective than are the practices that are advocated today.

The public has awakened to a keen curiosity about its health. This curiosity is mainly misdirected. There is no lack of interested persons busily engaged in misleading the public interest in health for private profit. The influences apparent today in magazines, on billboards, in newspapers and by way of the radio, constitute, in my judgment the plainest handwriting that has ever been written admonishing the physician that he must function as a health educator if he is to save the public from the fruits of its own folly and if he is to retain or regain leadership among guardians of the health of the people.

There has grown up a group who call themselves health educators. It includes doctors who find themselves better fitted for participation in group endeavors, teachers, social workers and public-spirited individuals with a genuine urge for service. It attracts philanthropists with more money than judgment and it offers a rare opportunity for activity to busybodies who have no genuine occupation. It is the least qualified of these groups who make the most noise.

One great weakness of mass educational movements is that they tend to become blatant for the sake of attracting attention. Mass movements in health education, as in politics or any other field, tend to attract to themselves the cranks and those with an ax to grind. There are physicians who consider that all educational activities should be abandoned because misunderstanding may arise and neuroathenic tendencies may be favored by free dissemination of information. The profits from well conceived educational activities include a better appreciation of medical science, better understanding of difficulties involved in diagnosis and treatment, more skepticism about quackery and charlatanism, greater and more constructive interest in medical progress and scientific research, and livelier appreciation of hygiene, diet and medical supervision in health. The doctor may properly display an unselfish interest in furthering the accumulation of these profits because they are in the interests of the public health.

The material that is being offered the public by the medical profession is educational. It is not primarily in the interest of the doctor but in the interest of the patient. There is no more reason why the medical profession should pay newspapers and radio for the dissemination of health information than there is for mathematicians to pay for the teaching of arithmetic in the public schools. The radio is being used extensively by organized medicine. The American Medical Association broadcasts weekly over a coast to coast network. At least seventy state district and county medical societies broadcast on regular weekly schedules with material furnished by the Bureau of

Health and Public Instruction of the American Medical Association, and others are developing their own material. In addition, there are medical societies which broadcast occasionally. It may be assumed that from 125 to 150 county medical societies are using the radio, so that there is scarcely a radio set which is not within range of an educational program sponsored by organized medicine.

News releases have been extensively employed by public health organizations. Voluntary health agencies have also used the newspaper release technique. So also have medical societies in a number of states. Some of these services are gratis to the press, but there is at least one which is sold to newspapers. County medical societies are employing news releases in a number of instances, getting their material from the monthly clip-sheet of *Hygeia*, the health magazine, which is available to any component or constituent society on request. Speakers' bureaus are commonly organized by state medical societies and in counties that contain larger cities. In the more remote areas where there is no great supply of speakers for meetings of lay groups, medical societies could render a definite service by organizing speakers' bureaus and letting it be known that their members will address lay groups on subjects of interest to their health. It seems reasonable to suggest that state and county medical societies might properly take an interest in seeing that the right kind of reading is available to lay inquirers about health topics. All that should be attempted is to be sure that medical literature of a kind which meets with the approval of the profession is not denied a fair place among the books purchased in a community library. To the extent that the play, the exhibit and the pagerium can be used without sacrificing dignity, they must be utilized.

Medical activity in health education is on the increase. To the extent that the resources of the Bureau of Health and Public Instruction permit, we are happy to cooperate with the local medical profession in furthering public instruction for better health.

DISCUSSION

DR H. S. CUMMINS, Washington, D. C. I am inclined to think that from a quantitative standpoint there is entirely too much education on medical matters going on over the radio. If the quality could be improved and the quantity decreased it would help. The public health administrator realizes that there are certain things which public health authorities must do for the body politic, that there are certain things which the physician must do for the public that there are certain things which the citizenship must do for itself and that there are certain things which can be done only through the cooperation of the citizen, the public health authorities and the physicians. If the general public is not informed as to the need for personal and public hygiene and sanitation, it is extremely difficult to secure interest in these matters. These facts have made it increasingly apparent that, unless public health education is brought to the general public, the greatest good cannot be attained. As a result there has been devoted more and more time to public health education among the general population. In some instances this has been carried to a high degree of excellence. In others the results have not been so satisfactory. During a serious epidemic, when everybody wants to know what steps must be taken to stamp out the scourge, the opportunity for public health education is easy. The good obtained in this way is likely to be temporary, it cannot be relied on to produce lasting results. It has been wisely said that "a mere increase in knowledge is not enough to safeguard health and prevent disease, the knowledge must be understood, accepted, and practiced by the people." Public health work can never be efficient until the general public understands the end in view, for what the public does not understand, it will carry on irregularly, inadequately or not at all. It has long been realized that the public health of a community depends on the personal health of the individuals composing that community. The practicing physician is the one who comes in the most intimate contact with the personal health of the community and to him is given the unusual opportunity for effective public health education. Often physicians do not take full advantage of the opportunity afforded them for health education in their own private practice. The Public Health Service is in receipt of

hundreds of letters asking questions that give evidence that the family physician was not interrogated or that if the query was presented to him he gave a hurried or evasive reply. It is felt that the physician in active practice should endeavor to take the time to answer as well as he can the various questions that arise regarding the illness of individuals. A sense of personal responsibility toward the public health is one of the qualities of individual citizenship which must be developed and fostered by every means at our command. It is this sense of personal initiative and responsibility and the ability of the individual to think and act for himself which is one of the basic elements of greatness of the American nation. To give information on any subject to every one in a community is a tremendous task and one that can never be finished. The magnitude of such a task should be a challenge to the physicians and public health administrators of the nation to develop a plan whereby each community may feel a sense of responsibility for the important task of health education. There must be some leadership in health education in each community, and it would appear logical that the physicians should combine forces with the public health authorities of the several communities to take the lead in this important work. It is important today to offset the subversive influence of the increasing amount of questionable and actually harmful so-called health education, and practicing physicians and official health organizations should ally themselves in their efforts to provide the best and the soundest knowledge that can be given in health education. It is desired to emphasize particularly one point brought out and that is the importance of seeing that libraries are provided with the proper material dealing with health information. The public health education that has been carried on so far has been the means of stimulating great interest of the general public in health matters. This interest should be met by providing suitable books and reference material on these subjects, which will give the information desired in the proper form.

The Teaching of Industrial Hygiene

DR LEIFRITT D. BRISTOL, New York. This paper was published in full in THE JOURNAL, March 31, page 990.

DISCUSSION

DR EDWARD C. HOLMQUIST, Chicago. I think that the teaching of this subject is important in the medical field because it should be in the hands of medical people to carry out industrial hygiene. Another is a point of view of the experience. Dr Bristol's experience has been in medical and public health work. Mine has been more in the treatment of these situations. With his program of industrial hygiene I notice that he places the treatment of injuries in occupational disease down as a poor third. I would put the treatment of injuries in occupational disease and the treatment of occupational disease a little higher on the list. I should like to see it close in rank and position. I think that its treatment is important.

DR REICHAARD FITZ, Boston. I wish that Dr Bristol had spoken about the history of industrial hygiene in this country because being a Bostonian, I think that it started there. Two hundred and ten years ago, rum was distilled through lead pipe and it was discovered that people had belly ache and wrist drop and weakness of the ankles from drinking it. A law was passed that henceforward it should be forbidden to distill it through lead pipes or worms. I think that was the first law with regard to that in this country. I think that being a physician to the medical students of Harvard College makes me an industrial hygienist. I think those boys are engaged in an industry, and I think it is in the medical school that they have a chance to learn something about industrial hygiene. Dr Bristol's figures interested me because the one illness we have more than anything else is the same as his, the common cold. The thing I should like to have him work out would be some method by which we could see if he and those of us who are struggling to teach in medical schools are not dealing with the same problem. Everything he has to say, I think deals with the medical student's health, preventing colds, preventing tuberculosis. We have epidemics interfering with their work as students, entirely analogous to what he sees in the industry he works for.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS, EDUCATION PUBLIC HEALTH ETC.)

ALABAMA

Lectureship in Honor of Physician—The Gaston J Greil Memorial Lecture was recently created by the Montgomery County Medical Society in honor of the late Dr Greil, a past president of the society. Dr Marvin F Haygood, superintendent of the State Tuberculosis Sanatorium at Alto, delivered the first lecture, March 22, on tuberculosis. Dr Greil, who died in 1932, established the old Anti-Tuberculosis League in 1908, according to the Montgomery *Advertiser*.

CALIFORNIA

Dr Dunshee Named State Health Officer—Dr Jay D Dunshee, health officer of Pasadena, has been appointed state health director, succeeding Dr Giles S Porter, effective April 1, newspapers announced. Dr Dunshee, who is 52 years of age, graduated at the State University of Iowa College of Medicine in 1908. He has been health officer of Pasadena since 1929 and was recently elected president of the Southern California Health Association for 1934. Prior to his appointment in the Pasadena health department, Dr Dunshee was for seven years director of the division of child hygiene of the Los Angeles Health Department. Charles W Arthur, bacteriologist, will serve as acting health officer of Pasadena.

Society News—Dr Nathaniel Austin Cary, Oakland, among others, addressed the Alameda County Medical Association, March 19, on the postfebrile care of the poliomyelitis patient.—Dr Langley Porter, San Francisco, spoke before the San Joaquin County Medical Society, March 1, on 'The University of California Medical School and the Practitioner'.—The Solano County Medical Society was addressed in Vallejo, March 13, by Drs Sylvan L Haas and Hans Lisser, San Francisco, on 'Surgical Aspects of Poliomyelitis' and 'Endocrine Disturbances of the Pituitary Gland,' respectively.—Speakers before the Medical Society of Veterans Administration Facility, Palo Alto, March 21, were Drs William Kerr and William E Carter, San Francisco, on 'Circulation and the Conduction System of the Heart' and 'The University Medical School and the Practitioner of Medicine,' respectively. The physicians are associated with the University of California School of Medicine and Hospital, respectively.—At a meeting of the Galen Club in San Diego, March 5, Drs William C Cooke and John C Schlappi discussed 'Etiology and Prevention of Heart Disease' and 'Management of Heart Failure,' respectively.

DISTRICT OF COLUMBIA

Medical Bills in Congress—Bills Introduced S 3259 introduced by Senator King, Utah, proposes to abolish the office of coroner and to establish the office of medical examiner for the District of Columbia. H R 8935, introduced (by request) by Representative Norton, New Jersey, provides for the prevention of blindness in infants born in the District of Columbia.

Appointments at Georgetown University—Recent appointments to the faculty of Georgetown University School of Medicine, Washington, include the following:

Dr Laszlo D Detre formerly director of the Hungarian Serum Institute special lecturer in immunology effective February 1.
Dr John R Schenken formerly of the State University of Iowa College of Medicine Iowa City instructor in pathology effective February 5.
Dr Philip Lewis Gray formerly of the University of Texas School of Medicine and recently engaged in private practice associate professor of pharmacology effective February 15.
Dr William F R Phillips formerly of the Medical College of the State of South Carolina visiting professor of anatomy effective February 1.
Joseph L Schwind Ph D formerly of Cornell University College of Medicine New York associate professor of anatomy effective July 1.

FLORIDA

Society News—Dr James Ralston Wells Daytona Beach, among others, spoke before the Volusia County Medical Society February 13 on carcinoma of the breast.—At a meeting of the Dade County Medical Society March 2 the speakers were Drs Arnold H Kegel, Chicago on angina pectoris relieved by total thyroidectomy, and Elmo D French Miami, dermatology with special reference to the new-born.

Bogus Representative of Board of Health—A racket perpetrated by a so-called representative of the state board of health is described in recent newspapers. Visiting rural towns, this man's method is to question residents, obtain specimens and prescribe, for which service he charges a fee. He gives his address at the state board's laboratory in Tampa, but requests his "patients" not to call him there, since he is in the city only long enough to sleep. His day hours are devoted to treating people, he claims. Any one encountering this impostor should communicate with the state board of health.

ILLINOIS

Personal—More than forty physicians gave a dinner party, March 11, to observe the seventy-second birthday of Dr Edward C Zoll, Elmwood. A birthday book was presented to Dr Zoll, containing the names of all those in attendance.

Error in Index—A news item about E H Bernard, who was found guilty of the illegal practice of medicine in February, was indexed in THE JOURNAL April 7, page 2, as follows: "Kuflewski, S J, found guilty." As chief inspector of the Department of Registration and Education of the State of Illinois, Mr Kuflewski reported the case to THE JOURNAL and his name was inadvertently inserted in the index instead of that of the illegal practitioner.

Society News—Dr Edwin W Hirsch, Chicago, addressed the Will-Grundy County Medical Society at Joliet, March 28, on "Treatment of Gonorrhea."—Dr Philip H Kreuscher conducted a clinic for crippled children at Sterling March 29, under the auspices of the Sterling Gyro Club and Whiteside County Medical Society.—Dr Rollin T Woodyatt Chicago, discussed "Water Metabolism and Maintaining the Water Balance" before the Springfield Medical Club, March 20.—At a meeting of the St Joseph County Medical Society, March 21, Dr Thurman B Rice Indianapolis, spoke on 'Local Immunization Including Antivirus and Bacteriophage Therapy'.—Dr Willis D Gatch, Indianapolis, addressed the Randolph County Medical Society, March 12, on 'The Principles of Surgery'.

Chicago

Cancer Meeting—Dr Fielding O Lewis, professor of laryngology, Jefferson Medical College Philadelphia, will be the guest speaker in a symposium on carcinoma of the larynx before the Chicago Medical Society April 18, in the Medical and Dental Arts Building. His subject will be laryngectomy, demonstrated with moving pictures. Other speakers and their subjects will be Drs James T Case and Max Cutler on irradiation, and Samuel Salinger laryngofissure. A dinner and reception will precede the meeting.

Society News—Dr Jack D Kirshbaum among others, spoke before the Chicago Pathological Society, April 9, on 'Intestinal Obstruction by Sequestered Lipoma of the Jejunum'.—Among the speakers before the Chicago Laryngological and Otological Society April 9, was Dr John A Cavanaugh on 'Mucocoele of the Frontal Sinus'.—At a meeting of the Chicago Roentgen Society, April 12, papers were presented by Drs Byrl R Kirklm, Rochester, Minn, and Sidney A Portis, on 'Differential Diagnosis Between Benign and Malignant Ulcerating Lesions of the Stomach' and 'Medical Aspects of Benign and Malignant Lesions of the Stomach respectively'.—At a joint meeting of the Institute of Traumatic Surgery and the Chicago Orthopedic Club, April 13 Drs Dallas B Phemister and Fremont A Chandler spoke on "Primary Shock Produced by Wounds and Operations" and "Problems in the Pathology of the Hip Joint in Children".—Speakers before the Chicago Ophthalmological Society April 16 will include Drs Isidore Finkelman and Samuel Wick, Elgin Ill, on 'Pressure on the Optic Nerve by a Carcinoma of the Maxillary Sinus Extending into the Cranial Cavity'.—The Chicago Society of Allergy will be addressed April 16 by Drs Eugene F Traut on 'Reactions of Nonarthritic and Arthritic Persons to Bacterial Filtrates' and Theodore Cornbleet and Morris A Kaplan on 'Proteose Studies in Eczema'.

INDIANA

Personal—E Mead Johnson, aged 81, president of the Mead Johnson Company in Evansville manufacturers of medical supplies and baby foods, died suddenly, March 2 of heart disease at Miami Beach Fla.—Dr and Mrs Malachi R French, Evansville celebrated their golden wedding anniversary, March 4.—Dr John I Mitchell Salem, has been made health officer for Washington County, succeeding the late Dr Samuel A Roberts.

Rat Eradication Program—Plans were formulated, March 10, for a rat eradication campaign to be carried on in Indiana, according to the state board of health. Members of the state board of health, the Indianapolis Health Department, Purdue University and the U. S. Department of Agriculture met with a representative of the governor's commission to undertake the organization of a systematic campaign.

Dental Meeting—Dr. Morris Fishbein, editor of *THE JOURNAL*, addressed the eighteenth annual meeting of the Isaac Knapp District Dental Society in Fort Wayne, March 27. Other speakers included Glenn J. Pell, DDS, Indianapolis, on "Oral Surgery, Extraction and Impactions for the General Practitioner," and Elbert C. Pendleton, DDS, Chicago, on "Biological Aspects of Denture Retention." Ezra E. Voyles, DDS, president, Indiana State Dental Association, also spoke.

IOWA

Tilton Jailed—Lester J. Tilton, Clinton began serving a term of thirty days in the Scott County jail, March 22, for nonpayment of a fine of \$1,000 imposed in federal court at Des Moines, for violation of the federal Food and Drugs Act (*THE JOURNAL*, Dec. 16, 1933, p. 1974). According to the *Chicago Tribune*, Tilton must sign a prisoner's oath to gain his freedom at the end of a month.

Society News—Dr. Joseph C. Ohlmacher, Vermilion, S. D., addressed the Des Moines Academy of Medicine and Polk County Medical Society, March 27 on "Functional Basis of Certain Kidney Disorders with a Brief Consideration of the More Important Kidney Lesions." Dr. William P. Wherry, Omaha, addressed the section on ophthalmology, April 13, on "Practical Applications of Newer Research in Chronic Sinusitis." Diseases of the respiratory tract were discussed by Drs. Daniel J. Glomset, Joseph B. Priestley and James A. Downing, all of Des Moines before the Hardin County Medical Society in Eldora, March 20. Dr. Solon Marx White, Minneapolis, addressed the Cerro Gordo County Medical Society, March 20, on "Heart Disease Among Elderly People." Dr. Gerald V. Coughlan, Council Bluffs, among others, addressed the Pottawattamie County Medical Society, March 20, on "Management of Prostatic Obstruction."

LOUISIANA

Society News—At a meeting of the Fourth District Medical Society in Shreveport, March 6, the speakers included Drs. William Battle Malone, Memphis, on "Surgical Diseases of the Spleen," and George R. Herrmann, Galveston, Texas, "Peripheral Vascular Diseases." At a recent meeting of the East and West Feliciana Bi-Parish Medical Society, Drs. Oscar W. Bethea and Paul T. Trilbot spoke on physical diagnosis and arthritis, respectively. Speakers before the Claiborne Parish Medical Society, February 8, were Drs. J. W. Cox on the control of cancer, Carl O. Wolff, Haynesville, cancer of the breast and uterus, and Clifford P. Rutledge, Shreveport, x-rays and radium in the treatment of cancer. Speakers before the Orleans Parish Medical Society, February 26, were Drs. Allan C. Eustis on "Physiologic Preventive Medicine," Joseph Hume, "A Consideration of Urinary Stone" and James W. Warren, "Complete Prolapse of the Rectum, Treated by Office Methods." Dr. Everett D. Plass, Iowa City, addressed a joint meeting of the New Orleans Gynecological and Obstetrical Society and the Orleans Parish Medical Society, February 19, on "Gestational Polyneuritis."

MASSACHUSETTS

Rockefeller Gift Provides Psychiatric Clinic—The establishment and maintenance of a psychiatric unit at the Massachusetts General Hospital, Boston, is now in prospect through a recent gift of \$80,000 by the Rockefeller Foundation. Of this sum, \$42,000 will go to Harvard Medical School for psychiatric work and the remainder will be available for the establishment of the clinic, the construction of which will begin in September. Dr. Stanley Cobb, Bullard professor of neuropathology at Harvard, will direct the project. Mental diseases in the early stages, as they appear in medical wards and in outpatient departments, will be studied in the new unit, and a small ward will be available for special treatment of incipient cases. Close cooperation will be established with McLean Hospital, Belmont, which has recently been reorganized, for the treatment of the more difficult cases. Simultaneously with this announcement comes the report of the appointment of Dr. Tracy Jackson Putnam as the first incumbent of a newly created chair of neurology at Harvard Medical School. He has also been appointed by the trustees of the Boston City

Hospital to take charge of the laboratories of its neurologic unit. A recent development at the hospital, this unit includes two wards for neurologic and neurosurgical patients and laboratories for the careful study of these patients and for research. Dr. Putnam graduated from Harvard in 1920. According to the *New England Journal of Medicine*, these changes are part of a coordinated plan in the medical school to bring into the department of diseases of the nervous system opportunities to study all kinds of mental and organic nervous diseases. Investigators from Harvard have been engaged in research at the Boston Psychopathic Hospital under the direction of Dr. Charles Macfie Campbell, professor of psychiatry, and Dr. Harry C. Solomon, assistant professor of psychiatry.

MINNESOTA

Illegal Practitioner Fined—Mrs. Christine Nelson, Minneapolis, pleaded guilty to a charge of practicing medicine without a license, February 26, and was sentenced to pay a fine of \$250 or serve six months in the Minneapolis workhouse. The sentence was stayed for one year on condition that Mrs. Nelson refrain from practicing medicine. Mrs. Nelson had been treating a Minneapolis woman for cancer of the breast for about two years and a half, during which time she had collected \$310, it is reported. The treatment consisted of the application of a salve followed by the application of a flax seed poultice causing a sloughing of the involved area. The patient's condition became worse and it was necessary to call in a physician, who operated in November 1933. On her card Mrs. Nelson identifies herself as a graduate of Professor Yuell's Swedish massage system and as a "cancer specialist—at your own risk."

MISSOURI

Personal—Dr. George C. Bellows has resigned as chairman of the public health and welfare committee of the chamber of commerce of Kansas City, after twelve years' service. Dr. Edward H. Skinner was named to succeed him. Dr. John D. Hayward was presented with a silver loving cup by the St. Louis County Medical Society, January 10, in appreciation of his services as president of the society in 1933. Dr. Robert T. Gibbs, Mexico, recently completed fifty years in the practice of medicine. Dr. William O. Hawkins, Roanoke, recently observed the completion of his fiftieth year in the practice of medicine.

The Press and Medical Achievements—The use of the names of members of the St. Louis Medical Society in connection with news items "describing the art of manipulation and instrumentation of certain given cases" is disapproved by the ethics committee, according to the society's bulletin. The right of the public to information and achievements of new developments by local members of the profession is acknowledged by the committee, but, it points out, "the publication of the event and the achievement do not carry the ethical justification for iteration on the part of certain members wherein the publication carries their name or names."

Society News—A symposium on allergy constituted the meeting of the St. Louis Medical Society, March 27, with Jacques J. Bronfenbrenner, Drs. French K. Hansel, Charles H. Liermann, Lee P. Gay and Charles M. Stroud as the speakers. Speakers before the Jackson County Medical Society, Kansas City, March 20, were Drs. James B. Weaver and Ellis W. Wilhelmy on "The Narrowed Lumbosacral Disk as Etiologic Factor in Sciatica," and "Achyilia Gastrica," respectively. Dr. John W. Shuman, Los Angeles, discussed "Thyroidism before the society, April 10, and Dr. Thurman B. Rice, Indianapolis, "The Private Physician in Public Health." Dr. Julius Frischer, Kansas City, was guest speaker before the Newton County Medical Society at Neosho, March 19, on "Transurethral Electrosurgery of the Prostate." At the clinical meeting of the St. Louis Pediatric Society, April 6, Dr. Stanley L. Harrison, among others, discussed "Paroxysmal Tachycardia in a Three Months Old Infant, with Review of Previous Cases."

MONTANA

Society News—Dr. Laurence G. Dunlap, Anaconda, was reelected president of the Montana Academy of Ophthalmology and Oto-Laryngology at its midwinter section meeting in Missoula, February 12, and Dr. Ashley W. Morse, Butte, reelected secretary. The society will entertain the Pacific Coast Oto-Ophthalmological Society at its meeting in Butte, July 16-18, and the Western Ophthalmological Society at its convention in Butte, July 19. Dr. Roderic P. O'Connor, San Francisco, demonstrated his muscle operation at clinics in Butte and Anaconda, February 22.

NEVADA

Annual Registration Due May 1—All practitioners of medicine and surgery holding licenses to practice in Nevada are required by law to be registered annually on or before May 1, with the treasurer of the Board of Medical Examiners, and at that time to pay a fee of \$2. Failure to pay operates to forfeit a licensee's right to practice medicine and his license to practice can be reinstated thereafter only on the payment of a \$10 penalty.

NEW JERSEY

Bill Passed—S 136 has passed the senate, proposing to grant to physicians treating persons injured by the fault of other persons liens on all claims, rights of action, judgments, compromises or settlements accruing to the injured persons by reason of their injuries.

Society News—Dr Stanley L. Wang, New York, addressed the Bergen County Medical Society, Hackensack, March 13, on urinary tuberculosis—Dr Isidor S. Raydin, Philadelphia, addressed the Camden County Medical Society, Camden, March 6, on "End-Results of Biliary Tract Disease"—Dr John J. Moorhead, New York, was the speaker before the Atlantic County Medical Society, Atlantic City, March 9, on "Essentials of Traumatic Surgery"—Dr Dean Lewis, Baltimore, President, American Medical Association addressed the Essex County Medical Society, Newark, March 8.

NEW YORK

Dr William Pierce Honored—The Medical Society of the County of Montgomery gave a banquet, February 14, at the Elks Club, Amsterdam, in honor of Dr William R. Pierce, secretary of the society since 1904 who has completed fifty years in the practice of medicine. Dr Horace M. Hicks was master of ceremonies, formal addresses were made by Drs Orrin S. Wightman and Daniel Philip MacGuire, New York, and many persons paid tribute to Dr Pierce in short speeches. Dr Pierce was graduated from the University of Pennsylvania School of Medicine in 1884.

Bills Introduced—S 1710 and A 2170 propose to permit corporations to be organized under the membership corporations laws of the state to establish, maintain and operate a nonprofit hospital service plan. Such corporations are to be exempt from the insurance laws of the state. S 1724, to amend the medical practice act, proposes to make it unlawful for any one other than a licensed physician to conduct, direct, supervise or control the work or reports of a clinical laboratory. The bill defines a "clinical laboratory" as a laboratory in which tests are made on individual persons, their secretions, excretions, blood and tissues to aid in the diagnosis, prognosis, or treatment of the individual's physical or mental state or states. A 2118, to amend those provisions of the medical practice act relating to osteopathy, proposes (1) to refer to osteopaths as "osteopathic physicians" and (2) to provide that a license to practice osteopathy shall not entitle the holder thereof to perform any surgical operation involving an incision opening a natural body cavity, or any surgical operation for the removal of cancer or other tumor for the amputation of an extremity or an appendage, or for the removal of any gland or organ or part thereof, of the human body. Such a license shall permit the holder to use those agencies incidental to the care of the diseases included in the examinations of the board of medical examiners, but this shall not be interpreted as authorizing the use of internal medication for the cure of disease. S 1677 and A 2165 to amend the education law relative to credentials propose to make it unlawful for any person to attempt to obtain by fraudulent means any certificate of registration or any diploma, certificate or other instrument, or duplicate thereof, purporting to confer any literary, scientific, professional or other degree. A 2164 to amend the medical practice act, proposes to make it a ground for the revocation of a license to practice medicine for the holder thereof to be guilty of unprofessional conduct. S 1663 and A 2123 propose to create in the department of mental hygiene a board of psychiatric examiners to consist of the state commissioner of mental hygiene, the head of the department of psychiatry or of neurology and psychiatry of a medical college in the state and a physician selected by the council of the medical society of the state. This board is to license as qualified psychiatrists all applicants who (1) have been licensed to practice medicine for at least five years and have had five years experience in actual practice and (2) have had three years full time practice in the care and treatment of persons suffering from mental diseases or mental defects in an institution providing for such treatment and having accommodations for at least fifty patients or who

have devoted five years immediately prior to their application to a practice confined wholly or substantially to the care and treatment of persons suffering from nervous and mental diseases or mental defects. S 1632 and A 2078, to supplement the workmen's compensation act, propose to require employers to pay compensation and provide medical care and treatment to employees contracting silicosis in the course of their employment.

New York City

Campaign Against Rats—Under the direction of the U. S. Public Health Service, 200 workers furnished by the Civil Works Administration were to begin a forty-five day campaign against rats during the latter part of February, according to the *New York Times*. It was expected that the number would shortly be increased to 1,800 men, who would be armed with 67,000 traps and 2,000 flashlights. They were to hunt the rodents under piers along the waterfront and in lofts, warehouses and abandoned buildings. Dead rats were to be incinerated, but a number were to be saved alive for experimental work in connection with typhus fever and Brill's disease in the government laboratory at Rosebank, Staten Island. The extermination of rats is part of a program for typhus control begun by the U. S. Public Health Service two years ago, it was said.

Personal—A committee headed by Dr Haven Emerson will make a survey of tuberculosis in the city at the request of the department of hospitals—Dr Charles C. Hedges has been appointed superintendent of Roosevelt Hospital—Dr James B. Collip, professor of biochemistry, McGill University, Faculty of Medicine, Montreal, delivered the William Henry Welch Lectures of Mount Sinai Hospital, March 26-27, on "Recent Advances in the Physiology of the Anterior Pituitary Gland"—Dr Robert Abrahams was the guest of honor at a dinner given March 8, by the executive committee of the New York Physicians-Yorkville Medical Society—The fiftieth anniversary of the graduation of Dr Robert J. Carlisle was celebrated at the reunion and smoker of the alumni association of University and Bellevue Hospital Medical College, March 23—Dr Leopold Jaché was the guest of honor at a dinner recently in honor of his twenty-fifth anniversary as radiologist at Mount Sinai Hospital.

University News—A new degree of doctor of medical science for graduate study in medical fields was recently authorized by the trustees of Columbia University. In petitioning the council for the degree, the faculty of medicine pointed out that such a degree was needed to identify competent practitioners in the specialized branches of clinical medicine and to protect the public from inadequately trained persons. Three years' training after the hospital internship and original work in graduate medical studies will be required of candidates for the degree of doctor of medical science, which replaces that of master of science now conferred for similar work—Edgar Allen, Ph.D., professor of anatomy, Yale University School of Medicine, New Haven, Conn., delivered the second of a series of lectures being sponsored by the department of biology, New York University at the New York Academy of Medicine, March 22, on "The Endocrine Control of Menstruation"—Wilbur W. Swingle, Ph.D., Edwin Grant Conklin, professor of biology, Princeton University, Princeton, N. J., delivered the third lecture, April 12 on "Physiological Study of the Adrenal Cortex."

OHIO

Personal—Dr Frederick C. Gunkel, Cincinnati recently completed fifty years of medical practice—Dr Basil B. Brim has been named health commissioner of Toledo, now a part time position—Dr Matthew T. Love, Shelby, recently celebrated the fiftieth anniversary of the beginning of his medical practice—Dr James M. Lantz, Lancaster, has announced his candidacy for election to the House of Representatives—Dr Owen S. Deathridge, clinical director of the Veterans' Administration Facility at Milwaukee since 1927, has been transferred as chief medical officer to the facility at Dayton—Dr Dennis J. Murphy, recently of the staff of the Veterans' Administration Facility at Marion, Ind., became administrative head of the facility at Chillicothe in January, succeeding Dr Frederick R. Sims, who has been transferred to Washington, D. C.—Dr John A. Roach, Alliance celebrated the fiftieth anniversary of his graduation from Western Reserve University School of Medicine February 28.

Society News—The public health committee of the Cleveland Academy of Medicine is giving special attention to the problem of amebiasis and has conferred with a special committee of the Cleveland Hospital Council on the problems of early recognition and measures for preventing spread of the disease. Drs William J. Merle Scott and John J. Morton

Jr., Rochester, N. Y., addressed the academy, March 16 on peripheral arterial disease.—Henry F. Vaughan, Dr. P. H., health commissioner of Detroit, addressed the Toledo Academy of Medicine, March 2, on "Professional Participation in Public Health Work."—The Toledo Pediatric Society was recently organized, with Dr. Lawrence I. Clark as president and Dr. Isadore R. Colm as secretary.—Dr. Joseph H. Baruch, Pittsburgh, addressed a joint meeting of the Insular and Harrison county medical societies in Ulrichsville, March 8 on "The Nutritional Problem of the Diabetic Patient."—Drs. James R. Jarvis, Van Wert, and Lawrence N. Irwin, Ohio City, addressed the Van Wert County Medical Society, Van Wert, March 6, on "The Challenge of Modern Obstetrics."—Dr. William A. Stoutenborough, Columbus, addressed the Champaign County Medical Society, Urbana, March 9, on "Strabismus in Children."—Speakers before the Wood County Medical Society, March 15, were Drs. James B. Rucker, Jr., and Thomas A. Owens, Toledo, on emphysema and Thomas F. Heatley, Toledo, fractures of the skull.—Dr. William H. Bunn, Youngstown, addressed the Columbiana County Medical Society, Lisbon, March 13, on cardiac irregularities and their treatment.—Dr. John H. J. Upham, dean Ohio State University College of Medicine, Columbus and chairman board of trustees American Medical Association, addressed the Summit County Medical Society, Akron, April 3, on "Heart Disease and Heart Failure, the Modern Problem of Middle Life."—Dr. John W. Carmack, Indianapolis, addressed the Montgomery County Medical Society, Dayton, April 6 on "Cooperation of the General Physician and the Otolaryngologist in the Treatment of Nasal Sinus Infection."

PENNSYLVANIA

The Psittacosis Epidemic in Pittsburgh—A committee of the Allegheny County Medical Society appointed to cooperate with the department of health of Pittsburgh in devising measures to stamp out the epidemic of psittacosis to which several deaths have been attributed issued recommendations following a conference with the department, March 28. The recommendations were to be used as a basis for a city ordinance controlling importation and owning of psittacine birds. The committee recommended (1) that all birds of the psittacine family brought into Pittsburgh since January 1 should be destroyed, (2) that all birds of any species that have been housed in the same store as those of the psittacine family since January 1 should be destroyed, (3) that transportation of all birds into the city be prohibited, (4) that owners of birds of the psittacine family be required to register such birds with the health department, and (5) that owners should be required to report immediately to the health department the illness or death of any bird of the psittacine family. The county medical society, March 20 requested the health department to furnish all available information about the epidemic and to provide isolation facilities for segregation and care of patients with the disease. The health department then requested the society to appoint a cooperating committee, which consisted of Drs. I. Hope Alexander, chairman, William W. C. Archibald and Walter F. Donaldson. Dr. Ray P. Moyer, director of health went to Washington, March 23, to confer with the U. S. Public Health Service concerning further measures of control and the reported irregularities in shipment of birds from California. An isolation ward was established at the Municipal Hospital, March 22. Newspapers reported that about fifty cases of the disease had occurred, with ten deaths.

Testimonial Dinner to Dr. Heckel—The annual dinner of the Allegheny County Medical Society was held in honor of Dr. Edward B. Heckel, Pittsburgh, former chairman of the Board of Trustees of the American Medical Association, April 3, at the Hotel Schenley, Pittsburgh, in recognition of his services and leadership. Gordon J. Lang, Ph.D., dean of the Division of the Humanities, University of Chicago, delivered an address entitled "Are Doctors Human?" At the annual meeting of the society in the afternoon Dr. George E. Pfahler, Philadelphia, delivered an address on "Radiologic Treatment and Results in Cancer, with Special Reference to Cancer of the Breast and Mouth," and Dr. Marion A. Blankenhorn, Cleveland, conducted a clinic. Dr. Heckel, who is a native of Pittsburgh, was educated at Allegheny College and at Bellevue Hospital Medical College, New York. He served as president of the county society in 1905, president of the Medical Society of the State of Pennsylvania in 1913-1914 and was chairman of the Board of Trustees of the American Medical Association from 1925 to 1932. In addition he is a former president of the Pittsburgh Academy of Medicine and the Pittsburgh Ophthalmological Society. He was also for many years a member of

the House of Delegates of the American Medical Association. A hand engrossed framed testimonial was presented to him expressing felicitations on his forty-four years of continuous service to the society.

SOUTH CAROLINA

Bill Passed—S. 770 to enact the uniform narcotic drug act, has been passed by the senate and the house.

TENNESSEE

University News—Dr. Alphonse R. Dochez, professor of medicine, Columbia University College of Physicians and Surgeons, New York, delivered the Phi Beta Pi lecture at Vanderbilt University School of Medicine, February 23, on "The Etiology of Acute Infection of the Upper Respiratory Tract."—The Vanderbilt Medical Library has acquired an extensive collection of books and periodicals of historical interest from Dr. George H. Weaver, Chicago. It contains files of some of the earliest medical journals published in the United States, letters and medical prints.—Dr. Elliott P. Joslin, Boston, conducted a clinic on diabetes at the university, February 14 and Dr. Joseph F. McCarthy, New York, a clinic on urology, March 6. Dr. Paul H. Ringer, Asheville, N. C., addressed the students, March 7, on management of tuberculosis.

Personal—Dr. Jesse C. Ellington, who has been on the staff of the U. S. Public Health Service in the Panama Canal Zone since June 1931, has accepted a position as field assistant with the state department of health, it is reported. Dr. Ellington was formerly on the staff of the department.—Dr. Monroe F. Brown, Memphis, has been appointed health officer of Lincoln County.—Dr. Owen F. Agee has been appointed director of a new health unit in Blount County.—Dr. Samuel Denton, Buffalo Valley, was guest of honor at a dinner given by his family and friends, February 22, celebrating his eightieth birthday. Fifty-three persons attended.—The eighth annual Bal four Lecture in Surgery at the University of Toronto Faculty of Medicine was delivered, April 3, by Dr. William D. Haggard, Nashville.

Health at Memphis—Telegraphic reports to the U. S. Department of Commerce from eighty six cities with a total population of 37 million for the week ended March 31 indicate that the highest mortality rate (22) appears for Memphis and that the rate for the group of cities as a whole was 12.4. The mortality rate for Memphis for the corresponding week of 1933 was 14.2 and for the group of cities, 11.3. The annual rate for eighty six cities for the thirteen weeks of 1934 was 12.7 as against a rate of 12.3 for the corresponding period of the previous year. Caution should be used in the interpretation of weekly figures as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

Society News—Dr. Frederick E. Marsh addressed the Chattanooga and Hamilton County Medical Society, February 22, on "Medical and Dietary Treatment of Gallbladder Disease."—Dr. James B. E. Neil was the speaker at a meeting of the Knox County Medical Society, Knoxville, January 16 on "Use of High Frequency Current in the Treatment of Prostatic Obstruction."—Drs. Alfred Blalock and Edward H. Barksdale, Nashville, among others, addressed the Hardin Lawrence-Lewis-Perry-Wayne Counties Medical Society at Waynesboro, in January, on "Empyema" and "Increased Frequency of Urination," respectively.—Dr. Byrd S. Rhea, Lebanon, presented a paper on complications of pregnancy before the Wilson County Medical Society, March 8.—Speakers before the medical society of Carroll, Henry and Weakley counties in McKenzie, February 6, were Drs. Cobb Pilcher and Tinsley R. Harrison, Nashville, on early diagnosis of brain tumor and cerebral vascular disease, respectively, and George R. McSwain, Paris, brain tumor.

TEXAS

Diphtheria Immunization in Dallas—Because Dallas has been shown to have the highest diphtheria morbidity and mortality of any city in the United States, the department of school health work recently undertook a survey of immunization in the public schools. The survey was conducted in forty six elementary schools in which 27,094 children were enrolled. Questionnaires were returned by 15,321 parents and the report covered 45,000 children of elementary, preschool and high school ages. During the school session 1932-1933 there were 138 cases of diphtheria among elementary school children with a loss of 1,750 days and 146 children were absent 1,330 days as diphtheria contacts.

Society News—Dr Edward H Skinner, Kansas City, was the guest speaker at a meeting of the Texas Radiological Society, in Waco, January 8, on "Radiologic Practice and Responsibility."—The fifth and sixth districts of the Texas State Medical Association held their second international post-graduate medical assembly in San Antonio, January 17-19. Guest speakers included Drs William Walters and Henry F Helmholtz, Rochester, Minn., Arthur W Proetz Willard Bartlett and George Gellhorn, St Louis, Franklin G Ebrugh, Denver, John A Kolmer, Philadelphia, Joseph Hume New Orleans, Miguel Bustamante, Gabriel Leyva Alarcon, Gustavo Baz and Enrique Martinez Barragan, all of Mexico. Dr Charles P Yeager, Corpus Christi, was elected president.—Drs James T Mills and Thomas H Chervens addressed the Dallas County Medical Society, March 8, on "Reconstructive Surgery of the Head and Neck" and "Forced Drainage of the Cerebrospinal Fluid," respectively and Dr Charles B Sanders led a pathologic conference on amebic dysentery. Drs Albert P D'Errico and Lemuel C McGee addressed the society, March 22, on "Cerebral Injury Sequelae Their Diagnosis and Treatment" and "Cardiospasm," respectively.—Dr Herbert E Hips Marlin, among others, addressed the Falls County Medical Society, January 8, on "Geometry of Fractures."—Dr Roland T Travis, Jacksonville, addressed the Henderson County Medical Society, Athens, January 8, on appendicitis.

GENERAL

Society News—The eastern section of the American Congress of Physical Therapy held a joint session with the New York and Pennsylvania physical therapy societies at the Columbia-Presbyterian Medical Center, New York, April 7. Speakers included Drs William H Schmidt, Philadelphia, on fever therapy, George Miller MacKee New York, physical therapy in dermatology, Leroy W Hubbard, Warm Springs, Ga., and Mount Vernon, N Y, muscle training and reeducation in treatment of poliomyelitis, Max Thorek, Chicago, an electrosurgical method for obliterating the gallbladder. Robert H Kennedy, New York, physical therapy in the treatment of fractures and Earl R Carlson, New York, neurologic aspect and treatment of birth injuries.—Dr Chevalier Jackson, Philadelphia, was elected president of the Pan American Medical Association during the recent congress and Dr Joseph Jordan Eller, New York, director general for five years. Vice presidents were elected from the countries represented and Dr Jose E Lopez-Silvero, Havana, Cuba, executive secretary for three years.

Board of Pediatrics Organized—The American Board of Pediatrics completed its organization at a meeting in January in St Louis, at which the following officers were elected: Drs Borden S Veeder, St Louis president, Henry F Helmholtz Rochester Minn vice president and Charles Anderson Aldrich, Winnetka, Ill, secretary. Other members of the board are Drs Philip Van Ingen New York, Harold C Stuart, Boston Alfred A Walker, Birmingham Wilbur C Davison, Durham N C, Franklin P Gengenbach, Denver and Edward B Shaw San Francisco. Three groups were defined for purposes of certification as follows:

Group I Physicians who have limited their practice to pediatrics for more than ten years may be certified on their records until September, 1936 after that date examination will be required.

Group II Physicians who have limited their practice to pediatrics for from six to ten years must submit evidence of at least one year's hospital training in a recognized pediatric center and of continued work in some pediatric institution or organization. Examination is required in this group.

Group III Graduates of five years standing or less must submit evidence of having completed one of the following forms of training: (a) one year in a general hospital with two years in a pediatric center or three years in a pediatric center. (b) two years service in a pediatric center plus two years practice in pediatrics including continued work in some pediatric activity. (c) one year's service in a general hospital one in a pediatric center plus three years specialized practice of pediatrics including connection with some pediatric activity. Examination is required of all applicants.

The American Board of Pediatrics was founded by the joint action of the American Pediatric Society, the American Academy of Pediatrics and the section on pediatrics of the American Medical Association each of which appoints three members.

Medical Bills in Congress—*Changes in Status* S 822 to permit the use of the mails for the shipment of certain drugs and medicines to cosmetologists and barbers was reached on the Senate calendar, March 29. Senator LaFollette Wisconsin asked that the bill go over to permit him to ascertain from the Department of Agriculture what its attitude is toward the measure. S 2571 has passed the Senate and House authorizing the Secretary of the Interior to arrange with the states and territories for the education medical attention relief of distress and social welfare of Indians. S 2800 the Copeland food

drink, drugs and cosmetics bill, was reached on the Senate calendar, March 29, but Senator Byrnes, South Carolina, objected to its consideration. H R 1766 has passed the House, to provide medical services after retirement on annuity to former employees of the United States disabled by injuries sustained in the performance of their duties. H R 7835, to provide revenue and equalize taxation, has been reported to the Senate, with amendments. One amendment proposed by the Senate committee would impose an excise tax on the first domestic processing of coconut oil, or sesame oil, or palm oil, or palm kernel oil, or sunflower oil, or imported whale oil or imported fish oil, or imported marine animal oil. The excise tax would be applicable to the medicinal oils. *Bills Introduced* H R 8961, introduced by Representative Dingell Michigan, proposes to amend the Reconstruction Finance Corporation Act, as amended, to provide for loans to nonprofit benevolent charitable corporations.

Kober Medalist and Lecturer Selected—Dr John Jacob Abel, professor of pharmacology, Johns Hopkins University School of Medicine Baltimore, will be presented with the Kober Medal of Georgetown University School of Medicine, Washington, D C, at the annual meeting of the Association of American Physicians in Atlantic City, May 1-2. Announcement of the award was made, March 28, at Georgetown, when Dr Walter B Cannon, George Higginson professor of physiology, Harvard Medical School, Boston delivered the annual Kober lecture on "The Story of the Development of Our Ideas of Chemical Mediation of Nerve Impulses." The Kober Foundation of Georgetown sponsors the medal and lecture each year to commemorate the birthday of the late Dr George M Kober, formerly dean of Georgetown University School of Medicine. The medal is presented for high achievement in the field of medical research, but, according to the report, Dr Abel is being recognized for his forty-one years of distinguished service as professor of pharmacology at Johns Hopkins rather than for any particular contribution to science this year. Dr Abel gave the first Kober lecture in 1925. Other honors conferred on Dr Abel include the Research Corporation prize in 1925, the Willard Gibbs medal awarded by the Chicago section of the American Chemical Society in 1926, and the gold medal of the Society of Apothecaries of London, 1928. Dr Abel is known for research on animal tissues and fluids and on the physiologic and therapeutic action of various substances. He is the editor of the *Journal of Pharmacology and Experimental Therapeutics*. He is a member of many scientific societies and a past president of the American Association for the Advancement of Science.

Changes in Status of Licensure—The Massachusetts Board of Registration in Medicine reported the following action:

Dr Dwight F Willis Boston license restored January 25. It had been suspended Sept 28 1933.

The Oregon Board of Medical Examiners reports the following action:

License of Dr Walter R Anderson Portland was revoked at a recent meeting of the board for unprofessional conduct.

The New Jersey State Board of Medical Examiners reports the following revocation:

Irvin W Kirk Millville registration of medical diploma revoked for the practice of illegal operations.

The State Medical Board of the Arkansas Medical Society reports the following:

Dr Peter A Taylor formerly of St Joe and Gould Ark, license revoked Nov 14 1933 because he had been convicted of a crime involving moral turpitude. In June 1930 found guilty and sentenced to serve three years in the Arkansas State Penitentiary for perjury in the Pope County Circuit Court.

The New York State Board of Medical Examiners reports the following action taken at a meeting, February 15:

License of Dr Burdette M Christianson Brooklyn suspended for six months dating from March 15.

The state department of health of West Virginia reports the following action taken at a meeting in March:

License of Dr Frederick A Fitch formerly of Huntington now of Gauleyburg Ky restored with agreement that he would not apply for narcotic permit. The license was revoked in March 1932.

License of Dr Elmhugh H Hale Cedarville revoked for violation of the Harrison Narcotic Act.

CORRECTION

Lines on Chart in Hospital Number—In the chart on page 1005 in THE JOURNAL March 31 each horizontal line represents 15 million population instead of 10 million as stated in the footnote.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 17, 1934

The Work of the Medical Research Council

Only within the last thirty years has financial provision, private or public, been made on a large scale in Great Britain for medical research. A beginning was made when Lord Iveagh erected and endowed the Lister Institute for laboratory investigations. The benefaction of Sir Otto Beit, which enabled promising young workers to devote themselves to research by means of fellowships, followed. In 1911, when the national health insurance act came into operation an annual rate of 2 cents for every insured person was paid into a fund for medical research. This furnished \$265,000 per annum, for the administration of which a medical research committee was appointed, and the National Institute for Medical Research was established at Hampstead (in London) in 1913. The Great War began in 1914 and diverted the work of the committee from its primary object. After that catastrophe the committee was reconstituted as the Medical Research Council, and the government increased the annual provision to \$625,000 and subsequently to a still greater amount to meet further development. The reconstituted organization took its place beside the Department of Scientific and Industrial Research, which had meanwhile been created. More recently these have been joined by the Agricultural Research Council, thus bringing science to the service of the community in the three main divisions of human affairs. The Medical Research Council consists of such leading men as Sir Charles Sherrington, J. A. Arkwright, Lord Dawson, Prof. F. D. Adrian, Prof. A. E. Boycott, Sir Thomas Lewis, Prof. D. P. D. Wilkie, Prof. H. S. Raper and Prof. Edward Mellanby. The council is able to foster the most effective relations between science and the state. Though supported by the latter, it has full liberty to pursue an independent policy for the advancement of medical knowledge and it can collaborate freely with other organizations. It is not a mere advisory body, but has full control over its funds and appoints its own administrative officers. Its funds comprise not only the government grant but also money from other sources, public or private, placed at its disposal for medical research.

THE CHANGING PROBLEM OF DISEASE

In its recent annual report the council points out that in the twenty years since the establishment of the original committee the problems of medical research have altered. Many diseases have greatly diminished in deadliness. In some cases no cause can be assigned for this, in others the difference is clearly due to improved social conditions, in still others the credit may be given to preventive medicine. There remains an important group in which the change is the direct result of knowledge acquired by recent research, and to this the workers in this country—many aided by the council—have largely contributed. Among the diseases that have almost disappeared, although for no known reason, is chlorosis, which twenty years ago was one of the commonest diseases in young women. Another disease in the disappearing group is epidemic diarrhea among children. Increased sobriety has rendered cirrhosis of the liver a comparatively rare disease. The work of the council has increased the sum total of knowledge of a number of diseases, but chronic arthritis remains as mysterious as ever. "Status lymphaticus" has been shown to have no existence as a definite morbid state. Mackay's work, published by the council two years ago, has awakened the medical profession to the wide incidence of anemia in infants. Witts has greatly

advanced clinical knowledge of macrocytic and microcytic anemias. Laidlaw, Andrenes and Smith have succeeded in conveying human influenza to ferrets and thus bringing it within the experimental field. Two years ago the council appointed a therapeutic trials committee, composed of clinicians and pharmacologists, to make trials of new remedies.

Lead in Canned Sardines

A new form of food contamination with lead has been discovered. The catering firm of Lyons & Co. has its own chemical laboratories, in which routine examinations for metallic impurities are made of foods that have been in contact with solder. In regard to sardines, it was found that 88 per cent of the samples contained less than 20 parts per million of lead but that the remainder yielded larger quantities, in one case 150 parts per million. In the cans no relation could be found between the amount of exposed solder and the lead contamination. But investigation of the process of sardine packing showed that the fish were cooked on metal grills, which were supposed to be made of tinned iron. In some factories, however, they were covered with soft solder. Contact with such grills was found to produce serious contamination with lead.

The Saving of Life in Sunken Submarines

In the house of commons the first lord of the admiralty stated that after exhaustive consideration the admiralty had come to the conclusion that the raising of sunken submarines in time to save life was not feasible and that the only practicable method of saving life was the Davis submerged escape apparatus, which was now fitted to all submarines. For the future it was proposed to rely on this. The United States authorities had reached the same conclusions. Those serving in submarines are all trained in the use of the Davis escape apparatus (described in *THE JOURNAL*, Sept. 5, 1931, p. 715). If men imprisoned in a sunken submarine thought that attempts were going to be made to raise the vessel there would be grave danger that in spite of their training in the escape apparatus they might be tempted to await the result of salvage operations instead of saving themselves by means of the apparatus. The result would be that they would lose the strength necessary for escape. Vessels would at once proceed to the scene of the disaster and a signal would tell the crew in the submarine of their presence to rescue them after they had escaped.

Davidson Black

The death from heart failure at Peiping of Davidson Black, M.D., D.Sc., F.R.S., professor of anatomy at Peiping Medical College and honorary director, Cenozoic Research Laboratory, National Geological Survey of China, is a great loss to science. He was only 49 and was still engaged on researches in connection with the fossil man discovered by him in 1929. When the field work closed at Chou Koutien at the beginning of the winter, besides the remains of *Sinanthropus*, deposits had already yielded bones of baboons which occupied caves in tertiary times and evidences of upper paleolithic culture. Davidson Black was convinced that the surface deposits were only scratched and was looking forward to resumption of excavations next spring. Born in Canada, he was educated at the University of Toronto. From 1909 to 1911 he was instructor in anatomy at Western Reserve University School of Medicine, Cleveland. In 1913 he became assistant professor a post which he resigned to become a captain in the Canadian Army Medical Corps. In 1918 he was appointed professor of neurology and embryology at Peiping Union Medical College. In a tribute in the *Times* Prof. C. Elliot-Smith states that Davidson Black did more for human paleontology than any one else. At the same time his work represented only the beginning of a task that awaits completion.

The Nature of Influenza

The annual report of the Medical Research Council contains an important study of influenza. Working at the Natural Institute of Medical Research, Drs P P Laidlaw, C H Andrews and Wilson Smith succeeded in conveying human influenza to ferrets. Washings from the nasal mucosa of human cases were passed through a filter that was capable of keeping back ordinary bacteria. The resulting filtrate, containing no microscopically visible organisms, was instilled into the nostrils of ferrets. A characteristic feverish and a catarrhal reaction followed and was transmissible by similar means to other ferrets. After recovery, which was usual, the animals were immune to further infection for a period of which the length has not yet been determined. Infection of the ferret occurred only when the material was instilled into the animal's nostrils. Injection by the needle was ineffective. The experiments have also shown a relation between the influenza virus and that found by Shope in America in the epizootic known as hog influenza. Shope found that this virus by itself produced trivial symptoms but that it was associated with a bacillus allied to the bacillus of Pfeiffer. The bacillus was incapable of producing the swine disease in epizootic form. Only when virus and bacillus were allied as primary and secondary invaders was the severe and naturally spreading disease produced. A strain of the hog influenza virus, supplied by Shope, has been found to produce in the ferret a condition indistinguishable from that caused by the virus of influenza. Further, a ferret that recovers from the influenza virus infection with the swine virus is immune to the influenza virus, while recovery from the latter infection produces a substantial, though not complete immunity to the former. It is noteworthy that many years ago the view that influenza is the fertilizer of the soil for the growth of other diseases was put forward. The late Dr Brownlee showed that influenza tends to recur every thirty-three weeks. If this takes place between April and December the complaint is mild but if it takes place between December and April it is much more severe. Perhaps this is due to the fact that the virus prepares the soil for the bacillus of Pfeiffer and for the organisms of pneumonia and other diseases.

PARIS

(From Our Regular Correspondent)

Feb 28, 1934

Intravenous Injections of Alcohol in Pulmonary Suppurations

Intravenous injections of alcohol in pulmonary suppurations which awakened alarm at first, are being more widely used in France since the technic of the method has been perfected and manifest results have been secured. Before the Societe de medecine des hopitaux de Paris Merle and Gurfinkel reported excellent results secured in three cases of pulmonary suppurations by the use of this method. One case was an acute gangrenous suppuration of the pulmonic type. The two other cases were chronic types of pulmonary suppuration in which the extent and the old nature of the lesions precluded surgical treatment. In these three cases the results of the treatment were such that they leave little doubt as to the therapeutic value of this method. These observations with similar observations previously published justify one in regarding the treatment of acute or chronic pulmonary suppurations with intravenous alcohol as a method of the first order when surgical treatment is not yet indicated when its indications are doubtful or when it is no longer possible. These cases possibly constitute the majority. One is even justified in expecting that a systematic and early use of this method will reduce the number of cases in which it will be necessary to intervene surgically. The harmlessness of this treatment already estab-

lished by various authors, appears absolutely certain to Merle and Gurfinkel. In more than 250 injections they observed no serious untoward incidents, aside from pain symptoms, which are of regular occurrence but usually easily tolerable, and signs of shock—commonly moderate. The authors concluded that this shock could be ascribed to the strongly hemolytic action of the solutions of alcohol in the serum with 45 per cent dextrose or in the artificial serum. This solution has a much less accentuated hemolytic potency, it diminishes sensibly the shock and the sclerosing action on the veins. The optimal dose of this solution appears to be from 40 to 50 cc per injection. But, in order to secure therapeutic results, it appears indispensable to use rather large total doses, thus necessitating for a cure a total quantity of from 200 to 300 cc of 45 per cent alcohol or from 600 to 900 cc of the 33 1/3 per cent solution.

Verification of the Causes of Death

Repeated complaints have been made because of the unreliable nature of French statistics on the causes of death. The Academy of Medicine became aroused and addressed to the minister a resolution demanding that the verification of the causes of death be made with greater care. The minister has sent a letter of instructions to the mayors of all the communes of France. The instructions provide that the mayor must designate an officer to examine the body and determine the true cause of death. He must state also the name of the physician who attended the patient and that of the pharmacist who furnished the medicines. No one imagines that this letter of instructions to the mayors will immediately bring about ideal conditions. In the large cities there is already a well organized service for the verification of the causes of death by specially appointed physicians.

BERLIN

(From Our Regular Correspondent)

Feb 19, 1934

Emigration of Physicians from Germany in 1933

According to information compiled by Regierungsrat Dornedden of the federal bureau of health, 284 Berlin physicians emigrated in 1933 to some foreign country. The destination given in 117 instances was Palestine, in 25, France, 22, England, 13, Switzerland, 13, Italy or Spain, 11, Austria, Czechoslovakia or Poland, 9, Scandinavia and northeastern Europe, 8, Netherlands and Belgium, 5, southeastern Europe, 1, Luxemburg, and 30, extra-European countries, while the destination of 30 physicians is unknown. In the case of forty other

TABLE 1—Percentage of Emigrating Physicians from Berlin and from the Remainder of Germany

Destination	From Berlin	From the Remainder of Germany
Palestine	46.1%	37.1%
France	9.8%	11.1%
England	8.7%	6.2%
Switzerland	5.1%	8.6%
Italy	3.5%	6.2%
Other European countries	1.0%	22.2%
Extra European countries	11.8%	8.6%
	100.0%	100.0%

physicians who left Berlin in 1933, the post office was unable to ascertain the present abode. Outside of Berlin reports on only 128 emigrating physicians have been received. Of this number seventy had been located in cities of more than 100,000 population so that 86 per cent of the emigrating physicians were from metropolitan centers.

It appears that almost half of the emigrating physicians were under 35 years of age and more than a further third belonged to the 35-44 age group. Whereas 39.9 per cent of the German

medical profession belongs to the age group 45 and above, only 17.5 per cent of the emigrating physicians belonged to this group. The percentage of women physicians among the emigrants was 14.8, whereas the percentage of women in the medical profession in Germany is 6.5. The number of emigrating physicians representing the specialties is shown in table 2.

TABLE 2—*Specialists Among the Emigrating Physicians*

	Distribution of Specialties		
	In Germany as a Whole	Immigrating Male Physicians From Berlin	From Remainder of Germany
General practitioners	63.7%	43.9%	48.7%
Internal medicine	7.6%	20.0%	13.5%
Surgery	5.6%	5.0%	5.4%
Gynecology	3.2%	6.4%	5.4%
Children's diseases	2.2%	6.7%	10.8%
Dermatology and venereal diseases	4.0%	7.1%	4.7%
Diseases of eye, ear, nose and throat	1.0%	3.4%	4.2%
Other specialties	7.0%	6.2%	7.2%
	100.0%	100.0%	100.0%

It is not yet possible to state exactly the number of physicians who emigrated in 1933. This report, however, gives an idea of the importance of the emigration of physicians from Germany, which, up to 1933, had been small.

Diabetes in Enzygotic Twins

Addressing the Berlin Medical Society, Professor Umher pointed out that diabetes is based on a constitutional inferiority of the islands of Langerhans. It is hereditary and causally independent of the environment. Enzygotic twins who have identically the same hereditary characteristics are particularly suitable for the study of hereditary diseases. According to the computations of von Verschuer of the Emperor William Institute for Anthropology there is a twin for every sixty adults, but only about one third of the pairs of twins are enzygotic. The establishment of the fact that twins are enzygotic is best based, according to Verschuer, on external resemblances with respect to features and bodily form, size, habitus, peculiarities of the organs (ears, eyes and nose), hair growth, qualities of character, trends and the like. A precondition is that they are of the same sex. Umher stated that he had observed three such pairs of twins. It was peculiar in all three pairs of twins that the type of diabetes was exceedingly similar in the two twins of each group. For instance, two twin sisters presented a frank diabetes gravis, and one sister who was not treated died early in coma, while the other sister received insulin treatment and survived longer. In another pair of twins there developed in one a mild case of senile diabetes, whereas the other had no glycosuria whatever. Inquiry revealed that the twin with diabetes had been a tavern keeper and a heavy drinker, whereas in the nondiabetic twin only a pathologic blood sugar curve betrayed his pancreatic weakness. These observations on enzygotic twins with diabetic disturbance of metabolism serve Umher as support for his theory that diabetes is a recessive hereditary disease, which is not caused by the environment but is influenced by it only in its mode of appearance.

Restricting the Medical Curriculum

Rust, the Prussian minister for science, art and public instruction, has transmitted to the medical faculties of the Prussian universities a decree of far-reaching importance on the subject of revision of the medical curriculum. The decree takes as its basis a new curriculum that was proposed by a Prussian faculty of medicine, and, in a somewhat modified form, it is already in force at universities outside of Prussia. The curriculum will need to be modified to fit local conditions, hence it is not intended that the proposals shall be binding on all institutions. Rust emphasized that in no case shall the specified number of hours of instruction be exceeded. If for

instance, a one-semester course in a subject is recommended, it will not be permissible for the subject to be presented in two semesters. The lectures in such cases must be revised. The same principle applies to clinics, in which a greater number of hours than is provided for in the decree may not be demanded. In the revised curriculum it must be made plain, the decree states, that not all subjects are of equal importance for training the practicing physician. In the preclinical studies, the instruction hours for the natural sciences must be greatly reduced. The minister expects the professors of chemistry, physics, zoology and botany to present in a separate course of lectures the subject matter for the medical students. If that does not seem possible, special instructors for the delivery of such lectures and the holding of the corresponding tests should be suggested to the Prussian minister of the interior. In the clinical studies the clinics of internal medicine, surgery, gynecology, pediatrics, pathologic anatomy and all other subjects must be curtailed. It is not the task of clinical instruction to train specialists in all branches. The minister requested that the suggested changes be rigorously carried out, and he emphasized that the deans would be held responsible for the execution of the plan in accordance with the instructions issued. In case, in allotting work to the several professors, the hours of instruction assigned are in excess of what the new curriculum provides for, the minister will reduce the number of hours without any special inquiry. The new curriculum goes into effect with the opening of the summer semester 1934.

Incidence of Syphilis in Clinics

At the Munich Medizinische Universitätsklinik, of which Professor von Romberg is director, some 50,000 case histories covering the period 1912-1932 (1918 excepted) were studied statistically. It was found that, twenty years ago almost 9 per cent of the patients had syphilis. During the war and the years following, the number of syphilitic patients rose owing to the increase particularly of latent infections in both sexes and an augmentation of acute syphilis in the men temporarily up to about 11 per cent. Since 1923, however, there has been a decreased incidence, which has gradually become manifest in all types of syphilis. Thus, in 1932 the percentage of syphilitic persons (41 per cent) was far below the status of 1912.

Retrenchments of the Krankenkassen

For the aid of the sick, the expenditures in 1932 of the federally controlled Krankenkassen in the German Reich amounted to 858,000,000 marks (\$326,000,000), or 81 per cent of the total expenditures. The average cost per member was 50.23 marks (\$19.09). Owing to the reduction in receipts resulting from the extensive unemployment, considerable retrenchment in the expenditures for every purpose was necessary. As compared with 1931, the expenditures of the federal Krankenkassen (omitting the federal allowance for family aid which in 1931 amounted to \$1,026,000 and in 1932 to \$304,000) were reduced 29 per cent (aid for the sick 30 per cent, weekly benefits 19 per cent, and administrative costs 17 per cent), while the expenditures for the prevention of illness, health aid and burial benefits suffered the heaviest reductions, namely from 51 to 52 per cent. As to aid for the sick, the expenditures for pocket money and convalescents' benefits were greatly reduced (80 and 74 per cent, respectively). The reductions for the following items were likewise heavy: domiciliary care 42 per cent, aid for household expenses, 44 per cent, sick benefits 40 per cent and care of dependent members of families 46 per cent. The reductions for the following purposes were not so heavy: physicians' fees, 21 per cent, hospital care for members 25 per cent, and spa treatment, 22 per cent. The smallest reductions were for dental care, the expenditures for members having been only 15 per cent, and for family dependents only 14 per cent, lower than in 1931.

VIENNA

(From Our Regular Correspondent)

Feb 12, 1934

Rôle of Tobacco in Gastric Ulcer

At a meeting of the Gesellschaft der Aerzte, Dr R Friedrich of the Chirurgische Klinik discussed the rôle of tobacco in the etiology and postoperative treatment of gastric and duodenal ulcer. The predominance of the disorder in the male sex is striking, and among the men so affected heavy smokers are in the majority. Various researches and experiments make it probable that persons who have a weak stomach, or already have an ulceration, are injured by smoking. The smoking of from five to ten cigarettes a day caused consistently an exacerbation of the symptoms in ulcer patients. Cigars do not seem to cause so much irritation. However, attention must be called to the fact that gastric ulcer is to be regarded as a manifestation of a general nervous predisposition and that duodenal ulcer occurs often in well nourished, full blooded persons, being frequently induced by the ingestion of too strongly seasoned food. Smoking causes a marked increase in the secretion of gastric juice, and exact observations on a large series of patients have convinced Dr Friedrich that patients who have been operated on for ulcer and continue smoking have more frequently pain and discomfort than those patients who discontinue smoking after the operation. He demands that a person operated on for gastric or duodenal ulcer shall give up smoking. It is true that now many women smoke, although statistics do not show an increase of ulcer cases among women. Perhaps the difference lies in the fact that women seldom smoke "on an empty stomach" and commonly smoke fewer and milder cigarettes.

The Physical Bases of Short Wave Therapy

Four weeks ago the Biophysikalische Gesellschaft fur Kurzwellenforschung was founded in Vienna, and just recently Prof Dr Paetzold of Erlangen delivered at its first session an address on "The Physical Bases of Short Wave Therapy". Paetzold explained that short waves effect a warming of the electrolytes, that is, the solutions of crystal salts, which are present in the body in large quantities and in various forms. Paetzold found that, with a definite resistance and a definite constant in an organism, the maximal heating of the organism (of the electrolyte) is brought about only by a certain wavelength. In general, this maximum is brought about in body fluids by waves from 3 to 15 meters in length. These waves are called ultrashort waves. They have an advantage over the short and long waves in that they produce geometrically straight rays, which can be precisely controlled and given any desired direction. They can easily penetrate otherwise poor conductors so that overheating or burning of the skin is impossible. The easy penetration of the waves makes possible also a particular effect on the deeper tissues. In the transmission of electric heat energy the skin, fatty tissues and bones receive less heat than the parts and organs of the body containing large amounts of fluids. Also the problem of selective heating was hereby solved and the temperature differences between the various layers can be exactly determined. The advantages of the ultrashort waves permit their use especially in rapidly developing inflammatory processes, which is just the opposite of the use of diathermy.

Opposition to Closing the Second Frauenklinik

The ministry of finance has repeatedly urged the ministry of public instruction which controls the affairs of the university to leave in operation only one surgical clinic, one clinic of internal medicine and one gynecologic clinic and to close the others. During recent years one clinic for each of these branches of medicine has been closed so that now there are only two clinics for each of these branches instead of three.

is formerly. Now it has been announced that it is the intention to close also the second Frauenklinik and to leave only the lecture room open. Need of retrenchment is not assigned as the reason for the proposed action, but attention is called to the fact that not only is the ambulatorium less frequented but also the number of births in Vienna has been greatly reduced. Vienna has the second lowest birth rate in Europe. 83 per thousand of population. Only Oslo, Norway, has a lower birth rate. 82. Last year the number of beds in this clinic was reduced from 300 to 68, and patients who could not be admitted, for lack of beds, were referred to the other clinic that was still functioning. But they did not go there but to the hospitals in the provinces. The plan to close the clinic has aroused great indignation. It is emphasized that the decrease in births is doubtless correct but that, on the other hand, the number of miscarriages and cases of disease in women is considerably higher. It is also impracticable to accommodate the large number of students in a single clinic. Moreover, the amount of money saved would be small and is not worth considering as compared with the physical and moral damage that would result for Austrian and foreign students through a reduction in the facilities for acquiring a medical education. The opposition to a purely bureaucratic conception of the problem, which neglects the ethical and politico economic aspects is so general that the hope is justified that the ministries will see the wisdom of reversing their decision.

NETHERLANDS

(From Our Regular Correspondent)

Feb 6, 1934

The Examination of Athletes

Dr J Van Mervenne describes in the *Tijdschrift voor sociale Geneeskunde* the Leeuwarden center for the examination of athletes. The center has four men physicians and one woman physician. Men and women are examined alternate weeks. Of 351 men examined thirty-six were found unfit, eighteen having a circulatory, five a pulmonary, and nine a nervous disorder. Of 193 women examined, ten were found unfit, one having an exophthalmic goiter, two a nervous disorder, six a cardiac disorder and one arthritis.

Infection of Pupils by Their Teachers

The *Handelsblad* of Oct 5 1933, announced that the commune of Oostdongeradeel had voted an appropriation of 500 florins (\$325) to send sixteen tuberculous children to the Sommevank Sanatorium. On making careful inquiries, this journal learned that a teacher in one of the schools of the commune had infected thirty pupils, the sixteen mentioned and fourteen others, who are receiving domiciliary treatment. The same thing happened in one of the De Hoorn schools, where fourteen children became infected and likewise the director of the school. Such catastrophes occur because in many places no medical certificate is required of teachers at the time of their appointment, and during their tenure of office they are subjected to no periodic health examinations.

The Supervision of Diabetic Patients

A committee of physicians met at Utrecht, under the chairmanship of Dr A Hijmans Van Den Bergh, to plan the formation of a national organization for the prolonged treatment of diabetes, in view of the increase in the number of diabetic patients in hospitals, relapses as soon as patients return home and the high percentage of deaths from diabetes. The purpose of the organization is chiefly to establish, with the aid of attending physicians, a regular supervision of diabetic patients in their homes to educate patients and those who care for them to understand the importance of the regimen. A committee was appointed to study the means of effecting the organization proposed.

Disinfection of Swimming Pools

In the hygienic laboratory in Utrecht, Idzerda and Wilder-vanck studied the disinfection of swimming pools. They publish in the *Nederlandsch Tijdschrift voor Geneeskunde* their results. They conclude that the addition of chlorine is preferable in the so called continuous system, provided (a) the time necessary to pass the contents of the pool through the filters does not exceed eight hours, (b) the number of users does not exceed the accepted limits for the establishment in question, and (c) the water lends itself to this method of disinfection. The chloramine method of disinfection should be used for the "periodic" system. The chlorine-copper method of disinfection is in theory an interesting process. The study of the conditions that effect an accelerated disinfection, compared with the action of chlorine alone has not been completed. Hence the application of this method of disinfection is admissible only in case the disinfective action of the water is regularly controlled.

A Blood Transfusion Service

The first blood transfusion service in the Netherlands was organized at Rotterdam by Dr Van Dijk. When the donors are selected they are given a complete examination and, if found fit, receive a card indicating the blood group. The cards are placed on file at a central bureau, where a physician desiring a donor may apply. The donor is reimbursed for his outlays and his loss of time from work.

BUDAPEST

(From Our Regular Correspondent)

Feb 3 1934

The Opening of the People's Hygienic Institute

A five story building has been erected at 3 Eotvos Street, in the heart of Budapest, for the People's Hygiene Museum which was opened recently under the management of Dr George Gortyay, lecturer to the university and ministerial counselor. The organization of this institute is as follows: 1 Directorate 2 Scientific section (a) research collection of material, (b) publications, courses, (c) social activities and the editing of the *Socialpolitika Szataszemle* (Social-Political Press Review) 3 Propaganda section (a) organization of health propaganda, (b) popular lectures, recitals and exhibits 4 Technical section the preparation of exhibits and propaganda material 5 Museum, with eleven sections comprising a vast amount of material 6 Library of 30,000 volumes. Particularly complete is the material relating to industrial hygiene and the alcohol campaign. There is a special reading room in connection with the library, and a public reading room. The institute has forty-five interesting films for use in connection with popular health lectures. Physicians and health institutes may borrow them free of charge.

The Work of the National Public Health Institute

The Hungarian Royal National Public Health Institute, which was opened five years ago, endeavors to apply achievements of modern hygienic studies into everyday life, as well as to train public health workers. Medical officers' courses of nine months' duration have been introduced. In connection with the institute is the "House of Physicians," which provides inexpensive board for graduate students. The institute has also a nurses' training school. The necessity for the training of nurses is shown by the fact that 56 per cent of the nursing staff in the hospitals has had no special training.

To make the campaign against infectious disease more effective, seven provincial bacteriologic testing stations have been erected. While the old central testing station had an average of 3,000 tests annually, the new institute performed 142,272 tests in 1932 and its branches performed 42,327 tests.

The institute introduced the Ramon preventive inoculations against diphtheria in 1929. To the end of 1932, 280,000 children had been given preventive inoculation.

After the thorough examination of 12,000 wells they marked in the villages all those wells which contain pure drinking water with a green cross and with the inscription Good drinking water. The institute tests all Green Cross wells twice yearly.

The institute has supervision also over drugs and proprietary medicines. The necessity for this was indicated by the fact that 92 per cent of all proprietary medicines tendered for registration were found inadequate.

The great effort to improve health conditions in the villages gave birth to the organization of so called model districts of which there are already six. The leaders of these model districts are the district physicians while in the villages the health activities are carried on by the parish doctor, who is assisted in this work by women trained in health work. The institute maintains contact with these women by means of a semimonthly publication entitled the *Green Cross* which informs them of all new phases of public health affairs.

The institute organized the systematic examination of village school children, and introduced the so called lying in huts where sick children are taken from their dark village houses and isolated. For the nutrition of the sick child a goat is kept beside the house.

The leader and founder of this institution is Prof. Dr. Johann, whose work is known beyond Hungary, as shown by the fact that the Council of the League of Nations February 17 appointed him a member of its Public Hygiene Committee which consists of ten delegated members and fourteen elected members.

Insulin Treatment of Schizophrenia

Dr Julius Schuster, late assistant at the university psychoneurologic clinic, made the striking observation that a series of mental patients were under-sensitive to insulin and from this fact he concluded that treatment with insulin might improve their condition. He had asserted previously in the *Archiv für Psychiatrie* (85, No 5, 1928) that insulin has both a direct and an indirect action on the central nervous system. The experiments of Stief in insulin poisoning have shown that insulin is an ectodermotropic drug, and as such therefore acts on the brain cells. Schuster advocated the use of insulin in schizophrenia, with highly satisfactory results. He reported in 1928 more than sixty cases of schizophrenia so treated and since then the number of cases treated has been doubled.

Marriages

HOWARD W. ROGERS, Rome, Ga., to DR. ELIZABETH LYDIA COUNCILMAN of Newburyport, Mass., at Cambridge, February 10.

JOHN MILTON ADAMS, New Haven, Conn., to Miss Carolyn Frances Gaston of Washington, D. C., at New York, March 24.

JOHN LEE MONTGOMERY, Erwin, Tenn., to Miss Maimie Agnes Tucker of Johnson City, February 11.

WILLIAM LE ROY FLEMING, Enfield, N. C., to Miss Edith Mickey Duke of Rocky Mount, March 22.

BARTON McCOSH COOKINGHAM, Rhinebeck, N. Y., to Mrs. Gertrude Havens of Red Hook, recently.

ROY LEE CASHWELL, Fountain Inn, S. C., to Miss Mary Sullivan West of Greenville, March 3.

FELIX WALTER SOKOLOWSKI to Miss Georgia Hale, both of Alton, Ill., at Carlinville, January 14.

GLYNN FITZGERALD BUSHART, Fulton, Ky., to Miss Leonora Amberg of Hickman Ky., March 10.

HENRY HARRISON GIBSON, Akron, Ohio, to Miss Anne Richardson of Sharon, Pa., recently.

VALENTINO B. DI LORETO to Mrs. Frances D. Alessio, both of Steubenville, Ohio, March 15.

Deaths

Jay Frank Schamberg @ professor of dermatology and syphilology, University of Pennsylvania Graduate School of Medicine, Philadelphia, and director of the Research Institute of Cutaneous Medicine, died March 30, of heart disease. Dr Schamberg was born in Philadelphia Nov 6 1870. He graduated from the University of Pennsylvania School of Medicine in 1892, served his internship at the Hospital of the University of Pennsylvania and studied in Vienna, Paris, Berlin, Hamburg and London. He was formerly lecturer on infectious eruptive diseases at his alma mater and professor of dermatology and syphilology at Temple University School of Medicine and Jefferson Medical College. He was a member of the American Dermatological Association and, in 1920 to 1921, president, he was also a past president of the Philadelphia County Medical Society. In 1904 he was a member of the House of Delegates, and from 1928 to 1929 chairman of the Section on Dermatology and Syphilology, American Medical Association. In collaboration with Drs Raiziss and Kolmer, Dr Schamberg was responsible for the synthesizing of arsphenamine in this country during the World War. He was the author of "Skin Diseases and Eruptive Fevers," and "Compendium of Diseases of the Skin" and co-author of "Acute Infectious Diseases and "Treatment of Syphilis". Dr Schamberg was elected to the editorial board of the *Archives of Dermatology* in 1927 to fill the unexpired term of Dr Hartzell, who died. In February 1928 he was reelected and served until February 1934.



JAY FRANK SCHAMBERG, M.D.
1870-1934

Charles Henderson Miller @ Chicago, Northwestern University Medical School, Chicago, 1898 formerly a pharmacist, at one time assistant professor of pharmacology at his alma mater and professor of pharmacology and therapeutics Bennett Medical College, aged 66 one of the founders and on the staff of the Woodlawn Hospital, where he died March 12 of embolism hypertension and coronary thrombosis.

Joseph G Perrault, St Albans Vt School of Medicine and Surgery of Montreal, Que Canada 1898, member of the Vermont State Medical Society past president of the Franklin County Medical Society for twenty-five years justice of the peace, at one time member of the city council and health officer, on the staff of St Albans Hospital aged 61 died January 31, of pneumonia.

Charles Galen Weston, Winter Park Fla Harvard University Medical School, Boston 1882, fellow of the American College of Surgeons past president of the Hennepin County (Minn) Medical Society formerly on the staff of the Hill Crest Surgical Hospital Minneapolis aged 75 died March 2 in the Victoria Hospital, Miami of acute hemorrhagic nephritis and bronchopneumonia.

Josiah Wellington Crane, Trenton N J, University of the South Medical Department Seavane Tenn 1900 member of the Medical Society of New Jersey and the American Academy of Ophthalmology and Oto-Laryngology medical director of the New Jersey State Prison Hospital aged 56 died February 18, at Rochester Minn of gastro intestinal fistula and bronchopneumonia.

Charles Clark Ammerman @ Surg Lieut Commander U S Navy, retired Elmira N Y George Washington University Medical School Washington D C 1906 entered the

navy in 1921 and retired in 1932 for incapacity resulting from an incident of service aged 63, died, March 20, in the United States Naval Hospital San Diego, of chronic nephritis.

John Baker Swift, Jr @ Boston, Harvard University Medical School, Boston, 1908, member of the New England Obstetrical and Gynecological Society and the New England Pediatric Society, instructor in obstetrics at his alma mater, on the staff of the Massachusetts General Hospital, aged 50, died suddenly, March 9, of heart disease.

Samuel Erskin Mitchell @ Muskogee, Okla, University of Nashville (Tenn) Medical Department, 1900 past president of the Haskell County Medical Society and the Muskogee County Medical Society, served during the World War, on the staff of the Veterans' Administration Facility aged 61, died, February 23.

Keeton Alexander, Lockhart, Texas, Louisville (Ky) and Hospital Medical College, 1908, member of the State Medical Association of Texas, past president of the Caldwell County Medical Society, past president of the school board of McMahan, aged 52 died March 8, of uremia.

Rollo Orly Payne, Ontario Ore Marion-Sims College of Medicine, St Louis 1899, Medico Chirurgical College of Philadelphia, 1903, member of the Associated Anesthetists of the United States and Canada, for many years county coroner, aged 56, died, Dec 25 1933.

William Francis Flanagan, Apponaug R I, Long Island College Hospital, Brooklyn, 1900 fellow of the American College of Surgeons, visiting surgeon to St Joseph's Hospital, Providence, aged 61, died, February 20, of carcinoma of the tongue and cervical glands.

Henry Green @ Dothan, Ala, Medical College of Alabama Mobile, 1892 past president of the Medical Association of the State of Alabama and the Houston County Medical Society, on the staff of the Moody Hospital, aged 67, died, February 22, of cerebral hemorrhage.

Robert Mortimer Jones, New York New York Homeopathic Medical College and Hospital, 1896, served during the World War, aged 63, died, February 21, in the New York Homeopathic Medical College and Flower Hospital, of hemorrhage due to gastric ulcer.

Galen Edwin Moyer @ Elvira, Ohio University of Pittsburgh School of Medicine, 1917, served during the World War, on the staff of the Elvira Memorial Hospital, aged 46, died February 3, in the Cleveland Clinic Hospital, of diabetes mellitus.

Edward Payson Crowell, Brooklyn, Long Island College Hospital, Brooklyn 1883, member of the Medical Society of the State of New York for many years member of the board of education, aged 77 died, February 27, of heart disease.

John Francis Dwyer, Corning, N Y Ohio Medical University, Columbus 1905, member of the Medical Society of the State of New York, on the staff of the Corning Hospital, aged 53 died, February 21 of heart disease.

Anna Sophia Windrow Holm, Chicago College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois 1901, aged 73, died March 15 of arteriosclerosis and myocarditis.

Harry Wilson Porter, Louisa, Va, University of Virginia Department of Medicine, Charlottesville, 1896, member of the Medical Society of Virginia aged 59, died, February 20 of cerebral hemorrhage.

George H Harper, Monroeville, Ala Atlanta College of Physicians and Surgeons, 1902 member of the Medical Association of the State of Alabama aged 59, died February 16, of emphysema.

Carmotte Ashley Cobb Beaumont, Texas, Tulane University of Louisiana Medical Department New Orleans 1902 served during the World War aged 57 died February 25, of myocarditis.

Alexander L Mathews, Callaway Neb Eclectic Medical Institute Cincinnati 1882 member of the Nebraska State Medical Association aged 84, died February 12, of hypostatic pneumonia.

John Milton Messinger, Oakfield, N Y University of Buffalo School of Medicine 1923, aged 34 died February 25 in the Glockner Hospital Colorado Springs following an operation.

Charles Andrew Haas St Paul University of Minnesota College of Medicine and Surgery Minneapolis 1894 aged 59, died January 22 in St John's Hospital, of carcinoma of the stomach.

Ernest Chandos Blackwell, Los Angeles, Bellevue Hospital Medical College, New York, 1895, aged 62, died, January 20, of chronic osteomyelitis of the left femur and myocarditis

John Benjamin Wrightsman, Denver, National Normal University College of Medicine, Lebanon, Ohio, 1890, aged 77, died, February 21, of chronic myocarditis and nephritis

Lester Orlo Houghten, Ironwood, Mich., University of Michigan Medical School, Ann Arbor, 1906, fellow of the American College of Surgeons, aged 52, died, March 15

George Norfleet Harrell, Grimesland, N C., University College of Medicine, Richmond, Va., 1907, aged 52, was found dead in his office, February 16, of cerebral hemorrhage

John H Hammond, Georgetown, Del., Medico-Surgical College of Philadelphia, 1889, aged 65, was found dead, February 22, with a bullet wound in the head

Cassius Harriot Darling, Worcester, Mass., University of the City of New York Medical Department, 1883, aged 74, died February 28, of cerebral hemorrhage

William R Hamilton, Weiser, Idaho, Victoria University Medical Department Coburg, Ont., 1892, formerly mayor, aged 67, died, February 13, of erysipelas

Clayton S Woolston, Spencerport, N Y., University of Buffalo School of Medicine, 1897, aged 60, died, February 5, in St Petersburg, Fla., of angina pectoris

William Frazier Tift, Long Beach, Calif., University of Vermont College of Medicine, Burlington 1880, aged 78, died January 14, of carcinoma of the prostate

Fischer Randall Jordan, Oakland, Calif., Cooper Medical College, San Francisco, 1895, aged 60, died, January 26, of chronic prostatic staphylococcus infection

John Spencer Gallagher, Salem, Ohio, Western Reserve University Medical Department Cleveland, 1887, aged 72, died suddenly, February 21, of heart disease

J F J Hood, Atlanta, Ga., Atlanta College of Physicians and Surgeons, 1901, aged 65, died February 19, in the Grady Hospital, of pulmonary tuberculosis

John Arrington, Blewins, Ark., licensed in Arkansas, year unknown, aged 57, died, February 2, in the Donnell Hospital, Prescott, of cerebral hemorrhage

Sharon C Newell, Helena, Mont., Columbus (Ohio) Medical College 1880, aged 77, died, January 2, in St Peter's Hospital, of chronic myocarditis

David Hunter McAlpin & Morris Plums, N Y., Bellevue Hospital Medical College, New York, 1888, aged 72, died, January 20, of arteriosclerosis

James Winfield Sampsel, Penns Creek, Pa., Jefferson Medical College of Philadelphia, 1878, aged 82, died, February 28, of cerebral hemorrhage

Andrew Harrison Weber, Chicago, Drake University Medical Department, 1895, aged 67, died, February 17, of organic heart disease

W A Hawkins, Dallas, Texas, (licensed in Texas, under the Act of 1907), aged 50, died, Nov. 15, 1933, of gas poisoning, self-administered

Thomas Hugh G Cook, Weslaco, Texas, Medical College of Alabama, Mobile, 1886, aged 68, died, February 18, of chronic endocarditis

George Zinn, Klemme, Iowa, Physio-Medical College of Indiana, Indianapolis, 1897, aged 66, died suddenly, January 29, of heart disease

Uriah Edward Bateson, London, Ont., Canada, Trinity Medical College, Toronto, 1889, aged 67, died, January 30, of heart disease

Anderson P Barclay, Wharton, Texas, Memphis (Tenn.) Hospital Medical College, 1901, aged 67, died, January 10, of heart disease

Warren Burd West, St Anthony, Idaho, Missouri Medical College, St Louis, 1897, aged 64, died, Dec. 18, 1933, of heart disease

Claude Reznor Leech & Walnut Creek, Calif., Cooper Medical College, San Francisco, 1894, aged 65, died, January 13

William Bell Wood, South Pasadena, Calif., Missouri Medical College, St Louis, 1875, aged 82, died, February 25

M D Empson, Galatia, Ill., Missouri Medical College, St Louis, 1882, aged 77, died, March 6, of hypostatic pneumonia

Wilmot Leland Ransom, Rockford, Ill., Chicago Medical College, 1874, aged 81, died, March 12, of lobar pneumonia

Correspondence

POSTERIOR PITUITARY IN PYELITIS

To the Editor—The interesting article of Ward Darley and W B Draper in *THE JOURNAL* (March 3, p 677), emphasizing atony of the musculature of the renal pelvis and ureter with the resultant sluggish drainage as an important factor in the development and course of pyelitis, refers to the experimental work of Gruber. He showed that the ureteral muscle responds with increased peristalsis to solution of pituitary (*J Urol* 20 27 [July] 1928), as they confirmed (*J Urol* 26 1 [July] 1931).

At the meeting of the American Gynecological Society in 1927 I presented a preliminary report of work done at Johns Hopkins on the etiology of pyelitis gravidarum, in which the occurrence of dilatation and atony of the upper urinary tract as physiologic phenomena in pregnant woman was stressed. The use of solution of pituitary was suggested for stimulating ureteral peristalsis in cases of pyelitis gravidarum that do not yield to the routine treatment of forcing fluids and administering alkalis. Reports of the work were published in the *Bulletin of the Johns Hopkins Hospital* (42 118 [March] 1928) and in the *Journal of Urology* (20 413 [Oct] 1928). The article by Gruber quotes my experimental data. The use of postpituitary was advocated by me also during the puerperium in cases of pyelitis as an attempt to forestall the persistence of ureteral dilatation which, in my series, was observable in about 40 per cent of cases of pyelitis for months or years after the termination of labor. Recently I substituted ampoules of pitressin for the original solution of pituitary in order to eliminate the osmotic factor. For the last few years, I have been using ampoules of pitressin in addition to ureteral catheterization in selected cases of pyelitis in order to obtain prompt relief.

J I HOFDAUER, M D, Cincinnati

STANDARDIZATION OF DIGITALIS

To the Editor—I was much interested in the communication published in *THE JOURNAL*, March 17, and purporting to come from the Heart Committee of the New York Tuberculosis and Health Association, although it is signed by the "Digitalis Committee." Whether these two committees are in reality two or whether they are one and the same under different names I am unable to say. Before discussing the contents of the communication I would point out that it should more properly have been addressed to Professor Cook, the chairman of the U S Pharmacopoeial Revision Committee, which has the matter of biologic standardization of digitalis and other drugs in charge, and it would doubtless have been referred to the proper subcommittee, where I am sure it would have received careful and sympathetic consideration. However, I am tempted to consider some of the points raised by it, as they have been for some time a source of considerable anxiety to many of us who are interested in and are working for simplicity and accuracy in the act of prescribing.

The committee is correct in stating that a frog method is official in the U S Pharmacopoeia. The reason for this lies in the fact that three subcommittees of the U S Pharmacopoeia viz., the committees of the 1910 revision, the 1920 and now the 1930 revision have voted unanimously to include a frog method of assay in preference to a cat method. These three committees were in each case composed of medical men, pharmacologists and pharmacists who had special interest in and knowledge of the biologic standardization problem. The decision in the case of each of the three revisions has been made by the different committees after one or more meetings with representatives of the large pharmaceutical houses engaged in biologic standardization of their products. In not one instance, as my

memory serves me, and I have been chairman of these subcommittees since the 1910 revision, has a single manufacturing pharmacist advocated the adoption of a cat method of assay. As a matter of fact, at each of these combined meetings pharmacist after pharmacist has said that it would be practically impossible for his firm to carry out such assays on cats, as they could not get enough animals to meet all their needs. It is one thing to assay a powder for one limited group of specialists and quite a different problem to assay the products of a large manufacturing house supplying perhaps a nation-wide demand for its digitals, to say nothing of the trade beyond the seas. If the pharmacists are so dissatisfied with a frog method of assay and are anxious for a cat method, why have their representatives for twenty-five years voted unanimously against the adoption of a cat method? At our conferences not one manufacturer has urged its adoption.

The statement that the majority of pharmacologists favor the cat method is equally open to serious question, not to make a stronger statement. Where did the "Committee" secure this information? To the best of my knowledge such a question has never been put up to the Pharmacological Society or to any authorized group of pharmacologists. I imagine the nearest approach to such a group consideration of the question would be the pharmacopeial subcommittee on biologic standardization which includes several pharmacologists and it has voted unanimously against the cat method. But even in this group there are relatively few pharmacologists. In other words, no one knows—the "Committee" I or any one else—what the majority of pharmacologists do favor, for to the best of my knowledge they have never expressed an opinion nor even have been asked to do so. Certain individual pharmacologists have expressed opinions pro or con but I would say comparatively few—certainly not so that any one can say what the "majority" of pharmacologists favor.

However, there is another aspect of the matter which is of grave importance as tending to therapeutic confusion. This is the use of the term "cat unit." Why should such terms be in use at all? What is gained except confusion? The only object in carrying out an assay be it chemical or biologic, be it by frog or by cat is to secure to the physician and patient a uniform potent preparation. It cannot in any way be used as an index to the amount of a drug to be given a patient. There is therefore no occasion or logical reason for the use of the term "cat unit." Other drugs are given in grams or grains, cubic centimeters or minims. Why then coin a new system of weights and measures for digitals? But the evil has gone even beyond this. There are now not only cat units but "international cat units" and one is led to wonder how many practicing physicians to say nothing of cardiologists, know the difference between the two. As if these were not enough, there are "frog units" of digitals, "heart tonic units" and "guinea pig units" and all equally illogical as the cat unit, national or international. Could confusion be worse confounded? There might with equal logic be cock units of ergot, dog units of cannabis, dog units of epinephrine solution and so on ad nauseam. There is nothing scientific about such a system. What general practitioners and cardiologists want I repeat is a uniformly potent preparation of digitals. Neither cares really how this is obtained whether on a cat, dog or frog. And he can get this uniform preparation by prescribing a pharmacopeial tincture made by some one of the firms in whose products he has confidence. They should know that in prescribing such a pharmacopeial tincture they will get one that is constantly under government supervision and control.

Finally, in what I have written I hope I have made the position of the Pharmacopeial subcommittee clear. It is grateful for criticisms and suggestions. It is unfortunate that not one of the signers of the Committee's communication found it

convenient to attend the Pharmacopeial convention in 1930 when the Revision Committee was selected. Without any doubt any one of them could have been elected a delegate to the convention if he had expressed the slightest desire and he would then have been eligible for election to the Revision Committee and if so elected could have served on the Subcommittee on Biological Standardization, where his knowledge and experience would have been of tremendous help in solving a very difficult problem.

C. W. EDMUNDS, M.D., Ann Arbor, Mich.
Chairman of the Subcommittee on Biological
Standardization of the U. S. Pharmacopeial
Revision Committee

To the Editor—The digitalis committee (THE JOURNAL, March 17, p. 862) endorses the cat method for the standardization of digitalis and gives some valuable information concerning it. It then states that tablets of digitalis leaves made up to the strength of 1 cat unit, $\frac{1}{2}$ cat unit and 2 cat units have proved satisfactory in clinical use. Also liquid preparations of digitalis should be put up so that 1 cc. contains the equivalent of 1 cat unit.

I should like to ask. In clinical work why not leave the cat in the laboratory? What clinicians want is an assured active preparation. Most of them do not know what a cat unit means and why should they be asked to remember it? It adds only to confusion to say that 1 cc. contains a cat unit. If the cat must be mentioned it would be sufficient to state that the preparation was standardized by the cat method.

H. A. MCGUIGAN, M.D., Chicago

[The letter of Dr. McGuigan was referred to Dr. Levy, who replies.]

To the Editor—The suggestion of Dr. McGuigan that the cat be "left in the laboratory" is, unfortunately, not feasible. The dosage of any form of medication must be gaged by its potency. When the chemical composition of a drug is known, the dose can be expressed in terms of weight or volume. But equivalent weights or volumes of digitalis preparations are not necessarily equal in potency. In the case of biologically standardized products there must be some unit of strength by which the effects on man may be estimated. The term "unit" is one with which the practitioner is already familiar and which he employs daily in prescribing insulin, diphtheria antitoxin and the vitamin products. A unit there must be, and since, in the assay of digitals, various methods are still in use, accuracy of definition makes it necessary to refer to the "cat unit."

ROBERT L. LEVY, M.D., New York
Chairman Digitalis Committee

HODGKIN'S DISEASE IN BROTHERS

To the Editor—In THE JOURNAL, February 17, McHaffey and Peterson reported two cases of Hodgkin's disease occurring simultaneously in brothers. Reference was made to the rarity in which this condition occurs in more than one member of a family. I wish to report another instance of two cases occurring in brothers.

A C. a man aged 32 came to the surgical dispensary at Northwestern University Medical School April 13, 1931 complaining of a swelling in the right axilla of one year's duration. Examination at that time revealed several indurated discrete axillary nodes. There was moderate enlargement of the spleen. The blood count indicated 6,125 white blood cells with a normal differential count save for 3 per cent eosinophils and 4,760,000 red blood cells with 85 per cent hemoglobin. The patient stated that a biopsy had been made three months previously at Epworth Hospital, South Bend, Ind. A laboratory report subsequently

obtained from the Epworth Hospital furnished pathologic evidence of the diagnosis Hodgkin's disease. The patient was given three courses of roentgen treatments with temporary benefit but died in March 1934. At that time there was involvement of the cervical nodes along the posterior border of the right sternomastoid muscle and roentgenographic evidence of enlargement of the mediastinal nodes.

When first examined, the patient stated his brother, H. C., had died of Hodgkin's disease seven years previously at the age of 27. Diagnosis was made at the University of Michigan hospital. A report obtained from the University of Michigan is as follows: "On examination it was found that there was an enlargement of the lymph glands more marked on the left side of the body, especially in the cervical region. The liver was found to be slightly enlarged and the spleen was large and firm. Laboratory examinations showed a marked increase of mononuclears and transitionals. The final diagnosis was Hodgkin's disease." He later was given roentgen treatment but died three years after the first glandular enlargement was discovered. The diagnosis was confirmed by subsequent biopsy at the Epworth hospital in South Bend.

W. KENNETH JENNINGS, M.D., Winnetka, Ill.

USE OF OTOSCOPE FOR UMBILICAL EXAMINATION IN OBESITY

To the Editor—I wish to make a simple suggestion which I have found of considerable value to me on two occasions in the past few weeks in rather difficult examinations. Recently two obese women whom I saw complained of intermittent, purulent, excoriated discharges from the umbilicus. Each had had previous surgery done. Because of the obesity the umbilicus could not be everted in the usual manner, and so I used an ordinary electric otoscope with a rather large speculum which gave a perfect view of the floor and side wall of the umbilical cavity, and in one patient showed a tiny sinus in the floor, discharging pus.

In view of the marked difficulty that I have previously experienced in examining this type of patient, I thought this suggestion worth passing along.

H. V. FINDLAY, M.D., Santa Barbara, Calif.

BRONCHIAL ASTHMA IN PREGNANCY

To the Editor—After reading the paper entitled "Bronchial Asthma as a Complication of Pregnancy," by Dr. Bradford Green (*THE JOURNAL*, February 3, p. 360), I feel that a comment made from a different angle is proper. The obstetrician is naturally struck by the aggravation of asthma during pregnancy, for it offers a disturbing complication to him. This may lead him to a broad conclusion, as "in a patient with true bronchial asthma of anaphylactic origin, the attacks are markedly exacerbated by pregnancy." However, to the internist interested in allergy, cases of equal interest are those in which allergic manifestations disappear during pregnancy.

That this occurs was first demonstrated to me nine years ago while supervising the allergy work in the department of internal medicine at the University of Michigan. The first patient with such a story was a highly educated, intelligent woman who had been through four or five pregnancies, with freedom from both asthma and hay fever during such times. The recollection of this case is vivid because she reiterated that she welcomed pregnancy because of freedom from allergic symptoms. Since then I have had a number of cases in which there was relief from asthma, hay fever and allergic migraine during pregnancy. In order to meet the argument that these manifestations may have been associated with the menstrual

period and so relieved during pregnancy, it should be stated that the patients have been proved sensitive to foods or pollen, with no relation to menstruation. This is proved to a nicety by the fact that a seasonal manifestation of allergy, such as hay fever, recurring yearly, may be absent entirely if pregnancy includes the months of hay fever incidence. I shall not go into speculations on the interesting fact that pregnancy may have a favorable effect on allergic responses.

I feel that the practitioner should realize that, though in some patients pregnancy may aggravate allergic manifestations, in others it may have the opposite effect.

R. H. KAMPMEIER, M.D., New Orleans.
Assistant Professor of Medicine, Louisiana
State University Medical Center

Queries and Minor Notes

A ANSWERS COMMITTEE considers queries on postal cards will not be noticed. Every letter must contain the writer's name and address but the name will be omitted on request.

MENSTRUATION, OVULATION AND THE SAFE PERIOD

To the Editor—I am unable to understand just what you regard as the safe period in the menstrual cycle. On page 861 of the March 17 issue of *THE JOURNAL* Dr. Emil Novak says there is no difference between the Knaus plan of counting forward ten to seventeen days from the first day of the preceding period to derive the safe span and the Ogino method of counting back twelve to nineteen days. On page 864 of the same issue under "Sterility and Artificial Insemination" you say the most favorable time to carry out this procedure is the ten days that occur midway between the menstrual periods. On page 864 under "Diagnosis and Treatment of Aspermia" you say that the best time to inject the spermatozoa is shortly after the cessation of menstruation. Of course all this is confusing as to when you mean the safe span is. But to complicate it Dr. G. L. Moench on page 866 states that the spermatozoa live for two weeks or so in the uterus and tubes. So how can you consider any time as being safe with that possibility?

EDWARD P. LEEPER, M.D., Dallas, Tex.

Answer—An examination of the various sources of information quoted by the correspondent reveals no conflict of views to justify the quandary under which he is apparently laboring. In the letter of Dr. Emil Novak, on page 861, the ovulation period (i.e., the period that is not "safe") is given as embracing the span between the tenth and seventeenth days of the twenty-eight day cycle, although, in his original paper in *THE JOURNAL* (February 10, p. 452) Novak believes it safer to consider the "dangerous" period as extending from the eighth to the twentieth days.

In the answer to the query on page 864 the round statement is made that the most favorable time for artificial insemination is the ten days midway between the periods, and this is explained, in the next sentence but one, by the statement that "ovulation may occur at any time from the tenth to the eighteenth days of the cycle" virtually the same period emphasized by Novak.

In answer to the query on aspermia (p. 864) the statement is made that artificial insemination should be done "shortly after the cessation of menstruation," and this is not very explicit. From what has been said as to the usual time of ovulation, this procedure would be more likely to be successful if carried out after the eighth or tenth day of the cycle. It is possible that ovulation might occasionally occur just after menstruation, but this is certainly not the rule.

Finally, the correspondent has obviously read incorrectly Dr. G. L. Moench's note (p. 866) as to how long the spermatozoon retains its potency after its entrance into the female genital canal. He explicitly states that "the limit is certainly not more than thirty-six to forty-eight hours," about the same as quoted by Novak from Ogino and Knaus. The little with which chastity has apparently been lost upon the correspondent is again submitted to him for careful study and analysis with one grammatical improvement which may make it clearer: "The presence of living sperms in the female genital canal allegedly two weeks after intercourse is no longer a scientific question but a moral issue."

With one exception all the authors quoted by the subscriber, therefore, are in essential accord as to the time at which ovula-

tion occurs, and as to the duration of potency in the male sperm. These two factors, together with the now generally accepted view that the life of the extruded ovum is short, constitute the basis for the concept of a "safe period," and this is apparently supported by considerable clinical evidence. However, as Novik has emphasized, it would be premature to consider the question closed or to regard this method of birth control as infallible, as some authors seem inclined to do.

SYPHILIS AND PREGNANCY

To the Editor—A white woman aged 26, married three years inquires as to the advisability of becoming pregnant. She is in good health has never had any symptoms of syphilis, and has always had a negative Wassermann reaction. Her husband aged 30 contracted syphilis presumably about eight years ago. It was undiagnosed until two and one half years ago when he was found to have a 4+ blood Wassermann reaction. Treatment by means of two courses of neosarsphenamine and sodium bismuth thioglycollate was administered. The blood Wassermann reaction remained positive and a test of the spinal fluid was found to be 4+. The colloidal gold curve was tabetic. Two courses of tryparsamide and iodobismutol were given. The blood and spinal fluid are now negative in all respects. The patient has had lightning pains of moderate severity for about two years. These have become less frequent since the last two courses of treatment. There have been two attacks of abdominal pain believed to be tabetic crises. The reflexes and all eye phenomena are normal. The general condition is good and there are no other symptoms. Is there any danger of the wife's contracting the disease if she becomes pregnant that is could it be transmitted to her in the semen? What are the chances of syphilis in the child? I should also appreciate any suggestions you could give for the further medical management of the husband. Please omit name and address.

M D Illinois

ANSWER—In view of the frequency of conjugal and hereditary neurosyphilis it would seem inadvisable for this patient to become pregnant. The question of whether or not there is a special strain of spirochetes that has a predilection for the nervous system is still being debated. There is a definite danger of the wife's contracting the disease if she becomes pregnant. Even if the child should not show active syphilis at birth, it might show evidence of a neuropathic heredity in later life. The possibility of such conditions as hydrocephalus, juvenile tabes, idiocy and imbecility should be borne in mind. The prognosis in tabes with a markedly positive Wassermann reaction of the blood and spinal fluid is not good, even though the manifestations have become negative under treatment. Whereas a certain percentage of cases may remain quiescent or may be arrested by active treatment, the majority of cases presenting lightning pains and tabetic crises are progressive and sooner or later ataxia, bladder symptoms or ocular disturbances develop. The medical management of tabetic cases presents many problems. As long as treatment with tryparsamide and iodobismutol has proved beneficial, it should be continued. Between courses, mercurial inunctions and iodides may be administered. The eyes should be frequently checked by a competent ophthalmologist. Hydrotherapy, massage, fever therapy and reeducation methods have a limited use in the management of advanced tabes.

TRICHINOSIS

To the Editor—What is the possibility of the introduction of trichinosis through an open wound? The larvae of the trichina were found in blood smears within two weeks after a large lacerated skin wound had been received. There were no referable gastro intestinal symptoms and the patient was absolutely certain that no form of pork had been eaten. Please omit name.

M D New Jersey

ANSWER—There does not seem to be any evidence that human trichinosis has been introduced into the body through wounds of the skin. The entrance of adult impregnated trichinae through such a wound is, however not inconceivable and it is of interest to note that in susceptible animals the injection of female trichinae with mature embryos may be followed with muscular invasion by the embryos (Berger E. and Stähelin, A. *Centralbl f Bakt* (abt. 1) 107 377 [June 20] 1928, 111 144 [Feb 16] 1929. Doerr R. and Schmidt G. W. *ibid* 113 271 [July 30] 1929). This result has been obtained on injection of female trichinae directly into the muscle as well as into the circulation. Demonstration of trichinous larvae in the blood makes the case in question one of unusual interest. The first and apparently so far the only other demonstration of trichinous larvae in the circulating blood in man is by W W Herrick and Theodore C Janeway (Demonstration of *Trichinella Spiralis* in the Circulating Blood in Man. *Arch Int Med* 3 263 [April] 1909) who found them in fresh samples of blood after taking with 3 per cent acetic acid

DERMATITIS FROM SPUN GLASS CHRISTMAS TREE ORNAMENTS

To the Editor—I recently came in contact with a dermatitis of the hand. The patient attributes the condition to the handling of some Christmas tree ornaments made of spun glass. These Christmas tree ornaments go under the name of 'angels' hair'. They are manufactured by the Strauss Eckhardt Company Inc 35 East Seventeenth Street New York. The dermatitis was of the trichophytosis type. I should be grateful for your opinion as to whether or not there have been other complaints of a similar character. The occurrence of a dermatitis from the handling of this article.

C N RAMSAY M D Cleveland

ANSWER—No record of a similar case, nor any sort of dermatitis from spun glass, has been found. The Strauss Eckhardt Company imports 'angels' hair' from Germany and in response to an inquiry states the belief that it is made of glass alone. The company does not know anything about the process of manufacture but expects further information from the manufacturers. To date this has not been received. It is possible, of course, that mechanical irritation from fine glass might cause a dermatitis if it was handled a great deal, but it is unlikely that it would cause a vesicular dermatitis resembling eczematoid ringworm.

The question of mechanical irritation can be tested by rubbing a small area of skin with the 'angels' hair' and another small area with some neutral substance, such as the back of a steel or silver (not nickel) knife blade. Both methods should cause a patch of dermatitis if the dermatitis is a mechanical one. If there is some irritant other than glass, the area rubbed by the glass would cause a dermatitis, the other not. Then a patch test with a small portion of the 'angels' hair' should be made, covered with a square of oiled silk, oiled paper, rubber dam or gutta percha and fastened with adhesive tape. After two days the result can be read according to the presence or absence of dermatitis on the area touched by the 'angels' hair'. If a positive reaction is obtained, a report of the case should be made.

PROPHYLAXIS OF AMEBIASIS

To the Editor—The recent articles on amebiasis leave one thing to be desired namely prophylaxis. It seems incredible that such an epidemic as that in Chicago could have come from such gross carelessness of personal hygiene as would have occurred on the part of an employee and one wonders whether some garden that furnished the hotel with salad vegetables might not have been fertilized with human excreta. How can lettuce and celery be cleaned to make them safe to be eaten raw? If a person with amebiasis should accidentally contaminate his fingers how would he proceed to disinfect them? Would there be danger to the family from lavatories faucets and towels? Please omit name.

M D California

ANSWER—Soon after cases of amebiasis were recognized in Chicago in 1933, careful inquiries proved that the vegetables bought by the hotel in question came from the same markets as those of other hotels in which cases of amebiasis did not occur. General inquiries regarding the source of all vegetables sold in the markets failed to reveal evidence of fertilization with human excreta.

Lettuce and celery, if thoroughly washed in rapidly flowing, pure water should be safe for eating raw.

Persons with amebiasis should pare the nails close to the fingers. The hands, and especially the fingers, should be thoroughly scrubbed with a nail-brush frequently, and always after using the toilet. The hands should then be dipped either in a weak solution of cresol or in alcohol before drying.

With reasonable care, there should be no danger to the family from lavatory or faucets. But an infected person should have a towel exclusively for his own use and kept free from reach of other members of the family.

EDEMA OF EYELIDS

To the Editor—A male patient with bilateral non nephritic edema of the eyelids upper and lower is desirous of having something done. There is no history of irritation. Please omit name.

M D Massachusetts

ANSWER—First the cause should be found, if that is possible. In some of these cases chronic inflammatory conditions in the accessory nasal sinuses are responsible for the edema. In others the edema may be a local manifestation of generalized trichinosis again there may be a localized dermatitis of the upper and lower lids underlying the edema and in many of the cases, no demonstrable cause can be found. If the usual treatment is unavailing and the disfigurement is considerable, oval or crescentic strips of the skin may be excised from the upper and lower lids provided not too much is removed.

ENDOCRINE OBESITY

To the Editor—A woman aged 26 came to me on account of obesity and amenorrhea. Her childhood history is negative except for chickenpox and measles. The father is heavy set and has diabetes. One sister slightly older than the patient is also considerably overweight and a brother has a tendency toward obesity. The patient is short. Menstruation began at the age of 12 and has always been irregular from a few days to one month when it first began. Later it lasted four or five days with a profuse flow, no clots and no backaches or pain. The last period was more than two years ago previous to her marriage, since which time she has not menstruated. The discharge is yellowish. The patient has no libido but gets ordinary satisfaction from sex relations. She states that formerly when she went a couple of months without menstruating she gained weight, which was lost when she began menstruating. She tires easily, has spells of nausea and cramps and is not short of breath. Constipation alternates with diarrhea. She has not been able to conceive. She is 59 inches (150 cm) in height and weighs 256 pounds (116 kg). She states that before her marriage she weighed 140 pounds (63.5 kg) and has gained 25 pounds (11.3 kg) in the last three months. She is very intelligent. She has a small amount of hair on the upper lip and face which has increased in the last two years. Her teeth are far apart. Obesity seems to be more pronounced on the shoulders and abdomen. The genitals are fairly normal in size. The uterus cannot be felt owing to the extreme obesity. The breasts are larger than usual. Roentgen examination shows a normal sella turcica but the frontal sinuses are underdeveloped. Laboratory examinations show normal blood chemistry and urine. The Wassermann reaction is negative. The basal metabolic rate is plus 3.08 per cent. An electrocardiogram showed a deep Q in the third lead which usually is significant of myocarditis. I have placed the patient on a 1500 calory diet and given her desiccated thyroid and the anterior pituitary like principle from the urine of pregnancy in the hopes of making her menstruate. In seven weeks she has lost 24 pounds (11 kg) but so far has not menstruated. Previous treatments with injections of theelin have also failed to bring menstruation. This is beyond question a pituitary disturbance with no doubt a family predisposition to glandular dysfunction. I have given her thyroid principally because her heart rate was 70 and blood pressure 120 and the fact that the basal metabolic rate is plus 3 for such a person is below normal in view of her surface area. Suggestions toward reducing the patient scientifically and also with respect to bringing about menstruation will be greatly appreciated. Would you advise using dinitrophenol in such a definite glandular case? Please omit name.

M D Missouri

ANSWER—The case is compatible with a hypofunction of the anterior pituitary gland, resulting in a decreased gonadal activity. The treatment seems adequate from the standpoint of weight reduction. However, it would be advisable to continue the use of either of the estrogenic preparations used until, and for some time after, the weight has returned to normal, before passing final judgment on their adequacy. In view of the patient's apparent resistance to the action of these endocrine preparations, it might be better to administer them in short courses, allowing rest periods in between. There is nothing to be gained by the use of dinitrophenol.

TOXICITY OF ETHYLENE DICHLORIDE AND OF TRICHLOROETHYLENE

To the Editor—One of our local firms is using ethylene dichloride in manufacturing its adhesive line consisting of library pastes and glues. There is a chloroform like odor which has several times nauseated an employee or two. I should like to know whether there is any harm that might arise from this.

M D Iowa

To the Editor—I am interested in obtaining some information on the relative toxicity of ethylene dichloride ($C_2H_4Cl_2$) and trichloroethylene (C_2HCl_3) and any health hazards attendant on the use of these solvents for industrial purposes. I note in THE JOURNAL April 16 1932 page 1401 a statement in reply to an inquiry that ethylene dichloride is more toxic than trichloroethylene. I would appreciate receiving any information that the Association may have as to specific tests on the relative toxicity of these two products.

L New York

ANSWER—Ethylene dichloride ($C_2H_4Cl_2$) is a member of a group of chlorinated hydrocarbons and is similar to carbon tetrachloride, trichloroethylene and chloroform. All these substances are toxic. The order of its toxicity may be inferred from the following list of various solvent intoxicants in terms of diminishing toxicity: benzene, ethylene dichloride, trichloroethylene, carbon tetrachloride, gasoline (boiling point 90°C), naphtha and Stoddard's solvent.

Ethylene dichloride has come into fairly extensive use as a solvent and extractive. Toxicity begins at about 500 parts of the vapors of ethylene dichloride per million of air. Manifestations are similar to those from carbon tetrachloride. These usually begin with nausea, headaches, mild respiratory irritation and diarrhea but culminate in gross injury (which may be temporary) to the liver with symptoms of, or simulating, guanidine poisoning.

In 1932 the department of industrial relations of the state of Ohio found itself involved in litigation with reference to its code governing dry cleaning operations. In hearings, extensive data were presented concerning the relative toxicity of carbon

tetrachloride, ethylene dichloride and trichloroethylene. This material has not been published beyond the point of hearing records.

A part of the testimony consisted of the presentation of the results of animal experiments in which the substances mentioned had been tested by respiratory administration and by skin application. In this work rabbits were utilized as experimental subjects. The rabbit is perhaps not as well suited for this type of experimentation as are dogs or monkeys.

Exposure was provided to various concentrations of vapors, and various quantities of the liquid were applied to the skin. Certain animals promptly died, others in the lower concentration series were killed. All were examined post mortem together with suitable controls. As lower concentrations of ethylene dichloride either killed animals more rapidly than trichloroethylene, or the extent of damage found at autopsy was greater, the conclusion was reached that the former is more toxic for rabbits than the latter. However, it was emphasized that the general order of toxicity was not greatly dissimilar.

It is not known that the results of these experiments will be published. Correspondence with the department at Columbus, Ohio may lead to these records becoming available. Since this was a matter of litigation, it is likely that conflicting testimony may have been presented, which also will appear in hearing records.

INFILTRATION ANESTHESIA FOR CURETTAGE OF UTERUS

To the Editor—Please describe a method of carrying out direct infiltration anesthesia for curettage of the uterus. You mentioned it under Herpes After Spinal Anesthesia for Curettage. Please omit name.

M D, Ohio

ANSWER—The patient should be given a hypodermic injection of 16 mg of morphine and 0.3 mg of scopolamine about forty five minutes before the infiltration is to be begun. The narcosis due to morphine persists for a variable length of time after the operation is ended and this usually insures that the patient will sleep or at least be comfortable for some time after the operation.

The surgical preparation of the vagina is, of course, the same as when inhalation anesthesia is employed. The patient should be made as comfortable as possible during the operation. Hence abundant pillows should be placed on the operating table, especially under the back and around the shoulders where braces are usually applied. For the local anesthetic, 0.5 per cent of procaine hydrochloride is used. To this solution after sterilization, two drops of 1,000 epinephrine are added for each ounce. About 175 cc of solution is prepared.

The technic for dilation and curettage is as follows. A narrow retractor is used to depress gently the posterior vaginal wall. If the patient has a narrow vagina or a rigid perineum solution should also be injected into the perineum as follows. The needle is inserted about midway down one labium majus and solution is injected all along the edge of this labium, then across the fourchette and up the edge of the other labium majus. It is usually necessary to remove and reinsert the needle a few times, but one must always reinsert the needle in an area that has already been infiltrated. With Allis forceps, slight traction is then made on the infiltrated fourchette and solution is injected into the layer between the vaginal wall and the rectum not only in the median line but also well out to the sides in the shape of a fan. The needle is inserted about 5 cm in each direction, and about 30 cc of solution is distributed in this space. In some cases it is necessary to insert the needle deeply through the fascia over each levator ani muscle and inject about 10 cc of solution into the muscles and fascial layers. Then the cervix is grasped with a tenaculum and gently pulled down and to the right side. The needle, which should be long and flexible, is then inserted into the left parametrium by following closely along the cervix for a distance of from 2 to 3 cm. If any resistance at all is met the needle has most likely penetrated the cervix. In this case it should be pulled back slightly and then inserted a little more laterally. After the needle is in the parametrium, the plunger should be pulled up slightly to make certain that the needle has not entered a blood vessel. If no blood appears in the barrel of the syringe, about 10 cc of solution is injected slowly and with the needle constantly but gradually being withdrawn. The same procedure is carried out on the right side of the cervix. The procaine hydrochloride in the parametrium blocks the large sympathetic ganglions of the Frankenhäuser, which are situated at the upper portion of the cervix. The local anesthesia produces blanching of the vaginal mucosa round the cervix. If parts of the vaginal epithelium are not blanched, it is best to inject about 5 cc of solution into the space between the cervix and the bladder and between the cervix and the rectum. It is a good plan to administer a hypodermic

injection of solution of pituitary when the operation is begun in order to insure a minimal loss of blood from the uterus

After waiting about five minutes it will be found that the cervix is soft enough to permit easy dilation without pain. Curettement is likewise a painless procedure and there is little bleeding. The uterus returns its tonicity even if solution of pituitary is not used. Occasionally the patient experiences slight pain when the corners of the uterus are curetted. One should not undertake to curet the uterus without a thorough knowledge of its anatomy or without an understanding of pathologic conditions that may be present.

TALIPES EQUINUS VARUS

To the Editor—I have an infant patient now nearly 2 months old whom I have been treating since birth for congenital talipes equinus varus. At the outset I utilized fixation and overcorrection simply by strapping with adhesive plaster. For the past month I have been using a metal splint which I remove at frequent intervals and massage the extremity. At this time there is evident improvement. How long should this treatment be continued? Would a plaster cast be more advisable? I want to avoid atrophy of the leg muscles. Can my present treatment be improved and what is the prognosis where early treatment is employed? Please omit name.

M D Illinois

ANSWER—Improvement must be continued until overcorrection is obtained, until the foot can be put in the overcorrected position by a moderate amount of pressure by the surgeon's fingers holding the leg just above the ankle and gently forcing the foot in the overcorrected position by the application of the index finger. A plaster-of-paris cast would undoubtedly be more advisable, but it should be applied by a trained physician, preferably an orthopedic surgeon. The present treatment can be improved by calling an orthopedic surgeon in consultation. If no additional measures are necessary, assurance can be felt that everything possible is being done for the patient.

The prognosis in congenital talipes is excellent, depending on (1) early diagnosis, (2) early treatment, (3) persistent treatment and (4) cooperation of the surgeon, parents or nurse, and later of the patient. Overcorrection should be obtained and maintained until functional use (walking in the overcorrected position) makes the correction permanent.

SIMULTANEOUS IMMUNIZATIONS

To the Editor—Can one administer all the toxins and antitoxins and vaccines at the same time? (I am referring especially to such as the scarlet fever toxin, diphtheria toxoid, vaccination against smallpox and prophylactic pertussis vaccine.) Can there be any more harmful symptoms or complications from the administration of all these vaccines and serums at one sitting than by injecting each at a time?

JACOB STERN M D Chicago

ANSWER—There is no experience with human beings on the basis of which a definite answer can be given to these questions. It is not known for instance whether successful vaccination against smallpox would interfere in any way with the immune reactions against scarlet fever toxin, diphtheria toxoid or pertussis vaccine. Neither is it known whether the inoculations mentioned would cause more serious symptoms if made at one time than if made at different times, but it would seem reasonable to assume that simultaneous inoculations might give rise to serious disturbances. Certainly it would not be advisable to undertake simultaneous inoculations in the present state of knowledge and experience.

HYDROCYANIC ACID EFFECTS ON PARKINSONISM

To the Editor—I have under my care a man aged 44 with a definite history of epidemic (lethargic) encephalitis in 1924 and parkinsonism developing five years later. For fifteen years he has been engaged in fumigation with hydrocyanic acid and states that whenever he has a whiff of the gas there is an increase in his rigidity. He is now being forced into retirement and desires to establish an industrial connection. I would appreciate information and special references concerning the effect of hydrocyanic acid in aggravating a condition quite obviously caused by an infectious disease. Please omit name.

M D District of Columbia

ANSWER—Hydrocyanic acid, being an internal asphyxiant and thus a disturber of normal tissue oxidation theoretically may be regarded as a temporary accelerant of almost every disease. The following quotation is derived from Henderson and Haggard's 'Noxious Gases' (New York Chemical Catalog Company, Inc, 1927):

'The tissues manifest life by heat and movement and the continual oxidation of foodstuffs. Cyanides stop this oxidation and the vital functions are suspended. The suspension is maintained only during the presence of the cyanide. Its removal allows the return of normal function if death has

not occurred during the period of oxygen starvation. Cyanide poisoning is a form of asphyxia caused by the arrest of internal respiration.'

In unprejudiced fairness, doubt may be entertained that the severity of Parkinson's disease and residual encephalitis is measurably increased by an occasional whiff of hydrocyanic acid. Even if at the moment of exposure the manifestations of these disorders are more noticeable, the effects of the episode are not known to eventuate in a persistent aggravation of the preexisting diseases. General discussions of the nature of hydrocyanic acid poisoning may be found in Alice Hamilton's 'Industrial Poisons in the United States' (New York, Macmillan Company, 1929), Kober and Hayhurst's 'Industrial Health' (Philadelphia, P. Blakiston's Son & Co, 1924), and several official publications of the United States and the British public health services.

USE OF DIPHTHERIA TOXOID

To the Editor—In November the local Parent Teachers Association sponsored and carried through the inoculation of 281 children of school age with the first of two treatments for diphtheria with toxoid. During the entire fall more or less trouble occurred with bad throats and in several cases this was followed by glandular trouble. Sore throat with fever occurred before the inoculation but so far as I know there was no nephritis. Thursday December 14 a youth aged 18 years who received the first treatment on November 29 was taken to the local hospital with acute nephritis. So far as I am able to find he was not ill with a bad throat any time this fall. I am wondering what the history of toxoid is with reference to nephritis. Would there be justification for concluding that his illness is due to the toxoid or might there be some other cause? I am wondering if it would be asking too much of your office to answer my questions at once and rather fully. As a school superintendent I am intensely interested in health and if nephritis is apt to follow inoculation with toxoid I don't want to be urging that it be taken. I would appreciate knowing what the picture is relative to diphtheria and toxoid and toxoid and its after effects.

Superintendent West Union
Public Schools

E A RALSTON West Union Iowa

ANSWER—While the possibility that the illness of the boy may have been due to the toxoid cannot be excluded absolutely, it seems probable that it resulted from some other cause. The experience in immunization against diphtheria does not indicate that nephritis is likely to follow the injection of toxoid. Toxoid properly administered appears to be an effective means of preventing diphtheria without any serious disturbances.

REDUCTION OF LOCAL ACCUMULATIONS OF FAT

To the Editor—An attractive woman aged 28 has appealed to me for scientific information that she may use to effect a reduction in the size of the calves of her legs. She is of slightly less than average size and is well proportioned except for an accumulation of fat around the thickest portion of the gastrocnemius muscles. The basal metabolic rate is normal and there is no evidence of any glandular abnormality. Five months ago she had a suspension operation for retroversion of the uterus. As a young girl she was very active in dancing, skating and rope jumping and the muscles of the legs are quite well developed. There is no tendency toward any deposit of fat elsewhere than the region mentioned. Is there anything in the way of massage or exercise that I may prescribe for her? If so please give details. Kindly omit name.

Jr Virginia

ANSWER—The reduction of local accumulations of fat is a difficult and uncertain matter. The use of a mild weight reduction diet accompanied by exercise of the affected parts is sometimes successful. Dancing and rope skipping would be the exercises of choice. Since the patient is not overweight, the reduction diet should be intermittent so as not to cause too much general weight loss. The exercises, however, must be maintained indefinitely, since there appears to be an increased tendency for the deposition of fat around well developed muscles once the exercise of those muscles ceases. The latter observation may have some bearing on the etiology of the fat accumulation in the case described.

VISUAL EFFICIENCY

To the Editor—I cannot get quite clear in my mind what a supervising approver for an insurance company means when he states that 20/100 vision is equivalent to 48 per cent of visual efficiency—based on a chart furnished by the American Medical Association. The vision in one eye of the patient in question is light perception and light projection and in the other eye is 20/100.

LEO J GOLDBACH M D Baltimore

ANSWER—The Section on Ophthalmology of the American Medical Association in 1925 received a report of a committee appointed to determine the percentage of loss of vision due to industrial accidents. This report is published under the title

of "Appraisal of Loss of Visual Efficiency" by the American Medical Association and is obtainable by purchase (ten cents)

According to that table, when the vision for distance is 20/100 and for near 14/70, by the Snellen scale, the percentage of visual efficiency in that eye is 48.9 and the percentage of loss of vision is 51.1. The Wisconsin table, which is in use by the industrial commission of Illinois, allows 75 per cent loss of vision or 20/100 vision

TOXIC NEURITIS OF OPTIC NERVE

To the Editor—I have a case of evidently toxic neuritis of the optic nerve of a hair dresser who has been using benzene Vapron shampoo and Inecto-Notox hair dye. I should like to know whether there is any record of toxic neuritis from these chemicals and if so where I could find information in the literature as to the treatment of such cases. Also chemical analysis of ingredients in the dyes.

C. S. BUCHER, M.D., Champaign, Ill.

ANSWER—There are no reports in the literature to the effect that Vapron or Inecto-Notox hair dye has caused optic neuritis. Naphthalene has a powerful effect on the lens of lower animals and when ingested produces cataract. Methyl alcohol fed to animals produces a degeneration of the macular ganglion cells of the retina. Clinically, retrobulbar neuritis is found in various poisonings, including methyl alcohol, tobacco and diabetes. Optic neuritis from benzene has not been heretofore reported so far as can be learned.

PRESCRIPTION OF DIURETICS

To the Editor—Please suggest how one may prescribe the diuretics urea, ammonium chloride and ammonium nitrate in a palatable form.

A. J. REICH, M.D., New York

ANSWER—The following prescriptions yield preparations probably as palatable as may be. All of these contain 1 Gm. of the drug per teaspoonful, which must be well diluted with water before being taken.

Rx Ammonium chloride	30 Gm
Anise water	30 cc
Syrup of glycyrrhiza	to make 120 cc
Rx Ammonium nitrate	30 Gm
Syrup of glycyrrhiza	to make 120 cc
Rx Urea	30 Gm
Acacia powder	12 Gm
Syrup of cinnamon	to make 120 cc

DIARRHEA AFTER TAKING IRON PREPARATIONS

To the Editor—The editorial entitled "Available Iron in Therapy" (THE JOURNAL, Dec. 30, 1933, p. 2123) states that the iron in pyrophosphate not only is available but is held in such firm combination that it does not produce the astringent effects so characteristic of other iron salts. Astringent effects are local. Astringent salts are used to curb diarrhea. Large doses of iron and ammonium citrate say from 6 to 8 Gm. daily induced loose stools or even diarrhea so that the dosage has to be curtailed. I never quite understood why this is so. The prevailing opinion among the profession is that iron is constipating as it is in the small dosage that many employ. Can you explain?

THOMAS I. O'DRAIN, M.D., Philadelphia

ANSWER—Iron and ammonium citrate is not a protein precipitant and hence is nonastringent. The laxative effect of the large dosage mentioned may be due to irritative action of the drug in such doses or to its otherwise disturbing digestive equilibrium. It is in this manner, no doubt, that large (1 Gm.) doses of reduced iron, which by itself is incapable of producing irritation, may cause diarrhea.

TYPHOID VACCINE AND TETANUS ANTITOXIN

To the Editor—1. Should a patient who has taken her last prophylactic dose of typhoid vaccine five days previously receive tetanus antitoxin for a moderately deep lacerated wound of the leg? The wound was inflicted by a metal support under a card table and occurred two days before the patient was seen. There is apparently little infection and no sutures were required. 2. Would the fact that the patient had just received a dose of typhoid vaccine increase the danger of reaction from the administration of tetanus antitoxin? Please omit name and address.

M.D., South Carolina

ANSWER—1. There seems to be no good reason why the patient should not be given tetanus antitoxin without delay if the nature of the wound demands antitetanus prophylaxis.

2. The typhoid vaccine would not, so far as is now known, increase the danger of reaction from tetanus antitoxin.

SAFE ANESTHETIC FOR OFFICE USE

To the Editor—What do you regard as the safest anesthetic for short anesthesia in office work? The general practitioner is in need of a safe anesthetic for minor office work such as opening boils, curetting ulcers, puncturing ear drums and things that require only a moment or two of work. Ether takes too long to be effective and I have always been just a little afraid of chloroform. I have given ethyl chloride a few times but I think it is unsafe in fact some claim that it is highly toxic. Is there anything safer? Or it may be that I am just a little too apprehensive in regard to the different agents. Please omit name.

M.D., West Virginia

ANSWER—The local anesthetic procaine hydrochloride is the safest agent for minor operations in the office. There are, however, many minor operations, such as those mentioned, in which a general anesthetic is desirable. The safest general anesthetic for office use is, no doubt, nitrous oxide, as has been amply demonstrated by its use in dental offices. Certainly, chloroform is to be avoided, and ethyl chloride is unsafe unless it is administered by an expert anesthetist. The safest possible agent is the only one permissible for office use, as a fatality due to an anesthetic used for a minor operation would carry with it great moral, ethical and medicolegal responsibility.

THYROID DISEASE IN A CHILD

To the Editor—The thyroid gland has been enlarging gradually in a girl aged 4 years. The child has a slender neck and one can see distinctly a small swelling corresponding to the thyroid gland. The mother had an enlarged thyroid gland with some symptoms of thyrotoxicosis while carrying the child. The girl is quite excitable. What management would be proper at the present time? Would compound solution of iodine in minimal doses be indicated? Please omit name.

M.D., Iowa

ANSWER—The management of thyroid disease in children is essentially the same as in adults except that more conservatism is indicated. The metabolic rate should be determined in a qualified laboratory. Growth and nutrition should be observed. Iodized salt should be used in the cooking and at the table. Cod liver oil given for vitamin content will also supply iodine. Together these substances will cover the iodine requirements. Foci of infection in the teeth, nose and throat should be removed. The daily life should be quiet and restful.

DOG AS A CARRIER OF SCARLET FEVER

To the Editor—Have dogs ever been known to act as carriers of scarlet fever and to transmit the disease to human beings? What is the public health teaching regarding a dog in a house quarantined for scarlet fever? Is the dog allowed to run free or should he be kept on the premises? Please omit name.

M.D., Minnesota

ANSWER—There is no evidence to indicate that the dog can be anything more than possibly an accidental carrier of scarlet fever. Dogs, like other household pets, must be excluded from the sickroom and from contact with patients suffering from acute infectious diseases. When thus excluded, it would seem to make little difference whether the dog is allowed to run free or is confined to the premises.

GLYCERITE OF BISMUTH BY MOUTH IN SYPHILIS

To the Editor—I should like to inquire as to the efficiency of the oral administration of the glycerite of bismuth in doses of 20 minims (1.25 cc.) three times a day in the routine treatment of syphilitic cases and as to whether it is possible to use this medication to replace completely the intramuscular injection of bismuth. Please omit name.

M.D., California

ANSWER—Glycerite of bismuth in any dose is of no value as an antisyphilitic. Administration of bismuth salts by mouth has been tried by Levaditi and others on syphilitic rabbits with inconstant results, far inferior to the results of intramuscular injection.

ACNE

To the Editor—Please inform me concerning the best line of treatment of pitting and scarring in acne.

F. L. CHENAULT, M.D., Decatur, Ala.

ANSWER—The major portion of methods of treatment of pitting and scarring in acne are of little or no value. The so-called peeling methods not infrequently increase rather than diminish the disfigurement. With proper hygiene of the skin in general pitting and scarring gradually improve with time and radical intervention is usually not justified.

EFFECTS OF IODIZED SALT

To the Editor—Please tell me what the effect would be in the use of iodized salt over a long period of time in a patient who has a basal metabolic rate of —23. How would this affect the giving of thyroid? Kindly omit name
M D Illinois

ANSWER—The prolonged use of iodized salt would not lower the rate of a patient to —23 per cent and, on the other hand, might affect the patient's thyroid so that a gradual rise of metabolism toward normal might occur. It would not affect the giving of thyroid if this is indicated. If thyroid disorder, either with or without goiter, is thought to be present, iodized salt is indicated.

CONTINUOUS USE OF QUINIDINE

To the Editor—Will you please advise me regarding reports on long continued use of quinidine in good sized doses. It seems to me that I recently read a report of 12 grains (0.78 Gm.) of quinidine being used daily over a period of months.

GEORGE W JONES M D Clovis N M

ANSWER—Patients with whom it agrees may be given such doses of quinidine indefinitely. It has been given for a year, and even for years.

ACUTE INFECTIOUS MONONUCLEOSIS

To the Editor—Is there at present a specific for use in the treatment of acute infectious mononucleosis or is the treatment entirely symptomatic?

J M BODENHEIMER M D Shreveport La

ANSWER—There is at present no specific treatment of acute infectious mononucleosis. Fortunately, symptomatic treatment is usually successful.

INFECTION WITH TUBERCULOSIS

To the Editor—In Queries and Minor Notes in THE JOURNAL February 17 the statement is made that an individual who was once infected with tuberculosis to the extent that he reacts positively to tuberculin is rendered hypersensitive to further tuberculous infection in a manner similar to that of an individual who is allergic to ragweed pollen. While such a theory has been promulgated by some writers the majority of workers in this field still maintain that a slight tuberculous infection reduces the risk of further infection.

In a recent paper (THE JOURNAL April 8 1933 p 1077) C A Stewart of Minneapolis reports his observations on eighty-four children at the Lymanhurst School for Tuberculosis and from his studies he concludes that an individual who has a primary tuberculous infection is doomed thereafter to develop consumption if successfully reinfected from exogenous or endogenous sources.

Of course no one doubts the fact that an individual cannot develop tuberculosis as a result of an endogenous infection unless he has previously been infected with tuberculosis and a focus containing viable tubercle bacilli is still present somewhere in his system. But there is no sufficient evidence to warrant the contention that a person who once had a primary tuberculous infection is more likely to be reinfected from exogenous sources.

This is not the place to discuss in detail the theories advanced by Dr Stewart and his associates nor is it necessary since no less an authority than Dr William H Park (THE JOURNAL Nov 18 1933 p 1619) discusses this matter in detail in connection with his report on the use of BCG vaccine and he and his collaborators conclude: "We do not think that slight primary tuberculous infection acquired by natural infection or produced by vaccination diminishes resistance against future superinfections by tuberculosis."

It is a matter of common knowledge that from 75 to 90 per cent of the adult population especially in urban centers have had a primary tuberculous infection as indicated by a positive tuberculin reaction yet only a small percentage develop clinical tuberculosis. If a primary infection would render an individual hypersensitive to further infection the incidence of tuberculosis would be much larger than it is. It may be argued that the greatest number of allergic individuals escape tuberculous disease because they are not exposed to infection. It is reasonable to suppose however that taking the population at large individuals who have had a primary infection are just as much exposed as those who have never been infected so that if there is sufficient infection prevalent among the population to produce a primary infection in such a large percentage of people one would expect sufficient exposure to reinfection to produce disease in a larger percentage than actually occurs. One is therefore forced to the conclusion that the vast majority of allergic individuals have sufficient resistance to ward off reinfection.

JOSEPH ROSENBLATT M D Liberty N Y

EFFECTS OF BODY TEMPERATURE ON SPERM

To the Editor—In Queries and Minor Notes in THE JOURNAL March 17 page 866 Dr G L Moench stated that the body temperature alone other factors remaining the same will kill all sperm in the female genital tract within twenty-four hours and certainly within forty-eight hours. If body temperature alone killed sperm living sperm in ejaculations from twenty-one to twenty-eight days after bilateral complete vasectomies would not be observed. However living sperm have been found after vasectomies in this time interval as reported by Dr A Elmer Belt (THE JOURNAL February 3 p 396).

W M FARSON M D Chicago

Council on Medical Education and Hospitals

COMING EXAMINATIONS

- AMERICAN BOARD OF DERMATOLOGY AND SYPHILIGOLOGY Written Examinations will be held in various cities April 30 Oral Cleveland June 11 12 Sec, Dr C Guy Lane 416 Marlboro St Boston
- AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY Oral (all candidates) Cleveland June 12 Sec Dr Paul Titus 1015 Pittsburg Bldg Pittsburgh
- AMERICAN BOARD OF OPHTHALMOLOGY Cleveland June 11 and Butte Mont July 16 Application must be filed at least 60 days prior to date of examination Sec Dr William H Wilder 122 S Michigan Bldg Chicago
- AMERICAN BOARD OF OTOLARYNGOLOGY Cleveland June 11 Sec Dr W P Wherry 1500 Medical Arts Bldg Omaha
- ARKANSAS Basic Science Little Rock May 7 Sec Mr Louis E Cebauer 701 Main St Little Rock Regular Little Rock May 14 15 Sec, Dr A S Buchanan Prescott Homeopathic Little Rock May 8 Sec Dr Allison A Pringle Eureka Springs Eclectic Little Rock May 8 Sec, Dr L L Marshall 820 W 14th St Little Rock
- CALIFORNIA Reciprocity San Francisco May 16 Sec Dr Charles B Pinkham 420 State Office Bldg Sacramento
- MINNESOTA Minneapolis April 17 19 Sec Dr E J Engberg 350 St Peter St St Paul
- NATIONAL BOARD OF MEDICAL EXAMINERS The examinations in Parts I and II will be held at centers in the United States where there are five or more candidates, May 7 9 (limited to a few centers) June 25 27 and Sept 12 14 Ex Sec Mr Everett S Elwood 225 S 15th St Philadelphia
- NEBRASKA Basic Science Omaha May 12 Application must be filed at least 15 days prior to date of examination Dir Bureau of Examining Boards Mrs Clark Perkins State House Lincoln
- NEVADA Carson City May 7 Sec, Dr Edward E Hamer, Carson City

Montana April Report

Dr S A Cooney, secretary, Montana State Board of Medical Examiners, reports the written examination held in Helena, April 4-5, 1933. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Four candidates were examined, all of whom passed. Two physicians were licensed by reciprocity. The following schools were represented:

School	PASSED	Year	Per
		Grad	Cent
Northwestern University Medical School		(1929)	83.5
Sch of Med of the Division of the Biological Sciences		(1932)	81.4
University of Illinois College of Medicine		(1931)	79.5
Washington University School of Medicine		(1932)	82.1
School	LICENSED BY RECIPROCITY	Year	Reciprocity
		Grad	with
Creighton University School of Medicine		(1921)	Nebraska
University of Wisconsin Medical School		(1929)	Wisconsin

New Mexico Endorsement Report

Dr P G Cornish, Jr, secretary, New Mexico Board of Medical Examiners, reports 17 physicians licensed by endorsement at the meeting held in Santa Fe, Oct 9-10, 1933. The following schools were represented:

School	LICENSED BY ENDORSEMENT	Year	Endorsement
		Grad	of
University of Arkansas School of Medicine		(1932)	Nebraska
College of Medical Evangelists		(1933)	B M Ex
Chicago Medical School		(1930)	Illinois
College of Physicians and Surgeons of Chicago		(1912)	Illinois
Rush Medical College		(1932)	Illinois
Indiana University School of Medicine		(1927)	Indiana
Tulane University of Louisiana Medical Department		(1907)	Louisiana
University of Maryland School of Medicine and College of Physicians and Surgeons		(1917)	Arkansas
Barnes Medical College Missouri		(1908)	S Dakota
Beaumont Hospital Medical College Missouri		(1897)	Mexico
Missouri Medical College		(1890)	Missouri
University of Buffalo School of Medicine		(1923)	New York
Baylor University College of Medicine		(1932)	Texas
University of Texas School of Medicine		(1932)	Texas

North Carolina Endorsement Report

Dr B J Lawrence, secretary, North Carolina State Board of Medical Examiners, reports 23 physicians licensed by endorsement at the meeting held in Raleigh, Dec 2, 1933. The following schools were represented:

School	LICENSED BY ENDORSEMENT	Year	Endorsement
		Grad	of
College of Medical Evangelists		(1933)	B M Ex
Yale University School of Medicine		(1931)	Michigan
Emory University School of Medicine		(1922)	Alabama
University of Georgia School of Medicine		(1930)	Georgia

Northwestern University Medical School	(1932)	Ohio
University of Louisville Medical Department	(1917)	Kentucky
Baltimore Medical College	(1903)	New York
Johns Hopkins University School of Medicine	(1930)	Maryland
University of Minnesota Medical School	(1925)	Minnesota
Central Medical College of St. Joseph Missouri	(1897)	Missouri
St. Louis University School of Medicine	(1932)	Missouri
Washington University School of Medicine	(1906)	Missouri
Cornell University Medical College	(1920)	New York
Long Island College Hospital	(1928)	Louisiana
University of Rochester School of Medicine	(1932)	New York
Medical College of the State of South Carolina		
(1926) (1931) South Carolina		
Meharry Medical College	(1932)	Tennessee
Vanderbilt University School of Medicine	(1931)	N. B. M. E.
Medical College of Virginia	(1932)	Virginia

Book Notices

Speech Disorders A Psychological Study of the Various Defects of Speech By Sara M. Stinchfield Ph.D. Lecturer in Psychology University College University of Southern California Speech Clinic Orthopedic Hospital School Los Angeles Cloth Price \$4 Pp 341 with 26 Illustrations New York Harcourt Brace & Company London Hegan Paul French Trubner & Co Ltd 1933

This carefully written volume will be of chief interest to the psychologist but of little interest or value in the treatment of speech disorders. To the person with speech defect it will appeal as a scientific book with interesting statistics, but no cures will be effected by the reading. Speech in infancy and childhood is tabulated with numerous relationships, but a too technical classification is presented. The deaf, blind and cleft palate child is discussed from a social point of view. References are numerous, but page numbers often are not mentioned. The pages on stuttering are devoted to etiologies but no final conclusion is reached. Outgrowth as a treatment is spoken of unfavorably, but no idea is given as to the best treatment for the defect. Freud's treatment is discussed but not evaluated. A comparison is made between college and school groups as to number and kind of speech defects. The author discusses researches on right and left handedness and on cerebral dominance made by different speech specialists and finds that there is no evidence that either of these theories gives the etiology. One chapter is taken up in comparing the scholarship and aptitudes of groups of students in college and school in relation to their being silent and oral readers in their study. Five excellent charts are shown with this information but the reader wonders what this has to do with speech disorders. The speech tests given are confined entirely to school and college groups but not to business or social groups. The chapter on case histories is good. Bluemel is given credit for "the most lucid and detailed" form of treatment. The author is mistaken in calling his theory visual amnesia. It is decidedly auditory. Bluemel (vol 1, p 377) refers to "auditory amnesia as the primary cause of stammering." The author is also mistaken about the Swift method. Swift, the originator of the visual theory and the treatment of visual development, says "the cause is visual asthenia" (*A Psychological Analysis of Stuttering Journal of Abnormal Psychology*, October-November 1915 p 13, line 3). Also in "Speech Defects in School Children and How to Treat Them" (Boston, Houghton Mifflin Company, 1918, p 18, line 10), 'they constantly lack this visual image while they are stuttering'.

The whole book is well written and clear to those familiar with speech nomenclature, but poor as far as treatment for stammering or other speech defects are concerned. In other words the author gives a psychologic study of all phases of the subject except the psychologic study of treatment which is the most important phase of the whole subject.

Diagnostics urgents Abdomen Par H. Mondor professeur agrégé à la Faculté de Paris. En deux volumes. Second édition. Cloth Price 160 francs Pp 1064 with 306 Illustrations Paris Masson & Cie 1933

In this edition the author offers an exhaustive differential diagnosis of acute abdominal conditions without consideration of pathogenesis or therapy. The book contains chapters on acute peritonitis, traumas of the abdominal cavity, intraperitoneal hemorrhages, intestinal occlusion, other syndromes such as acute dilatation of the stomach, acute hemorrhagic pancreatitis, intestinal infarcts, torsion and volvulus of the intestine. Discussion of differential diagnosis is exemplified by case

histories accompanied by temperature charts. Owing to the presence of many repetitions, several chapters are rather voluminous, 127 pages being devoted to the diagnosis of appendicitis, 89 to perforation of gastric and duodenal ulcers and 41 to Meckel's diverticulitis. While discussing appendicitis, the author applies the term "absurd" to a diagnosis of acute enteritis or spastic colitis. Reproductions of photographs are instructive but not attractive, because of a grayish appearance caused probably by overexposure. Certain omissions have been noticed for instance, in the discussion of the diagnosis of ectopic pregnancy, the Aschheim-Zondek test is not mentioned at all, blood chemistry has not been considered in the diagnosis of intestinal occlusion. Generally speaking, physical and also roentgenographic observations are described meticulously, while laboratory observations have been completely disregarded or are treated in a stepmotherly manner. The index of authors mentioned in the text appears to be superfluous as no bibliographic references are given. The book is well written, it contains an immense wealth of diagnostic material and may be considered as a valuable and authoritative contribution to the French medical literature.

Red Medicine Socialized Health in Soviet Russia By Sir Arthur Newsholme K.C.B. M.D. and John Adams Kingsbury LL.D. Secretary of the Milbank Memorial Fund. Cloth Price \$2.50 Pp 324 with Illustrations Garden City N.Y. Doubleday Doran & Company Inc 1933

Red Medicine is both interesting and evasive. It is interesting in that it carries the reader a little too smoothly and altogether too hurriedly over a vast area of perhaps heretofore slightly known territory. Too smoothly, because the reader is likely to be impressed with the apparent ease with which each item of interest and every incident of note seem to have been discussed with more or less intimate understanding and sang froid, too hurriedly because in the limited time of possibly six weeks the reader is carried rapidly over 9,000 miles of southwestern Soviet Russia, through and about fourteen cities, in a section of the world where some familiarity with the language, customs and previous social system would, no doubt, have been of great assistance in checking the interpreter's explanations. This trip must have been much less deliberate than that of the original Volga boatmen.

The style of the book is simple and the reader is somewhat intrigued by the freely flowing accounts of night life, dancing, bowling, high spots of industry, commerce, agriculture, building operations and public parks and the authors' side trips to view famous jewels and objects of art. Indeed, the first part of the book is an interestingly written travelogue of a previously planned, personally conducted sightseeing trip into hitherto unknown parts. One's interest tires, however, on account of the too free use of superlatives in praise of services and institutions that must have been hastily observed. Eleven chapters are devoted to a description of communism, government in the Union of Socialist Soviet Republics, industrial conditions and health, agriculture, religious and civil liberty, home life recreation clubs, education women in Soviet Russia, marriage and divorce.

Those chapters which are devoted to care of children care of maternity, the problem of abortion, the training of physicians the medical care of the sick in residential and nonresidential institutions and care of tuberculosis and venereal disease are filled with references to institutions and generalities concerning the mechanics of medical care and organization details.

The discussion of medical education is inadequate and unconvincing. The use of statistics on pages 203 and 212 is inadequate for the purpose and the conclusion that 'evidently there has been a marked reduction in it' (infant mortality) is a dogmatic statement not supported by facts.

One looks in vain for an evaluation of the quality of medical care or an account of actual medical procedures. The authors have carefully and completely avoided a satisfactory discussion of the income of physicians and the methods by which they are paid.

The treatment of the entire subject is exceedingly favorable to the forms of medical institutions that the authors found on this trip. In spite of the fact that the authors feel that they took precautions against drawing conclusions from "show window display" there are many reasons to think that they saw only the best of everything.

It is repeatedly stated that the Russians started from almost nothing in the way of medical care for the people (p 269), and it is recognized that this gave certain advantages, since there were no institutions to be changed or with which to compare present standards of medical care. Yet there is no adequate comparison of present-day medical practice with that of the prewar period.

The comparisons with the United States (pp 271-277) have some defects. The shortage of physicians in the rural areas in the United States seems to be exaggerated and belittled as due wholly to historical causes in Russia. Self medication, which prevails so much in the United States, is absent in Russia but only, according to the statements of the authors, because of the excessive price of drugs and their almost complete absence from private trade (p 274). The information on the income of physicians in Russia is extremely indefinite, and nowhere are definite figures given (pp 250-251 and p 274).

There seems to be a tendency to exaggerate the value of institutional medical care through laboratories, groups, hospitals and sanatoriums.

Much is made of the fight on cholera and typhus, but there is little reference to the fact that these have been abolished elsewhere and that the reduction in typhoid, diphtheria, small-pox and other diseases has been much greater in other countries.

Much is made of the fact that the lack of physicians was the cause of bad conditions previously, but nowhere is there a conclusion drawn that the increased supply of physicians might have produced improved conditions without the excessive socialization.

The lack of food and housing is mentioned, but little stress is laid on the fact that the first of these especially has been the cause of tremendous famines that have undoubtedly caused more deaths than disease.

While there is frank reference to the abolition of all essential liberties, there is no discussion of how this must affect medical research, especially in its social relations. It is hard to believe that scientific research can flourish in such an atmosphere.

Medizinische Kolloidlehre Herausgegeben von Prof Dr L Lichtwitz Direktor der I Inn Abt des Rudolf Virchow Krankenhauses Berlin Dr Dr Rapp Ed Liesegang und Prof Dr Karl Spiro Direktor des Physiologisch Chemischen Instituts der Universität Basel Lieferung 3 [Untersuchungsmethoden] Paper Price 5 marks Pp 153 232 with illustrations Dresden & Leipzig Theodor Steinkopff 1933

This instalment of *Medizinische Kolloidlehre* deals chiefly with fermentations and the immunity reactions. Kurt G Stern, writing on the enzymes, discusses their chemical nature, their colloidal and their electrolytic character. He prefers the term "sorption" to "adsorption," as it is necessary to abandon the attempt to distinguish between mere physical and true chemical union, sorption being the result of difference in electrical potential. The kinetics and the character of enzyme reactions in solutions as well as within cells is discussed, and the chapter ends with an estimate of the number of enzyme molecules per cell. This is calculated for the yeast cell at somewhere between 15,000 and 50,000, while *Aspergillus niger* contains only 1,000 saccharose molecules. It is probable that the genes of genetics are catalyzers whose number per cell may be as low as 2, 1 or 0. Alfred Klopstock endeavors to show to what extent colloid chemistry can explain the antigen-antibody reaction. While all antigens are colloids, not all colloids are antigens. Antibodies may also be crystalloid. Ehrlich's fanciful theory of 'haptophore' and "ergophore" groupings with its great variety of antibodies must be abandoned and the unitarian view of Bordet and Friedberger adopted, which postulates a similar fundamental change that manifests itself in different forms under different conditions. These reactions are essentially of a colloid-chemical character. Thus, the toxin-antitoxin reaction is essentially a change in the colloidal nature of the toxin particles which may under certain conditions result in deflocculation. Anaphylaxis is the same kind of reaction involving antibodies that are present in or on the cells and which react with the antigen resulting in a change in the colloidal equilibrium of the surface layer. Whether this change directly acts as the functional stimulus or whether it results in the production of histamine which may be the direct cause of the symptoms (as is held of late) is merely a matter of detail.

Medicolegal

Insurance, Accident Death from Gas Bacillus Infection—On the life of Harry S Martin, the Bankers' Life Company of Des Moines had issued two life insurance policies, both providing for double indemnity if he died by accident. On April 28, 1930, Martin, a farmer, went into and out of his hog house several times, caring for a litter of newly farrowed pigs. An employee, who was assisting him, noticed once as Martin was coming out of the hog house that the back of his hand had been skinned and was bleeding. Martin wiped his hand with his handkerchief but continued at his work until midnight, when he returned home. The next morning his wife noticed that the area around the wound was puffed and swollen and of a purplish color. Martin worked as usual on that day, except that on his way home for lunch he consulted his family physician, Dr Besser, who also observed a peculiar discoloration around the wound. He cleaned the wound with green soap and put on an iodine dressing, gauze and a bandage. On the second morning following the injury, Martin returned to Dr Besser's office, the wound then looking more angry. In the afternoon of the same day he called on Dr Besser again, and the wound was dressed as before. The local condition improved and the wound was last dressed by Dr Besser May 3 or 4. But Martin, who had been an energetic active man, was observed after the injury to slow down. His color was pasty and ashy, he had a sleepy look, and his eyes appeared sunken. He moved sluggishly and continued thus indisposed.

On June 6, Martin again consulted Dr Besser, this time because of abdominal pain. Early the next morning Dr Besser was called and visited Martin at his home. But the pain continued and, three quarters of an hour later, Dr Besser was called again. At this visit he made a tentative diagnosis of acute appendicitis and advised Martin to go to the hospital. Martin's wife observed at this time eight or ten little spots on his back, of a purplish color, like his hand had been when it was hurt. At the hospital a blood examination showed a white cell count of 14,000. A consultation was held and the tentative diagnosis of appendicitis was agreed to. On the morning of June 7, at about 9 o'clock Martin was operated on. When the abdomen was opened the appendix was seen to be somewhat inflamed, but neither Dr Johnson, who was operating, nor Dr Besser, considered its condition sufficient to account for the symptoms. The appendix was removed, but Martin did not improve. On the fourth day after the operation, symptoms of intestinal obstruction appeared and a second operation was performed. The incision was made at the site of the previous operation. As the stitches were removed the wound gapped open, exposing dark-colored muscle described by Dr Johnson as black and crepitant. The intestines were distended and generally black, but the intestine near the site of the operation was the best part. There was considerable fluid in the abdomen. No bands of adhesion nor twisting of the intestines were found. The odor was somewhat characteristic, from sour to rancid, not a normal odor. The wound was closed with drainage. A diagnosis of gas bacillus infection was made and an injection of serum was given but Martin died June 12, after a few hours of apparent improvement.

The insurance company paid the basic insurance required by both policies but refused to pay the double indemnity due if Martin's death was caused by accident. Thereupon Martin's widow, the beneficiary of the policies, sued to enforce payment of the double indemnity, alleging that Martin died by accident.

All the medical witnesses for the plaintiff believed that the gas bacillus might remain dormant in the blood for several weeks or longer and then set up an active infection in a part of the body remote from the point of injury, through which the bacillus entered. Dr Besser believed that there was no pathologic condition to account for Martin's death other than gas bacillus infection. The defendant-insurer contended, however, not only that the evidence offered by the plaintiff did not show that Martin's death was due to infection by the gas bacillus or that his death could have resulted from such an infection incident to the accident of April 28 but that it did not show even that the injury to Martin's hand was accidental.

The insurer's medical witnesses contended that the infection might have resulted from some failure of technic in the course of the operation or from other causes, that no certain diagnosis of infection by the gas bacillus could be made except by a laboratory test, and that the testimony of the insurer's experts showed that infection arising from the gas bacillus must develop at or in proximity to the injury which the bacillus entered that the bacillus cannot be carried in the blood stream and set up infection at a point remote from the point of entry, and that infection from this bacillus always appears within a very short time after the entry of the bacillus and develops rapidly.

The trial court directed a verdict for the insurer and gave judgment in its favor. The plaintiff, the widow of the insured, thereupon appealed to the Supreme Court of Iowa.

The Supreme Court was unable to see the force of the insurer's contention that there was no direct evidence to show that Martin's death resulted from an accident. The testimony of the widow, the family physician and the helper employed on the farm of the insured eliminated from consideration any injury other than that of April 28, 1930. All physicians who testified for the plaintiff believed that the gas bacillus entered the wound then inflicted. Whether the evidence as to the facts on which their opinions were based was true, and how much weight should be given to the opinions themselves, were matters within the discretion of the jury. The insurer contended that the appendicitis and the resulting operation introduced a new and independent cause and that, even if death did result from infection by the gas bacillus, the operation contributed to and hastened the death and that therefore double indemnity was not payable. It appeared to the Supreme Court however, that the evidence adduced by the plaintiff was sufficient to make a case for the jury and that in directing a verdict for the defendant the trial court erred. The ruling and judgment of the trial court were therefore reversed.—*Martin v Banlkers Life Co of Des Moines (Iowa)*, 250 N W 220.

Workmen's Compensation Acts Tuberculosis of Spine Aggravated by Strain.—The plaintiff, while in the employ of the defendant, strained his back. He soon resumed work and continued at it for several months. His employer, the defendant, reported the accident to the department of labor and industry but reported it as noncompensable. Some months after the accident the plaintiff was found to be suffering from tuberculosis of the spine, pulmonary tuberculosis and tuberculosis of one testicle. The industrial commission held that the plaintiff had tuberculosis of the spine at the time of the accident but that it was not then disabling, that the accident injured the plaintiff's back in the region attacked by the tuberculous process, that an injury may aggravate a tuberculous process in the spine or cause it to flare up, so that disability results that the injury by accident Aug. 17, 1929, was the cause of the plaintiff's disability, and that the plaintiff had been totally disabled since Aug. 22, 1930. The department of labor and industry therefore awarded compensation. His employer appealed to the Supreme Court of Michigan.

The plaintiff's medical witnesses were of the opinion that the fact that he was able to work at hard labor for several months after the strain showed that the strain aggravated his tuberculosis of the spine and caused total disability. On the other hand, the defendant's medical witnesses believed that an injury sufficient to effect that result would have produced an intensifying of the disease such as to disable the plaintiff from labor within a month. The Supreme Court concluded, however that there was evidence supporting the finding of the commission and that therefore it was not for the court to review it. In passing on the contention of the employer that the plaintiff's disability was caused by tuberculosis of the lungs and throat, unconnected with the accident, the court called attention to the commission's finding. "The fact that plaintiff has pulmonary tuberculosis which is or may be disabling does not defeat his claim for compensation in this case, as the commission cannot speculate as to what percentage of his disability is caused by the pulmonary tuberculosis or tuberculosis of the throat and the Pott's disease aggravated by the injury."

The award to the plaintiff was affirmed.—*Heller v Consumers Power Co (Mich)* 250 N W 298.

Society Proceedings

COMING MEETINGS

- Alabama Medical Association of the State of Birmingham April 1-19 Dr D L Cannon, 519 Dexter Avenue Montgomery Secretary
- American Association for the Study of Goiter, Cleveland June 7-9 Dr J R Yung 670 Cherry Street Terre Haute Ind Secretary
- American Association of Genito Urinary Surgeons Hot Springs Va May 14-16 Dr Henry L Sanford 1621 Euclid Avenue Cleveland Secretary
- American Association on Mental Deficiency, New York May 26-29 Dr Groves B Smith Beverly Farms Godfrey Ill Secretary
- American Clinical and Climatological Association Toronto Canada May 21-23 Dr Francis M Rackemann 263 Beacon Street Boston Secretary
- American College of Physicians Chicago April 16-20 Mr E R Love land 133 South 36th Street, Philadelphia Executive Secretary
- American Dermatological Association New York June 7-9 Dr William H Guy 500 Penn Avenue Pittsburgh Secretary
- American Gastro-Enterological Association Atlantic City April 30 May 1 Dr Russell S Boles The Rittenhouse Plaza Philadelphia Secretary
- American Gynecological Society White Sulphur Springs W Va May 21-23 Dr Otto H Schiwarz 630 South Kingshighway St Louis Secretary
- American Laryngological Association Cleveland June 7-9 Dr William V Mullin 9204 Euclid Avenue Cleveland Secretary
- American Neurological Association, Atlantic City June 4-6 Dr Henry Alsop Riley 117 East 72d Street New York Secretary
- American Orthopedic Association Rochester Minn June 6-9 Dr Ralph K Ghormley Mayo Clinic Rochester Minn Secretary
- American Psychiatric Association New York May 28 June 2 Dr William C Sandy State Education Building Harrisburg Pa Secretary
- American Society for Clinical Investigation Atlantic City April 30 Dr H L Blumgart 330 Brookline Avenue Boston Secretary
- American Society of Clinical Pathologists Cleveland June 8-11 Dr A S Giordano 531 North Main Street South Bend Ind Secretary
- American Surgical Association, Toronto Canada June 4-6 Dr Vernon C David 59 East Madison Street Chicago Secretary
- American Therapeutic Society Cleveland June 8-9 Dr Oscar B Hunter 1835 Eje Street NW Washington D C Secretary
- American Urological Association Atlantic City May 27-24 Dr Gilbert J Thomas 1009 Nicollet Avenue Minneapolis Secretary
- Arizona State Medical Association Prescott June 7-9 Dr D F Harbridge 822 Professional Building Phoenix Secretary
- Arkansas Medical Society Little Rock April 16-18 Dr W R Brooksher 602 Garrison Avenue, Fort Smith Secretary
- Association of American Physicians Atlantic City May 1-2 Dr James H Means Massachusetts General Hospital Boston Secretary
- California Medical Association Riverside April 30 May 3 Dr Emma W Pope 450 Sutter Street San Francisco Secretary
- Connecticut State Medical Society Bridgeport May 23-24 Dr Charles W Comfort Jr 27 Elm Street New Haven Secretary
- District of Columbia Medical Society of the Washington May 2 Dr C B Conklin 1718 N Street NW Washington Secretary
- Florida Medical Association Jacksonville April 30 May 2 Dr Shaler Richardson 111 West Adams Street Jacksonville Secretary
- Georgia Medical Association of Augusta May 8-11 Dr Allen H Bunce 139 Forrest Avenue NE Atlanta Secretary
- Illinois State Medical Society Springfield May 15-17 Dr Harold M Camp Lahl Building Monmouth Secretary
- Iowa State Medical Society Des Moines May 9-11 Dr Robert L Parker 3510 Sixth Avenue Des Moines Secretary
- Kansas Medical Society Wichita May 9-11 Dr J F Hassig 804 Huron Building Kansas City Secretary
- Maine Medical Association Bangor May 28-29 Miss Rebekah Gardner 22 Arsenal Street Portland Secretary
- Maryland Medical and Chirurgical Faculty of Baltimore April 24-26 Dr Walter Dent Wise 1211 Cathedral Street Baltimore Secretary
- Massachusetts Medical Society Worcester June 4-6 Dr Walter L Burrage 182 Walnut Street Brookline Secretary
- Medical Library Association Baltimore May 21-23 Miss Marjorie J Darrach 645 Mullett Street Detroit Secretary
- Mississippi State Medical Association Natchez May 8-10 Dr T M Dye McWilliams Building Clarksdale Secretary
- Missouri State Medical Association St Joseph May 7-10 Dr E J Goodwin 634 North Grand Boulevard St Louis Secretary
- National Tuberculosis Association Cincinnati May 14-17 Dr Charles J Hatfield Henry Phipps Institute Philadelphia Secretary
- Nebraska State Medical Association Lincoln May 22-24 Dr R B Adams Center McKinley Building Lincoln Secretary
- New Hampshire Medical Society Manchester May 15-16 Dr C R Metcalf 5 South State Street Concord Secretary
- New Jersey Medical Society of Atlantic City June 5-8 Dr J B Morrison 66 Milford Avenue Newark Secretary
- New York Medical Society of the State of Utica May 14-16 Dr D S Dougherty 2 East 103d Street New York Secretary
- North Carolina Medical Society of the State of Pinebluff April 30 May 2 Dr L B McBrayer Southern Pines Secretary
- North Dakota State Medical Association Fargo May 28-29 Dr Albert W Skelsey 20 1/2 Broadway Fargo Secretary
- Oklahoma State Medical Association Tulsa May 21-23 Dr L S Willour Ainsworth Building McAlesier Secretary
- Rhode Island Medical Society Providence June 7 Dr J W Leech 167 Angell Street Providence Secretary
- Society for the Study of Asthma and Allied Conditions Atlantic City N J April 28 Dr W C Spain 116 East 53d Street New York Secretary
- South Carolina Medical Association Charleston May 13 Dr E A Hines Seneca Secretary
- South Dakota State Medical Association Mitchell May 14-16 Dr John F D Cook Langford Secretary
- Texas State Medical Association of San Antonio May 7-10 Dr Holman Taylor Medical Arts Building Fort Worth Secretary
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Titles marked with an asterisk (*) are abstracted below.

American J Obstetrics and Gynecology, St Louis

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- Radiation Therapy in Carcinoma of the Corpus Uteri W P Healy New York—p 1
- Failures in Tubal Sterilization (Maddler) Clinical and Histologic Study W H Ruhovits and A J Kohak Chicago—p 12
- Fertility in the Male II Technic of Spermatozoa Count D L Belding Boston—p 25
- *Significance of Menstrual Disturbances in Pulmonary Tuberculosis Preliminary Report H C Hesselstine Chicago and W M Spear Oakdale Iowa—p 32
- Theca Cell Tumors of the Ovary P J Melnick and A E Kanter Chicago—p 41
- Contraception Neglected Field for Preventive Medicine O J Toland Philadelphia—p 52
- Incidence Treatment and Mortality of Eclampsia Analysis of One Hundred and Twenty Three Cases J Binder Jersey City N J—p 59
- Possible Derivation of Guanidine and Histamine in Autolysis of Acute Placental Infarcts and Their Probable Relation to Eclamptic Toxemia R A Bartholomew and F Parker Atlanta Ga—p 67
- Length of the Human Menstrual Cycle C F Fluhmann San Francisco—p 73
- Sickle Cell Anemia in Pregnancy A F Lash Chicago—p 79
- Placental Necrosis A B Clements New York—p 84
- Modification in Technic of Bell Beutner Operation F H Falls Chicago—p 89
- Blood Chemistry Studies of Normal New Born Infants II Blood Sugar and Alkali Reserve Estimations A Holman and A Mathieu Portland Ore—p 95
- Tumors of Urethra C H Phillips and Marion D Douglass Cleveland—p 99
- Treatment of Recent Puerperal Inversion of Uterus Report of Five Cases D N Barrows New York—p 105
- Numbul and Scopolamine Analgesia in Labor Report of One Hundred and Sixty Cases L Averett Philadelphia—p 109
- Pathogenicity of Monilia (Castellani) Vaginitis and Oral Thrush H C Hesselstine Chicago I H Borts and E D Plass Iowa City—p 112
- Cold Light for Inspection and Transillumination of the Cervix S G Berlow Perth Amboy N J—p 117
- Influence of Posture on Movement of Fluid in Trachea of the New Born An Experimental Study D P Murphy Philadelphia—p 118
- Congenital Heart Disease in Which Diagnosis Was Made Before Birth Two Cases A L Dippel Baltimore—p 120

Menstrual Disturbances in Pulmonary Tuberculosis—Hesselstine and Spear observed the significance of menstrual disorders in pulmonary tuberculosis in 148 state sanatorium patients. The study seems to indicate that patients comparable to these are likely to have an increased mortality incidence if amenorrhea develops especially late in the disease. An unexplained amenorrhea in young women may be the first symptom of phthisis. Menstrual temperature increase not exceeding 1 degree F, appears to be a better prognostic sign than no thermal increase. Hemoptysis and blood-streaked sputum at menstruation were not associated with a poorer prognosis than at other times. Dysmenorrhea appears more likely to occur in parous than in the nulliparous women yet its incidence seems to decrease with the advance of the disease.

Modification in Technic of Bell-Beutner Operation—In Falls modified technic of the Bell-Beutner operation the uterus is exposed, the tubes and ovaries are freed from adhesions and the advisability of leaving one or both ovaries is carefully considered. A wedge shaped incision is made in the uterine fundus down to the mucosa from side to side including the interstitial portion of the tubes but not the attachment of the round ligaments to the uterus. The wedge is from 1 to 2 cm. wide at the top depending on the size of the uterus. The round ligaments are pulled into the wedge-shaped wound left in the fundus of the uterus by inserting the needle with number 2 chromic catgut through the posterior lip of the uterine wound near its center. The point of the needle emerges

close to the mucosa of the uterus and about 2 cm below the cut edge. The needle is then passed through the broad ligaments just below the round ligament, brought back and inserted through the anterior lip of the uterine wound at about the same level as the stitch through the posterior lip. When this stitch is pulled taut, the round ligament is doubled on itself and drawn into the groove of the fundus of the uterus, which closes over on top of the ligament. Two additional interrupted sutures are placed through the fundus from the posterior to the anterior wall. The wound and the suture line in the uterus are completely peritonized, leaving only one knot of fine catgut exposed, as in the original Beutner technic. Postoperatively, these uteri are found to be held well up in the pelvis and to be freely movable, and there has been less complaint of disturbance of the bladder and backaches since the adoption of this modification.

American Journal of Surgery, New York

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- Principles Involved in Treatment of Carcinoma Affecting Organs Located in the Male and Female Pelvis R C Coffey Portland Ore—p 1
- Clinical Value of Experimental Ureteral Implantation T J Kirwin New York—p 14
- Presacral Dermoids F H Lahey and E B Eckerson Boston—p 30
- The Present Day Treatment of Colonic Cancer F W Rankin Lexington Ky—p 36
- Recent Progress in Cancer Research J K Narat Chicago—p 43
- *Large Malignant Tumor (Sarcoma) of the Uterus with Multiple Bone Metastases (Femur Pelvic Bones and Skull) Case Successfully Treated by Hysterectomy and Coley's Toxins D M Blum Des Moines Iowa comments by W B Coley New York—p 47
- Actinomyces of Subphrenic Space A M Graves and A Ochsner New Orleans—p 54
- *Acute Capsulitis of Cystic Degenerated or Partially Degenerated Adenoma of Thyroid Gland Its Clinical Distinction from Gross Intra Adenomatous Hemorrhage W A Plummer and A C Broders Rochester Minn—p 63
- Myofascitis F H Albee New York—p 70
- Fractures of the Lower End of the Humerus E L Eliason and C W McLaughlin Jr Philadelphia—p 79
- Spinal Cord Tumors Notes on Series F C Grant Philadelphia—p 89
- Liver Deaths and Their Prevention How Danger Can Be Recognized and Avoided by Use of Preoperative and Postoperative Diagnostic Measures S Weiss New York—p 96
- Anesthetics Narcotics and the Sick Man G Crile Cleveland—p 102
- General Care of Patient in Anesthesia S C Wiggan Boston—p 106
- Modern Concepts of Genito Urinary Tuberculosis G J Thomas and T J Kinsella Minneapolis—p 111
- Physiology and Pathologic Physiology of Dynamics of Urinary Passage ways M Muschat Philadelphia—p 129
- Advantages and Applicability of the Tork Orchiopexy for Undescended Testis A E W Ada New York—p 133
- *Exclusion Operation for Duodenal Ulcer Experimental and Clinical Study M E Steinberg Portland Ore—p 137
- Intestinal Evacuation by Hydraulic Suction Further Uses of Suction Siphonage G H Pratt Philadelphia—p 148
- Acute Appendicitis After Forty Clinical Review of One Hundred Cases U Maes F F Boyce and Elizabeth M McFetridge New Orleans—p 157
- Congenital Malformations of Anus and Rectum Report of One Hundred and Sixty Two Cases W E Ladd and R E Gross Boston—p 167
- Spasmodic Torticollis Recurrent After a Free Interval of Thirty Years C W Rand Los Angeles—p 184
- Improved Technic for Restoration of Pendulous Breasts A G Biddle New York—p 191
- Simplified Dressing for Clean Surgical Wounds B I Golden Elkins W Va—p 194
- Treatment of Varicose Ulcers A A Schmier Brooklyn—p 195

Treatment of Sarcoma of Uterus with Bone Metastases—Blum reports the case of a large malignant sarcoma of the uterus (removed by hysterectomy) with multiple bone metastases. The roentgenograms indicate that credit for the patient's complete recovery must be given to Coley's toxins. The author thinks it is well worth while to attempt the use of these toxins in any similar condition although they should not be used to the exclusion of other recognized methods of treatment. Coley has never advocated using the toxins in cases that were operable except for a brief period in sarcoma of the long bones (endothelial myeloma) in the hope of saving the limb.

Acute Capsulitis of Cystic Degenerated Adenoma of Thyroid—According to Plummer and Broders acute non-suppurative inflammation in the capsule of a cystic degenerated or partially degenerated adenoma will cause painful enlargement of the adenoma. The acute symptoms are more or less transitory. In cases in which thyroidectomy is performed the

histologic evidence of such acute inflammation is frequently not recognized for the reason that (1) sections are not taken from the capsule of the adenoma for microscopic study, (2) or, since the inflammation may be confined to certain portions of the capsule, the sections may not be taken from the regions involved and, (3) even though the capsule is carefully examined, acute or subacute inflammation may have subsided before thyroidectomy is performed. Gross hemorrhage into the substance of a cystic degenerated adenoma of the thyroid does not usually cause enlargement of the adenoma. Acute inflammation in the capsule of a cystic degenerated or partially degenerated adenoma predisposes to gross hemorrhage into the substance of the adenoma, and therefore inflammation and hemorrhage frequently are associated. If enlargement of a cystic degenerated adenoma of the thyroid has occurred gradually for several hours or days and such enlargement has been accompanied by pain, one must assume that the enlargement is the result of acute inflammation. If enlargement of this type of adenoma has reached its maximum within a few minutes, accompanied by severe pressure or pain, it must be assumed that the enlargement is the result of hemorrhage and at operation recent blood clots will be found in the substance of the adenoma. Since the two conditions are frequently associated, microscopic evidences of acute inflammation are likely to be found in the capsule of the adenoma, and in these cases symptoms that must be attributed to the inflammation will be present also—pain of longer duration, accompanied by tenderness, local heat and possibly fever.

Exclusion Operation for Duodenal Ulcer—Steinberg used two series of animals for his experiments. Of the first series (twenty-three animals) twenty-one survived. These animals had a typical Finsterer modification of the second Billroth stomach resection with an Exalto shortcircuiting operation and the motor part of the stomach removed. Seven animals in addition to the foregoing procedure, were subjected to a kink distal to the anastomosis. None of the twenty-three animals developed an ulcer. In the second series of animals a typical Devine operation was performed with an Exalto shortcircuiting of the duodenal contents, and the motor part of the stomach was left in place. There were twelve dogs in this series, and six developed definite large chronic ulcers. In the remaining six dogs, no ulcers were found. A kink distal to the gastroanastomosis was performed in three animals all of which developed definite chronic ulcers. The von Eiselsberg operation should be abandoned. There is not sufficient clinical evidence to justify a definite expression of opinion on the results of the Devine exclusion operation. From the experimental work and theoretical and anatomic considerations this operation should influence the production of jejunal ulcers. The author's personal clinical experience in twelve cases with a typical Finsterer exclusion operation has been favorable.

Archives of Dermatology and Syphilology, Chicago

29 1172 (Jan.) 1934

- The American Board of Dermatology and Syphilology. A Step Forward in the Supervision of Specialism. F. Wise. New York.—p. 1.
LXVII Lipids of the Skin Surface. M. F. Engman and D. J. Kooyman. St. Louis.—p. 12.
Porokeratosis (Mibelli). Report of Its Occurrence in a Negro. J. V. Ambler. Denver and K. L. Stout. San Francisco.—p. 20.
*Multiple Ganglioneuromas of the Skin. Report of Case with Differential Diagnosis from Reticulohistiocytic Granuloma. Neuma. Vanthoma and Recklinghausen's Disease of the Skin. H. Montgomery and P. A. O'Leary. Rochester. Minn.—p. 26.
*Pseudo Atrophoderma Colli. Hitherto Undescribed Condition. S. W. Becker and Kathleen B. Muir. Chicago.—p. 53.
Elastic Tissue in Fetal Skin. F. W. Lynch. St. Paul.—p. 57.
François Xavier Svediaur 1748-1824. J. E. Lane. New Haven. Conn.—p. 80.
Photography in Dermatology. New Method. K. M. Davenport and A. W. Fuchs. Rochester. N. Y.—p. 92.

Multiple Ganglioneuromas of the Skin—Montgomery and O'Leary report a case of multiple cutaneous nodules of the skin, which clinically suggested multiple xanthoma but which they believe to be a case of multiple ganglioneuroma with origin from the peripheral sympathetic nervous system. There was no histologic evidence of xanthoma in the early well developed and involuting lesions. They believe that the large pale staining cells which predominated in the early nodules presented the principal morphologic features of sym-

pathetic ganglion cells, namely, one or two prominent, densely staining nucleoli, five Nissl granules in the cytoplasm of the cell and multiple dendritic processes. Transitions between endothelial cells, histiocytes and the large pale staining ganglion cells were apparent histologically, this led some pathologists to regard the ganglion cells as histiocytes and the case as one of reticulohistiocytic granuloma. It is the authors' concept, however, that the histiocytes and the inflammatory and granulomatous changes seen in association with the ganglion cells are more satisfactorily explained as the results of a secondary process, which, possibly because of interference with the vascular supply, resulted in disappearance of the ganglion cells and spontaneous involution of the lesions. The presence of multiple cutaneous tumors composed chiefly of ganglion cells is probably best explained on the basis of a malformation.

Pseudo-Atrophoderma Colli—During the last five years Becker and Muir observed two women patients with a dermatosis which seems to be a clinical entity, and in the cases observed there were no physical abnormalities. The patients were young Jewish girls. Clinical examination did not verify the preliminary impression of atrophy. The histologic section from one case did not show definite atrophy, although O'Leary stated that epidermal atrophy was found in sections from one of his cases. Therapy for seborrheic dermatitis had no effect on the lesions in one case, and rather strong salicylic acid ointment did not improve the condition in another case. The designation "pseudo atrophoderma colli" is suggested for this condition. The appearance of the lesions was that of a pigmentedary disturbance suggesting vitiligo. The lesions appeared to be atrophic. On close inspection the apparently depigmented regions consisted of epidermis thrown up into tiny folds. When the skin was put under tension, the contrast between the shiny and the dull areas was less marked but was still visible and the dull areas were covered with fine scales. When traction was released, wrinkling was again apparent. While it was difficult to outline the individual lesions the shiny pseudo atrophic plaques seemed to be arranged largely in a vertical direction.

Archives of Surgery, Chicago

27 979 1166 (Dec.) 1933

- Radiosensitivity of Tumors. T. W. Stewart. New York.—p. 979.
Experimental Chronic Arthritis (Synovitis) Produced by Intra Articular Injections of Bacterial Filtrates and Other Foreign Proteins. A. Brunschwig and Lucy Dell. Henry. Chicago.—p. 1065.
*Sympathetic System and Pain Phenomena. R. C. Shaw. Preston. England.—p. 1072.
*Absorption in Intestinal Obstruction. R. R. Best. L. A. Newton and R. Meindinger. Omaha.—p. 1081.
Primary Malignant Disease of Duodenum. S. A. Eger. Cleveland.—p. 1087.
Nasopharyngeal Carcinoma. O. Christianson and S. W. McArthur. Chicago.—p. 1109.
Action of Cathartics on Isolated Dogs' Colon. I. Secretary. Activity. L. M. Larson. Minneapolis and J. A. Borgen. Rochester. Minn.—p. 1120.
Id. II. Motor Activity. L. M. Larson. Minneapolis and J. A. Borgen. Rochester. Minn.—p. 1130.
Review of Urologic Surgery. A. J. Scholl. Los Angeles. E. S. Judd. Rochester. Minn. L. D. Keyser. Roanoke. Va. J. Verbrugge. Antwerp. Belgium. A. A. Kutzmann. Los Angeles. A. B. Hepler. Seattle and R. Gutierrez. New York.—p. 1146.

Sympathetic System and Pain Phenomena—Shaw points out that the sympathetic fibers may conduct afferent stimuli subserving common sensation after the extirpation of the somatic innervation, this function appears to develop gradually after removal of the spinal nerve supply. Sympathetic fibers convey impulses of pain in certain types of intractable neuralgia which are distinct from the conditions of pain conveyed by the spinal system. The sympathetic system acts as a control on the somatic sensory thresholds and the removal of this influence is followed by a temporary increase of common sensitivity. The anatomic sympathetic pathway in the cervicothoracic region contains spinal sensory fibers, the irritation of which might result in a composite type of neuralgic pain. Surgical ablation of the paraspinal ganglia will definitely cure the sympathetic type of intractable neuralgia through the removal of the mechanism of pain. Periaxillary sympathectomy will certainly relieve pain in similar conditions and the operation produces its results by the induction of an inhibitory phase through the radiation of molecular shock throughout the sympathetic neural circuit.

Absorption in Intestinal Obstruction—Best and his associates carried out experiments in the hope that definite conclusions might be drawn as to the rate and selectivity of absorption above and below an obstruction. In the group in which methylene blue (methylthionine chloride) is known to have been recovered from the urine after its absorption from the intestine, there was only a slight variation in time, which could be accounted for by the difference in the size of the animals and particularly by the variations in the amount of retained secretions above the obstruction. An animal with a smaller amount of intestinal contents above the obstruction would have a greater concentration of the dye, and absorption would probably be more rapid than in an animal with greater retention. In no case was the absorption more rapid above the obstruction than it was in the normal dog. When the dye was injected into the lumen below the level of the duodenal or ileal obstructions, the time of its appearance in the urine varied between fifty and seventy minutes, showing that there was no increase and only a slight decrease in absorption below the level of obstruction. The authors were unable to demonstrate any increase in the rate or selectivity of absorption above or below the level of obstruction. Their experiments suggest that there is no increase in the rate or selectivity of absorption above the obstruction, and this seems strong evidence that increased absorption above the obstruction cannot be the cause of death. Their experiments also tend to rule out the probability of increased absorption below the obstruction. They believe that it is within the realm of probability that death following intestinal obstruction is due to a failure of neutralization or buffer reaction to take place between the upper and lower intestinal contents in the lower part of the intestine. This need not be interpreted in terms of the development of a definite toxin but rather of a physiochemical reaction that usually takes place when the contents of the upper and lower parts of the intestine are permitted to intermix. With this phenomenon there occurs absorption or failure of absorption of a substance, which causes a disturbance not in accord with normal cellular function and incompatible with life. Clinically the authors' best evidence of this is the fact that an obstruction of the distal colon is compatible with life for some time. This may be explained by the fact that the intermixture of the upper and lower intestinal contents has already occurred above the obstruction and absorption has taken place. If the obstruction occurs above the distal colon, in the more active secreting levels and the absorption area death occurs earlier than in the case of a lower obstruction. Thus in a subject with an ileostomy, partial admixture and absorption have already taken place but with complete duodenostomy or jejunostomy this admixture and absorption have not taken place and death occurs much earlier in the latter than in the former condition.

Canadian Public Health Journal, Toronto

25 152 (Jan) 1934

- Safe Milk W J Bell—p 1
Brucella Abortus Infection in Cattle in Relation to Milk R Gwatkin Toronto—p 5
Undulant Fever in Ontario A L McNabb Toronto—p 10
Milk and Its Relation to Tuberculosis R M Price Toronto—p 13
Home Pasteurization of Milk N E McKinnon Toronto—p 16
Importance of Dairy Farm Inspection J B Hollingsworth Ottawa Ont—p 17
Epidemics in Canada Due to Milk Borne Infection R H Murray Regina Sask—p 19
Nutritional Value of Pasteurized Milk E W McHenry Toronto—p 22
Model Milk By Laws O V Ball Toronto—p 25
The Public and Pasteurization R H Murray Regina Sask—p 28
Extent of Pasteurization in Canada R H Murray Regina Sask—p 30
Clean Bottles a Factor in Clean Milk Preliminary Report W J Deadman and F J Elliott Hamilton Ont—p 32
Sanitary Caps for Milk Bottles A T Byram Toronto—p 35
Common Defects in Pasteurizing Plants Including a Survey of Pasteurizing Plants in a Large City A E Berry Toronto—p 36
Improper Pasteurization and Its Results A L McKay Toronto—p 44
Pasteurizing Equipment for Small Dairies E W Johnston Toronto—p 45
Need for Supervision of Milk Supplies A E Berry Toronto—p 47

Milk and Its Relation to Tuberculosis—In a study of 300 tuberculous children in Toronto Price found that 15 per cent of the extrapulmonary tuberculosis (e g bone joint lymph nodes kidney and skin) was due to the bovine type of

tubercle bacillus. Infection with the bovine type occurred most often in the region of cervical lymph nodes. All the patients infected with the bovine type of tubercle bacillus had used raw milk and resided outside Toronto. The clinical investigation indicated the alimentary route of infection. The majority of children infected with the human type gave a history of contact with human tuberculosis. The clinical investigation indicated the respiratory route of infection. Of 200 samples of unpooled raw milk examined, eight yielded tubercle bacilli on direct smear and guinea-pig inoculation. Of 100 samples of pooled raw milk, twenty-six yielded tubercle bacilli. Of 100 samples of the same milk, pasteurized none showed tubercle bacilli on guinea-pig inoculation. This observation is confirmed by the fact that not a single case of bovine tuberculous infection has been encountered in this generation of children raised on pasteurized milk in Toronto where pasteurization is compulsory and has been rigidly enforced since 1915.

Delaware State Medical Journal, Wilmington

6 122 (Jan) 1934

- Medicine Past and Present A Stengle Philadelphia—p 1
Pink Pills and Panaceas A J Cramp Chicago—p 5
Cystitis Its Cause and Treatment N R Washburn Milford—p 7

Journal of Nervous and Mental Disease, New York

79 1124 (Jan) 1934

- Paradoxical Symptoms in Right Temporal Lobe Tumor L Stone Topeka Kan—p 1
Paralysis Agitans and Trauma L Grimberg New York—p 14
Mental Factors in the World Depression P Federn Vienna Austria—p 43
*Manganese Treatment of Schizophrenic Disorders R G Hoskins Worcester Mass—p 59

Manganese Treatment of Schizophrenic Disorders—Hoskins treated nine schizophrenic patients with manganese chloride by mouth over a period of several weeks without detectable influence on the psychosis. Thirty patients were subjected to intramuscular injections of a colloidal preparation of manganese (0.32 per cent manganese) over an average period of forty-nine days with an average total dosage of 227 cc. Several representative metabolic features were investigated at the beginning and at the conclusion of the medication. The results of the latter study were convincingly negative as regards both the clinical and the metabolic conditions of the patients. These negative results suggest that beneficial effects claimed by certain earlier investigators may have been due to unintentional psychotherapy.

Journal of Thoracic Surgery, St Louis

3 109-220 (Dec) 1933

- *Abscess of Lung with Pleural Effusions E Sergent and M Iselin Paris France—p 109
*Treatment of Pulmonary Abscess by Peripheral Lung Fixation and Regional Thoracoplasty R H Overholt Boston—p 134
Fixation of Chest Lesions with Subsequent Compression W P Herbert Asheville N C—p 153
Present Status of Thoracoplasty Results and Technique E J O'Brien Detroit—p 159
Causes of Death from Thoracoplasty in Pulmonary Tuberculosis Analysis of Five Cases H L Beje Iowa City—p 166
Collapse Therapy and the Ambulatory Patient J A Myers, Minneapolis—p 175
*Detailed Description of a Safe and Reliable Method for Closing Large Bronchi W E Adams Chicago—p 198

Abscess of Lung with Pleural Effusions—The association of a lung abscess with a pleural effusion seems to Sergent and Iselin to be much more serious than previous reports indicate. In eleven cases reported by the authors there were nine deaths. Five of these were seen after a thoracostomy had been performed by others, the operation being followed by a more or less marked aggravation of symptoms. In only two did a thoracostomy suffice to cure the empyema and the lung abscess at the same time. In five cases thoracostomy was unable to effect a cure. It produced an amelioration but the abscess continued to develop leading to death at an interval varying from six weeks to eight months. From an anatomic point of view these cases were characterized by a pleural pocket of small dimensions and from a clinical standpoint they took the form of a chronic pleural fistula with progressive impairment of general health. In four cases thoracostomy led to a veritable catastrophe: the abscess had been crowded into the depths by

a considerable pneumothorax. The pleural pocket was then of large dimensions and the clinical picture one of a pleural suppuration persisting in spite of good pleural drainage. All the patients died in from six days to six weeks. Treatment depends on the difficulty of recognizing the existence and the situation of the abscess and the frequent multiplicity of pus pockets, pleural as well as pulmonary. In encapsulated pleural effusions the relatively slow impairment of general health after thoracostomy leaves time to locate and open successively residual pulmonary or pleural pockets. In diffuse effusions the situation after thoracostomy becomes alarming so rapidly that subsequent operations are of considerable gravity. Treatment should bend its efforts toward prevention by unearthing an abscess under the purulent pleurisy that masks it and by draining it after the effusion becomes encapsulated.

Treatment of Pulmonary Abscess—Overholt applied clinically the principle of peripheral lung fixation and regional, extrapleural compression over an abscess area in three cases. Each patient had pulmonary suppuration to a sufficient degree to be wholly incapacitated and bedridden for a large part of the time. All were treated without the necessity of lung cauterization and external drainage. All patients were hospitalized a comparatively short period of time. In each case a sufficient period has elapsed since operation without recurrence of symptoms to warrant a preliminary report. The longest period of hospitalization for investigation and operation was five weeks. All patients were discharged with an intact thoracic wall and with their cough and expectoration reduced to minimal amounts. Follow-up studies have shown that continued and satisfactory improvement occurred in all, with disappearance of practically all symptoms. A sufficient length of time has elapsed to indicate permanence of the results. In the selection of cases for regional thoracoplasty, the necessity of ruling out foreign body and bronchiectasis has been emphasized. It is also important to demonstrate the adequacy of internal drainage. The choice of regional thoracoplasty in the surgical management of pulmonary abscess need not necessarily be limited, however, on account of uncertainty as to bronchial drainage. The formation of pleural adhesions and the collapse procedure can be carried out and, if there is failure to cure cauterization of the underlying lung can be resorted to later and external drainage provided. In other words, a less serious and less radical type of operation is proposed for surgically treating lung abscess, which may be sufficient to effect a cure.

Method for Closing Large Bronchi—The unsatisfactory results of others in attempting to occlude large bronchi experimentally by the silver nitrate technic has led Adams to describe the following method, which he has used more than 250 times with no mortality. Morphine, 0.015 Gm., and atropine 0.0004 Gm., per kilogram of body weight are given from one-half to one hour before bronchoscopy. With the animal secured in the dorsal position, a bronchoscope is introduced and passed down to the carina. The applicator consists of a number 8 gage iron wire with threads cut at one end, about which a small piece of absorbent cotton is secured firmly. A small firm swab is necessary to obviate the danger of the cauterizing agent running down into the air passages when the swab is applied to the bronchial mucosa. The danger is further obviated by pressing the swab against the mouth of the silver nitrate container after it has been saturated with a 35 per cent solution and rotating it to wring out as much of the solution from the swab as possible. If the bronchus to be occluded is small, the swab is simply thrust into it and held in place for about ten seconds. In larger bronchi, as the swab is brought firmly in contact with the bronchial wall, the applicator is slowly rotated, thus rolling it around the entire circumference of the bronchus. As it is being rotated, a to and fro movement is made as though one were massaging the surface. The bronchus is thus well cauterized, the white area standing out in sharp contrast to the normal pink mucosa. The cauterized area should be about 1 cm. in width and include the entire circumference of the bronchus. An applicator with a curved tip is of value in cauterizing upper lobe bronchi. Complete occlusion occurs in from ten days to two weeks, depending on the size of the bronchus. If one application does not produce complete occlusion of the bronchus, the procedure is repeated.

Laryngoscope, St. Louis

44 184 (Jan) 1934

- Brief History of the Early Development of the Anatomy of the Ear Dorothy Wolff, St. Louis—p 1
Oral Mycoses: Clinical Aspect of Oral Mycology D MacFarlan Philadelphia—p 29
Id. Dental Aspects of Oral Mycoses C W Riggall Jr Philadelphia—p 35
Id. Laboratory Diagnosis of Oral Mycoses F D Weidman Philadelphia—p 41
Experiments on Utricle W J McNally, Montreal—p 50
Recovery After Streptococcal Meningitis Following Otitic Septic L Kleinfield New York—p 56
Use of Fresh Sheep Head for Teaching the Technic of Submucous Resection of Nasal Septum W Morrison New York—p 59
Case Presentation of Brain Abscesses Originating in Otorhinologic Focus I M Davidoff, New York—p 62
Neutropenia P Reznikoff, New York—p 66
Sinusitis in Children R Luongo Philadelphia—p 71
An Overlooked Factor in Susceptibility to the Common Cold A E Ewens Atlantic City, N J—p 78

Minnesota Medicine, St. Paul

17 152 (Jan) 1934

- Correlative Value of Clinical and Pathologic Findings in Roentgen Diagnosis K Ikeda St. Paul—p 1
Postoperative Peritoneal Adhesions: Causes and Prevention A E Benjamin Minneapolis—p 4
Surgical Treatment of Congenital Clubfoot G A Williamson St. Paul—p 12
Amebiasis: Report of Case Complicated by Liver, Lung and Brain Abscess J N Gehlen St. Paul—p 18
Treatment of Enuresis H S Lippman, St. Paul—p 23
Sarcoma of Second Metacarpal Bone: Case Report and Review A E Olson Duluth—p 24
Allergic Factor in Migraine H B Sweetser Jr Minneapolis—p 31
The Dos and Don'ts of the Injection Treatment of Varicose Veins H O McPheeters Minneapolis—p 33

New England Journal of Medicine, Boston

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- Regional Ileitis: Clinical Not a Pathologic Entity J Homans and G M Hass Boston—p 1315
Evaluation of Signs and Symptoms in Diagnosis of Extra Uterine Pregnancy: Review of Ninety Cases A F Jonas Jr Baltimore—p 1324
Complete Surgical Removal of Stomach for Hour Glass Deformity Caused by Carcinoma W R Morrison Boston—p 1329
Spontaneous Intra-peritoneal Hemorrhage of Unknown Origin Complicating Pregnancy: Report of Two Cases E d Errico Boston—p 1331
Efficacy of Methenamine as a Bactericidal Agent in Urinary Tract Infections V Vermooten New Haven Conn and R V Berry Bangall N Y—p 1332
Status of Vasography E A Edwards Brookline Mass—p 1337
Device for Making Radiographs of Gastrointestinal Tract R Dresser and F Scholz Boston—p 1343
Cardiovascular Review for 1932 P D White Boston—p 1346

210 158 (Jan 4) 1934

- "The Association of Diabetes and Tuberculosis: Epidemiology, Pathology, Treatment and Prognosis" H I Root Boston—p 1
Sugar Tolerance in the Arthritic H A Nissen and K A Spencer Boston—p 13
Cardiovascular Review for 1932 P D White Boston—p 20

The Association of Diabetes and Tuberculosis—Root observed that the incidence of active tuberculosis in 1,121 diabetic necropsies was 28.4 per cent and in 51,705 nondiabetic necropsies 2.29 per cent. Since the association of the two diseases would be expected less than half as frequently as the incidence of tuberculosis alone, it follows that active tuberculosis occurred in diabetic patients at necropsy between two and three times as frequently as expected. Tuberculous infection in diabetic children as shown by skin tests and calcified tracheo-bronchial glands is more common than in Massachusetts school children, and the development of adult type pulmonary tuberculosis in a group of 750 children who developed diabetes before the age of 15 years was more than thirteen times as frequent as among Massachusetts school children. Among adolescent diabetic patients who developed the disease between the ages of 15 and 19 years, pulmonary tuberculosis occurred sixteen times as frequently as among Massachusetts high school students. Among 1,373 diabetic adults examined roentgenologically, active pulmonary tuberculosis was found in thirty-eight cases, or 2.8 per cent. Deaths from pulmonary tuberculosis among diabetic persons increased from 4.7 per cent of 342 deaths before June 1919 to 6.7 per cent of 1,503 deaths between Aug 7, 1922 and Nov 2, 1931 in spite of the decreasing tuberculosis mortality in the community. The factors of familial contact, race,

occupation, housing, poverty and alcoholism do not appear to explain the greatly increased incidence of pulmonary tuberculosis in diabetes

New York State Journal of Medicine, New York

33 1423 1478 (Dec 15) 1933

- Diagnosis of Glaucoma Simplex S B Marlow Syracuse—p 1423
Pathology of Chronic Simple Glaucoma A B Reese, New York—p 1428
Operative Treatment of Chronic Glaucoma Report of Two Hundred Successive Operations A Knapp New York—p 1431
Medical Treatment of Chronic Simple Glaucoma W Zentmayer, Philadelphia—p 1433
Syphilis of the Lung Report of Four Cases with Autopsy Findings H C Deuman, Brooklyn—p 1438

34 1-40 (Jan 1) 1934

- Treatment of Toxemias of Pregnancy B P Watson, New York—p 1
Nephritis and Pregnancy K Kuder and H J Stander New York—p 5
Treatment of Carcinoma of the Cervix W P Healy New York—p 10
*Treatment of Tumors of the Ovary H C Taylor Jr, New York—p 13
Treatment of Uterine Myomas Review of Five Hundred Cases R A Kimbrough Jr Philadelphia—p 18

Treatment of Tumors of the Ovary—Taylor points out that the extent of treatment required in a given case of ovarian tumor depends on the following factors 1 The tendency to develop to a great size is an important consideration in deciding the first question of whether or not to operate Certain of the small, non-neoplastic cysts will remain relatively stationary or will regress, while others, such as the pseudomucinous cysts, will almost inevitably reach enormous proportions 2 The tendency to develop various complications, particularly torsion, represents a hazard of varying importance among the different types of even the benign tumors and under certain circumstances, is a reason against delay in operating 3 The tendency to bilateral development must be the chief guide in determining the advisability of limiting the operation in a given case to the removal of only one ovary 4 The frequency of the malignant transformation of benign tumors remains a disputed question Percentages, however, are offered in the literature based either on the cases in which malignant areas are found within otherwise benign tumors or on the proportion of the malignant to the benign growths among tumors of supposedly similar histogenesis

Public Health Reports, Washington, D C

49 152 (Jan 5) 1934

- Influenza Epidemic of 1928 1929 in Fourteen Surveyed Localities in the United States An Analysis According to Age, Sex and Color of the Records of Morbidity and Mortality Obtained in the Surveys S D Collins—p 1

Southern Surgeon, Atlanta, Ga

2 97 176 (June) 1933

- Fundamentals of Surgery R Wilson Charleston S C—p 97
Rational Treatment of Acute Peritonitis T G Orr Kansas City Kan—p 102
Pyelonephritis of Pregnancy G R Livermore Memphis Tenn—p 110
Dyspareunia L F Turlington Birmingham Ala—p 117
Surgical Progress from a Physiologic Standpoint Considerations of the Biliary System and of the Stomach and Duodenum R O Lyda Greensboro N C—p 123
Nephrostomy in Theory and Practice H Cabot Rochester Minn—p 129
Division of Plastic Surgery Its Organization Its Needs and Its Field of Usefulness J S Davis Baltimore—p 136
Various Functions of the Testes W E Lower Cleveland—p 143
Skeletal Traction for Dislocation of Cervical Spine Report of Case W G Crutchfield Richmond Va—p 156
Side Lights on Pathology of Appendicitis H A Royster Raleigh N C—p 160

Southwestern Medicine, Phoenix, Ariz

18 1-42 (Jan 1) 1934

- Recent Advances in the Therapy of Malignant Neoplasms of the Head and Neck M R Guttman Chicago—p 1
Place of Allergy in Modern Medicine L O Dutton El Paso Texas—p 5
Allergy in Relation to Urogenital Tract D M Davis Phoenix Ariz—p 9
Impressions of Surgery in Europe J L Green Jr El Paso Texas—p 12
Smallpox I J Bush El Paso Texas—p 17

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below Single case reports and trials of new drugs are usually omitted

Brain, London

58 353 504 (Dec) 1933

- Postural Relations of Frontal and Motor Cortex of the Dog C N Woolsey—p 353
Encephalic Control of Tone in Musculature of the Urinary Bladder O R Langworthy and L C Kolb—p 371
Observations on Paralyzed Bladder G Holmes—p 383
State of Bladder and Its Sphincters in Complete Transverse Lesions of Spinal Cord and Cauda Equina D Denny Brown and E G Robertson—p 397
Perception of Flicker in Lesions of Visual Pathways G Phillips—p 464
Leiodystonia Endocrine Autonomic Neurosis of Tropics P M Van Wulften Palthe—p 479

British Journal of Experimental Pathology, London

14 367 436 (Dec) 1933

- Observations on Antiphage Serums I The Percentage Law C H Andrewes and W J Elford—p 367
Id II Properties of Incompletely Neutralized Phage C H Andrewes and W J Elford—p 376
Effect of Hypophysectomy on Growth of the Walker Rat Tumor C S McEuen and D L Thomson—p 384
Experiments on Filtration of Yellow Fever Virus Through 'Gradocol' Membranes G M Findlay and J C Broom—p 391
Reaction of Arterial Blood in Cancer Sylvia Dickinson and R E Havard—p 394
Differentiation of Virus of Vesicular Stomatitis from Virus of Foot and Mouth Disease by Filtration I A Galloway and W J Elford—p 400
Effect of Repeated Injections of a Bacterial Vaccine W W C Topley—p 408
Further Observations on Electric Charge of Erythrocytes in Certain Protozoal Diseases H C Brown—p 413
Nature of Tumors Induced in Fowls by Injections of Tar J McIntosh—p 422

Journal of Mental Science, London

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- Mental Deficiency F D Turner—p 563
Community Control of Mental Deficiency in the United States E A Doll—p 578
Interaction of Heredity and Environment L Hoghen—p 590
Juvenile Types of General Paralysis R M Stewart—p 602
Emotional Factors in Intellectual Retardation E Miller—p 614
*Cholesterol Its Relation to Mental Disorder A G Duncan—p 626
*Somnifane Narcosis Toxic Symptoms and Their Treatment by Insulin R Strom Olsen—p 638
*Factor of Hypoglycemia in Etiology of Idiopathic Epilepsy R L H Minchin—p 659
Ketogenic Diet in Epilepsy S M Allan—p 677
Studies in Epilepsy F L McLaughlin—p 688
Studies in Experimental Psychiatry IV Deterioration of 'G' in Psychotic Patients Constance Simms—p 704
Studies in Perseveration D E Cameron and T G B Caunt—p 735
Occupational Therapy from the Therapist's Standpoint Joan West—p 746

Cholesterol Its Relation to Mental Disorder—Duncan summarizes his seven years study of the relation of cholesterol in mental disease He observed that the blood cholesterol is lowered in certain general conditions affecting the organism as a whole (1) heightened emotion and quickened psychomotor activity (2) fever and (3) hyperthyroidism A factor common to all these is an increased metabolic rate Blood cholesterol is raised in apathy and diminished psychomotor activity and in subthyroidism In each of these conditions there is a diminished metabolic rate The properties of cholesterol are such that when the cholesterol in blood and tissues is lowered, an increase of the metabolic rate is to be expected when cholesterol is increased, diminished metabolism should result The analysis of actively growing tissue supports this view Therapeutically induced diminution of the blood cholesterol acts on the nervous system, in some cases at least as a stimulant causing increased mental activity Therapeutic raising of the blood cholesterol acts on the nervous system, in some cases, as a sedative causing diminished mental activity It is concluded that cholesterol is one of the controlling factors of cellular metabolism and that neurons are susceptible to quantitative changes of this substance in their environment

Barbituric Acid Narcosis Treatment by Insulin—Strom Olsen describes a modification of technic by which it was possible to eliminate dangerous toxic manifestations in

narcosis in which 2 cc of a barbituric acid derivative (sommifame) was given intramuscularly. This was sufficient to induce sleep. From then on an average of from 5 to 6 cc in twenty-four hours was administered to subjects in robust health—a quantity that was adequate for the production of a fairly deep narcosis. Injection at regular intervals is not advocated. Some persons may develop toxic symptoms after only a few injections. A large proportion of these symptoms are due to upset of carbohydrate metabolism of the liver and the heart by the narcotic, and the administration of insulin and dextrose is an integral part of the treatment and a rational method of prevention. In the author's forty-six treatments on forty patients, fourteen were not given dextrose or insulin, in fifteen dextrose and insulin were administered immediately on the appearance of ketonuria or other toxic symptoms, and in seventeen dextrose and insulin were given from the commencement of treatment. In the first group ketonuria developed in six instances and narcosis had to be cut short in five, in two on account of circulatory collapse and in three because of marked ketosis, drowsiness and vomiting. Of the remaining eight treatments, four proceeded normally, while in the other four smaller quantities of the barbituric acid were given to avoid complications. In twelve of the fifteen treatments in the second group ketonuria developed, while in the remaining three other toxic symptoms supervened. As soon as ketonuria appeared, from 5 to 15 units of insulin was given with the next dose of the barbituric acid, followed by the ingestion of from 1 to 1½ ounces (30 to 45 Gm.) of dextrose. The optimal dose of insulin varied from one individual to another. In the remaining three cases no ketonuria was evident, but other toxic symptoms developed. In the group in which insulin and dextrose were administered from the beginning of the course and tolerably large doses of the barbituric acid were given throughout none of the seventeen patients thus treated developed ketonuria except one, in whom it appeared on the sixth day. In this patient insulin was increased from 20 to 30 units daily and the immediate effect was the entire disappearance of ketosis during the remainder of the course. These patients remained singularly free from alarming symptoms, especially circulatory collapse and in no instance was narcosis prematurely discontinued. Other toxic symptoms that remained in abeyance were extreme drowsiness, cyanosis, coldness of the extremities and vomiting. Insulin seems to have no effect in preventing pyrexia, oliguria, albuminuria and leukocytosis, for these symptoms occurred with equal frequency in the three groups.

Hypoglycemia in Idiopathic Epilepsy—Muchlin investigated the blood sugar values of a series of epileptic patients in order to find whether hypoglycemia might not be the causative factor in idiopathic epilepsy. The author observed that epilepsy is associated with a low fasting blood sugar. The dextrose tolerance curve in epilepsy shows that the islets of Langerhans are overactive. Drugs that are beneficial in epilepsy raise the blood sugar level (except bromides, which reduce the irritability of the cerebral cortex). In the post-convulsive phase of epilepsy the immunity from fits is associated with raised blood sugar. Variations in the balance of the autonomic nervous system have little influence on the incidence of fits. Natural recovery from epilepsy is associated with the onset of hypo-insulinism.

Journal Obst and Gynec of Brit Empire, Manchester 40 1125 1302 (Dec.) 1933

- Pathology of Ovarian Tumors. Part VI. W. Shaw—p. 1125
- *Early Signs of Preeclamptic Toxemia with Especial Reference to the Order of Their Appearance and Their Interrelation. F. J. Browne—p. 1160
- *Alleviation of Pain in Five Hundred and Sixty Cases of Spontaneous Labor. Louise McIlroy and Helen E. Rodway—p. 1175
- Studies of Movements of the Uterus (I). T. N. Morgan—p. 1196
- Granulosa Cell Tumor in Both Ovaries with Metastases in the Corpus and Cervix Uteri. A. J. M. Holmer—p. 1207
- Ectrophy of Bladder Associated with Pregnancy and Labor. J. B. Dawson—p. 1214
- Full Term Ectopic Gestation. Report of Two Cases. W. C. Spackman—p. 1220
- Menopausal Menorrhagia and Its Treatment by Radium. A. Broido—p. 1224

Early Signs of Preeclamptic Toxemia—To obtain information regarding the order of appearance of the early symptoms and signs of preeclamptic toxemia and the relation of

the symptoms and signs to each other, Browne analyzed the records of 320 patients. The evidence brought forward shows that, whatever the cause of preeclamptic toxemia may be, it is something that can cause each of the signs and symptoms directly. That is, each sign and symptom, such as hypertension, albuminuria and edema, is due directly to the toxic agent, and each is produced independently of the other. Hypertension does not cause albuminuria or edema, nor does albuminuria cause edema or edema hypertension or albuminuria. The minor early symptoms, such as headache and sickness, also seem to be due to the direct action of a toxic agent rather than to the increased intracranial pressure of cerebral edema or to the vascular changes of hypertension. The author states that, if his observations and the conclusions based on them are correct, it will be possible to narrow considerably the field of investigation into the causation of preeclamptic toxemia. Several illustrations of this assertion will suggest themselves, but he presents only two. 1. It might be assumed that a possible cause of preeclamptic toxemia is the increase in the volume of the blood that takes place normally in pregnancy, combined with a lack of vasomotor correlation due to some defect, congenital or acquired, in the 'blood pressure restrainers' in the carotid sinus. But, although this might give rise to hypertension, many other clinical features would still remain unexplained. 2. Preeclamptic toxemia cannot be due solely to a blood pressure raising hormone such as epinephrine, for, while such a substance might, if present in sufficient quantities, give rise to hypertension, the hypertension would not cause the other characteristic clinical phenomena.

Alleviation of Pain in Labor—McIlroy and Rodway state that 560 primiparas delivered spontaneously were given sedatives and anesthetics during labor and delivery. During the first stage, morphine, with or without potassium bromide and chloral hydrate, were given. During the second stage of labor the anesthetic that gave the most favorable results was undoubtedly a mixture of gas and oxygen. During delivery in some cases the mixture was supplemented by chloroform or ether. It was found that a combination of potassium bromide and chloral hydrate in the first stage is a useful and safe sedative, especially in excitable and nervous patients, and it has no apparent effect in lessening uterine contractions. Vomiting is avoided by sipping the drugs dissolved in at least 6 ounces of water with dextrose or lemonade. Morphine is the most valuable of all sedatives. It is rare to find any adverse effect on the mother or the fetus. It is much safer than many of the toxic barbiturates now in use. Its effect is intensified and prolonged by giving it in a 50 per cent solution of magnesium sulphate. In many cases an alteration in the frequency or duration of uterine contractions was not noticeable. In some cases, the intervals between the pains were prolonged but the pains were increased in intensity. Observations on the effect of morphine on the infant showed that spontaneous respiration took place no matter how late the drug was administered. Of 600 cases in which delay in the birth of the infant occurred, in nine mothers morphine had been administered within four hours of birth, and no difference was noted between the infants in these cases and those of delay due to unknown causes. Resuscitation was effected by means of carbon dioxide and oxygen. Nitrous oxide gas and oxygen gave the best results in the second stage of labor and during delivery. The duration, strength and frequency of the contractions increased in more than 50 per cent of the cases. There were no cases of postpartum hemorrhage due to the administration of anesthetic drugs.

Practitioner, London

131 629 724 (Dec.) 1933

- Constipation and Allied Problems. C. Watson—p. 629
- Significance and Treatment of Diarrhea. J. P. Lockhart Mummery—p. 636
- Treatment of Diarrhea in Childhood. R. W. B. Ellis—p. 642
- Modern Treatment of Constipation. J. Geoghegan—p. 652
- Physical Treatment of Constipation. C. B. Heald—p. 666
- Painful Constipation. H. E. Griffiths—p. 673
- Modern Diagnosis of Carcinoma of the Breast. D. C. L. Fitzwilliams—p. 676
- Deep Transverse Lie of the Head. W. Shaw—p. 685
- Antenatal Care in the Interests of the Child. A. G. Watkins—p. 690
- Cardiac Rheumatism and Bath Treatment. A. P. Bernath—p. 703
- Treatment of Disease of the Tibia. E. F. Neve—p. 711

Presse Medicale, Paris

42 209 224 (Feb 7) 1934

- What Is Sclerocystic Ovaritis? G. Cotte and C. Pallot —p 209
 *Hypercalcemic Ankylosing Arthritis and Parathyroidectomy M. P. Weil —p 211
 *Sodium Thiosulphate for Unexpected Symptoms of Gold Therapy J. Vignati, U. Hradiste and V. Skolnik —p 212

Hypercalcemic Arthritis and Parathyroidectomy—Weil does not feel that either the character of an ankylosing arthritis or a hypercalcemia offer sufficient evidence on which to base parathyroidectomy. Therefore fourteen patients were chosen who were afflicted with generalized chronic arthritis and had resisted all other treatments. In all these patients, partial thyroidectomy was performed as well as parathyroidectomy when the parathyroids could be found. In three patients with rhizomelic spondylitis, amelioration occurred in two (in one of whom the parathyroids were found to be abnormal). In two patients with multiple arthritis and goiter, considerable improvement occurred in one in whom partial thyroidectomy was performed but the parathyroids were not found. The other showed improvement for about six months. Of the nine remaining patients with multiple arthritis who were operated on, one died and one did not have the operation completed. In four cases no change occurred; in one there was considerable improvement and in one in which the parathyroids were not found there was also a marked amelioration of the condition. The author believes that although improvement from the operation is possible in some instances poor results occur and that the interpretation is disputable and the indications are lacking in precision.

Sodium Thiosulphate for Unexpected Symptoms of Gold Therapy—Vignati and his associates describe their method of gold therapy with which they have never had serious accidents. The agents employed in their gold preparation were gold chloride, anhydrous sodium sulphite crystallized sodium thiosulphate and distilled water each chemically pure. To obtain a solution containing 0.01 Gm of gold per cubic centimeter of solution for injection, they prepared a solution of 2 Gm of sodium sulphite, and 65 Gm of sodium thiosulphate in 40 cc of distilled water. To this they added drop by drop and with shaking, a solution of 1 Gm of gold chloride dissolved in 25 cc of distilled water. Finally the solution was filtered, neutralized with sodium hydroxide and sterilized for one hour at from 90 to 100 C. A total of 217 patients with pulmonary tuberculosis and some additional patients with rheumatism, syphilis, asthma and atrophy of the optic nerve received treatment with this preparation. No serious reactions resulted and in four cases was there a short, afebrile exanthematous reaction after which treatment was resumed without incident. The authors believe that the apparent protective action of sodium thiosulphate against reactions to gold therapy needs to be verified on a large scale by other investigators.

42 225 248 (Feb 10) 1934

- Etiology of Sylvian Vascular Spasms H. Roger and P. Sarradon —p 225
 *Latent Icterus of Chronic Cholecystitis E. Chabrol and A. Busson —p 228
 *Cobalt as Vasodilator J. M. le Goff —p 231

Latent Icterus of Chronic Cholecystitis—In studying forty-five cases, Chabrol and Busson found that pigment cholemia, through its constant presence is more valuable than cholesterolemia in recognizing chronic cholecystitis without icterus. Chauffard once remarked that hypercholesterolemia is incompatible with diseases of the biliary tract. Consequently it is precisely the hepatobiliary disease that seems to condition the amount of bilirubin in the blood in chronic cholecystitis. Undoubtedly the familial tendency may be a factor. This explanation may be valuable for a certain number of diseases but it is generally surprising to see the pigments return forty-eight hours after surgical intervention for removal of the inflammatory focus. The authors believe that before passing judgment on the precise mechanism which governs this latent pigment retention (hepatitis, angiocholitis, cholelithiasis, spasm or pancreatic involvement) it is important to know the rate of increase in order that surgical indications may benefit. Out-

side of icterus, hypercholesterolemia is more a symptom of atherosclerosis or of chronic nephritis than a manifestation of biliary lithiasis. The authors state that the bilirubin content of the blood is not higher in cases in which the calculi are obvious to the roentgen rays. In a great number of cholemic states the hyperbilirubinemia disappears the day following surgical intervention. In twelve cases of gastroduodenal ulcer the bilirubin content of the blood was normal eleven times. The one exception (20 mg per thousand cubic centimeters) concerns a case presenting subhepatic adhesions forming a perivisceral veil and marked periduodenitis. Familial cholemia may be present when there is a contrast between the high rate of the bilirubinemia and the absence of pain provoked by Murphy's sign. When a cholic inflammation is complicated by a vesicular reaction, variance is generally found between the weak bilirubinemia and the abnormal degree of subhepatic sensitiveness. The authors recognize that the pigment content of the blood easily tends to individualize the group of chronic colitis without hepatovesicular involvement, the rate of bilirubin is then normal. Forty-eight hours after operation there was scarcely any increase in the bilirubin in cases in which the liver was unaltered; this was observed in various operative conditions, such as appendicitis, hernia, hysterectomy and ovariectomy. The authors found that early attacks of bilirubinemia in patients operated on for cholecystectomy without drainage are not incompatible with a progressive amelioration of the condition of these patients. In the majority of cases of cholecystitis the pigment cholemia reaches its normal rate in two or three weeks, the maximum being three months after operation.

Cobalt as Vasodilator—Le Goff experimented with cobalt compounds on rabbits and dogs. The cobalt was administered either by mouth or by subcutaneous injections in an isotonic solution. On the basis of experiments in animals, the author decided to test the action of cobalt compounds in human beings. In three cases the cobalt was administered by mouth and in seventy-two by intramuscular injections of an isotonic solution of cobalt chloride, citrate and salicylate. In conclusion the author states that a few centigrams of cobalt compounds from 0.01 to 0.05 Gm are not toxic for man. Their main effect is the vasodilatation of the blood vessels of the face and ears with a fall in blood pressure. This redness of the face seems to be produced by a paralyzing effect of cobalt acting on the sympathetic system.

Minerva Medica, Turin

1 145 176 (Feb 3) 1934

- Considerations on Circulation of Bile in Intrahepatic and Extrahepatic Biliary Tract O. Uffreduzzi —p 145
 *Serum Coagulation of Weltmann in Hepatopathy in Relation to Protein Picture of Serum E. Massobrio and U. de Michelis —p 147
 *Behavior and Significance of Weltmann's Serum Reaction in Some Diseases Research on Behavior of Electrolytic Threshold of Coagulation Flocculation to Heat of Exudates Transudates and of Normal and Pathologic Cerebrospinal Fluid M. Pellegrini and G. Barsini —p 154
 Chloropicnic Hyperazotemia A. Creazzo —p 162

Weltmann's Serum Reaction in Hepatopathy—Massobrio and de Michelis experimented with Weltmann's serum reaction on hepatic diseases, diseases of the biliary tract and hemolytic icterus. To an equal amount of serum (0.1 cc) they add 5 cc of a solution of calcium chloride in distilled water diluted in arithmetical progression from 0.1 per hundred to 0.1 per thousand and boil the whole batch on a water bath for fifteen minutes, during which time the tubes must be shaken continually. The authors found that Weltmann's serum coagulation reaction cannot give early indication of a hypofunction of the liver but is valuable for differential diagnosis of hepatic diseases. In advanced cirrhosis the reaction showed a marked and constant increase of the coagulation column. Inflammatory processes of the biliary tract and tumors of the liver and of the biliary system showed either shortening of the coagulation column or normal values. In view of the results of the reaction the authors take into consideration the possibility of a concomitance of processes influencing the coagulability of the serum in an opposite or in the same way. In regard to the relation of the column of coagulation to the alterations of the hematic protein picture in hepatic diseases they state that there exists a certain parallelism between increase of the column

of coagulation and inversion of the protein quotient, particularly in forms with pronounced cellular involvement. The fact that diseases with marked inversion of the protein quotient sometimes present a shortening of the column of coagulation indicates that the two conditions are strictly dependent on each other.

Weltmann's Serum Reaction in Some Diseases—Pellegrini and Barsini studied the effect of the Weltmann reaction on the serum of 300 patients presenting various diseases, 28 with exudates and 16 with transudates, 12 with normal and 4 with pathologic cerebrospinal fluids. The authors found that the modifications undergone by serum coagulation constantly reflect the nature of the lesion developing in the organism and vary according to whether the pathologic process is exudative or sclerotic. In inflammatory diseases of the biliary tract there is an alteration of the coagulation toward the higher electrolytic concentrations, while the opposite behavior is evinced by the cirrhotic lesions of the liver. Since cirrhosis also embraces catarrhal icterus, it corroborates the prevalently hepatic nature of this disease. In other diseases in which the hepatic function may be involved, as in pernicious anemia, diabetes mellitus and chronic alcoholism, the effect of the reaction is analogous to that observed in cirrhosis. This behavior was observed without exception in twenty-one cases of postencephalitic parkinsonism. The authors maintain that the reaction of Weltmann is one of the more sensitive indexes of altered hepatic function.

Deutsche medizinische Wochenschrift, Leipzig

GO 197 232 (Feb. 9) 1934

- Quantitative Qualitative and Time Factors in Tuberculous Infection and Its Significance for Pathogenesis of Disease B. Lange—p. 197
 *Aspects of Atypical Pneumonias During Childhood J. Watjen—p. 201
 Acute Enterococcus Pneumonia with Aspects of Typhoid H. Gerhartz—p. 206
 *Calcium Therapy of Influenzal Bronchitides and of Common Pneumonia E. Zapel—p. 207
 Extreme Pulmonary Collapse Therapy Case H. Jessen—p. 209
 Treatment of Pollen Allergy K. Hansen—p. 210
 Most Important Infectious Diseases C. Hegler—p. 213
 Nutrition of Healthy and Sick Charity Recipients H. Bartelmaier—p. 218

Atypical Pneumonias During Childhood—Watjen reports the histories of four cases of atypical pneumonia in children, which ended fatally. The postmortem examinations revealed that the atypical pneumonic changes were characterized by more or less extensive hemorrhagic infiltration of the pulmonary tissues, involvement of the interstitial tissues of the lung, and, with the exception of the first case by pulmonary abscesses. The discovery of the pulmonary abscesses during the necropsy was a surprise in that their existence had not been indicated by the clinical aspects. The anatomic and bacteriologic aspects of the reported cases resembled those of influenzal pneumonia. All four cases developed outside of an influenza epidemic, and it could not be decided whether they were precursors or the late stragglers of an influenza epidemic. The detection of influenza bacilli in three of the patients is noteworthy, because it again raises the question of the causal role of Pfeiffer's bacillus in influenza and in influenzal pneumonia. The author thinks it possible that the Pfeiffer bacillus plays a part in influenzal pneumonia and calls attention to the possibility of an infection by carriers of the bacillus outside of an influenza epidemic. He thinks that these atypical cases of pneumonia, which resembled influenzal pneumonia, were the result of the same factors that in the course of an influenza epidemic occur with greater frequency. He assumes that the peculiarities of the pathogenic organism and a reduced resistance in the patient are the dominating factors in these atypical pneumonias.

Calcium Therapy of Pneumonia—In enumerating the beneficial effects of calcium therapy, Zapel mentions the stimulating influence on the sympathetic nervous system, the anti-inflammatory action, the favorable effect on the blood coagulation, the reduction of the irritability of the cerebral cortex, the significance of the calcium ions for the osmotic pressure, the digitalis-like action on the heart and the favorable effect on the excretory system. Since a 20 per cent solution of calcium gluconate gave promise that it would combine the favorable effects of hypertonic solutions on the circulation with the effects of calcium preparations, the author decided to employ a 20 per cent solution of calcium gluconate in influenzal and pneumonic pulmonary complications. The dosages varied

according to the severity of the disorder. From 10 to 50 cc was divided in several daily doses. Some of the injections were given intravenously and some intramuscularly. As a rule the treatment was continued until the fever had completely disappeared. The author admits that it is difficult to estimate the results of the treatment in an objective manner, but, on the basis of observations in 200 cases of influenza, influenzal bronchitis and pneumonia he stresses that the preparation is well tolerated in both the intravenous and the intramuscular injections. It exerts a digitalis-like action on the heart and on the peripheral circulation. In influenzal bronchitis and in pleurisy an antexudative and an anti-inflammatory effect can be observed. The superiority of the 20 per cent solution over the formerly employed 10 per cent solution lies in the fact that it acts more rapidly and that larger amounts of calcium can be administered with the same quantity of fluid. About the effects on the calcium content of the blood, the author states that his observation corroborated those reported in the literature.

Klinische Wochenschrift, Berlin

13 201 240 (Feb. 10) 1934

- Pathogenesis of Rickets R. Degkwitz—p. 201
 Preparation of Direct Virulent Pure Culture of *Spirochaeta Pallida* from Rabbit Syphiloma in Fluid Culture Medium E. Hoffmann and W. Frohn—p. 206
 Significance of Thyroid for Respiration of Tissue Sections of Warm Blooded Animals H. Paal—p. 207
 Corticotrope (Suprarenal) Hormone of Anterior Lobe of Hypophysis K. J. Anselmino, F. Hoffmann and L. Herold—p. 209
 Epidemiology and Clinical Aspects of Malignant Diphtheria E. Lorenz—p. 212
 Significance of Muscular Tonus for Blood Circulation D. Mateeff and C. Petroff—p. 217
 Progressive Muscular Dystrophy Its Hereditary Transmission and Glycine Treatment S. Kostikow—p. 219
 Mechanism of Takata-Ara Test L. Schindel—p. 221
 Specific Sensibilization of Serologic Reactions H. T. Schreus and R. Foerster—p. 224
 Arterial Blood Pressure and Arteriovenous Oxygen Difference C. Miltonel—p. 224
 Recognition of Stenosis of Aortic Isthmus During Life B. P. Kuschelewski, M. I. Ghikin and D. M. Sysslin—p. 225
 Vitamins W. V. Drigalski—p. 226

Significance of Muscular Tonus for Blood Circulation—Mateeff and Petroff point out that gravitational disturbances in the circulation are due to the fact that, under the influence of the hemostatic pressure, the capillaries and the small and large veins of the lower portion of the vascular system become dilated and take up a larger amount of blood than is the case when the patient is reclining. The hemostatic pressure exerted on the inside of the vascular walls is counteracted by their elasticity and by the counterpressure of the surrounding tissues. The elastic resistance of the vascular walls is not constant but variable, depending on the tonus and the influence of the innervation. The authors think that the circulatory significance of this vascular tonus should not be overestimated and that the hemostatic pressure is counteracted mainly by the pressure from the surrounding tissues, especially from the muscular tonus. If the latter factor really has this predominating significance for the circulation, it is to be expected that persons with a pathologically decreased muscular tonus are subject to circulatory disturbances when they are standing up. The authors investigated this problem on persons with reduced, increased and normal muscular tonus by determining the pulse rate and blood pressure when the persons were reclining and standing. They found that in patients with pathologically decreased muscular tonus the hemostatic pressure during erect posture produces a disturbance in the blood distribution which is so severe that in a comparatively short time (from five to twenty-five minutes) the circulation fails completely and the so called gravitation shock develops. Bandaging of the lower extremities up to the pelvis by means of an elastic bandage counteracts the gravitational disturbances in the blood distribution of these patients. In patients with pathologically increased muscular tonus and in healthy persons with good muscular tonus, the gravitational disturbances in the blood distribution are extremely slight. The normal muscular tonus prevents the abnormal dilatation of the capillaries and of the small and large veins of the lower parts of the body and facilitates the backflow of the blood to the right side of the heart.

Mechanism of Takata-Ara Test—Schindel states that the Takata-Ara reaction which was first suggested for the differen-

tiation of the changes in the cerebrospinal fluid in neurosyphilis from those in bacterial meningitides, was later employed on the serums of patients with hepatic diseases. Jezler's results seemed to indicate a globulin increase in liver disease, but Skouge, who also investigated this problem, proved that a considerable increase in globulin does not necessarily lead to a positive outcome of the Takata-Ara test. The contradictory results of Jezler and Skouge induced the author to study the mechanism of the Takata-Ara reaction. He found that by the addition of the lower fatty acids, such as formic, acetic, propionic and butyric acids, to the dilution series of a serum it is possible to obtain a positive reaction in a serum that otherwise gave a negative Takata-Ara reaction. The addition of mineral acids, however, did not have this effect. The flocculation following the addition of the low fatty acid takes place exactly as in the naturally positive Takata-Ara serum, in the dilution of 1:32. By adding one of the lower fatty acids to the serum as such, it was possible to produce a type of flocculation which resembles that in ascites. Transformation of the experimentally as well as the naturally positive Takata-Ara reactions into negative ones could be effected by the addition of a solution of sodium or potassium hydroxide. These observations indicate that it must be questioned whether a positive Takata-Ara reaction is the result of changes in the composition of the serum proteins, for it is not likely that in the case of the addition of the fatty acids the process is simply a protein precipitation. Further experiments are being conducted to determine to what extent the fatty acids that develop in the intermediate metabolism play a part in the outcome of the reaction.

Medizinische Klinik, Berlin

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*Chronic Intestinal Disturbances with Decalcification of Bones in Adult Relations to Celiac Disease of Children H. Wendt—p. 187
Prognosis and Treatment of Pemphigus Vulgaris L. Hauck and H. Hocker—p. 192
Operation in Calculous Occlusion of Ductus Choledochus H. Florcken—p. 194
Clinical Evaluation of Duodotirosine F. W. Lapp—p. 195
*Simple Method for Percutaneous Application of Histamine B. von Issekutz—p. 197
Treatment of Chronic Relapsing Paronychia and of Related Ungual Diseases by Means of Excision and Thiersch Transplantation T. Rudofsky—p. 198
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Histologic Investigations on Changes in Bile Passages in Artificially Increased Cholesterol by Means of Dehydrocholic Acid M. Clara—p. 203
Case Containing Syringe and Fluid for Treatment of Gonorrhea in Men F. Fleischmann—p. 205

Chronic Intestinal Disturbances—Wendt relates the history of a woman, aged 39, presenting symptoms similar to those observed in celiac disease of children. Severe enteritic disturbances existed, particularly in the small intestine. Roentgenoscopy without a contrast medium indicated the presence of large amounts of fluid in the small and large intestine for there were numerous shadows with level surfaces. Clinical examination revealed a fluctuating abdomen and splashing sounds could be elicited. Following ingestion of the barium meal, there was a comparatively normal evacuation of the stomach, but the filling of the small intestine was irregular. In some portions of the small intestine the passage seemed to be accelerated and in others retarded. Examination of the duodenum revealed *Bacillus coli*. In spite of the fact that the pancreatic and biliary secretions were normal, there existed severe disturbances in the resorption of fats, proteins and carbohydrates. The patient had tetanic attacks and examination revealed hypocalcemia, hypophosphatemia, extensive osteoporotic processes and spontaneous fractures. Acidosis existed and a disturbance in the carbohydrate metabolism was indicated by the low blood sugar curve following a dextrose tolerance test. The examination of the blood picture revealed hypochromic anemia and leukopenia. The author concludes that this is a true case of celiac disease.

Percutaneous Application of Histamine—It is pointed out by von Issekutz that in the use of skin irritants it is always

histamine or a substance that acts similarly that produces the hyperemia. This knowledge led to the direct application of histamine. Application by iontophoresis, in which a histamine-containing filter paper is covered on one side with aluminum and serves as an anode, is perhaps the best method. The filter paper is moistened and applied to the skin and, shortly after a current of from 3 to 15 milliamperes has been passed through the anode, the histamine action is evident. However, since this method requires a special apparatus and a certain experience, it is not always practical, and the author devised a method that can be applied without an apparatus. He shows that the penetration of histamine is prevented mainly by the fat-covered horny layer of the skin. Because of this layer the histamine ointment can enter the skin only through the hair follicles, and, in order to facilitate the penetration, the horny layer has to be loosened. The author effected this by passing a fine glass paper over the skin. The pressure should be slight, because pain, detachment of the deeper layers of the epithelium, exposure of the corium and appearance of petechial hemorrhages must be avoided. The rubbing is continued for from twenty to thirty seconds, so that the upper epithelial layer is loosened and the exfoliated particles cover the skin like a fine meal. This loosening of the epithelium and the intracellular microscopic fissures are sufficient to facilitate resorption of the histamine. A further improvement can be effected by using a water-soluble gelatinous base rather than a fatty base. The author found also that if his method of preparing the skin is employed the histamine preparation does not need to be so concentrated. He found a 0.5 per cent gelatinous histamine preparation more effective than a 2 per cent fatty histamine ointment.

Wiener klinische Wochenschrift, Vienna

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- Clinical Aspects of Exophthalmic Goiter E. Risak—p. 161
Problem of Checking Further Spreading of Typhoid and Paratyphoid by Bacillus Carriers V. Gegenbauer—p. 163
*Significance of Glycosuria and Hyperglycemia in Diseases of Coronary Arteries A. Edelmann—p. 165
*Applicability of New Method for Determination of Histidine in Examination of Urine of Pregnant Women Regine Kapeller-Adler—p. 168
New Results of Research on Rheumatism E. Mahiwa—p. 171
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Mineral Free Water Therapy in Increased Blood Pressure H. Koelbl—p. 174
Medicinal Treatment in Otiatry C. Stein—p. 176
Clinical Aspects of Labyrinthitis E. Ruttin—p. 179
Pneumothorax in Family Practice O. Satke—p. 180

Glycosuria and Hyperglycemia in Diseases of Coronary Arteries—Among 118 patients with coronary sclerosis or with coronary thrombosis, in whom Edelmann studied the carbohydrate metabolism, there were 62 with temporary or continuous glycosuria or hyperglycemia. The majority of these patients had a latent diabetes mellitus. It was found also that coronary sclerosis frequently concurs with arteriosclerotic occlusion of the dorsal artery of the foot, and in both conditions there frequently exists a diabetic disturbance of the metabolism. The author concludes that latent diabetes is one of the most important etiologic factors in the development of arteriosclerosis. He demands dietary measures in coronary sclerosis and in sclerosis of the arteries of the foot and he thinks that eventually dietary restrictions could be instituted for prophylactic purposes. He calls attention to the possibility of treating coronary sclerosis and sclerosis of the arteries of the foot by radium irradiation of the region of the heart and by the simultaneous administration of insulin.

Histidine in Urine of Pregnant Women—Kapeller-Adler who investigated the occurrence of histidine in the urine of pregnant women, succeeded in finding a specific method for the detection of histidine. A reexamination of Voges' test convinced her that it is not reliable. In her method of determining the histidine in the urine the phosphates are eliminated first then the histidine is concentrated and after suitable treatment, colorimetric examination is done. The following reagents are required for the colorimetric test: (1) a 1 per cent solution of bromine in 33 per cent solution of acetic acid; (2) two parts of ammonia mixed with one part of a 10 per cent solution of ammonium carbonate; (3) a 1:1000 standard histidine solution; (4) a tenth normal solution of potassium permanganate. After giving a detailed description of the procedure the author

presents tabular reports of the outcome of the tests. The urines from pregnant women always gave a positive reaction, but the quantities of histidine fluctuated and there was no relation between the quantity of histidine and the stage of advancement of the pregnancy. In the urines of sixty-two pregnant women, the values fluctuated between 6 and 74 mg per hundred cubic centimeters. It was not possible to determine at what period of pregnancy the histidine elimination begins, but positive reactions were obtained during the sixth week, and in some instances only traces of histidine were demonstrable during the fifth and sixth week, while a week later histidine was detectable in noticeable quantities. Tests on seventeen healthy nonpregnant women resulted in negative reactions in all but one of the cases, and of the urines of ten nonpregnant women with various disorders two gave positive results: one was from a woman with bronchial carcinoma and the other from a woman with exophthalmic goiter. The urines of six women with amenorrhea and of one with myoma were entirely free from histidine. Examination of the urines of puerperal women indicated a slow decrease in the histidine values. In ten out of eleven urine specimens the histidine and the Aschheim-Zondek tests gave identical results, but in one case of negative Aschheim-Zondek reaction a large amount of histidine was discovered. Somewhat surprising was the observation that the urines from healthy men gave positive histidine reactions much more frequently than did those from healthy women. The author is now conducting experiments to determine whether the histidine elimination can be modified by hormones. She also describes a rapid control reaction for the demonstration of histidine in the urine.

Klinicheskaya Meditsina, Moscow

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 Problem of Sex and of Endocrinology G. A. Bokanov —p 1189
 Gravidan and Its Biologic Properties G. P. Artynov —p 1207
 Parathyrogenous Bony Dystrophies and Calcinoses P. A. Kluergum —p 1238

*Functional Disturbance of Thyroid in Industrial Chronic Mercurial Poisoning M. A. Kazakevich —p 1247

Functional Disturbance of Thyroid in Mercurial Poisoning—Kazakevich investigated 133 workers in a mercury plant. Of these, 48 were men and 85 women. 60.9 per cent of the group were between 20 and 30 years of age. The duration of occupation was from six months to three years. Manifestations of a thyrogenous character with an enlargement of the thyroid were observed in 57.3 per cent. The incidence of vasomotor neurotic states of thyrogenous character raises the percentage to 88.9. The following constituted characteristic complaints: irritability, somnolence, poor memory, disturbed sleep, headache, tremor of the extremities, particularly of the fingers, flushes, sweating, palpitations, falling out of hair, increased salivation, bleeding gums, weakness and apathy. Among the characteristic objective signs were tremor of the eyelids, dilated pupils, exophthalmos, absent or weakened pharyngeal and conjunctival reflexes, tremor of the fingers, red dermographism, increased sweating and salivation enlarged and tender thyroid, and falling out of hair. Double color line of the gums, pale skin and mucous membranes, arterial hypotonus and labile pulse were rather frequent signs in chronic mercurial poisoning. Enlargement of the cervical and inguinal lymph nodes was present in almost all cases. In the beginning the nervous system reacts to mercurial intoxication with a vasomotor neurosis, which gradually develops into hyperthyroidism if the intoxication continues. The highest values of mercury excreted in the urine were found in adolescents up to the age of 20 and disturbances of the thyroid function and of the vegetative nervous system occurred in them with greatest frequency. The incidence of hyperthyroidism was higher in women than in men. The author urges a number of preventive measures for the removal of mercurial vapors, exclusion of workers below the age of 20, and the consideration of limiting in some cases the period of employment to six months at one time. Administration of salts of iodine and of bromine because of the readiness with which these halogens combine with mercury is recommended just as soon as the first signs of mercurial irritation appear.

Acta Chirurgica Scandinavica, Stockholm

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 Diastolic Conditions in Cases of Jaundice Due to Malignant Tumors E. Millbourn —p 47
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 *Diagnosis and Disinvasion of Intestine with Aid of Fluorocopy P. M. Sjostrom —p 125
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 Skin Temperature of Plantar Surface (Ipsen) in Study of Deep Thromboses N. Liedberg —p 229
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Cerebral Symptoms in Course of Operations on Pleura—Petren reports three cases of severe cerebral complications occurring during a surgical intervention on the pleura or the lung. In one case a thoracotomy was performed for the cure of pleural empyema, in the second case the cerebral symptoms developed after two punctures of the exposed lung, and in the third they appeared in the course of a plastic procedure on the thoracic wall for the closure of a persisting empyema cavity. Sudden loss of consciousness was the mode of onset in all three cases, the rest of the symptoms exhibiting considerable variation. In the first case there developed a hemiplegia, facial paresis, almost complete aphasia and later clonic convulsions and death twenty hours after the onset. In the second case there developed hemiplegia, facial paresis, aphasia and amaurosis while amaurosis was the only focal symptom in the third. Necropsy in the first case revealed nothing abnormal in the brain tissue. Hemiplegia, aphasia and the visual disturbance in the second case disappeared in a few hours while in the third case the amaurosis disappeared in the course of three days. The earlier views considered this phenomenon in the nature of a nervous reflex, hence such terms as pleural reflex, pleural shock, pleural epilepsy and pleural eclampsia. Wever injected air into the carotid artery and produced the same cerebral symptoms as in the cases under consideration. Ophthalmoscopic examination of these animals revealed air embolism of the retinal vessels. Postmortem observations were as a rule negative. Wever found air in cerebral arteries in two cases of sudden death. The author concludes that the theory of pleural reflex has been replaced by the concept of air embolism of the cerebral vessels, the retinal vessels and later the coronary vessels, as the cause of the cerebral complications in operations on pleura and lung.

Disinvasion of Intestine with Aid of Fluorocopy—Sjostrom states that for the last three years all cases of intussusception admitted to the Lund Hospital were referred to the roentgen department. In addition to the establishment of the diagnosis an attempt was made in almost all cases to disinvaginate the intussuscepted intestine under fluoroscopic control with the aid of a barium enema under pressure employing massage and taxis. The successful cases were kept under observation, the failures were submitted immediately to a laparotomy. Disinvasion was successfully carried out by this method in twenty-two of thirty-eight cases, the children being discharged as cured. In the remaining sixteen, operation was performed immediately after the attempt at reduction under roentgen control had failed. In all of these, reduction was accomplished at the operation. It is the ileocecal intussusception that can be reduced by a barium enema and taxis under fluoroscopic control. In nineteen cases of this type, failure was encountered only once. The nonileocecal intussusceptions can frequently be diagnosed roentgenologically, and operation should be performed at once. Cases in which the history is shorter than twenty-four hours are most favorable. Taxis should not be attempted in cases in which there is a history of more than two days. The author does not recommend non-operative disinvasion as an independent method. In his experience it proved valuable as a preoperative means of eliminating about two thirds of all the cases in which a cure may be brought about by conservative means, while in the remaining one third the operation may be carried out without an increase in mortality.

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STANDARD TREATMENT PROCEDURE IN EARLY SYPHILIS

A RESUMÉ OF MODERN PRINCIPLES

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This presentation of a uniform type of procedure in the treatment of early syphilis is the product of a genuinely massive investigation of world-wide scope, sponsored by the League of Nations Health Organization and carried through in the United States by the combined efforts of the United States Public Health Service and a group of five university clinics aided by the generosity of several donors. The material embraces the records of 75,000 cases of syphilis, of which 3,244 were examples of early syphilis followed for six months or more and 383 followed for as long a period as five years or more.¹ These figures while not in themselves impressive, express an aggregate material larger than any as yet fully evaluated in the literature and are entirely capable of serving as a basis for a definition of the aims and methods of modern effective treatment for early syphilis. The time covered ranges from 1916 to 1931 for the collection of the cases, and twenty months for the study of the records, so that the period embraces essentially that of modern syphilologic practice and its conclusions may be accepted as applicable to the work of today.

ELICIBILITY OF EARLY SYPHILIS FOR STANDARDIZED PROCEDURE

The strength of treatment in late syphilis lies in individualization but attention to the individual is not nearly so essential a factor in the management of early syphilis. While no one can deny that individualization has its place throughout the management of early syphilis in contrast with late has proved beyond question to be amenable to a considerable degree of routine standardization and mass technique the principles

of which have so wide a degree of applicability that they can be formulated into definite rules and systems for all but universal use. The clear definition of the aims possible at the early stage of the disease, the youth and relatively good health of the patients, their freedom from the intrinsic damage in later life produced by years of syphilitic infection, all make standardization easy and acceptable and, in fact, a positive asset in the great aim of the ultimate extinction of the disease.

THE AIMS TO BE ACHIEVED

Again in contrast with late syphilis, the aim in the period of latency and late manifestations is preventive and symptomatically curative rather than radically curative. The period of infectiousness and transmission over (except in the pregnant woman), "cure" in the sterilizing or complete sense is probably out of the question. In early syphilis, on the other hand, the evidence of the laboratory and the more slowly accumulated presumptions of clinical experience indicate that radical or complete "cure" is possible by an appropriate treatment technique, and infectiousness, limited largely to the primary, secondary and relapse manifestations of the first two years and to the semen, becomes the crucial issue in public health control. The aims in early syphilis may therefore be crisply defined as, first, the prevention of transmission by treatment and, second, the individual "cure." This order of arrangement has a proper social significance, and the aims are accomplishable to a degree presently to be defined.

PRINCIPLES GOVERNING THE CONTROL OF INFECTIOUSNESS

Present knowledge of the biology of the disease, and the conclusions drawn from the study of cutaneous and mucosal relapse by the University of Pennsylvania group² and the presentation of this problem from the Cooperative Group material³ have been summarized in the following condensed statement of the principles governing the control of infectiousness in early syphilis. Any standardization of treatment must, it is believed conform to these principles and take account of these conclusions to be acceptable.

CONTROL OF INFECTIOUSNESS IN SYPHILIS⁴

1 Infectiousness in syphilis is a function of three factors (a) time (b) arsphenamine (c) individual predisposition to relapse.

2 Infectiousness is not a function of the serologic state of the patient. No serologic test has any value as a proof of infectiousness or noninfectiousness early or late.

2 Stokes J H, Besancon J H and Schoch A G. Infectious Recurrence and Mucocutaneous Relapse in Syphilis. J A M A 96:344 (Jan 31) 1931.

3 Stokes J H, Cole H N, Moore J E, O'Leary P A, Parran Thomas and Wile U J. Venereal Disease Information 12:55 1931 (read before the International Congress of Dermatology and Syphilology, Copenhagen Aug 5-9 1930).

4 From Stokes J H. Modern Clinical Syphilology, ed 2. Philadelphia W B Saunders Company 1934 (to be published) figure 99 p 213.

The syphilis clinics of the University of Pennsylvania, Western Reserve University, the Johns Hopkins University, the Mayo Clinic and the University of Michigan assisted by the U S Public Health Service and supported by a special fund contributed by an anonymous donor and a grant by the Milbank Memorial Fund.

1 Venereal Disease Information 13:135-165 20-23 1931.

3 Syphilis, treated or untreated, is most infectious early, grows less so with lapse of time, is rarely infectious (but may be so) after five years. Late syphilids and late prenatal ("congenital") cases are not infectious.

4 Therefore, spur for time and delay in any issue involving infectiousness (i. e., marriage, intercourse).

5 Infectiousness is controlled and syphilis will be extinguished, if ever, as a health problem, by treatment of the infectious person.

6 The public health responsibility of the physician is therefore with the early months and years of the disease.

7 Treatment to control infectiousness must be with the arsphenamines. No other drug will do.

8 The use of arsphenamines must not be delayed even to secure any minor individual immunizing advantage.

9 Treatment to control infectiousness must be continuous, not intermittent, and last at least eighteen months. Rest periods encourage relapse.

10 Acetarsone (Stovarsol), tryparsamide, and nonspecific (including fever) therapy must not be expected to control infectiousness.

11 Search for infectious lesions is ineffective, except as an adjunct. Hence inspection of prostitutes is useless.

12 Instruction to and cooperation by the patient is ineffective and untrustworthy except as adjunct.

13 The amount of arsphenamine required is not less than twenty injections. The critical point is between 5 and 9.

14 Heavy metal is required as an adjunct.

15 The infectiousness of semen and vaginal secretions even in the absence of lesions, in early and latent syphilis demands absolute mechanical protection in intercourse treatment or no treatment. Continence, advised, is seldom practiced.

16 Inspection, instruction, control and protection are more essential in rest periods than under treatment.

17 There is a relapsing type of early syphilis regarding which no rules or predictions can be formulated.

18 In relapsing types, infectiousness may reappear immediately after, or even during (arsphenamine resistant), treatment with the arsphenamines.

19 Alcohol, dirt, bad hygiene, irritants including tobacco, sweat, friction (intercourse) predispose to infectious lesions.

20 The great promoter and source of relapse is the short arsphenamine course (one to four injections) unsupported by other treatment.

21 Treatment prophylaxis (after exposure) is unreliable. If given it must be followed through.

22 Adequate examination of patients would protect physicians, dentists, nurses and transfusion recipients from most risks of accidental infection.

23 The nonpregnant, nonsyphilitic woman should be protected mechanically and by treatment of the partner.

24 Conception should not take place except under treatment control.

25 The child of the pregnant syphilitic woman should not be destroyed, but protected *in utero* by treatment of the mother, before and after conception, and of the father, if syphilitic, before conception.

THE INDIVIDUAL "CURE"

The term "cure" must be used with circumspection and the use of quotation marks expresses its status as a clinical presumption rather than as an established fact. There are no available criteria of "cure" at this time, and many more years of observation will be required to establish its status. None the less, for practical purposes "cure" is a complete extinction of all symptoms and signs of the disease, with nontransmission of the infection over a lifetime, or as close an approximation to it as present follow-up clinical material permits one to study. "Cure" as here used is therefore essentially what is spoken of as "satisfactory result" in the Cooperative Clinical material that the patient has been followed for two years or more and that during one

probationary year he has had no symptoms of syphilis, examination of his blood has been consistently negative, and he has had a negative spinal fluid examination and a negative physical examination or has had a reinfection.

Briefly expressed, among patients under observation and treatment for two years or more, the highest proportion of satisfactory results obtained under conditions stated in the next paragraph was 71.4 per cent under all methods of treatment taken in the aggregate and 86.4 per cent satisfactory results when treatment was "continuous" as distinguished from "intermittent," "intensive" and "irregular."

THE "GOLDEN OPPORTUNITY" REDUCED TO FIGURES

The term applied by Pusey to the superior outlook of treatment begun in the primary stage of syphilis before the blood serologic tests become positive ("seronegative primary") has been justified abundantly by statistical analysis. The proportion of "cures" when treatment is begun in the seronegative primary stage (diagnosis by dark field or other identification of *Spirochaeta pallida*) is, as given, 71.4 per cent average and from 83 to 86 per cent best results. When, through failure of the patient to present himself or of his physician to diagnose primary syphilis until the blood test becomes positive, treatment is not begun until the so-called seropositive primary stage "cure" is attained in only 53.3 per cent by average and from 64 to 70 per cent by the best methods. This represents a clear loss of 18 per cent in outlook for "cure" by the delay. If the patient goes on to the development of a secondary eruption, of course with a positive blood test, "cure" is attained in only 50 per cent by average and 61 to 82 per cent by best methods. This represents a possible loss of 21 per cent by average and 14 per cent by best methods over the outlook prevailing when treatment is begun in the seronegative primary stage.

The figures for other elements in the clinical picture of early syphilis when the patients were under treatment or observation for six months or longer are as follows. Fixed positive blood tests develop in 3.8 per cent when treatment begins in the seronegative primary stage, in 14.5 per cent in the seropositive primary stage, and in 13.3 per cent in the early secondary stage. Fixed positiveness in early syphilis is a serious matter, for in this condition 30.6 per cent proved to have neurosyphilis, while among those rendered Wassermann negative only 18 per cent had neurosyphilis. All other forms of relapse and progression are from two to five times as frequent among those who are not rendered Wassermann negative as in those who are. Serologic relapse occurs in 12 per cent of the seronegative primary group, in 16 per cent of the seropositive primary group and in 15 per cent of the early secondary group. Owing in part to the chronology of the disease and in part to a possible protective or inhibitive effect of cutaneous and mucosal secondaries on mucocutaneous relapse, in this one aspect of early syphilis and in this only does one observe any apparent advantage gained by the patient whose treatment is deferred. 16 per cent seronegative primary, 20 per cent seropositive primary, and 9.5 per cent relapse when the patient has developed his secondary eruption.

It is apparent, therefore, that his duty to the individual patient, dear to the heart of the conscientious physician, even more than his duty to the public health, demands the earliest possible diagnosis, as well as the earliest possible application of treatment.

COMBINED ARSENICAL AND HEAVY METAL
TREATMENT AND ITS FUNCTIONS

The investigations of the Cooperative Clinical Group were not designed to deal with the question as to whether arsphenamine or heavy metals should be used alone in the treatment of early syphilis, nor is there opportunity here to review the literature on this question. It is accepted now as axiomatic that no patient with early syphilis should be treated by the sole use of an arsenical. To do so may lead to an unprotected state of high susceptibility to the most critical forms of relapse involving the nervous system (neurorecurrence), the liver and other structures. In an unknown proportion of cases it does more—it directly predisposes the patient to an allergic reaction that forms the basis of so-called malignant precocious tertiarism—the development of highly destructive gummatous lesions within a few months of the primary stage. The protection of the patient from these dangers consists in the invariable use of mercury or bismuth compounds in conjunction with arsenical therapy, either simultaneously (concurrently) or in alternating courses. While there is some dispute in the literature as to the relative merits of the concurrent and the alternating use of the two modes of treatment, the material here presented embraces both types and no effort is made to differentiate between them. Just as no patient should be treated exclusively with an arsenical, so also no patient should be treated exclusively with a heavy metal—even with bismuth, for all that it possesses greater spirocheticidal qualities than mercury. Its inferiority to the arsphenamines in this regard has been clearly demonstrated and the necessity for the use of an arsphenamine for the control of infectiousness is borne out by the present investigations.

THE CONTROL OF RELAPSE BY TREATMENT

The general principles of this phase of treatment from the standpoint of infectiousness have been summarized, but it is worth while to emphasize further the existence of the relapsing type of patient, whose recurring infectiousness is a menace to the public health (12 per cent of the 3244 patients), and to point out that the occurrence of weak positive serologic tests among the negatives in an otherwise favorably progressing patient is a serious matter. Of the 113 patients in whom this occurred, 18 per cent subsequently developed a clinical or serologic relapse. The figures supporting the statement that arsphenamine is absolutely necessary to the control of infectious relapse in the treatment of early syphilis are clearly defined, 35 per cent of infectious relapsing patients had had less than five injections of arsphenamine and 81 per cent had had less than fifteen injections. Of those who had twenty or more injections only 13 per cent ever sustained an infectious relapse. Thus twenty injections of an arsphenamine becomes the optimal number needed in the individual case to control the danger he represents to his contacts and to the public health.

It should be emphasized that in the first six months after treatment ceased, nearly one half (45 per cent) of the relapses had occurred. By the end of the first year, 73.6 per cent, by the end of the second year, 91 per cent. Hence the critical time of probation for the treated patient is the two years following the cessation of treatment, and no promises should be made, no precautions relaxed and no observation neglected during this period. An increased rather than a diminished frequency of blood tests, and periodic inspection of

the mucosae, skin and anogenital region are essential during this probationary period. Especially should pregnancy and mechanically unprotected intercourse be even more strictly controlled after than during standard treatment in early syphilis.

THE DANGER OF THE REST INTERVAL OR LAPSE

One of the most important contributions of recent years to the technic of treatment of early syphilis has been to the question of intermittence as distinguished from continuity of treatment. Those who recall the nineteenth century syphilology will remember the practical necessity of rest periods from treatment, enforced by the high toxicity and debilitating effects of the one effective antisypilitic drug, mercury. With the advent of rapidly eliminated tonic agents such as the arsenicals, which leave no trail of anemia and weight loss in their wake, and of highly effective and sometimes markedly stored but relatively nontoxic agents such as bismuth, much that appears as intermittent is really continuous treatment. While other investigations, including especially the foremost American study by Moore and Kemp, have supported the view that even the most modern treatment should be continuous and not intermittent, the Cooperative Clinic Group investigation seems to set the capstone to the demonstration. It may now be said with positiveness that the old practice of administering treatment in early syphilis by fits and starts, conditioned on the Wassermann report of the blood, is pernicious, that even the introduction of a few weeks of complete rest from treatment into the management of the first eighteen months of the disease is likely to be profoundly injurious, that the patient who lapses or escapes treatment during this period is his own worst enemy, and that no rest intervals, and a regimen in which the patient is constantly receiving either an arsenical or a heavy metal during the first year of the disease or longer, if the indications require, is the best and safest modern practice, in the interest both of the patient and of the public health.

The figures supporting these rather forcible and uncompromising statements are clear cut. They were obtained both by a study of infectious relapse and by the analysis of serologic and clinical results on the basis of four modes of treatment: the continuous, just described, the intermittent, in which rest intervals or complete breaks in treatment were introduced into the normal course, either purposefully or through the patient's negligence, the intensive, a system that has had some popularity in this country, and involves a short (three or four injection) course of arsphenamine alternating with a heavy metal course in units with long rest intervals between the arsenic-heavy metal units, and, finally irregular treatment, totally irregular and uncontrolled, with long and short courses, rest intervals and so on in fortuitous disarrangement.

Continuous treatment, then, whether prolonged or brief, and practically regardless of the drugs used, is superior in its results to the intermittent or other schemes of treatment. The continuous method secured the reversal of the blood Wassermann reaction by the end of a year in 81.8 per cent, whereas the intermittent scheme of treatment with rest intervals of a month or more secured only 37.3 per cent of reversals, and irregular treatment gave only 4.7 per cent of Wassermann reversals within a year. It appears, then, that that great bugbear of physician and patient, the fixed or irreversible positive Wassermann reaction in treated early syphilis, lies at the door of the rest interval or

lapse from treatment rather than in any peculiarity of disease or drugs

In the matter of relapse, treatment continuously administered resulted in fewer relapses of all kinds than treatment with rest periods or lapses (continuous treatment 13.1 per cent relapse and Wassermann fastness, as against 20.8 per cent with intermittent, 45.3 per cent with irregular, and 41.5 per cent with intensive treatment)

End results after two years show even more clearly the dangers of the rest period and irregularity of treatment as well as the inadequacy of the short arsphenamine course in the intensive system. With continuous treatment, 79.7 per cent achieved satisfactory or "curative" results, with intermittent treatment (rest intervals), 65.0 per cent, with irregular treatment, 33.3 per cent, and with intensive treatment, 23.4 per cent.

PROLONGED TREATMENT, FIXED SCHEDULE AND "ABORTIVE CURES"

It has become inexcusable either to shorten treatment because the patient was seen early in the course of the infection (Wassermann negative or seronegative primary syphilis), or because his blood test, originally positive is reversed to negative within the first year. The former conception, that of so-called abortive cure, has been abandoned even in the country of its origin (Germany). The latter conception, much more widely prevalent in this country, also should be abandoned. The Wassermann reactions are an unsafe guide to the time of cessation of treatment. That the patient tends to stop with the first negative is the well known "fiscal landmark" of Harrison, and it is an open question whether, for his own good, the patient should be informed of a negative blood test even if he obtains one, lest he thereupon shorten his course of treatment. Treat by schedule and not by Wassermann test is the slogan of the best modern practice.

The failure of the blood Wassermann reaction to reverse is more a matter of how treatment is given than of how much treatment is administered. A little treatment continuously given is more than twice as effective as when intermittently applied and more than four times as effective as when irregularly given. Prolongation and intensification of treatment, however, using much arsphenamine and much heavy metal, but especially much arsphenamine in the first three months, promotes good results. Much arsphenamine and much heavy metal is four times as effective as little arsphenamine and little heavy metal in securing a negative Wassermann reaction within this period, when the drugs are continuously used. This statement is based on five or more doses in this three month period representing "much." The good end results obtained by prolonging continuous treatment for more than a year are more than double those obtained by the same kind of treatment carried through less than a year (49.7 per cent versus 24.4 per cent).

THE DANGERS OF LITTLE ARSPHENAMINE AND THE SHORT ARSPHENAMINE COURSE

The distressing frequency of the practice, for which physician or patient may be to blame, of giving four or five arsphenamine injections, testing the blood, finding the patient Wassermann negative in an early case, and virtually dismissing him with a few pills, munctions or heavy metal injections should be fought with every resource that current knowledge can bring to bear. Consider first infectious relapse. Two thirds (64 per cent) of those patients who received only

one to four injections of an arsphenamine with heavy metal relapsed, while of those who received from five to nine injections with heavy metal, only one seventh (14 per cent) relapsed. The critical point, then, for a large proportion of patients with early syphilis with respect to the control of their infectiousness lies between the fifth and the ninth arsphenamine injection. Figures already cited show that twenty injections of an arsphenamine is the approximate number a patient with early syphilis should have in order to avoid becoming a menace to family and community through infectious relapse.

In the nervous system, formerly thought to be injured by an arsenical, it appears that three times as much relapse (neurorrecurrence) and other involvement develops if little arsphenamine is administered, than if much arsphenamine is used. Here the measure "little" arsphenamine indicates less than twenty injections and "much" arsphenamine more than twenty injections.

With reference again to the fixed positive serologic bugbear, the amount of treatment given is of less importance than the manner of its administration, the superiority of continuous treatment over intermittent, intensive and irregular treatment being shown by previously cited figures.

SOME "VERSUS" DATA

The practicing physician feels himself constantly in need of advice as to the relative merits of one or another drug in the treatment of syphilis. It appears from the Cooperative Clinical Group investigation that the original arsphenamine when used alone is superior in rapidity of action on the blood Wassermann reaction, but the deficiencies of neoarsphenamine are to some extent compensated for by its use with a heavy metal and by its employment in a continuous rather than an intermittent system of treatment. Neoarsphenamine is inferior to arsphenamine in that it produces a larger residue of absolutely irreversible blood Wassermann reactions than does the older drug. The total of "satisfactory results" (in cases under treatment or observation for six months or longer) with arsphenamine is 20.7 per cent as compared with 17.5 per cent with neoarsphenamine, and the total of relapses with arsphenamine is 26.6 per cent and with neoarsphenamine is 26.7 per cent. Neoarsphenamine, although slightly inferior to arsphenamine, is not an "inefficient" drug, and its greater adaptability and easier application make it, in suitable combination, the preferred drug for the physician engaged in general practice, on whom is dependent the ultimate suppression of syphilis. These conclusions seem to carry the greater validity because they tend to reconcile the very similar results in American and European clinical practice. It should be noted, moreover, that in irregular treatment there is little choice between the two drugs. In the matter of reactions the two drugs parallel each other and given in terms of reactions per thousand injections for arsphenamine they show 14.7 for mild and 2.2 for severe reactions, for neoarsphenamine they show 13.7 for mild and 2.4 for severe reactions. These figures are based on 105,942 injections of arsphenamine and 30,779 injections of neoarsphenamine.

In early syphilis, both in the cooperative studies of relapse and in the study of the general effect of treatment, the evidence tends to indicate that the combinations of arsphenamine-bismuth are more effective than those of arsphenamine-mercury. Arsphenamine-mercury

combinations may act more rapidly than arsphenamine-bismuth combinations in the first three months in reversing the blood Wassermann reaction, but the good effect of the arsphenamine-bismuth combinations appears later (that is in the four to twelve months reversal group). Particularly in controlling infectious relapse, it appears that in arsphenamine-bismuth combinations relapses occurred in only 3.6 per cent, as contrasted with 9.6 per cent with arsphenamine-mercury combinations. However since the proof of the value of any drug lies in the clinical rather than the serologic results, and a complete clinical evaluation has not been made a final judgment on the relative merits of the two heavy metals from these studies, is premature.

OPTIMAL TREATMENT

Is it possible to define an average amount of treatment that leads to good results? On the much to be desired answer to this question, the Cooperative studies shed a certain amount of light, complicated by the statistical complexities introduced by lapse of patients lack of adequate follow up and similar influences that affect the entire field of modern syphilology. It appears that after two years of observation or treatment the largest number of patients obtaining satisfactory results falls in the category of those receiving from twenty to twenty-nine injections of an arsphenamine and a similar amount of heavy metal. Thus, thirty injections of the arsenical becomes a therapeutic objective, in place of the "forty or over" suggested by the results of earlier investigators. That heavy metal is a necessary participant in the securing of good results is indicated by the fact that progression and relapse occurred when much arsphenamine and little heavy metal was given in 25.9 per cent, as compared with 16.5 per cent of the patients who received much arsphenamine and much heavy metal (over twenty injections or 120 injections).

A SYSTEM OF TREATMENT INCORPORATING THE FOREGOING PRINCIPLES

From the data thus far presented it appears, then that the modern system for the treatment of early syphilis must be continuous, it must employ an arsphenamine and a bismuth compound the latter intramuscularly, it must call for not less than twenty and unless special resistiveness is encountered, hardly more than thirty injections of the arsphenamine, and in accordance with the principles generally recognized in the treatment of the disease the system should call for continued treatment with heavy metal for one year after all symptoms and signs of the disease have disappeared. In order to determine this end point blood tests should be taken at least at the beginning and end of each arsphenamine course and the patient should be warned of the lack of significance of the negative report from the standpoint of the schedule. Weak positives after a negative has appeared should be taken as seriously as strong or fully relapsing positives. A spinal fluid examination with Wassermann test cell count protein estimation and colloidal gold test should be made before the end of the arsphenamine phase of treatment or the introduction of any rest period (none to be allowed until after the first year). It is understood that such a system can be carried through only with adequate tolerance on the part of the patient and this tolerance should be conserved in every possible way. If it fails the case becomes one for consultation. The same system should be employed whether treatment is begun in the seronegative or seropositive primary or the secondary stage.

All standardized treatment for early syphilis should be preceded by an examination of the urine for albumin sugar and casts and by a sufficiently detailed physical examination to assure the absence of serious organic disease. Inquiry should be made as to symp-

A Scheme of Treatment for Early Syphilis*

Day or Week	Arsphenamine Gm	Interim Treatment	Blood Wassermann Reaction	Comment
Day 1	0.30 G		1	Arsphenamine dosage for first 3 injections at level of 0.1 Gm for each 25 pounds body weight average subsequent dosage 0.4 Gm men 0.3 Gm women. In average patient all lesions heal rapidly and blood Wassermann reaction becomes negative during first course if arsphenamine can not be used substitute 8 to 10 doses 0.3 Gm silver arsphenamine or 10 to 12 doses 0.6 Gm neo arsphenamine this applies also to subsequent courses.
5	0.30 G			
10	0.30 G			
Week 3	0.4			
4	0.4			
5	0.4			
6	0.4			
7	0.4			
8		Bismuth 4 doses, 0.2 Gm and KI or Ung Hg and KI	1	If mercury is used note overlap of 1 week at end of first and start of second arsphenamine courses at this point a few days without treatment may be dangerous neuro recurrence.
9				
10				
11				
12	0.4		1	Arsphenamine starts bismuth stops watch for provocative Wassermann reaction after first dose of arsphenamine.
13	0.4		1	Try to prevent short lapses in treatment especially at this early stage.
14	0.4			
15	0.4			
16	0.4			
17	0.4			
18-23		Bismuth 6 doses or Ung Hg and KI	1	Bismuth is better than mercury use it if possible examine cerebrospinal fluid at about this time if patient's cooperation can be secured.
24	0.4			
25	0.4			
26	0.4			
27	0.4			
28	0.4			
29	0.4			
30-77		Bismuth 8 doses or Hg and KI	1	
38	0.4			
39	0.4			
40	0.4			
41	0.4			
42	0.4			
43	0.4			
44-3		Bismuth 10 doses or Ung Hg and KI	1	Patients with seronegative primary syphilis may cease treatment here if blood Wassermann reaction has always been negative. Note that bismuth or mercury courses are gradually getting longer—4 6 8 and now 10 weeks.
44	0.4			
45	0.4			
46	0.4			
47	0.4			
48	0.4			
49	0.4			
50-69		Bismuth 10 doses or Ung Hg and KI	1	The average seropositive primary or early secondary patient should have at least 5 courses of arsphenamine. It is safer to finish treatment with bismuth or mercury rather than with arsphenamine.
60-69				
70-122	Probation	No treatment	6-12	Blood Wassermann every month if possible at least every other month.
127		Complete physical and neurologic examination spinal puncture and if possible fluorescope examination of earlown ear stripe. Thereafter yearly physical examinations blood Wassermann every 6 to 12 months. If the two spinal fluid examinations above are negative this need not be repeated.		

* From Venereal Disease Information 10 No 2 February 1929

toms of second and eighth nerve involvement recent severe headaches hepatitis (jaundice enlarged liver acholic stools) and pregnancy before the first treatment is given. If such symptoms are present, preparatory use of a bismuth compound in seropositive primary or secondary syphilis may be required. As a rule however, there are no contraindications of this sort to the scheme about to be described. As soon as possible

and at least within the first week, a complete physical, neurologic and blood serologic examination should be recorded

AN ALTERNATING CONTINUOUS ARSPHENAMINE-BISMUTH SYSTEM

The arspphenamine-bismuth alternating system here described is essentially that used in recent years by the clinics of the Cooperative Group and published in 1929 for the guidance of practitioners. In general, if neoarsphenamine is substituted for arspphenamine, a longer arsenical course and somewhat shortened intervals, with a dosage scale of 0.45-0.6 Gm maximum for women, and 0.6-0.75 Gm for men is advised.

As an optional scheme more in harmony with the trend toward longer courses three series of from ten to twelve injections each of the arsenical drugs may be given. To secure an overlapping of the heavy metal and the arsenical, believed by some observers to protect against neurorecurrences, two, three or even four injections of the bismuth compound should be given before the end of the longer arsenical course, continued through the period in which the arsenical is suspended, and on into the beginning of the next arsenical course. The bismuth compound is then suspended while the arsenical course is completed.

REACTION-PREVENTION PRINCIPLES

It is exceedingly difficult to include detail within the space of a paragraph on reaction prevention. Only certain general principles can be given. The initial physical and urine examinations have been mentioned. In addition, the following items are of moment. The physician should

- 1 Inquire into the history of idiosyncrasy, allergic tendencies, skin irritability (especially eczema and seborrhea), focal and intercurrent infection, liver damage, and pregnancy before treatment is begun.

- 2 Question the patient before each treatment regarding (a) itching skin or rash, (b) purpura and melena, (c) gastrointestinal reaction, (d) condition of the mouth and teeth.

- 3 Examine at least the eyes (jaundice), face (dermatitis), mouth (salivation, bismuth pigment, purpura), flexures of the elbows (dermatitis), wrists and ankles (purpura) before each treatment. Take the temperature.

- 4 Make the first dose of any drug not more than half the full dose.

- 5 Pull back on syringe pistons before intravenous injections to be sure of vein entry, before an intramuscular injection to be certain a deep vessel has not been entered.

- 6 Inject intramuscularly into the inner angle of the upper outer quadrant of the buttock and massage long and well after the injection.

- 7 Inject all solutions for intravenous use slowly through a small needle, not faster than 0.1 Gm per minute for neoarsphenamine.

- 8 Keep carbohydrate and alcohol low in the diet, and protein and fat high.

- 9 Permit only a light meal before and after an arsenical, and prescribe a mild cathartic the morning after.

- 10 Make a urine examination biweekly.

- 11 Give calcium freely.

PHYSICIAN-PATIENT RELATIONSHIP AND RESPONSIBILITY

The physician has it largely in his power to make or mar the outcome for a patient with early syphilis. He is responsible (1) for an adequate technic, (2) for close surveillance as to infectiousness, (3) for anonymous reporting to health authorities if his state law requires, (4) for the return of recalcitrants in the infectious stage to treatment, (5) for adequate instruc-

tion of his patient as to course, prevention of complications, and transmission of the disease, (6) for instruction as to marriage and procreation. It is, moreover, essential that he establish a rapport with his patient that will hold him to treatment for the time required. In doing this, the following guide to the substance of the first interview or two is helpful. The physician should lay before the patient the facts under these heads:

- 1 That he has syphilis and present the evidence for the statement.

- 2 His outlook for "cure" with emphasis on the excellent reward of persistence in early cases.

- 3 The general facts of infectiousness as previously outlined.

- 4 The possibility of marriage, under medical control with personal cooperation, and the possibility of healthy offspring under prenatal direction and treatment.

- 5 The necessity for postponement or avoidance of marriage, intercourse and pregnancy until the infection is under therapeutic control with the arspphenamines.

- 6 The relative inefficiency of the blood serologic tests as a measure of infectiousness, fitness for marriage or conception, and "cure" (reiterate).

- 7 The dangers (relapse, neurorecurrence, serologic irreversibility and treatment-fastness, precocious tertiarism and malignant syphilis) of inadequate, short course and irregular treatment.

- 8 The lulling into false security produced by the quick disappearance of symptoms under treatment.

- 9 The probable treatment requirements, including at least an eighteen months estimate for early syphilis, whether sero-positive or seronegative primary, or secondary.

- 10 Personal hygiene, control of treatment reactions, and symptoms of infectious recurrence.

- 11 The need for observation throughout life.

- 12 Special arrangements (examination of contacts and infection source, of family, communication of facts to others, treatment arrangements for travelers and nonresidents).

- 13 The probable costs and their settlement or adjustment.

OBSERVATION THROUGHOUT LIFE

Every effort should be made by the physician responsible for a patient with early syphilis to keep his charge under observation throughout life. This is the only assurance we can as yet offer against insidious unrecognized progression and relapse. During the probationary two years following the cessation of the standard treatment, observation and serologic tests are desirable three or four times a year. After this period, yearly physical examination and blood test, without repetition of the spinal fluid if previously twice negative, is in order. Teleroentgenographic and cardiologic study of the heart and great vessels is desirable by the fifth year, and thereafter as the physical examination indicates, but at least with repetition in the tenth year. Only by such supervision can the greatest security be insured for the patient.

Vitamin A and Epithelial Structures—One of the most characteristic properties of vitamin A is its power of influencing the development of epithelial structures in the body. In the absence of this vitamin from the diet the cells lining the respiratory, alimentary and genito-urinary passages as well as those of certain glandular organs lose their normal structure and arrangement and tend to be changed to layers and nests of keratinized epithelium. This change is of great importance for the reason that the altered epithelial surfaces permit the invasion of bacteria so that infections are more likely to occur in animals suffering from a deficiency of this vitamin in their diet. Exactly how far a plentiful supply of vitamin A will protect human beings from infections is not known.—Colwell, S. J. *Vitamins in Clinical Medicine, Practitioner* 132 15 (Jan) 1934.

AN ANTIDOTE FOR ACUTE MERCURY
POISONING

PRELIMINARY REPORT

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In experimental work recently reported,¹ sodium formaldehyde sulphyxylate has been found to afford a high degree of protection to dogs who have previously received a fatal dose of corrosive mercuric chloride by mouth. A short account of this work with the methods of study and the technic of therapy, which I have tentatively adopted for human cases, is herein given so that it may be made available for clinical use at an early date.

Several compounds were tested for their ability to counteract the effect of corrosive mercuric chloride on excised tissues. This was done by studying the oxygen consumption of rat tissues in the Warburg-Barcroft microrespiration apparatus. The compounds that yielded promising results on oxygen consumption of tissues were then tested on rats and dogs for evidence of protective action against fatal doses of corrosive mercuric chloride.

TABLE 1—Protective Action of Sulphoxylylate Therapy Against Fatal Doses of Corrosive Mercuric Chloride Administered Intravenously and Orally to Dogs *

Number of Dogs	Corrosive Mercuric Chloride	Antidote	Time Administered After HgCl ₂	Effect	
				Survived	Died
8	4 mg per Kg intravenously	None		1	7
5	4 mg per Kg intravenously	20% sulphyxylate 0.7 Gm per Kg intravenously	Just before HgCl	5	0
4	20 mg per Kg by mouth	0.8% NaCl 3 cc per Kg	4 hours after	1	3
4	20 mg per Kg by mouth	Sulphyxylate 0.5 Gm per Kg intravenously	17 to 30 min	4	0
9	2.5 mg per Kg by mouth	0.8% NaCl 2.5 cc per Kg Intravenously 5 cc per Kg by mouth	40 to 90 min	1	8
3	2.5 mg per Kg by mouth	Sulphyxylate 0.5 Gm per Kg intravenously	33 to 70 min	1	2
12	2.5 mg per Kg by mouth	Sulphyxylate 0.5 Gm per Kg intravenously 1 Gm per Kg by mouth	40 to 90 min	9	3
3	3.5 mg per Kg by mouth	0.8% NaCl 2.5 cc per Kg Intravenously	30 minutes	0	3
3	3.5 mg per Kg by mouth	Sulphyxylate 0.5 Gm per Kg intravenously	33 to 70 min	1	2

* Control dogs received equivalent volumes of 0.8 per cent physiologic solution of sodium chloride.

A summary of results obtained in dogs with sulphyxylate therapy is shown in table 1. When sulphyxylate was administered intravenously, all of five dogs survived a subsequent fatal dose of corrosive mercuric chloride (4 mg per kilogram) also injected intravenously. Preceding the oral administration of corrosive mercuric chloride, the dogs were given from 15 to 20 mg per kilogram of morphine sulphate subcu-

taneously to prevent vomiting. Four dogs were given 20 mg per kilogram of corrosive mercuric chloride by mouth and sulphyxylate intravenously from seventeen to thirty-four minutes later, with no deaths. Three of four control dogs treated with 0.8 per cent sodium chloride died. When larger doses of corrosive mercuric chloride (from 25 to 35 mg per kilogram) were given by mouth to six dogs, and sulphyxylate therapy was given intravenously up to seventy-five minutes later, only two of the six survived. In the dogs that succumbed, autopsy revealed widespread necrosis of the mucous membrane in the upper gastro-intestinal tract, while histologic examination by Dr J G Pasternack of this laboratory showed little or no pathologic changes in the kidneys as compared to the extensive degenerative changes typical of mercurial nephritis, which was found in the control dogs.

These observations suggested that the damage in the alimentary canal might have been an important factor in the death of these treated animals, since sulphyxylate administered intravenously does not appear in appreciable amounts in the alimentary canal. Accordingly, twelve dogs were given a fatal dose of corrosive mercuric chloride (25 mg per kilogram) by mouth and sulphyxylate therapy both by mouth and intravenously.

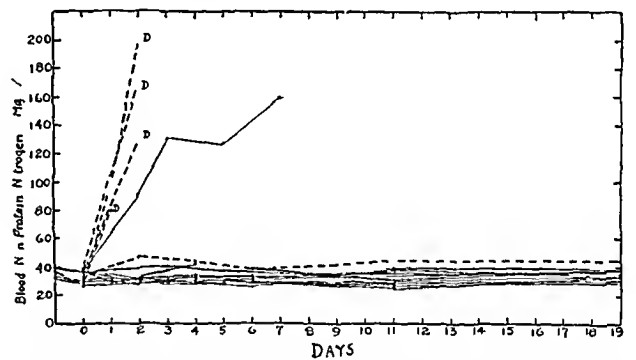


Chart 1—The absence of elevation of blood nonprotein nitrogen in nine dogs that received 25 mg per kilogram of corrosive mercuric chloride by mouth and oral and intravenous sulphyxylate therapy within an hour and a half. Interrupted lines represent control dogs; continuous lines, treated dogs.

within an hour and a half after the mercury. Nine survived, and a striking result found in these animals was the high degree of protection against kidney damage, as shown by the lack of elevation of nonprotein nitrogen in the blood for two months subsequent to the intoxication (chart 1).² Of the three treated dogs that succumbed, two died during the first night. At autopsy no renal lesions were present. The third lived eight days but refused all food during this time. Bloody stools were present. In spite of the elevation of nonprotein nitrogen that occurred in this dog, careful histologic examination of the organs showed only some inflammatory changes in the gastro-intestinal mucosa. Autopsy also revealed that this animal was pregnant.

Ten control animals were given corrosive mercuric chloride, 25 mg per kilogram, by mouth and treated with 0.8 per cent sodium chloride in equivalent amounts. Nine of the dogs died, and it is believed that vomiting occurred in the survivor, since little elevation of the nonprotein nitrogen occurred. Marked renal lesions were present in these nine dogs and elevation of nonprotein nitrogen in those animals studied.

1 Rosenthal S M. Experimental Studies in Acute Mercurial Poisoning. Pub Health Rep 48: 1543 (Dec 29) 1933.

2 Rabbits given two times the fatal dose of corrosive mercuric chloride subcutaneously can be completely protected against kidney damage by intravenous injections of sulphyxylate.

The basis of this protective action against corrosive mercuric chloride by formaldehyde sulphoxylate has been studied from the point of view both of chemical characteristics and of pharmacologic behavior. Sulphoxylate is a strong reducing agent and can rapidly reduce indigo carmine, whose reduction potential at p_H 7.0 is -0.125 volt. It can confer this reducing action to the body fluids and excretions, other possible applications of this alternation of reducing power in the body, physiologic as well as therapeutic, are being investigated.

The ability of sulphoxylate to reduce corrosive mercuric chloride into the insoluble and less toxic mercurous salts and to metallic mercury is marked. A grayish black precipitate can be detected when a few drops of 1 per cent corrosive mercuric chloride is added to aqueous solutions of sulphoxylate up to one part in 400,000. Likewise, a precipitate can be detected when a few drops of 1 per cent sulphoxylate is added to corrosive mercuric chloride solutions up to one part in 80,000. Following intravenous injections into animals, the ability of the blood serum to reduce corrosive mercuric chloride is the most sensitive test that has been developed for the detection of sulphoxylate. If 0.1 cc of 0.2 per cent corrosive mercuric chloride is

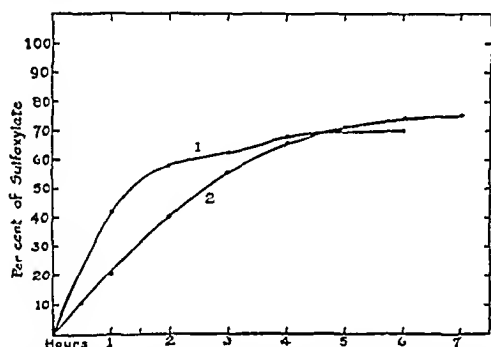


Chart 2—Curve 1 the excretion of formaldehyde sulphoxylate in the urine of an unanesthetized dog of 10 Kg following the injection of 2 Gm of sulphoxylate intravenously. Curve 2 urinary excretion in a rabbit of 3.4 Kg following the intravenous injection of 17 Gm of sulphoxylate.

added to 0.5 cc of blood serum, normally no precipitate results. Following intravenous injections of from 0.5 to 1.0 Gm per kilogram of sulphoxylate in animals, the blood serum and urine for at least five hours will show this precipitation.

The toxicity of sulphoxylate is low. One gram per kilogram of a 10 per cent solution administered slowly by intravenous injection into rats, rabbits, guinea-pigs and dogs is tolerated without symptoms. One gram per kilogram injected intraperitoneally daily for three weeks produced no visceral changes in rats as shown in histologic examinations by Dr Pasternack.

When given by mouth in doses of from 0.2 to 0.5 Gm per kilogram (10 per cent solution), no symptoms are produced except in some cases a purgative action and sulphoxylate can be demonstrated in the semisolid stools within a short time. From 5 to 10 per cent of this oral dose can be recovered in the urine. When from 0.2 to 0.5 Gm per kilogram is injected intravenously into rabbits and dogs, approximately from 70 to 75 per cent can be recovered in the urine within seven hours (chart 2). For the qualitative and quantitative estimation of sulphoxylate in aqueous solutions, a color reaction has been developed that will detect one part of sulphoxylate in 8,000 and that is not

given by any of the other sulphur compounds that have so far been tested.³

To 4 cc of the dilute solution in a large size test tube, approximately 4 Gm of ammonium sulphate crystals (more than will dissolve) and 0.6 cc of a freshly prepared 2 per cent solution of sodium nitroprusside are added. The test tube is shaken frequently for five minutes, during which time a green color will develop, which fades out. The tube is allowed to stand fifteen additional minutes and then 4 drops of a 3 per cent solution of hydrogen peroxide is added. A blue color develops that is permanent for several hours. By employing a standard solution of 1 to 4,000 sulphoxylate, I have diluted the unknown solution until an approximate color match with the standard is obtained at which time the supernatant fluids can be compared in a colorimeter.

It has thus been established that (1) sulphoxylate is a compound of low toxicity that can persist in the body for several hours after intravenous injection, in concentrations that confer on the blood the ability to reduce corrosive mercuric chloride to insoluble mercurous compounds, which are known to be considerably less toxic, (2) when injected intravenously the major part of the sulphoxylate is excreted in the urine within a few hours, which means that high concentrations are reached in the kidneys, (3) following oral administration in sufficient quantities sulphoxylate can persist throughout the gastro-intestinal tract so that it can render local protection and also reduce to insoluble compounds any unabsorbed mercury that may be present, (4) a high percentage of dogs can be saved from a fatal oral dose of corrosive mercuric chloride and can be protected against renal injury if oral and intravenous therapy is given within an hour and a half after the poisoning.

The length of time after oral intoxication that sulphoxylate therapy will be of benefit remains to be established. Experiments on rats and rat tissues suggest that after the cell damage is sustained little benefit can be expected. It is likely however that following oral administration of corrosive mercuric chloride, the damage to the kidneys and other tissues proceeds for several hours, during which time sulphoxylate therapy would be of benefit. It is not possible at present to state whether this therapy will be of any benefit in the delayed symptoms of acute mercury poisoning or in chronic mercurial intoxication.

I have had occasion to administer this therapy in ten cases of corrosive mercuric chloride poisoning in human beings. The results have been confirmatory of the experimental observations and justify a report at this time in order that this therapy may be given wide spread clinical trial.⁴ The fact that no fatalities and no appreciable kidney damage occurred in any of these cases is suggestive of the value of the therapy in view of a mortality of approximately 25 per cent as reported by recent investigators⁵ and with renal injury occurring in a further percentage of the survivors. However, it is usually impossible to know the amount of

3. Sodium hydrosulphite (Na_2SO_3) has been found to give this reaction but it can be differentiated in that dilute solutions give an immediate color with nitroprusside while sulphoxylate requires the presence of ammonium sulphate.

4. The generous extension of facilities at Emergency Hospital and other hospitals has greatly aided this work. I am indebted to Dr Neil Campbell, resident physician at Emergency Hospital with whom a more detailed and extensive report will later be published.

5. Peters J. A., Eisenman Anna J. and Kydd D. M. *Am. J. Med. Sc.* 185: 149 (Feb.) 1933. Mintz E. R. *New England J. Med.* 1933: 208: 1189 (June 8) 1933. Betha O. W., Bradley J. A. and Lilly J. G. *Internat. M. Digest* 23: 369 (Dec.) 1933.

mercury absorbed by these patients and final conclusions can be drawn only from an extensive series of cases

REPORT OF CASES

CASE 1—A man aged 26, weighing 52 Kg (114 pounds), took four 0.5 Gm tablets (30 grains) of corrosive mercuric chloride with suicidal intent. Vomiting occurred approximately an hour and a half later, and treatment was given at Emergency Hospital approximately two hours after the poisoning. Gastric lavage was carried out with 5 per cent sulphoxylate and the grayish black reduced mercury was seen in the stomach washings. Three hundred cubic centimeters was left in the stomach part of which was vomited in half an hour. After the oral therapy 250 cc of 10 per cent sulphoxylate was administered intravenously, the injection being slowly given over a period of forty minutes. Bloody stools were passed during the next twenty-four hours and the urine contained a faint trace of albumin, but subsequent blood and urine examinations at Gallinger Hospital were negative and recovery was uneventful.

CASE 2—A woman, aged 24 weighing 45 Kg swallowed two 0.5 Gm tablets of corrosive mercuric chloride. Milk and eggs were given in about fifteen minutes. Half an hour after the poisoning abdominal cramps and severe vomiting began. She was brought to Georgetown Hospital at this time where

TABLE 2—Absence of Renal Injury in Human Cases of Poisoning with Corrosive Mercuric Chloride Treated with Formaldehyde Sulphoxylate*

Case	Stated Dose of HgCl ₂ Gm	Emesis Interval	Sulphoxylate Therapy Interval	Albuminuria	Blood Nonprotein Nitrogen Mg per 100 Cc
1	20	90 minutes	120 minutes	Very faint trace negative	15†
2	10	70 minutes	420 minutes	++ negative	26-29
3	15	Short time	120 minutes	Very faint trace	26-26
4	15	30 minutes	120 minutes	Very faint trace negative	20
5	20	20 minutes	90 minutes	Trace negative	26
6	10	30 minutes	120 minutes	Very faint trace negative	26-26
7	10	60 minutes	180 minutes	Negative	23
8	10	40 minutes	60 minutes	Very faint trace negative	24
9	0.5		70 minutes	+ negative	10‡
10	0.5	30 minutes	90 minutes	Very faint trace	‡

* Traces of albumin were usually present for a few days only
† Urea nitrogen
‡ Phenolsulphonphthalein excretion 77 per cent

gastric lavage was done. She was seen by me seven hours after the poisoning when 10 Gm of sulphoxylate was given by mouth in iced orange juice. This was largely vomited within ten minutes. Ten grams of sulphoxylate was given intravenously as a 7 per cent solution in water. No symptoms were experienced during the injection and there was no change in the pulse or respiration. The blood serum two and a half hours after the injection was moderately positive for sulphoxylate (corrosive mercuric chloride test). With the exception of albumin in the urine for three days, no other effects were noted and no elevation of the blood nonprotein nitrogen occurred.

CASE 3—An obese woman aged 54 took three 0.5 Gm tablets of corrosive mercuric chloride dissolved in water. Vomiting occurred in a short time. About an hour later an emetic was given by an ambulance physician and she was brought to Emergency Hospital where gastric lavage and milk were administered. Two hours after the poisoning 10 Gm of sulphoxylate was administered by mouth in iced orange juice and 16 Gm (7 per cent solution) was slowly administered intravenously, about thirty minutes being taken for the injection. Part of the oral dose was vomited shortly after it was taken. The blood serum was positive for sulphoxylate (corrosive mercuric chloride test) three hours after the injection and the urine collected and kept on ice for fourteen hours after the therapy, contained by the colorimetric method 65 per cent of the sulphoxylate that was injected. Recovery was uneventful with no elevation of nonprotein nitrogen of the blood. The

urine from the beginning contained a very faint trace of albumin, but the past history suggested a mild chronic nephritis.

CASE 4—A girl, aged 18, took three tablets of corrosive mercuric chloride dissolved in a glass of water. She collapsed on the street and was brought to Emergency Hospital by a cab driver approximately an hour and a half after she had taken the mercury. Gastric lavage with 5 per cent sulphoxylate was given and 10 Gm left in the stomach. The stomach washings showed the presence of mercury. A considerable part of the sulphoxylate was later vomited. Twelve grams of a 7 per cent solution was given intravenously, half an hour being allowed for the injection, and three hours after this a second injection of 8 Gm was administered. The blood serum was positive for sulphoxylate (corrosive mercuric chloride test) three hours after the last injection and the urine for twelve hours after the therapy contained 65 per cent of the amount of sulphoxylate injected intravenously. A very faint trace of albumin was present in the urine for three days. Although she left the hospital against advice on the fifth day, she was symptom free and no evidence of kidney damage was present. A later report stated that she was well after leaving the hospital.

CASE 5—A man, aged 35 weighing 60 Kg, with a history of acute nephritis with edema four years previously, took four undissolved 0.5 Gm tablets of corrosive mercuric chloride. He vomited in about twenty minutes. At Emergency Hospital gastric lavage was administered with milk and eggs about an hour later, and 10 Gm of sulphoxylate by mouth and 10 Gm intravenously about an hour and a half after the poisoning. A colitis developed the following day and persisted for nine days, with from three to six liquid bloody stools daily. During his twenty-five day stay in the hospital the urine showed a trace to a very faint trace of albumin, and a few granular casts were present during the first half of this period. Phenolsulphonphthalein tests and blood chemistry gave results within normal limits. A severe mercurial stomatitis developed on the fifth day and had not completely cleared up at the time of his departure. Otherwise he left the hospital symptom free.

CASE 6—A woman, aged 26, took two 0.5 Gm tablets of corrosive mercuric chloride. Vomiting occurred in about thirty minutes. Gastric lavage with milk was given at Emergency Hospital in about ninety minutes and mercury was demonstrated in the stomach washings. Sulphoxylate therapy was administered in about two hours. Ten grams was given by stomach tube, most of which was later vomited. Thirteen grams was injected intravenously, thirty minutes being allowed for the injection, an additional 6 Gm was injected six hours after the poisoning. The blood serum four hours after the first intravenous injection was still slightly positive for sulphoxylate (corrosive mercuric chloride test). The total urine for the first twelve hours (kept on ice) contained 67 per cent of the amount of sulphoxylate given intravenously. A very faint trace of albumin was present in the urine for three days, but the blood chemistry was normal and later urinalyses were negative. She was symptom free when she left the hospital after one week, refusing to remain longer.

CASE 7—A man, aged 37, stated that at 5:30 p.m. he took two undissolved 0.5 Gm tablets of corrosive mercuric chloride. At 6 o'clock he took five potassium permanganate tablets and at 6:30 he took 2 ounces (60 cc) of tincture of iodine. Vomiting occurred after taking the iodine. He was picked up in collapse by the ambulance at 7 o'clock and brought to Emergency Hospital. Gastric lavage with milk was administered. Examination showed an iodine stain on the fingers, redness of the mouth and abdominal tenderness. From 8:30 to 9 o'clock he was given 10 Gm of sulphoxylate by mouth and 10 Gm intravenously. Examination of the urine was strongly positive for iodine and qualitative tests were negative for manganese. Quantitative examination showed the probable presence of a trace of mercury (0.8 mg per liter). No elevation of blood nonprotein nitrogen and no urinary abnormalities were present during his six days stay in the hospital when he left against advice. There was no colitis.

CASE 8—A woman aged 38 swallowed two undissolved tablets of corrosive mercuric chloride. She was brought to Emergency Hospital in forty-five minutes. Vomiting had not occurred and a considerable amount of blue fluid containing

corrosive mercuric chloride was recovered by gastric lavage. She was given 10 Gm of sulphoxylate by mouth in iced orange juice and 10 Gm intravenously an hour after the poisoning. Because of vomiting, most of the oral dose was not retained as well as a second oral dose of 10 Gm administered four hours later. Frequent bloody stools were passed during the following three days and tests for occult blood were still strongly positive on the fifth day, although no gross blood was seen. The blood nonprotein nitrogen was normal the day after admission. The urine contained a very faint trace of albumin for three days but was negative on the fifth day, when she left the hospital against advice.

CASE 9—A woman, aged 31, took an undissolved 0.5 Gm tablet of corrosive mercuric chloride. Vomiting did not occur and she was given gastric lavage with milk and eggs at Emergency Hospital within about thirty minutes. Corrosive mercuric chloride was demonstrated in the stomach washings by the grayish black reaction with sulphoxylate. Gastric lavage with 5 per cent sulphoxylate was administered in eighty minutes, 5 Gm being left in the stomach. Ten grams was injected intravenously. Later observation at Gallinger Hospital showed albuminuria for two days after which urinalysis gave negative results and blood urea nitrogen was normal.

CASE 10—A moderately obese woman, aged 37, drank about half of a 0.5 Gm tablet of corrosive mercuric chloride dissolved in water. Milk and eggs were given shortly afterward and vomiting occurred in about thirty minutes. At Emergency Hospital ninety minutes after the poisoning she was given gastric lavage with 5 per cent sulphoxylate, and 10 Gm was left in the stomach. Most of this was vomited. Ten grams was given intravenously, twenty-five minutes being allowed for the injection. Five grams was then given by mouth in iced orange juice, and this was retained. The stools for two days were strongly positive for occult blood, and the urine showed a very faint trace of albumin, otherwise she was symptom free. The phenolsulphonphthalein excretion in two hours (intravenous method) was 77 per cent at the end of a week's stay in the hospital.

Besides the fact that these acute cases of poisoning were treated as early as possible, these experimental studies emphasize the importance of certain conditions attending this therapy. It is desirable to have sufficient sulphoxylate retained in the stomach so that some of the unchanged drug will pass down the alimentary canal. If vomiting is severe, the use of morphine hypodermically may be helpful. If little of the drug is retained the use of high colonic irrigations with a 1:1,000 solution of sulphoxylate is indicated. The other requirement is to give sufficient amounts of the drug intravenously to confer on the blood for several hours the ability to reduce corrosive mercuric chloride, as described. To this end, in the average adult human case the following procedure is suggested.

Gastric lavage is done through a stomach tube with a 5 per cent solution of sulphoxylate, approximately 200 cc of this solution being left in the stomach. Immediately following this, 10 Gm dissolved in from 100 to 200 cc of distilled water⁶ is slowly injected intravenously, from twenty to thirty minutes being permitted for the injection. From four to six hours after the completion of this injection the intravenous administration of from 5 to 10 Gm of sulphoxylate may be repeated in severe cases. If it is feasible to test the blood serum against corrosive mercuric chloride, the time that this reaction becomes faintly positive or negative (from three to five hours) may be taken as an indication of the time to give this second intravenous

dose of sulphoxylate. If colitis later develops, I employ high colonic irrigations with a 1:1,000 solution of sulphoxylate once or twice daily.

SUMMARY

Sodium formaldehyde sulphoxylate saved nine of twelve dogs from a fatal oral dose of corrosive mercuric chloride, when administered by mouth and intravenously within an hour and a half after the poison had been taken. The nine surviving animals were protected against kidney damage, as shown by the lack of elevation of the blood nonprotein nitrogen. In the dogs that succumbed following this therapy or following intravenous therapy only, no significant renal lesions were demonstrable histologically.

The sulphoxylate was used in ten human cases of acute poisoning from corrosive mercuric chloride, and recovery occurred without appreciable kidney damage.

HYPERPARATHYROIDISM

A COMMON AND POLYMORPHIC CONDITION AS
ILLUSTRATED BY SEVENTEEN PROVED
CASES FROM ONE CLINIC
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AND
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Since the epoch making discovery in 1925 by Mandl¹ in Vienna and in 1926 by Du Bois² in this country that osteitis fibrosa cystica is a manifestation of hyperparathyroidism the medical profession has been quick to apply this knowledge, and the literature of the past few years contains numerous case reports and metabolic studies on this, the classic form of hyperparathyroidism. There have been, in addition, excellent summary articles on the subject.³ Most of the cases of hyperparathyroidism so far in the literature have represented the classic form, i. e., osteitis fibrosa cystica. This type of the disease is rare and offers no diagnostic difficulties. It is one of our chief objects in the present paper, however, to point out that other forms of hyperparathyroidism are not rare pathologic curiosities but conditions that every practitioner will not infrequently meet. The diagnosis must be considered and ruled in or out when any of a whole list of presenting symptoms of the most varied nature is encountered. The seventeen cases that form the basis of this paper were all studied at the Massachusetts General Hospital and a parathyroid tumor was removed in each instance. Of these cases, eleven were so diagnosed for the first time at this hospital. The large series can be only partially accounted for, therefore, by the fact that a special study on bone metabolism was being conducted. Only the clinical points of value to the practitioner will be emphasized in this paper, stress being laid on the early symptoms and the diagnosis or exclusion of the disease.

From the Medical Service of the Massachusetts General Hospital. The data on two patients are supplemented by those obtained at the Huntington Memorial Hospital.

1 Mandl Felix. Klinisches und Experimentelles zur Frage der lokalisierten und generalisierten Osteitis fibrosa. B. Die generalisierte Form der Osteitis fibrosa. Arch f klin Chir 143: 245, 1926.

2 Hannon R R, Shorr E, McClellan W S, and Du Bois E F. A Case of Osteitis Fibrosa Cystica (Osteomalacia?) with Evidence of Hyperactivity of the Parathyroid Bodies. Metabolic Study I. J Clin Investigation 8: 215 (Feb.) 1930.

3 Hunter Donald and Turnbull H M. Hyperparathyroidism. Generalized Osteitis Fibrosa. Brit J Surg 19: 203 (Oct.) 1931. Barr D P and Bulger H A. The Clinical Syndrome of Hyperparathyroidism. Am J M Sc 179: 449 (April) 1930.

⁶ Commercial samples of technical sodium formaldehyde sulphoxylate are impure and are not suitable for intravenous injection. A purified product should be used and the solutions should be freshly prepared. Preparations of the drug suitable for this purpose and sealed in ampules with the exclusion of oxygen may be obtained from manufacturers of neosarsphenamine. We are indebted to Merck & Co., New York, the Diarsenol Company, Inc., Buffalo, and the Dermatological Research Company, Philadelphia, for a supply of these ampules.

In tables 1 and 2 the cases are arranged chronologically with reference to the date of removal of the tumors, and the more important features are tabulated

PATHOLOGY

Metabolism—Hyperparathyroidism is a disease that is usually due to a functioning adenoma of the parathyroid glands. Cases 15, 16 and 17 in this series however presented hyperplasia of all parathyroid tissue. This aspect will be discussed in another communication. As a result of the increased production of the hormone, there is a disturbance in the metabolism of calcium and phosphorus. The easily measurable manifestations of this disturbance are an increased serum calcium level, a decreased serum phosphorus level, and an increased excretion of both elements in the urine.

Bones—The bones are the only storehouse for calcium and phosphorus in the body, so that this increased loss in the urine, other things remaining equal, leads to a demineralization of the bones. The histologic evidence of an increase in calcium absorption is an increase in osteoclasts. The bones, therefore, become porous and filled with osteoclasts. Osteoblasts, laying down new bone, attempt to keep pace with the osteoclasts and are therefore likewise increased. Both these cells are derived from the reticular cells of the bone marrow. The fibrosis that occurs probably represents a proliferation of the reticular cells to form the osteoblasts and osteoclasts. Two additional secondary changes may occur. Cysts may develop in the fibrous areas and enlarge until they form multiple cysts with fibrous walls. Secondly, the osteoclasts in certain areas may proliferate to such a degree that they form osteoclastomas (benign tumors of bone tissue with giant cells). The disease at this advanced stage with cysts and tumors was described by von Recklinghausen in 1891⁴ and has gone by the name of *ostitis fibrosa cystica multiphasata* or von Recklinghausen's disease of bone ever since.

Urinary Tract—The increased excretion of calcium and phosphorus in the urine not infrequently leads to the formation of urinary calculi (twenty-three times in a series of eighty-three cases⁶). In some instances the calcium phosphate precipitates occur in the kidney parenchyma (most often in the collecting tubules) and lead to secondary kidney contracture and insufficiency.

In case 9 in the present series, a flat roentgenogram of the abdomen revealed in the region of each kidney stellate groups of punctate shadows outlining the kidney pyramids. This observation gave the clue to the proper diagnosis.⁶

Blood—The replacement of so much of the marrow cavity with fibrous tissue leads to a decrease in the hematopoietic elements and hence in an occasional case to an anemia and leukopenia. Thus patient 1 of this series had on admission a red blood cell count of 2,400,000, a hemoglobin of 50 per cent, and a white blood cell count of 3,100.

Teeth—The teeth do not take part in the generalized decalcification. They may fall out because of disease of the jaws but they themselves remain well calcified.

This is brought out strikingly by roentgenograms in which the well calcified teeth stand out sharply against the poorly calcified jaws. This failure of the teeth to become decalcified is strong evidence against their being a reserve supply of calcium.

CLINICAL TYPES OF DISEASE

Depending on whether the urinary tract or skeletal involvement predominates and the degree of change present in each system, it is possible to describe several different types of the disease.

Classic Hyperparathyroidism (von Recklinghausen's disease)—Skeletal symptoms predominate and consist of decalcification, cysts, tumors and, eventually, fractures (five cases in this series).

Osteoporotic Form of Hyperparathyroidism—Presenting symptoms are due to generalized decalcification and there are no cysts or tumors (two cases in this series).

Hyperparathyroidism with Nephrolithiasis—Presenting symptoms are associated with renal stones and there may be no gross skeletal changes (eight cases in this series).

Hyperparathyroidism with Renal Insufficiency (nephrocalcinosis)—The symptoms are those of Bright's disease (one case in this series).

Acute Parathyroid Poisoning—This is a condition simulating acute parathyroid poisoning in dogs with sudden death and characteristic pathologic changes (no cases in this series). A case reported by Dawson and Struthers⁷ may well fall into this group.

Hyperparathyroidism Simulating (or Complicated by) Paget's Disease—The existence of this group is not yet certain. There is a discussion of this condition under the section on differential diagnosis (one case in this series).

DURATION OF DISEASE

Whereas the disease may produce a fatal issue—usually from renal involvement—it probably smolders on for years in the majority of cases, crippling but not killing. In any one case it is difficult to say just when the disease began. Patient 6 was first seen and the diagnosis was made in 1926. He had been passing gravel in the urine for eight years at that time. The tumor of case 1 appeared in the patient's neck following a miscarriage fourteen years before her admission to the hospital whereas the bone symptoms had been of only one year's duration. In this connection, case 10 is extremely interesting.

A woman aged 54 entered the hospital to have a bladder stone removed from a trabeculated "cord bladder." The cord injury had occurred as the result of a fracture of a lumbar vertebra at the age of 15. The fracture was brought about when she attempted to lift a heavy load to her head "in the old country." No further skeletal symptoms developed. If one reconstructs the story it is probable that the fracture was the result of a decalcified vertebra due to hyperparathyroidism but that this had not caused further obvious damage until it had occasioned a bladder calculus. Following the removal of the parathyroid tumor thirty-nine years after the fracture the patient stated that she had never felt so well in her entire life.

SYMPTOMATOLOGY AND PHYSICAL OBSERVATIONS

The symptomatology can be divided into three groups: (a) that due to the hypercalcemia per se; (b) that related to skeletal changes, and (c) that related

⁴ von Recklinghausen F D. Die Fibrose oder deformierende Ostitis die Osteomalacie und die osteoplastische Carcinome in ihren gegen eutigen Beziehungen. Fe tschrift f Rudolf Virchow. Berlin 1891.

⁵ Albright Fuller Baird P C Cope Oliver and Bloomberg. Ether Studies on the Physiology of the Parathyroid Glands. IV. Renal Complications of Hyperparathyroidism. Am J M Sc 18 49 (Jan) to be published.

⁶ Eppinger E and Magendanz H. Radiologic Evidence of Extensive Calcification of the Kidneys in Ostitis Fibrosa Cystica. Am J Roentgenol. to be published.

⁷ Dawson J W and Struthers J W. Generalized Ostitis Fibrosa with Parathyroid Tumor and Metastatic Calcification. Edinburgh M J 30 41 (Oct) 1923.

TABLE 1—Preoperative Data on Seventeen

Cases	Clinical Type of Disease	Sex	Age	Symptoms and Signs Dependent on			Previous Diagnoses	Approximate Duration Years
				Hypercalcemia	Skeletal Disease	Excretory Factors		
1 M S	Classic	♀	41	Weakness fatigability constipation weight loss	Bone pain bone tenderness bone tumors kyphosis	None	Nephritis	14
2 M L	Osteoporotic	♀	60	Weakness fatigability constipation weight loss	Back pain flatfoot joint pain fracture of metatarsal	Polyuria	Flatfoot arthritis neurasthenia osteomalacia osteoporosis	2½
3 C E S	With nephrocalcinosis	♀	13	Weakness weight loss	Constant bone pain hyperextensibility	Polydipsia polyuria nocturia cures!	Enchondroma solitary cyst giant cell tumor rickets renal rickets marble bone	4
4 A B	(a) Classic (b) with nephrolithiasis	♀	41	Weakness fatigability constipation	Bone pain bone tenderness kyphosis fractures limp	Polydipsia polyuria nocturia	Rheumatism arthritis flat feet	3
5 R T	(a) With nephrolithiasis (b) osteoporotic	♀	55	None	None	? Polyuria	Cholelithiasis nephrolithiasis	5
6 C M	(a) Classic (b) with nephrocalcinosis (c) with nephrolithiasis	♂	5	Weakness constipation fatigability anorexia weight loss	Bone pain bone tenderness fractures kyphosis bone deformity	Polyuria polydipsia nocturia gravel colic	Arthritis osteomalacia	10
7 M D R	Classic	♀	6	Weakness fatigability constipation weight loss	Bone pain joint stiffness tumor of jaw fractures kyphosis hyperextensibility	Polydipsia polyuria nocturia	Rheumatism arthritis	3
8 A N R	(a) Simulating Paget's disease (b) with nephrolithiasis	♀	44	None	Localized bone pain limp	None	Sarcoma of ilium	1½
9 J R C	(a) Osteoporotic (b) with nephrocalcinosis	♂	57	Weakness fatigability weight loss	Bone pain	Polydipsia polyuria nocturia	Sacro iliac disease	2
10 M T S	With nephrolithiasis	♀	44	Weakness weight loss	None	Those due to cord bladder	Fractured vertebrae with cord involvement bladder stone	30
11 M T	Classic	♀	63	Weakness fatigability constipation weight loss	Bone pain bone tenderness fractures tumor of jaw kyphosis hyperextensibility	Polydipsia polyuria nocturia colic	Neurosis rheumatism epilepsy solitary cyst	12½
12 Y D	With nephrolithiasis	♀	31	Lassitude	None	Colic	Nephrolithiasis	0
13 W G S	With nephrolithiasis	♂	22	Weight loss	None	Hematuria colic (bilateral) stones and gravel in urine	Nephrolithiasis	1
14 M R	(a) With nephrolithiasis (b) osteoporotic	♂	32	Always thin and tired	Old deformities from rickets	Colic	Nephrolithiasis	1½
15 A P	With nephrolithiasis	♀	62	Lassitude	None	Polyuria polydipsia gravel colic	Rheumatism nephrolithiasis	7
16 T F	With nephrolithiasis	♂	26	Lassitude	None	Polyuria nocturia colic	Nephrolithiasis	1½
17 J M M	With nephrolithiasis	♀	33	None	None	Colic	Nephrolithiasis	1½

Proved Cases of Hyperparathyroidism

Diagnostic Procedures						Blood				Further Comment
Roentgen Studies		Biopsy	Serum		Plasma Phosphatase Bodansky Units	Evidence of Renal Disease	Hemoglobin per Cent	Red Blood Cells Million	White Blood Cells	
Skeleton	Genito Urinary Tract		Calcium Mg per 100 Cc	Phosphorus mg per 100 Cc						
Decalcification +++ cysts tumors	Normal	Osteosarcoma	13.7	1.0	2	None	60	2.4	7100	Tumor palpable in neck appeared following a miscarriage
Decalcification + fish type vertebral fracture	Normal	Not done	10.4 12.3	1.6 1.6	2	None	80	4.0	7700	One of mildest cases and one of most gratifying results
Decalcification +++ cysts deformity absence of lamina dura widened epiphyseal lines	? Nephro lithiasis	Fibrosis ++ osteoclasts +++ osteoid + osteoblasts ++	12.1	4.7	36	Albuminuria +++ fixation of specific gravity nonprotein nitrogen 66 reduced phenol sulphophthalein	70	4.0	8900	Patient did not return for check up tetany has persisted and cataracts have developed
Decalcification ++ cysts tumors fractures fish type vertebral	Bilateral renal stones		14.2	2.1	7.5	Albuminuria pyuria fixed specific gravity reduced phenol sulphophthalein	60	3.0	4000	Kidney stones did not reabsorb after operation tumor not found until second operation
Decalcification 0 to +	Unilateral renal stone	Not done	12.8	2.6	4.0	Albuminuria pyuria				First case to be picked up by routine blood chemistry on all cases with urinary calculi
Decalcification +++ cysts tumors fractures fish type vertebral absence of lamina dura	Bilateral nephro lithiasis calcification of kidney parenchyma		13.1 to 16.5	1.4 to 3.2	14.2	Albuminuria rare cast fixation of specific gravity reduced phenol sulphophthalein nonprotein nitrogen 56 mg	70	4.2	8600	Tumor found on seventh operation first case to be diagnosed in the country second in world
Decalcification +++ cysts tumors fractures absence of lamina dura	Negative	Osteitis fibrosa cystica	13.7	2.4	18.0	Normal	60	3.4	4000	Previously operated on elsewhere and no tumor found it was looked for and was found in anterior mediastinum because of knowledge obtained one week before from case 6
Decalcification 0 to + Paget's disease of right ilium	Right renal calculus	Not done	14.0	1.0	18.0	Pyuria				Lesion in ilium when first seen was a large sharply circumscribed area of bone absorption with X-ray treatment alone this was changed into an area of coarse trabeculations typical of those seen in Paget's disease following removal of the tumor the density was further increased
Decalcification +++	Calcification of kidney pyramids	Osteoclasts +++ osteoblasts +++ fibrosis ++ osteoid normal	16.8	2.9	26	Albuminuria pyuria fixation of specific gravity reduced phenol sulphophthalein	60	3.7	8000	First case to be diagnosed by X-ray changes in kidneys
Decalcification 0 to + old fracture of lumbar vertebrae	Bladder stone		14.0	2.3	4	Pyuria reduced phenol sulphophthalein	70	4.2	10000	Fractured vertebra 20 years before entrance while carrying weight on head developed cord lesion and cord bladder entered hospital for bladder stone
Decalcification +++ cysts tumors fractures	Normal	Not done	13.9	1.6	16.0	Albuminuria pyuria rare cast reduced phenol sulphophthalein	70	4.4	9000	After developing postoperative tetany has gradually returned to hyperparathyroid state and rest of tumor is to be removed
Decalcification 0 normal	Bilateral stones	Not done	11.5	3.1	2.7	Pyuria	60	3.6	6700	Had palpable tumor in neck which turned out to be thyroid adenoma no polyuria
Decalcification 0 normal	Right renal calculus	Not reported	10.8	2.8	4	Hematuria	90	4.0	12000	Absence of polyuria again surprising
Decalcification ++	Renal calculus ? calcification in both kidneys	Not done	14.0	1.9	6	Hypertension white sediment with casts	70	3.2	9200	No polyuria tumor may have started in childhood when patient had rickets (cf hyperplasia of parathyroids with rickets)
Decalcification 0 normal	Bilateral stones	Not done	10.0	2.2	7.3	Pyuria reduced phenol sulphophthalein	70	4.0	11000	First case in series in which multiple tumors were found microscopically appearance of glands different from that in cases 114 considered case one of hyperplasia
Decalcification 0 normal	Two stones in right ureter	Not done	16.7	1.7		White sediment with fine granular casts pyuria	80	0	1400	Multiple tumors all found microscopically appearance same as case 115 considered case one of hyperplasia
Decalcification 0 normal	Double ureters stone on right	Not done	12.4	2.1	4.2	Pyuria albuminuria	80	4.0	9500	Like case 1 and 16 all parathyroids were enlarged microscopically appearance of parathyroid tissue same as case 10 and 16 hyperplasia

Remainder of tumor was removed and blood values are now normal

to the increased excretion of calcium and phosphorus in the urine

Symptoms Due to Hypercalcemia—Just as hypocalcemia causes an increased excitability of nerve-muscle apparatus (tetany), so hypercalcemia causes the opposite. It takes more electricity to cause a muscular contraction in such individuals than in the normal. This is the antithesis of Erb's sign for tetany. However, from a practical point of view such evidence is unreliable and superfluous. Hypotonia, lassitude, constipation and other similar manifestations are often present and are related to this effect of hypercalcemia. Flatfoot, a very common symptom, is probably related to the hypotonia. Case 2 was diagnosed as hypochondriacal and neurasthenic because of these symptoms. They all disappeared after operation. Case 1 is interesting in this respect. As already stated, fourteen years before admission the patient developed what later was proved to be a parathyroid tumor in the neck. About this time she lost her appetite and her weight fell from 145 pounds to 94 pounds (from 65.8 to 42.6 Kg). Constipation developed and she became so tired that she could not do her housework. All these symptoms disappeared immediately after operation and one year thereafter her weight was 139 pounds (63 Kg). It is characteristic of these vague symptoms that their having been present becomes obvious only after they have disappeared. The change is then commented on by the patient.

Symptoms Due to Skeletal Involvement—These symptoms vary in severity from the case showing absolutely no bone symptoms (cases 5, 12, 13, 15, 16 and 17) to one like case 6 in which the skeleton became practically nonexistent and which, in fact, may end fatally from the sheer inability to raise the thorax in respiration. A spontaneous fracture is often the event that first calls attention to the underlying disease. Bone tenderness and bone pain, usually attributed to arthritis, neuritis, and the like have in most instances been present long before. Bone deformity is usually a late manifestation except as regards the spine.

Loss of 7 inches (18 cm) in height with kyphosis was complained of by patient 6 when first seen. Bone tumor due to an underlying cyst may be an early manifestation. It is especially apt to occur in the jaw and may be treated as an epulis for years before the underlying condition is recognized (case 11). Patient 1 complained of lumps on her right forearm and one of the right metacarpal bones. Biopsy of the former showed it to be an osteoclastoma.

Symptoms Related to Hypercalcemia and Hyperphosphaturia—Polyuria and polydipsia are present in almost all cases and are usually attributed to the increased excretion of calcium and phosphorus (compare the analogy with glycosuria and polyuria in diabetes mellitus). This symptom was so prominent as to suggest diabetes insipidus in two cases.⁸ Enuresis was present in case 3 before the operation. Patients 12 and 13, both of whom had multiple urinary calculi, did not have polyuria. Had they had it, perhaps calculi would not have developed.

Renal colic or some other manifestation of nephrolithiasis may be the first and only symptom. The first symptoms in case 6, years before the diagnosis was made, was the passage of "sand" at the end of urination. Ten cases in our series have presented urinary

calculi, in seven, the symptoms were confined to those pertaining to calculi, in five of these (cases 12, 13, 15, 16 and 17), no evidence of bone disease could be discovered by roentgenograms, in the other two, it was minimal. Patient 3 had all the symptoms, signs and laboratory manifestations of Bright's disease. Had she not had bone disease as well, chronic glomerular nephritis would have been a justifiable diagnosis. Three other patients (4, 6 and 9) had definite renal impairment, presumably due to calcium deposits in the kidneys (nephrocalcinosis). In cases 4 and 9 these deposits were visible by x-rays.

The question naturally arises why some individuals with the disease develop bone lesions without lesions of the urinary tract and why others do the opposite. The explanation is probably as follows. The amount of bone disease is proportional to the daily loss of calcium phosphate from the body times the duration of the disease. The daily loss in turn is dependent on the output in the urine (proportional to the severity of the disease) plus the output in the feces (a relatively unimportant value) minus the intake in the food. Therefore, short duration together with a naturally high intake of calcium would make marked bone disease unlikely. The precipitation of calculi in the urinary tract on the other hand, will depend on the excretion of calcium and phosphorus in the urine (proportional to the severity of the disease), the alkalinity of the urine, the degree of polyuria, and the like. A severe degree of hyperparathyroidism could, therefore, be associated with calculi in a short time.

Cases 5, 10, 12, 13, 14, 15, 16 and 17 were discovered as a result of doing routine calcium and phosphorus determinations on all patients with urinary calculi. From the few patients thus far examined, we are inclined to believe that hyperparathyroidism will turn out to be a fairly common cause of urinary stone and that in the future the case in which there is a stone and no bone disease will be the commoner type of hyperparathyroidism.

X-RAYS

Skeleton—There may be no skeletal changes in hyperparathyroidism demonstrable by x-rays (cases 12, 13, 15, 16 and 17). The chief roentgen evidences, when such exist, are increased radiability, deformities, cysts, tumors and fractures. Only the first of these is fundamental, the other four are secondary changes. Being a metabolic disease, hyperparathyroidism must exert its fundamental action, demineralization, on the entire skeleton if at all. Therefore, in a doubtful case it is essential to decide at once whether one is dealing with a generalized or a localized disease.

Furthermore a disease may be polyostotic without being generalized. It must be emphasized that at first sight the secondary bone changes—cysts, tumors and fractures—may make one think that the skeleton is involved in a spotty manner, but a more detailed study will reveal that the decalcification is uniform and generalized. Of course, immobilization due to a fracture may enhance the decalcification in the involved part.

Of interest in this connection is the following case, which was referred to this clinic for a question of parathyroid disease. The patient had pains in the bones of her legs. These by x-rays showed marked increased radiability, but the upper extremities were not similarly involved. This was strong evidence against the diagnosis, which was satisfactorily ruled out on other grounds. Absence of the lamina dura in the tooth

⁸ Allan F. N. Hyperthyroidism. Proc. Staff Meet. Mayo Clinic, 6: 684 (Nov. 18) 1931. Rosenback and Disque. Verhandl. d. Ges. f. Verdaungs- u. Stoffwechselkr., tenth day, Budapest, 1930, p. 223.

sockets by x-rays has been emphasized by Strock⁹ and is a manifestation of this generalized decalcification. It is not pathognomonic of decalcification due to parathyroid disease. Therefore, given bone lesions detected by x-rays, they are presumably not due to hyperparathyroidism unless generalized increased radiability is present. An exception to this statement in the form of the disease simulating Paget's disease will be discussed under differential diagnosis.

Deformities demonstrable roentgenographically may be very extensive and obvious. Lateral roentgenograms of the lumbar vertebrae often disclose biconcave disks (fish-bone vertebrae), which occur because the softened vertebrae can no longer withstand the tendency of the nucleus pulposus of the intervertebral disk to expand. They are evidence of softened vertebrae and are not pathognomonic of hyperparathyroidism but may occur in osteomalacia, multiple myeloma and the like.

The cysts, if present, are usually multiple but need not be. There may be marked expansion of the overlying bone. A cortical cyst is especially suggestive of this disease.

The tumors or osteoclastomas usually occur in the jaws, at the ends of the long bones or in the ribs. In contradistinction to the cysts, they occur only where there is cancellous bone. As yet we know of no way, roentgenographically, of differentiating these from the cysts, unless they give the definite soap bubble appearance of such tumors.

Fractures, when present, usually occur through cysts or tumors.

In addition to these roentgenographic changes, some cases show peculiar lesions in the terminal phalanges. Patients 3 and 6 had marked soft tissue clubbing, and the latter of these patients had partial resorption of the bodies of the terminal phalanges. In case 9 the phalanges and metacarpals gave a peculiar appearance by x-rays, in that the edges of the bones were everywhere fenestrated suggesting a complete lack of cortex.

Urinary Tract—Urinary calculi or punctate deposits of calcium in the kidney parenchyma should be looked for in cases of questionable hyperparathyroidism.

The Parathyroid Tumor—Before operation, an effort should be made to localize the position of the tumor. In two cases in our series, it was visible in the anterior mediastinum by roentgenograms, although this fact was determined only after operation. The tumor often lies in close proximity to the esophagus, so fluoroscopy during the administration of thick barium by mouth might be of help. If this had been done in case 4, an unnecessary operation might have been avoided. No tumor was found at the first exploration. Two years later it was found lying wedged between the esophagus and the trachea.

LABORATORY DATA

Serum Calcium and Serum Phosphorus—Once the diagnosis is suspected, its confirmation or exclusion depends on the chemical laboratory. Hyperparathyroidism is almost unique in giving the combination of a high serum calcium and a low serum phosphorus level. Other conditions, such as multiple myeloma and metastatic malignancy, may produce a high serum calcium, but when they do, the serum phosphorus also is usually elevated. Rickets and osteomalacia are often associated with a low serum phosphorus but in these diseases the calcium is seldom above normal, more often below and never as proportionately high as the phosphorus is low.

The serum should be taken fasting. One cannot be too careful about having chemically clean syringes and centrifuge tubes. All hospital linen that might be used in drying the glassware must be avoided, as the bleaching materials contain calcium. The methods we have employed are, for the calcium, that of Fiske and Logan¹⁰ and, for the phosphorus, that of Fiske and Subbarow.¹¹ A serum phosphorus below 3.5 mg per hundred cubic centimeters and a serum calcium above 11 mg per hundred cubic centimeters should be regarded with suspicion, especially if repeatedly obtained. The preoperative range of serum calcium in our series was from 11.5 to 16.8 mg and of phosphorus from 3.6 to 1.5. An exception to the high serum calcium and low serum phosphorus rule in hyperparathyroidism occurs when the disease has progressed to marked renal insufficiency, when one gets a higher serum phosphorus (for instance, patient 3 with a serum phosphorus of 4.7).

Urinary Calcium and Phosphorus Excretions—Whereas hypercalciuria and hyperphosphaturia are two of the most constant metabolic abnormalities of the disease from a practical clinical point of view this evidence is extremely laborious to obtain, seldom necessary and, in the borderline case, often not helpful. Thus, hypercalciuria is dependent on the hypercalcemia. If the latter is at a borderline level, the former will be as well.

Plasma Phosphatase—The plasma phosphatase level, probably an index to the degree of osteoblastic activity, is elevated in hyperparathyroidism in proportion to the amount of bone disease and independent of the degree of hyperparathyroidism. Thus, patients 10, 12 and 13 with no detectable bone disease had phosphatase levels of 4.0, 2.7 and 4.0 units, respectively (method of Bodansky,¹² in which the normal range is from 2 to 4 units), whereas patient 7, with classic von Recklinghausen's disease, had a level of 16.9 units. Following operation, the phosphatase level only gradually returns to normal over a period of months, which again suggests that it is a measure of the amount of bone disease. From what has just been said, it is obvious that a normal phosphatase level does not rule out hyperparathyroidism. Nevertheless, the determination can be useful in differential diagnosis, as is shown by the following example.

A woman, aged 23, was referred to the hospital because of multiple bone cysts and a past history of many fractures. The roentgenograms strongly suggested von Recklinghausen's disease with the one reservation that the bones which were not involved with cysts showed no generalized decalcification. The phosphatase in the plasma was not elevated.

If the large amount of bone disease present had been due to hyperparathyroidism, the phosphatase level should have been elevated. However many of the important diseases that come up in differential diagnosis have elevated phosphatase levels as well. The determination is of most value, of course, in following the progress of any one case.

Renal Stones—Since in many cases of hyperparathyroidism renal stones develop, it is often important to analyze stones obtained by operation or by spontaneous passage to see whether they are of the type

¹⁰ Fiske C H and Logan M. Personal communication to the authors. Folin Otto Laboratory Manual of Biological Chemistry, edition now in press.

¹¹ Fiske C H and Subbarow Yellapragada. The Colorimetric Determination of Phosphorus. *J Biol Chem* 66:375 (Dec) 1923.

¹² Bodansky Aaron. Determination of Plasma Phosphate. *Proc Soc Exper Biol & Med* 28:760 (April) 1931.

⁹ Strock M S. Personal communications to the author.

which is associated with that disease. Obviously, if the stone is the result of hyperparathyroidism, it should contain a large amount of calcium and phosphorus. Hunter³ analyzed a stone and found 24.4 per cent calcium and 8.4 per cent phosphorus. Stones in cases 6 and 12 showed the following analyses: calcium 40.5 per cent and phosphorus 2.4 per cent in case 6, calcium 18.6 per cent and phosphorus 3.8 per cent in case 12.

OPERATION

The surgical aspects of these cases will be left for a separate paper by our surgical colleagues.^{12a} A few points seem worth stressing, nevertheless.

The chief operative difficulty is in finding the tumor. Only patients 1 and 9 had palpable tumors before operation. Before undertaking this operation, a surgeon must be more than just "a good thyroid surgeon." He should know the normal and possible aberrant situations of the parathyroid glands; he must be familiar with their reddish brown color and smooth surface (in contrast to the granular surface of thyroid), he must be able to differentiate them from lymph nodes, collections of fetal fat, and thyroid lobules, and he must be prepared to continue the search, even if this leads him into the anterior mediastinum (cases 6 and 7). For the latter reason the surgeon must not undertake the operation until he is convinced by the blood chemistry that a tumor is present. There is no time like the initial operation to find the tumor.

In our experience, the surgeon can expect, given a marked degree of hyperparathyroidism, to find a sizable tumor. Thus, only patient 2 in our series had a small tumor (1 cm by 0.5 cm by 0.5 cm), but she had a minimal degree of hyperparathyroidism. This particular tumor was the only one in which the normal gland could still be seen on the periphery of the tumor. At first we believed by analogy with hyperthyroidism that a small amount of tissue might cause a marked degree of the disease. It is now quite clear, however, that the tumor tissue is no more potent per gram of tissue than normal tissue. Therefore, except in very mild cases, the surgeon need not stop at every minute body encountered. This applies to normal parathyroid bodies as well. These must in no case be removed by the surgeon, who is unable to find the tumor in the hope that some good will be done. Such practice only increases the danger of severe tetany if the tumor is later found.

Unlike thyroid adenomas, parathyroid tumors mold themselves surprisingly well into crevices, as between the esophagus and the trachea. This means that one can be very close to them and still not palpate them.

We believe that hypoparathyroidism following the removal of a tumor may be very dangerous. We have observed that the tetany is most marked in the patients with most bone disease and is probably to be attributed to this fact more than to atrophy of disuse in the remaining parathyroids. We see no objection in doing a subtotal resection of the tumor in these cases, and that is our present policy (case 11). When normal parathyroids have been removed at previous operations (cases 4, 6 and 7), this should of course be done. If a surgeon decides on this procedure, he should leave behind, with a good blood supply, a piece of the tumor considerably larger than a normal gland. The tendency, because of experience with hyperthyroidism, is to leave too little. Thus, in cases 4, 6 and 7, moderately

severe tetany developed in spite of the fact that pieces considerably larger than a normal gland were left behind. Patient 11 is the only one to date who has had a tendency for the hyperparathyroidism to recur, but the removal of the remainder of her gland should offer no difficulties.

The surgeon should keep in mind the fact that multiple parathyroid tumors do occur. This was so in cases 15, 16 and 17. The surgery in such cases is an entirely different problem and discussion will have to be postponed.

NONSURGICAL TREATMENT

We believe there is no successful treatment of this condition other than surgery.

Röntgen Therapy—We followed the total calcium and phosphorus metabolism for a long period of time in patient 4, who received maximum doses of x-rays over the neck region without detecting any change in the urinary excretions or blood values, and subsequently a parathyroid tumor with no degenerative changes was removed. Patient 6 also received roentgen treatment without benefit. Treating the tumors of the skeleton with x-rays should also be avoided. Whereas it will cause temporary benefit to the tumors, it will not affect the cysts and will tend to increase the fibrosis of the marrow and enhance the anemia. Patient 8 received roentgen treatment of the right ilium when the lesion there was suspected of being sarcoma, with subjective relief.

Dietary Treatment—A high phosphate diet,¹³ a high calcium diet,¹⁴ or preferably both, will prevent decalcification. In case 4, we were even able to demonstrate a marked improvement of the skeleton by diet alone. In this case, however, kidney complications soon developed. The high calcium diet and especially the high phosphate diet increase the danger of kidney complications. Therefore, whereas dietary treatment may cure the skeleton, it does not prevent kidney damage and is to be avoided.

Vitamin D—Vioosterol in large amounts was administered to patients 1 and 4, during which time careful metabolic studies were done, and no appreciable effect on the calcium or phosphorus balances was noted.¹⁵

POSTOPERATIVE COURSE

Starting in the first few hours after the tumor is removed there is a marked decrease in the output of urine and in the excretion of calcium and phosphorus. The patients may become practically anuric. The calcium and phosphorus excretions in the urine remain low for a long period, from weeks to months. Thus patient 1 on a low calcium diet excreted in the urine during a three-day period before the operation 662 mg of calcium and 1,176 mg of phosphorus. During the second week after the operation, the corresponding figures for a three-day period were 27 mg of calcium and 122 mg of phosphorus. The serum calcium likewise responds extraordinarily rapidly. In case 9 the serum calcium in the first four hours dropped from 16.4 mg to 13.4 mg and reached 11.7 mg within twelve hours. There is a temporary slight fall of the

13 Albright, Fuller, Bauer, Walter, Claffin, Dorothy, and Cockrill, Jesse R. Studies in Parathyroid Physiology. III. The Effect of Phosphate Ingestion in Clinical Hyperparathyroidism. *J. Clin. Investigation* 11: 411 (March) 1932.

14 Bauer, Walter, Albright, Fuller, and Aub, J. C. A Case of Osteitis Fibrosa Cystica (Osteomalacia?) with Evidence of Hyperactivity of the Parathyroid Bodies. *Metabolic Study II*. *J. Clin. Investigation* 8: 229 (Feb.) 1930.

15 Albright, Fuller. Unpublished data.

12a Churchill, E. D., and Cope, Oliver. Parathyroid Tumors Associated with Hyperparathyroidism. Eleven Cases Treated by Operation. *Surg., Gynec. & Obst.* 58: 1 (Feb.) 1934.

already low serum phosphorus as well. In table 3, post-operative values for serum calcium, serum phosphorus and plasma phosphatase and the like for case 9 are given.

Tetany may develop if the blood calcium falls much below 7 or even 8 mg. The sudden change from a high blood calcium to a low one may cause visual disturbances and may affect the mental equilibrium. Such

excess of 11.9 mg and phosphorus of 2.8 mg per hundred cubic centimeters had a calcium of 9.8 mg and a phosphorus of 3.9 mg seven hours after the removal of the tumor and, six days later, the values were 10.5 and 3.9, respectively. These are to be compared with the figures in case 9 (marked bone demineralization), which did not show normal values until almost four months after operation (table 3).

TABLE 2—Data Relating to Operative Observations and Postoperative Course

Cases	Pertaining to Operation			Immediate Post operative Course			Results at Last Examination					Evidence of Improvement
	Location of Tumor	Size of Tumor (cm)	Total or Subtotal Resection	Post operative Tetany	Serum		Time Followed Months	Serum		Plasma Phosphatase Bodansky Units		
					Calcium Mg per 100 Cc	Phosphorus mg per 100 Cc		Calcium Mg per 100 Cc	Phosphorus mg per 100 Cc			
1 M S	Below right thyroid lobe	6.5 × 5.0 × 3.5	Total	0	7.6	3.6	32	9.4	3.4	2.38	Gain of 38 pounds all symptoms gone no anemia x-rays showed increased density but cysts still unchanged	
2 M L	Usual location of right lower parathyroid	1.0 × 0.7 × 0.5	Total	0	10.4	4.4	18	10.6	3.7	1.7	Gain of weight increased strength no back pain very optimistic	
3 C E S	Behind right lobe of thyroid between esophagus and right common carotid	2.2 × 1.7 × 1.0	Total	+++ cataracts	5.3	5.0	13				Increased density of bones by x-rays kidney function tests not repeated, albuminuria still massive*	
4 N B	Behind esophagus at level of thyroid gland	3.5 × 2.0 × 1.0	Subtotal	+	5.8	4.3	12	7.6	4	3.0	Gain in weight of 25 pounds symptom free	
5 R T	Below lower right pole of thyroid	1.5 × 1.0 × 1.0	Total	+	8.8	1.9	No follow up					
6 C M	Anterior mediastinum	3.0 × 3.0 × 3.0	Subtotal	+++	5.2	3.0	1				Death one month after operation following emergency operation to remove kidney stone	
7 M D R	Anterior mediastinum	3.5 × 2.0 × 1.5	Subtotal	++	5.1	3.3	10	8.4	2.0	5.1	Able to walk without crutches no pain gain of 28 pounds	
8 A N R	Under right thyroid lobe lying against the trachea	2.0 × 0.8 × 0.6	Total	+	8.8	3.1	9	10.1	3.6	6	Gain in weight symptom free	
9 J R C	Below and posterior to left lobe of thyroid adjacent to esophagus	4.0 × 2.2 × 2.0	Subtotal	+++	6.2	3.9	6	8.8	3.4	7	No symptoms gain of 25 pounds	
10 M J S	Posterior to left lobe of thyroid	3.0 × 1.7 × 0.8	Total	0	10.5	3.9	5	10.5	3.65	4	Gain 12 pounds in first two months feels much stronger	
11 M T	Posterior to upper half of left lobe of thyroid along side of trachea	3.0 × 2.0 × 1.0	Subtotal	+	7.2	2.2	4	11.4	2.8	5.2	Still bedridden feels stronger	
12 Y D	Below left lobe of thyroid (elena)	1.5 × 1.5 × 1.5	Total	+	8.0	3.2	0					
13 W G S	Posterior to left lobe of thyroid	1.7 × 1.7 × 1.7	Total	0	10.0	2.3	1				Increase in strength less tired at end of day's work gain of 6 pounds	
14 M R	Posterior to right lobe of thyroid (cystic)	2.2 × 1.2 × 1.0	Total	0	10.1	2.5						
15 A P	Two lower glands and right upper in normal position left upper not found all three very large	1.5 × 1.2 × 0.5 1.8 × 0.8 × 0.6 5.0 × 3.0 × 1.3	Total of two and subtotal of third	0	12.0	2.2						
16 T F	Both glands on right enlarged left side not explored	1.5 × 1.0 × 0.6 4.5 × 3.5 × 2.5	Total of two	0	10.8	2.2						
17 J M M	All four in normal positions and very large	2 × 2 × 1 1 × 0.5 × 0.4 1.8 × 1.5 × 0.4 2 × 2 × 1	Total of three resection of fourth	0	10.8	2.2						

* Since the paper was written the patient has died. Details concerning the death were not obtained but it was probably due to renal insufficiency.

patients may become temporarily very apprehensive. The treatment of the tetany is beyond the scope of this paper. If the suggestions are followed under the section entitled "operation" we believe that tetany requiring special treatment will seldom be necessary. The time required for the blood calcium and phosphorus to return to normal probably depends mostly on how much the skeleton has to be repaired. Thus patient 10 with no skeletal changes and a preoperative serum cal-

The improvement in symptomatology to be noted following operation is extraordinary. Whereas the patient's only complaint before operation may have been related to a fracture, he not infrequently says after the operation that he has not felt so well in years. A gain of weight is marked, constipation disappears, lassitude is replaced by a feeling of energy, bone pain and tenderness disappear within a few days. A bone biopsy in case 9 eight days after operation showed that

the osteoclasts had already disappeared. The rapid disappearance of bone symptoms is especially surprising in view of the fact that roentgenograms may show no decrease in the radiability for six months. The osteoclastomas gradually disappear. The cysts probably remain indefinitely. The roentgenograms in case 1, taken three years after the operation still showed the bone cysts unchanged even though all preoperative symptoms had disappeared, whereas the roentgenograms in case 4 showed marked improvement one year after operation in what was considered to be bone tumors. If the lesion, whether interpreted as a cyst or as a tumor by x-rays, improves after operation it is likely that it was a tumor. Whether the calcium deposits in the genito-urinary tract are ever absorbed we cannot state. The deposits in the kidneys in case 9 were still unchanged four months after operation, as

Senile Osteoporosis—By osteoporosis is meant a condition in which the bone tissue is quantitatively decreased but qualitatively normal. It may be brought about by an underactivity of the osteoblasts in laying down bone (senile osteoporosis) or by an overactivity of the osteoclasts in resorbing bone (osteoporotic form of hyperparathyroidism). The end result is very much the same in either case—the roentgenogram shows increased radiability, bone pain, fractures and deformities occur. The serum calcium in senile osteoporosis is normal, the serum phosphorus is reduced (often about 3 mg) or normal, the plasma phosphatase is normal. If these criteria are not sufficient to differentiate the two conditions, a bone biopsy in senile osteoporosis would fail to show fibrosis of the marrow and increased osteoclasts. In exophthalmic goiter of very long standing we have observed a generalized osteoporosis, which has

TABLE 3—Observations in Case 9 Before and After Operation

Days Post operative	Serum		Plasma Phos- phatase (Bodansky) Units	Urinary Cal- cium Excretion per 24 Hrs. While on a Low Calcium Diet Mg. per 24 Hrs. *	Biopsy	Renal Function Test†	Weight Pounds	Roentgen Studies
	Calcium Mg. per 100 Cc.	Phos- phorus Mg. per 100 Cc.						
Minus 15	16.0	3.0	21.9			12 10 13	104	Osteoporosis +++ calcium deposits in kidney parenchyma
Minus 7	16.8	2.9	22.0	591		3 12 12		
0	16.4	2.5	31.9	312	Osteoclasts +++ osteoblasts +++ fibrosis ++			
1/0	13.4	2.8						
3/0	11.7	2.2		39				
5/0	11.3	1.8		8				
1	10.2	1.5		17				
2	9.2	1.8		16				
3	8.4	2.2		19				
5	6.6	2.2	33.1	20				
8	6.3	2.3		21	No osteoclasts osteoblasts +++ fibrosis ++			
13	5.9	2.8	20.6	13				
21	5.5	3.0	17.6			3 1 17		
22	5.1	4.6						
25	5.0	5.0	12.5				112	
29	5.1	4.8						
37	5.4	5.8			No osteoclasts osteoblasts ++ fibrosis ++	10 8 15		
50	5.1	6.4	7.5					
66	6.7	5.4	5.0			10 11 10	117	
93	8.1	4.0						
101	7.2	4.3	6.6					
112	9.8	3.7						
119	9.2	3.7			No osteoclasts osteoblasts ++ fibrosis ++	10 12 1	122	No change

* Normal value is 63 mg. (Bauer, Waller, Albright, Fuller and Ambrose, C. Studies of Calcium and Phosphorus Metabolism in the Calcium Excretion of Normal Individuals on a Low Calcium Diet. Data on a Case of Pregnancy. J. Clin. Investigation 7: 70 [April] 1929).
† Expressed as percentage of dye excreted in fifteen minutes after intravenous administration. Normal values are 25, 15, 20, 10, 12 (Chapman, L. M. and Halsted, J. A. The Fractional Phenolsulphonphthalein Test in Bright's Disease. Am. J. Med. Sc. 186: 223 [Aug.] 1933).

was the phenolsulphonphthalein output. Patient 3 with severe kidney damage, nephrocalcinosis, showed no improvement of renal function during the first two months after operation. Such improvement, however, was shown by a patient studied by one of us (J. C. A.) at the Huntington Hospital following operation at the Peter Bent Brigham Hospital.

DIFFERENTIAL DIAGNOSIS

Just as hyperparathyroidism mimics many conditions, so many conditions mimic hyperparathyroidism. There are other metabolic diseases causing urinary calculi, gout, oxaluria, cystinuria and the like; there are other conditions causing polyuria, pain in the back, flatfoot, constipation, lassitude and the like, but our discussion here will have to confine itself to other bone diseases that are to be considered in differential diagnosis. In table 4, these are listed and the outstanding differential points are put in tabular form.

persisted for years after the thyrotoxicosis. The osteoporosis in this condition is presumably of the increased bone resorption type.

Of all the conditions to be differentiated from hyperparathyroidism, "senile" osteoporosis is perhaps the most difficult. This is because it resembles the mild osteoporotic form of hyperparathyroidism in which the blood values are almost borderline anyway. Thus, patient 2 with this form of hyperparathyroidism, had normal blood values when first seen. Only after repeated blood chemistry determinations for a year was the correct diagnosis made. Her tumor was only 1 cm. long. In such mild cases complete metabolic studies will probably still be indicated.

Paget's Disease (osteitis deformans).—In the first place, we believe that Paget's disease is not a form of hyperparathyroidism, as advocated by some,¹⁶ because

16. Ballin, Max and Morse, P. T. Parathyroidism. Am. J. Surg. 12: 403 (June) 1931. Parathyroidism and Parathyroidectomy. Ann. Surg. 94: 592 (Oct.) 1931.

(1) although often polyostotic it is never generalized, which is almost inconceivable for a metabolic disease, (2) in Schmorl's entire series of 138 personally observed autopsies,¹⁷ in six cases studied by Stenholm¹⁸ and in one case recently from this clinic in which an autopsy was performed, the parathyroid glands showed no significant histologic changes, and (3) the metabolic changes are not those of hyperparathyroidism.¹⁹ It must be stated that a biopsy taken from an advancing edge of a Paget's disease lesion may be extremely difficult to distinguish from osteitis fibrosa cystica. Roentgenograms usually serve to differentiate the two diseases. In Paget's disease, in contradistinction to osteitis fibrosa cystica, one notes the spotty distribution

comparable degree of bone disease, is considerably higher than that observed in osteitis fibrosa cystica. The two diseases have little in common, therefore, and this is true of the majority of cases. In spite of these facts, we have included under the clinical types "hyperparathyroidism simulating [or complicated by] Paget's disease." We cannot define the exact connection if any, between the two diseases at the present time. The facts are these: Patient 8 had symptoms localized to one bone, the roentgen changes of the skeleton aside from slight generalized decalcification were localized to the same bone (right ilium); the roentgen changes themselves could be considered consistent with Paget's disease, the blood chemistry

TABLE 4—Points in Differential Diagnosis Between Hyperparathyroidism and Other Bone Diseases

Disease	Differential Points as Regard			Serum		Plasma Phosphatase	Miscellaneous
	Symptoms	Roentgen Studies	Biopsy	Calcium	Phosphorus	High	
Hyperparathyroidism with bone involvement	Bone pain & deformity fracture tumor polyuria those related to stones	Increased radiability generalized deformity cysts tumors fractures stones	Rarefied bone fibrosis of marrow osteoclasts +++ osteoid tissue only slightly increased osteoblasts +++	High	Low	High	All age groups
Senile osteoporosis	No bone tumor polyuria or stones	No cysts tumors or stones	No fibrosis of marrow osteoclasts normal osteoid tissue normal or decreased osteoblasts decreased	Normal	Normal or low	Normal	
Paget's disease	Bones enlarged no polyuria stone infrequent	Polyostotic but not generalized bones hypertrophied, e.g. thickened skull	May occasionally be difficult or impossible to differentiate	Normal or slightly high	Normal or slightly high	Very high	Runs in families predilection for weight bearing bones seldom seen under 40 arteriosclerosis +++
Osteomalacia	No bone tumor polyuria or stones	No tumors or stones bending deformities +++	Osteoid tissue +++ osteoblasts ++ osteoclasts decreased	Normal or low	Low	High	Practically absent in this country except with fatty diarrhea
Solitary cysts	Confined to cysts	No generalized changes cysts may be multiple	Cannot differentiate if taken from lesion	Normal	Normal	Normal	
Solitary benign giant cell tumor	Confined to tumor	No generalized changes	Cannot differentiate if taken from lesion	Normal	Normal	Normal	
Osteogenesis imperfecta	Fractures +++ no bone tumor, polyuria or stones	Cysts rare no tumors or stones	No fibrosis of marrow osteoclasts normal	Normal	Normal	Normal or very slightly elevated	Hereditary often coupled with blue sclerae and deafness improves after cessation of growth
Multiple myeloma	Can cause same bone symptoms and renal symptoms	Can be almost indistinguishable	Tumor tissue	Normal or high	Normal or high	Normal	Bence Jones proteinuria
Metastatic malignancy		Bones not involved normal seldom affects bones of forearms and lower legs	Tumor tissue	Normal or high	Normal or high	?	? Primary focus
Basophilic adenoma of pituitary (Cushing's disease)	Obesity hirsutism and amenorrhea	Usually only osteoporosis		? Normal	? Low	?	Abdominal striae by pertension

of the lesions and the presence of normal bone somewhere in the body, especially the small bones of the hands. The involved bones show in most instances a characteristic enlargement (hyperostosis). Thus, the skull is usually thick as well as giving a moth-eaten appearance as compared with the thin moth-eaten appearance in osteitis fibrosa cystica. Aside from the skull, the weight-bearing bones are the ones most involved, e.g., the sacrum. This distribution is not the case in osteitis fibrosa cystica. There is a coarse pattern, difficult to describe, to the trabeculation of the affected bones, which in itself is almost pathognomonic of Paget's disease and contrasts with the sparse irregular trabeculae of osteitis fibrosa cystica. Kidney stones occur, but less often. The serum calcium is normal or only slightly elevated (11 mg), the serum phosphorus is normal or slightly elevated tending to parallel the calcium curve the plasma phosphatase given a

was that of hyperparathyroidism, a kidney stone was present, and a parathyroid tumor was removed. A case that we saw at the Boston City Hospital was almost identical. M. W., a Jewish woman, aged 45, married, complained of bone pain of eight months duration. Roentgenograms showed lesions confined to the pelvis, lower lumbar vertebrae and occiput characteristic of Paget's disease. The serum calcium was 13.2 mg, the serum phosphorus was 2.2 mg, and the plasma phosphatase was very high. A parathyroid tumor was removed by Dr. I. J. Walker. Patient 1 had a thickened mottled skull by roentgen examination typical of Paget's disease, although the rest of the roentgenograms were typical of osteitis fibrosa cystica. Two cases from the literature²⁰ of undoubted hyperparathyroidism have likewise presented such marked thickening of the skull that they led to the clinical diagnosis of Paget's disease. These

17. Schmorl G. Ueber Ostitis Deformans Paget Virchows Arch 1. 1902. 288: 694. 1902.
18. Stenholm Ture. Pathologisch Anatomische Studien über die Osteo dystrophie fibrosa Uppsala Almqvist & Wiksell 1924.
19. Unpublished data.
20. Schmorl G. Demonstration Verhandl d. Deutsch path. Ges. 1912. 191. A. K. Lippman. Further Observations on Osteitis Fibrosa Generalisata Acta chir. Scandinavica 68: 251. 1931.

observations may be explained by coincidence. The following alternative hypothesis, however, is suggested.

Hyperparathyroidism with its generalized stimulus to osteoclastic activity may enhance the localized unknown factor stimulating osteoclastic activity in Paget's disease. Thus, if the unknown factor causing Paget's disease is present in a patient in a subthreshold amount, a superimposed hyperparathyroidism may make the underlying disease become manifest.

From a practical point of view, we believe that all patients with roentgen evidence of Paget's disease should have their blood chemistry tested in the hope of finding a complicating hyperparathyroidism. In a series of more than thirty cases of Paget's disease so examined in this clinic, however, we have failed to uncover a single one complicated by hyperparathyroidism, aside from case 8, which was first diagnosed at the Huntington Hospital.

Osteomalacia—In this country it is necessary to define what one means by "osteomalacia" (adult rickets) because the term is often used very loosely. It is a condition in which bone tissue shows a definite pathologic abnormality, namely, a failure of calcium deposition in the osteoid "tissue" with resulting widened osteoid seams. The disease is practically nonexistent in this country except in association with fatty diarrhea and resulting lack of absorption of the fat-soluble vitamin D. The bones bend rather than fracture. The serum phosphorus is low. The serum calcium is low or normal. The plasma phosphatase is high. Such patients show a rapid therapeutic response to vitamin D and an adequate diet in contrast to hyperparathyroidism. A biopsy of the bone, if decalcified in such a way as to show the osteoid "tissue," is pathognomonic.

"Solitary" Cysts—A single cyst pathologically indistinguishable from the cysts occurring with hyperparathyroidism is relatively common. This condition is localized. It is to be differentiated from hyperparathyroidism, therefore, by the demonstration of a normal skeleton elsewhere and by the finding of a normal serum calcium, a normal serum phosphorus and a normal plasma phosphatase.

Not infrequently such "solitary" cysts occur in more than one bone, hence the quotation marks. Such cases with multiple "solitary" cysts will, of course, more strongly suggest von Recklinghausen's disease. The following case is interesting in this respect.

N W, a woman aged 23, entered the hospital because of trouble with her right leg, which was first fractured at the age of 8. She had had seven subsequent fractures. She had not had polyuria. The leg was markedly shortened and deformed. Tumefactions of multiple bones could be felt which, by x-rays, were found to be cysts. These were present in the right tibia, right fibula, right femur, right ilium, several ribs, both humeri and the occipital bone. The bones not involved were perfectly normal. The lamina dura was present in the roentgenograms of the teeth. The serum calcium was 9.4 mg, the serum phosphorus 3.2 mg, and the plasma phosphatase 4.1 units. We considered this to be a case of multiple solitary cysts. The possibility that the patient had had a hyperparathyroidism sometime in the past which had spontaneously disappeared cannot be ruled out. Thus a patient with von Recklinghausen's disease several years after operation might show just such a picture.

Solitary Benign Giant Cell Tumor—A benign giant cell tumor may be a completely localized condition or part of an underlying hyperparathyroidism. If the former, the remaining skeleton and the blood values will all be normal.

Osteogenesis Imperfecta (fragilitas ossium)—Osteogenesis imperfecta has thus much in common with hyperparathyroidism it is a generalized bone disease with multiple fractures. It is, on the other hand, hereditary and apt to be associated with blue sclerae and deafness. The pathologic change in the bone consists in a depression of bone formation coupled with normal bone absorption. A biopsy would show therefore, no increase in osteoclasts and no fibrosis. If anything, the osteoblasts and osteoid "tissue" would be decreased. The serum calcium and serum phosphorus are within normal limits. The plasma phosphatase is not elevated, or only slightly so.

Multiple Myeloma—The roentgenograms in this condition may very closely resemble those in hyperparathyroidism. A woman aged 50, showed increased radiability of the entire spine with typical "fish" vertebrae. The diagnosis of myeloma was not made until autopsy. Another patient, E A M, had numerous punctate irregular areas of diminished density in the skull, similar areas in both femurs, fine mottling of all the bones of the pelvis, and a large area of bone destruction in the wing of the ilium giving an appearance similar to a giant cell tumor. The diagnosis was made by biopsy in this case.

Hypercalcemia has been reported in myeloma, although neither of these cases showed it. Hypophosphatemia is not, however, associated consistently with the hypercalcemia. The plasma phosphatase level on E A M was 1 unit, a low normal. Secondary renal changes also develop in multiple myeloma similar to those in hyperparathyroidism.²¹ Thus the biopsy, the lack of hypophosphatemia and perhaps a normal phosphatase level are the deciding points. Bence-Jones proteinuria, if present, would be strong evidence in favor of myeloma, as this has not been reported as far as we know in hyperparathyroidism.

Metastatic Malignancy—This condition (of the prostate, breasts, bronchus, thyroid and hypernephroma) should seldom cause difficulty. Metastases seldom occur below the knees or below the elbows. The involved bone remains normal. Hypercalcemia may develop but not hypophosphatemia. In the case of a metastatic malignant growth of the breast suggesting hyperparathyroidism, reported by Mason and Warren, the serum calcium was 17.3 mg and the serum phosphorus 4.1 mg.

Basophilic Adenoma of Pituitary (Cushing's disease)—Osteoporosis has been one of the features of the syndrome recently described by Cushing, associated with basophilic tumors of the anterior pituitary. It has not yet been definitely decided whether or not a secondary hyperparathyroidism is present in such cases due to a hyperplasia of the parathyroid glands. In one of Cushing's cases²² the serum calcium was normal (9.8 mg), the serum phosphorus was low (2.7 mg), and there was a high calcium excretion in the urine. The obesity, hirsutism, amenorrhea and hypertension in Cushing's syndrome are not features of simple hyperparathyroidism. Schmorl²⁴ and Molneus²⁵ reported an interesting case in which a woman suffered from Cushing's disease plus von Recklinghausen's dis-

21 Perla David and Hutner Lawrence. Nephrosis in Multiple Myeloma. *Am J Path* 6: 285 (May) 1930.

22 Mason R L and Warren Shields. Metastatic Carcinoma Simulating Hyperparathyroidism. *Am J Path* 7: 415 (July) 1931.

23 Cushing Harvey. Further Notes on Pituitary Basophilism. *J A M A* 99: 281 (July 23) 1932.

24 Schmorl G. Gesellschaft für Natur und Heilkunde zur Dresden. offizielles Protokoll München med Wchnschr 59: 2887 1912.

25 Molneus. Ueber die multiplen braunen Tumoren bei Osteomalacie. *Arch f klin Chir* 101: 333 1913.

case and showed at autopsy both a basophilic tumor of the pituitary and a tumor of the parathyroids. The remaining parathyroids were likewise hyperplastic, suggesting that the tumor was the result of an underlying hyperplasia—that, therefore, the von Recklinghausen's disease was a late manifestation of Cushing's disease in this case.

Other conditions in which the roentgenogram might suggest hyperparathyroidism are radium poisoning, erythroblastic anemia (Cooley's anemia) and the lipid dystrophies. With the roentgenogram the similarity ends, however, and they should offer no difficulty in diagnosis.

SUMMARY

In the clinical aspects of seventeen cases of proved hyperparathyroidism, emphasis has been laid on the different forms which the disease may take, the pathologic changes and pathologic physiology, the signs and symptoms, the laboratory diagnosis, the roentgen diagnosis, the treatment, and the differential diagnosis. We wish to stress the point that, whereas the disease can hardly be called common, it must very frequently be considered when any of a multiplicity of symptoms is present. Failure to make the diagnosis is regrettable in that therapy for it is highly successful.

STAPHYLOCOCCUS TOXOID IN THE TREATMENT OF PUSTULAR DERMATOSES

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Favorable results have recently been reported with the use of staphylococcus toxoid in the treatment of certain pyogenic infections of the skin. Dolman¹ has brought down to date the present knowledge of the subject and has reported some interesting results of his own work. He prepared his own toxoid, standardized it on animals and determined the antibody (or immunologic) titer of the patients' blood during the course of treatment. Twenty-eight patients were treated, suffering from boils, pustular acne, severe pustular dermatitis, eczematoid recurrent infections and other staphylococcic infections. Apparent cure of the infection in each case occurred soon after treatment was begun, when an average total dose of 2 cc was given subcutaneously in eight doses.

In view of several favorable reports, and also because commercial preparations of toxoid were soon to be put on the market, it was decided to make a study of the clinical effects of subcutaneous injections of staphylococcus toxoid in a series of pustular dermatoses. Our investigations were carried out in the outpatient department of Bellevue Hospital.

PREPARATION OF TOXOID AND TECHNIC OF TREATMENT

In the manufacture of the commercial preparation of staphylococcus toxoid that we investigated, the so-called Burky strain of staphylococcus was used because it produces a much more potent necrotizing toxin than any

other strain that was tried. All cultures, broth or agar, were grown under 20 per cent carbon dioxide tension, and dilutions of the toxoid were made in 0.2 per cent peptone. One necrotizing unit of toxin is defined as that amount which will induce in the skin of susceptible rabbits an area of erythema at least 10 by 10 mm with a necrotic center. All toxin filtrates were detoxified with a diluted solution of formaldehyde U. S. P. (0.3 per cent) and standardized on the skin of susceptible rabbits. Three preparations of toxoid were used in this study having values of 200, 400 and 800 units per cubic centimeter, respectively. In beginning this series of cases a 1:10 dilution of the 800 unit preparation was used to determine the severity of the local reactions. After the first few cases were treated this was discontinued because of the mildness or absence of reactions. Subsequently our patients received doses of undiluted toxoid from the outset.

Injections were given on the average of once a week. The dosage was increased as rapidly as possible, its size being determined by the amount of the previous reaction. In some instances the final single dose was as high as 1,200 units. No other treatment of any kind was given. Individual records were kept of each patient, and progress was charted weekly. Seventy-five patients were treated, only forty-two of whom received a total dose of more than 2 cc of undiluted toxoid. The remaining patients failed to return for more than two or three treatments.

The patients were divided into two groups, one of us working with males, the other with females, the two groups being carried along independently. From time to time other members of the staff kindly observed our results.

REACTIONS

Reactions consisted mostly of local manifestations at the site of injection. Many cases showed an area of redness varying from 3 to 10 cm in diameter accompanied by induration and increase in local heat, with some tenderness persisting for a period of forty-eight hours. As the number of injections and the amount of toxoid were increased, the reactions showed a tendency to disappear. In three female patients systemic reactions consisting of malaise, headache and temperature elevation persisted for two or three days after the injection, and in one instance the patient was confined to bed. No focal reactions were noted. Practically no reactions were noticed with the diluted toxoid.

CLINICAL RESULTS

In our series of forty-two cases there were twenty-eight of acne vulgaris, six of furunculosis and eight of sycosis vulgaris. Thirty-five patients had received previous local treatment of one kind or another from various sources. One had taken bromides and five gave a history of ingestion of iodides in the form of iodized salt. Sixteen had used yeast with no improvement and five of these stated that yeast had made the condition worse. One patient developed a series of furuncles after taking three cakes daily for six weeks. Another took yeast daily for two months the eruption becoming worse.

Acne Vulgaris.—Of the twenty-eight acne cases twenty-two were of the pustular and six of the papular varieties. Twelve were severe, eleven moderately severe and five mild. The average number of treatments was 9.4 and the average total dosage of toxoid was 6.11 cc. The smallest total dosage was 2 cc given in four weeks and the largest was 12 cc over a period of fifteen weeks.

From the Department of Dermatology and Syphilology, Bellevue Hospital, service of Dr. Howard Fox.
¹ Dolman, C. E., Treatment of Localized Staphylococcic Infections with Staphylococcus Toxoid. J. A. M. A. 100: 1007 (April 1) 1933.

At the end of treatment the twenty-two cases in the pustular group showed three slightly improved, eleven unimproved and eight worse. Of the papular group two were improved, one was unimproved and six were worse after treatment. In one of the papular cases the iodides were stopped at the beginning of treatment with subsequent disappearance of the eruption. In one patient of the pustular group who had received 12 cc

Summary of Cases Treated with Staphylococcus Toxoid

	Number of Cases	Severity			Average Dosage		Result		
		Mild	Moderate	Severe	Total Dose Cc	No. of Doses	Improved	Unimproved	Worse
Acne vulgaris (pustular type)	22	4	6	12	6.11	9.4	3	11	8
Acne vulgaris (papular type)	6	1	5		6.11	9.4	2	1	3
Sycosis vulgaris	8	2	3	3	5.0	9.6		4	4
Furunculosis	6	2	3	1	5.0	5.0	3		
Total	42	10	14	18	6.0	9.2	8	19	15

of toxoid in fifteen doses a large furuncle developed on each forearm after the last injection.

Sycosis Vulgaris—Eight patients with sycosis vulgaris, of from one to nine years' duration, all of whom had been previously treated, were given an average total dosage of 8 cc in an average of 9.6 treatments. One patient received 15.5 cc in fourteen doses, or more than 1 cc to a dose. As in the acne group, in one of these patients a furuncle of the neck developed following completion of treatment. At the conclusion of treatment all these patients were unimproved or worse.

Furunculosis—Six patients with furunculosis were given an average of eight treatments, the average total dose of toxoid being 5.5 cc. Three patients had either a single furuncle or a single "crop," in no case lasting more than four weeks. These all recovered or improved rapidly. The remaining three patients, who had had recurrent crops over periods of from two months to two years, showed no improvement. Although these three cases cleared up rapidly, attention is again called to the fact that such infections are inclined to be self limited.

SUMMARY AND CONCLUSIONS

1 Forty-two patients with pustular dermatoses including twenty-eight cases of acne vulgaris, eight of sycosis vulgaris and six of furunculosis were treated with staphylococcus toxoid.

2 No patient received less than 2 cc total dosage, the maximum being 15.5 cc, the average was 6.5 cc per case.

3 Of the forty-two cases, eight were slightly improved and thirty-four were unimproved or worse at the end of treatment.

4 Furuncles developed in two cases after large doses of toxoid had been administered.

5 While this series of cases is small, the results appeared to be so definitely unsatisfactory that continuation of this method of treatment seemed unwarranted. Caution should be exercised in becoming overenthusiastic about the value of staphylococcus toxoid until further reports confirm or deny our observations.

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DEVELOPMENT OF TETANUS ANTITOXIN FOLLOWING ADMINISTRATION OF TETANUS TOXOID

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This communication records the development of tetanus antitoxin in twenty-nine persons following the administration of tetanus formaldehyde toxoid. It will be appreciated that the number submitting to immunization in any one laboratory is much more limited than is the case with diphtheria toxoid, so that an adequate evaluation of tetanus toxoid can be made only by the combined experience from many places.

The twenty-nine individuals were adults, two of whom (subjects 5 and 17 in the table) had had a primary stimulus of tetanus toxoid some years previously. The blood of each was tested for tetanus antitoxin before the toxoid was given. Although the testing was carried down to a level of 0.001 unit, only subject 17 who had had a previous stimulus, showed any antitoxin, 0.004 unit, no trace of antitoxin being evident in the other serums.

Two lots of toxoid were used. One, given to patients 1 to 16, was obtained through the kindness of G. Ramon of the Pasteur Institute, Paris, while that given to patients 17 to 29 was prepared in the Connaught Laboratories. For the guinea-pig, the minimal lethal dose of the toxin from which the latter was prepared was 0.00005 cc, solution of formaldehyde to 0.3 per cent was added and the mixture incubated at 37°C until 5 cc, injected subcutaneously in guinea-pigs, failed to produce any signs of tetanus. This state was reached, for the lot used in this experiment, in a period of six months. The absence of toxicity as well as the ability to stimulate antitoxin production was firmly established by further tests on guinea-pigs and rabbits.

Tetanus Antitoxin in Human Subjects in Response to Tetanus Toxoid

Subjects	2 Weeks After Second Dose	1 Month After Third Dose	5-7 Months After Third Dose
	Units per Cubic Centimeters of Serum		
1	<0.1	0.1	>0.01 <0.1
2	>0.1	0.2	>0.5 <1.0
3	>0.1	>0.1	0.003
4	>0.1	>0.1	>0.1 <0.5
5	>0.1	>0.1	>0.001 <0.1
6	<0.1	0.1	0.2
7	>0.1	>0.1	0.1
8		>0.1 <0.5	0.1
9	>0.1	>0.1	0.1
10	>0.1	0.2	>0.01 <0.1
11	>0.1	>0.1	>0.1 <0.5
12	>0.1	0.1	>0.1 <0.5
13	>0.1	>0.1	>0.2 <0.5
14	>0.1	0.1	>0.01 <0.1
15	0.1	0.1	0.1
16	<0.1	>0.005 <0.1	>0.01 <0.1
17	(>5 <10)	>1.0 <5.0	0.5
18	(0.01)	>0.1	>0.01 <0.1
19	(>0.1)	>0.1 <0.5	>0.01 <0.1
20	(>0.1)	>0.003 <0.1	0.01
21	(<0.005)	0.005	<0.001
22	(<0.01)	<0.1	>0.01
23	(<0.002)	<0.003	0.01
24	(<0.02)	0.003	>0.01 <0.1
25	(<0.002)	0.1	>0.001
26	(<0.002)	<0.003	>0.01 <0.1
27	(<0.002)	<0.1	0.1
28	(<0.02)	>0.1 <0.2	0.1
29	(<0.002)	0.2	0.1

* The figures in parentheses were obtained when mice were used; the figures without parentheses when guinea pigs were used.

pared was 0.00005 cc, solution of formaldehyde to 0.3 per cent was added and the mixture incubated at 37°C until 5 cc, injected subcutaneously in guinea-pigs, failed to produce any signs of tetanus. This state was reached, for the lot used in this experiment, in a period of six months. The absence of toxicity as well as the ability to stimulate antitoxin production was firmly established by further tests on guinea-pigs and rabbits.

From the Connaught Laboratories, University of Toronto

and sterility was shown by anaerobic and aerobic cultures before the material was released for trial on human subjects

The toxoid was given in three doses of 10, 15 and 15 cc with an interval of one month between the first and second doses, and two weeks between the second and third. Slight local reactions were produced in some instances, showing redness and swelling within the first twenty-four hours and disappearing rapidly. None of the reactions were of a degree to give rise to any concern. Blood serum taken one month after the first dose showed the merest traces of antitoxin in four only, while that of subject 17, who had a previous stimulus and a measurable amount of residual antitoxin, showed 0.1 unit per cubic centimeter. Blood was drawn at intervals thereafter, two weeks after the second dose, one month after the third dose, and from five to seven months after the third dose. The results of the titrations of the serums are shown in the table.

Examination of the table shows that in twenty-eight of the twenty-nine persons given tetanus toxoid demonstrable tetanus antitoxin developed in twenty (including subject 17) to a titer of 0.1 unit or more per cubic centimeter, in six to a titer of 0.01 or $>0.01 <0.1$ units, in one to a titer of 0.003 unit and in one to $>0.001 <0.1$ unit per cubic centimeter. When it is realized that 0.001 unit neutralizes at least 1 minimal lethal dose, and 0.1 unit at least 100 minimal lethal doses, the antitoxin production appears very significant.

The blood taken from five to seven months after the administration of toxoid showed in general a reduction in the antitoxin level but twenty-seven of the twenty-eight still showed antitoxin, thirteen to a level of 0.1 unit or more, twelve to a level of 0.01 unit or $>0.01 <0.1$, one to a level of 0.003 unit, and one to a level of 0.001 unit. It is possible that a different testing method might have demonstrated antitoxin present to a lower level than was possible with the method used, the principle of which was the preservation of guinea-pigs against a lethal dose of the toxin or multiples thereof. The fact, however, that from five to seven months after receiving tetanus toxoid twenty-five of twenty-nine persons showed the very considerable antitoxin titer of 0.01 unit or more per cubic centimeter—capable of neutralizing ten or more minimal lethal doses—while two others showed antitoxin to a lower titer is striking evidence of the efficacy of tetanus toxoid.

There is more than a suggestion in cases 2, 6, 12, 23 and 24 that there was a late increase in antitoxin several months after the last dose. While testing for differences in such antitoxin titers is subject to some errors which must be considered in interpreting these apparent increases, a similar observation of late increase in tetanus antitoxin titer has been made by Ramon¹ and by Lincoln and Greenwald.²

In spite of the small number involved the evidence is fairly definite that the Pasteur Institute toxoid was a superior antigen to that prepared in this laboratory. Not only was the response to the second injection much more marked in those receiving the former but their average level of antitoxin—one month and from five to seven months after the last dose—was much higher. The reason for this difference is not apparent at present.

There is evident, too, the marked variation in the individual response to tetanus toxoid. Thus some

showed as much as 0.5 unit of antitoxin, and one who had received a previous stimulus produced even more, while the majority had at least 0.1 unit. On the other hand, several were found to have much less than 0.1 unit and in the case of subject 26 no antitoxin was demonstrable. Patients 26 and 5, the latter of whom, in spite of a previous stimulus, reached a titer of only 0.001 unit, are examples of refractoriness to immunization such as has been noted previously by Ramon and by Lincoln and Greenwald.

SUMMARY AND CONCLUSIONS

Of twenty-nine persons given three doses of tetanus toxoid, significant amounts of antitoxin developed in twenty-eight, a titer of at least 0.1 unit per cubic centimeter of serum being reached in the majority, or twenty. From five to seven months after the last dose there was, in general, a reduction in the antitoxin level but twenty-seven still showed demonstrable antitoxin, the majority, twenty-five, showing 0.01 unit or more.

This is further evidence that active immunization with tetanus toxoid might be adopted advantageously by certain groups in whom the hazard of tetanus is greater than in the general population.

"HEAVY WATER" AND TUMOR GROWTH

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Pursuant to a suggestion by Prof. Harold C. Urey, the effect of "heavy water" on tumor growth has been investigated. This liquid consists of water in which ordinary hydrogen, of mass 1, has been replaced by its isotope, deuterium ("heavy hydrogen"), of mass 2.¹ When replacement is complete, the substance is no longer water but deuterium oxide, quite another material with specific gravity, vapor pressure, and freezing and boiling points differing from those of water.

High concentrations, such as have been shown detrimental to lower forms of animal life and to seeds, could not be employed in the projected experiment, however, on account of their cost, and it was necessary to be content with a preparation in which somewhat less than 0.5 per cent (from 0.40 to 0.42 per cent, according to determinations made by one of us) of the hydrogen was deuterium. Still, as ordinary water has but one part in 30,000 of deuterium, and the sample employed held one part in 250, mice to which it was administered would receive about 120 times their usual intake of "heavy hydrogen," an increment that might conceivably have some effect.

A group of sixty mice averaging 18 Gm in weight were started on a dry diet (dog biscuit), Nov. 15, 1933. Three days later, as they were losing weight rapidly and a few had died, they were allowed a little turnip over the week end. The dry diet was resumed November 21 and continued thereafter throughout the entire experiment. November 27, when the mice had suffered an average loss of 3 Gm each in weight and it was thought that some dehydration must have

¹ Ramon G. and Zoeller C. *Compt. rend. Soc. de biol.* **112**: 347 (Feb. 3) 1933.
² Lincoln Edith M. and Greenwald C. K. *Proc. Soc. Exper. Biol. & Med.* **30**: 1241 (June) 1933.

From the Institute of Cancer Research, Columbia University.
¹ Urey H. C., Brickwedde F. C. and Murphy G. M. A Hydrogen Isotope of Mass 2 and Its Concentration. *Physical Review*, **40**: 115 (April) 1932. Urey H. C. *Chemical Properties of the Hydrogen Isotope*. Review of Scientific Instruments, **4**: 223 (Aug.) 1933.

occurred, daily subcutaneous injections of 1 cc of physiologic solution of sodium chloride made from the "heavy water" to each of twenty-four animals were begun, while a control group of similar size received ordinary physiologic solution of sodium chloride in the same way

It was anticipated that these injections would restore the original weights, but as this did not happen it is evident that some of the loss mentioned must have been due to causes other than the deprivation of water, perhaps less food was consumed

The "heavy water," as purchased, contained certain impurities in the form of rather stable organic compounds, which were removed by refluxing for four hours with slightly acid permanganate and subsequent fractional distillations from both acid and alkaline permanganate

December 5, one dozen "heavy water" mice and an equal number of controls were inoculated with mouse sarcoma 180, a tumor that takes in 100 per cent and almost never recedes. Because such a vigorous neoplasm might override small effects that would come to light with one more delicately balanced between growth and regression, another dozen "heavy water" mice with their controls, were inoculated with carcinoma 63 which takes in some 75 per cent of cases and disappears spontaneously in a fair number

The injections were continued, with the exception of Sundays and an intervening holiday, until December 18, in the case of sarcoma 180, when seventeen treatments had been given, and until December 30 in the case of carcinoma 63, when twenty-seven had been administered, the experiment having been terminated in both instances by ulceration of the larger tumors. Not the slightest effect on either tumor or host was observed in the mice to which "heavy water" had been given

In order to be certain that the deuterium had been absorbed by the mice and by their tumors the proportion of deuterium to normal hydrogen in the water that

tive index was measured. Check determinations were obtained by repeating the entire process on each sample. In the case of the mice themselves, enough water was available for a preliminary purification by prolonged refluxing with potassium permanganate made acid with phosphorus pentoxide, thus permitting a more rapid distillation through the combustion tube. The results were as given in the accompanying table.

Thus tumor and normal tissues were equally able to take up deuterium

Also seven intravenous injections were given to each of twelve mice bearing carcinoma 63 and five intra peritoneal treatments to three mice with the same tumor. Here the injections were begun one week after implantation of the neoplasm, and again there was no discoverable difference between the "heavy water" mice and their controls

The analyses of the "heavy water" were performed in the laboratory of Dr G M Murphy of the department of chemistry

CONCLUSION

Deuterium, in the amounts that it was possible to administer as "heavy water" had no demonstrable effect on the growth of mouse sarcoma 180 or mouse carcinoma 63

MONILIASIS OF THE SKIN IN DIABETES

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According to Jacobson¹ Langenbeck in 1839 was the first to describe the relation of yeastlike fungi to human disease. They were found in the lesions of thrush in the mouth. Cutaneous moniliasis is common in many classes of patients.

Robin,² in 1853, recognized a variety of yeast as the cause of thrush. Since then, Castellani³ and Stovall⁴ have considerably enriched the literature with reports of fungous diseases in human beings. Clarity and simplification of classification of the yeastlike fungi are due to Stovall and his associates. Stovall identified the yeastlike fungi with the genus *Monilia*. He divides *Monilia* into three species. Species I, represented by *Monilia parapsilosis*, is nonpathogenic, species II is represented by *M. albicans*, and species III by *M. candida*. Both species II and species III have been repeatedly isolated from human vaginitis and thrush.

In textbooks and in the periodical literature on diabetes there are repeated references to the seriousness of pyogenic infections complicating diabetes, with little or no mention of fungous infections excepting that type referred to as genital pruritus or vulvovaginitis.

From the Departments of Medicine and Dermatology, West Suburban Hospital and Cook County Hospital.
The expense of the cultures was defrayed by Therapeutic Grant 143 of the American Medical Association.
1 Jacobson H P. Fungous Diseases. Springfield Ill. Charles C Thomas 1932.
2 Stovall W D and Bubolz A B. From Yeastlike Fungi. J Lab & Clin Med 18: 890 (June) 1933.
3 Castellani Aldo. Fungi and Fungous Diseases. Chicago 1928.
4 Stovall W D and Greeley H P. Bronchomycosis. J A M A 91: 1346 (Nov 3) 1928.
Stovall W D and Bubolz A A. Forty Strains of Yeastlike Fungi Isolated from the Sputum. J Infect Dis 45: 463 (Dec) 1929.
Cultural and Biochemical Characteristics of *Monilia* Isolated from Human Sources. Ibid 50: 73-88 (Jan) 1932.
Identification of Certain Funguses Pathogenic for Man. Am J Pub Health 22: 493 (May) 1932.
Footnote 2. Stovall W D and Pessin S B. Classification and Pathogenicity of Certain *Monilia*s. Am J Clin Path 3: 347-365 (Sept) 1933.

Results of Deuterium Injections

Sample	Deuterium Content (Percentage of Total Hydrogen)
1. Water from mice inoculated with mouse sarcoma 180	0.28 ± 0.01
2. Water from mice inoculated with mouse carcinoma 63	0.28 ± 0.01
3. Water from carcinoma 63	0.29 ± 0.01

these contained was determined by measuring its refractive index. Only carcinoma 63 furnished enough tissue for this determination, in which, of course, none but unulcerated tumors were employed. The mice, after their tumors had been removed, were minced and the water then distilled from the tissues in vacuo at 70 C and condensed in a trap surrounded by a solid carbon dioxide-alcohol mixture. The carcinoma was similarly treated. The water so obtained was purified by distilling it very slowly in a stream of dried oxygen through a tube 45 cm long filled with ceric oxide deposited on granular pumice and copper oxide wire and heated to 700 C into a trap surrounded by a carbon dioxide-alcohol mixture. The distillation temperature was kept below 60 C, so that the proportion of water vapor to oxygen was not high enough to interfere with the complete combustion of the impurities in the water. Silver nitrate crystals and solid potassium hydroxide were added to the distillate, which was then redistilled in an all glass (Pyrex) still directly into the cell of the Zeiss interferometer with which the refrac-

The most recent and pretentious work on fungous diseases⁵ refers only cursorily to diabetes as a predisposing factor. Greenwood and Rockwood⁶ found fungous infections of the skin in about 70 per cent of diabetic patients. All the infected patients had the fungus on the feet. Wise and Sulzberger⁷ say that the skin diseases due to *Ordiomyces* (yeastlike fungi) in diabetes have not received the attention in the literature that they deserve both on practical and on theoretical grounds. Recently we have observed two cases of fungous infections (*Monilia*) in males involving other than the genital region. One patient was treated with all the known and accepted fungicides, followed by diabetic management. The second case received only diabetic management.

In 1921 Kumer⁸ found chronic paronychia constantly associated with yeastlike organisms. Kingery and Thienes⁹ first succeeded in experimentally inoculating these organisms from the skin of orange pickers. Hopkins¹⁰ and Kumer found these yeastlike organisms in a diabetic patient with pruritus vulvae. They identified the organisms as *Monilia*. Hall¹¹ refers to the pathologic terrain necessary for infestation by *Monilia*. This is afforded by diabetes.

REPORT OF CASES

CASE 1—E. B., a white man, aged 24, seen by one of us in June 1927, had known of his glycosuria for two weeks but for six months had had polyuria, polydipsia and a loss of 10 pounds (4.5 Kg). He had had eczema as a child and many severe attacks of urticaria in late years. There was no family history of diabetes. He was well nourished and tawny. The breath was foul but no acetone was detected. There was no dyspnea. The teeth were in good condition, the tonsils had been removed. The eyes reacted normally. The chest and abdomen were normal. The blood contained 170 mg of dextrose per hundred cubic centimeters. The urine gave maximum tests for sugar, acetone and diacetic acid. When he left the hospital his condition was controlled on a diet furnishing 161 Gm of dextrose. He received 70 units of insulin daily. His general condition had much improved.

Between that time and July 1931 he had considerable difficulty in keeping the urine sugar free without hypoglycemic reactions. In July 1931 he was treated for an infection of the dorsum of the left foot. It was then noted that the pulsations in the dorsalis pedis arteries were weak. The infection cleared up. He was next seen Feb. 12, 1933, with a pronounced superficial mycotic dermatitis having a well defined oozing area on the plantar surface of the right large toe. It had been present for four months and was exaggerated (patient's statement) with the usual 'ringworm' remedies. There was marked swelling of the lymph glands in both inguinal regions. He had been thoroughly instructed in the modern home care of diabetes and presumably was sugar free. Scrapings taken for microscopic potassium hydroxide examination showed the hyphae and spores of *Monilia*—*Monilia albicans* grew on Sabouraud's isolation culture mediums. Treatment both with organic dyes and with the usual fungicidal preparations produced a superimposed dermatitis. The fungous infection was unabated.

The diabetes was found to be out of control. In July the patient entered the West Suburban Hospital. The usual dietetic measures and a sufficient dose of insulin cleared up the glycosuria. The feet were simply kept exposed and external medication was discontinued.

He left the hospital in a much improved condition and since then he has progressed satisfactorily on management consisting

of controlling the diabetes and leaving his feet and legs exposed to the air as much as possible. In order to accomplish this he goes stockingless and wears sandals of the type known as "beach sandals." When last seen the diabetes was well controlled and his skin had a normal appearance and texture.

CASE 2—E. J., a white man, aged 59, who entered the Cook County Hospital, Aug. 3, 1933, had had an ulcer of the right foot for six months. Vesicles and bullae on both hands for two days and swellings below the eyes one day. He has had diabetes since 1928 and has been on an unweighed diet and insulin since. In 1930 the great toe of the right foot was amputated because of diabetic gangrene. Since January 1933 he has noticed an ulcer under the head of the right fifth metatarsal. It has become larger, especially during the past month (July). Two days before admission he first noticed numerous small vesicles over the dorsum of both hands extending along the dorsum, particularly between the fingers. One day before admission he noticed a swelling under both eyes. The hands and face itched considerably. He gave no history of illness other than diabetes. His family history was essentially normal. The blood pressure was 170 systolic, 94 diastolic. The brachial arteries were sclerotic. The inguinal glands bilaterally were palpable. It is now known that mycotic adenopathy can occur.¹⁰ There were no other masses or areas of tenderness.

On the right foot was an ulcer under the head of the fifth metatarsal. This area was tender to touch. The skin over both feet was shiny and red. There was no difference in temperature. The popliteal and dorsalis pedis arteries of both feet did not pulsate. There were numerous small vesicles over the dorsal surfaces of both hands and particularly between the fingers. Some of the lesions were crusting. One small area of a scaling, red, shiny eruption was present on the back.

To the dermatologist the lesions on the face appeared to be a dermatitis venenata that was receding. The lesions of the fingers and hands were considered an eczematoid fungous dermatitis. On microscopic examination of the lesions on the hand, *Monilia* was shown to be the causative agent.

The blood sugar on admission was 240 mg per hundred cubic centimeters, and the urine was positive for sugar.

The patient was put on dietary management and given 10 units of insulin daily. Local treatment consisted only of a soothing ointment to the face. He left the hospital, August 15, with the lesion of the hands and face definitely cleared up, although the ulcer on the foot had broken open and was draining.

COMMENT

The cases presented are both cases of diabetes complicated by infection with *Monilia*. The first patient received the usual fungicides without improvement, instead, the condition became much aggravated. In the first case the allergic constitution previously manifested by urticaria and the precocious endarteritis probably contributed to the severity of the fungous disease.¹¹ The second older, patient also had a predisposing obliterating endarteritis. This patient showed the "id" reaction to the fungous toxin about the eyebrows. He had received no treatment prior to admission to the hospital. Both cases responded rapidly to competent diabetic management without local fungicidal medication.

It has been presumed that the glycosuria irritated chemically the tissues with which it came in contact. This was the prevailing explanation for the pruritus and the vulvovaginitis of the diabetic patient. In our observations, such local inflammations have been the result of local infection with fungi.

Competent diabetic management seemed to be the deciding factor in the treatment of *Monilia* infection of the skin in both instances. To us, this is the all

⁵ Jacobson, *Fungous Diseases*, p. 86.
⁶ Greenwood, A. M. and Rockwood, Ethel M. *Skin in Diabetic Patient*. Arch. Dermat. Syph. 21: 96 (Jan.) 1930.

⁷ Wise, Fred and Sulzberger, M. B. *The Practical Medicine Series: Dermatology and Syphilology*. Chicago, Year Book Publishers, 1933, p. 7.

⁸ Quoted by Hopkins, J. G. and Benham, R. W. *Monilia Infections of the Hands and Feet*. New York State J. Med. 29: 793 (July 1) 1929.

⁹ Hall, T. B. *Mycotic Infections of the Skin*. abstr. J. A. M. A. 101: 7 (July 1) 1933.

¹⁰ White, Cleveland. *Mycotic Inguinal Lymphadenitis Associated with Superficial Fungous Dermatitis of the Feet*. Arch. Dermat. & Syph. 18: 271 (Aug.) 1928.

¹¹ Personal communication from Dr. Geza de Takats. It is generally known that cases of poor circulation, whether due to phlebitis or to an arterial process, frequently have a superimposed fungous infection. This is especially true of older diabetic patients in whom fungous infection may be the starting point of gangrene.

important therapeutic maneuver in the treatment of fungous infection in diabetes

P Perazzi¹² reports a case of *Monilia vaginitis* which he treated with diet and insulin. He noted marked improvement without the use of any local therapy. Perazzi is of the opinion that the dextrose in the urine is a factor in the production of *Monilia vaginitis*.

Plass, Hesselstine and Borts¹³ and Hesselstine¹⁴ feel that the dextrose in the urine plays no part in the fungous infection of the female genitalia.

Plass, Hesselstine and Borts further recall that Sabouraud's medium, which is the medium of choice for fungous cultures, is adjusted to a p_H of 5.5. Whether or not the skin p_H in diabetes approaches this level, and thereby contributes to the extensive growth and stubbornness of the fungous infections, warrants further investigation.

CONCLUSIONS

1 In neither of two cases of superficial fungous infections of the skin (moniliasis) in diabetes could the sugar in the urine have been the direct cause except as it indicated the presence of uncontrolled diabetes.

2 One case did not respond to ordinary fungicides but did respond to diabetic control. The other case responded immediately to diabetic control.

3 It is felt that the control of the diabetes is all important in the treatment of these complications.

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THE EFFECT OF INTRAVENOUS HYDROCHLORIC ACID IN NARCOSIS

EXPERIMENTAL OBSERVATIONS

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AND

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Widespread interest has recently been aroused by an enthusiastic report by MacGilvra¹ of the use of intravenous hydrochloric acid as a means of promptly terminating anesthesia both in experimental animals and in man. In the report, successful results are described in terminating ether anesthesia in rabbits, guinea-pigs, rats and monkeys. It was also used successfully in a patient who appeared moribund from the effect of tribrom-ethanol (aveitin) anesthesia. The author suggested that the treatment might be equally efficacious in other forms of anesthesia. In view of the obviously great clinical value which a successful and safe method of terminating narcosis would have, it seemed advisable that this procedure should be immediately subjected to further carefully controlled experimental observations.

In a preliminary report² we described the results of the intravenous injection of varying amounts of tenth normal hydrochloric acid in dogs which had been anesthetized with ether, tribrom-ethanol and pentobarbital sodium (nembutal). In no case were we able to demonstrate the least effect on the rate of recovery. In

spite of these discouraging results, it was felt advisable to continue the observations, using other laboratory animals. Our experiments have now included dogs, guinea-pigs, rabbits, monkeys (*Macacus rhesus*) and

TABLE 1—Effect of Hydrochloric Acid in Ether Anesthesia

Animal	Weight kg	HCl N/10 Cc	Reflexes Present	Legs Move C min	Attempts to Stand 10 min	Stands 16 min
Dog C2	27.6	3	1 1/2 min	4	7	9
718	20.4	3	1	4	7	11
		3				
C2*	23.6		1 1/2	5	9	13
Baboon (<i>Papio papio</i>)						
A142	4.0	2	0	1	1 1/2	3
A14 *	4.0		0	1	1 1/2	3
A14	4.5	2	0	1 1/2	2 1/2	4
A142*	3.0		0	1	1 1/2	3
A147	4.0	2	0	1 1/2	2 1/2	4
A14**	4.5		0	1	1 1/2	3
A142	3.0	2	0	1	1 1/2	3
A142	3.5		0	1	1 1/2	3
Rabbit						
C1	2.4	2	Died			
C2	2.3		2 1/2	3	4	5
C3	1.5	2	1 1/2	2	2 1/2	1
C3	1.5		1	2	2	4
C2	2.3	2	Died			

* Control

baboons (*Papio papio*). All the experiments were carefully controlled by simultaneous observations on untreated animals. In each case the experimental procedure was as follows: Deep narcosis was induced in two animals, following which one was given one or more intravenous injections of tenth normal hydrochloric acid, while the other was untreated or, in certain

TABLE 2—Effect of Hydrochloric Acid in Pentobarbital Sodium Anesthesia

Animal	Weight kg	Dose Gm	HCl N/10 Cc	Reflexes Present	Legs Move	Attempts to Stand	Stands
Dog							
11.9	26.4	0.75	2	80 min			16 hr
			2				
			2				
			2				
			2				
			2				
1.6*	31.4	0.95		80			6 hr
J.7	21.0	0.60	100	No change	remained in deep anesthesia until		
			100	killed two hours later			
			100				
			60				
J.40	20.0	0.62		Same as above			
Monkey (<i>Macacus rhesus</i>)							
C127	2.5	0.05	2				1 1/2 hr
C127	2.5	0.05					12 hr
Rabbit							
C3	1.0	0.10	2	10 sec	10 sec	1 1/2 sec	20 sec
C4*	1.4	0.10	1 1/2	10 sec	10 sec	1 1/2 sec	20 sec
C3†	1.5	0.10	2	30			2 hr
C4†	1.4	0.10		60			9 hr
Guinea pig							
C1	0.43	0.032	2	Died			8 hr
C2*	0.42	0.02					

* Control

† Pentobarbital sodium given five minutes after cessation of previous observation

‡ Subcutaneously

12 Quoted by Plass, Hesselstine and Borts.
13 Plass, E. D., Hesselstine, H. C. and Borts, I. H. *Monilia Vulvovaginitis*. *Am. J. Obst. & Gynec.* 21: 320-334 (March) 1931.
14 Hesselstine, H. C. *Diabetic or Mycotic Vulvovaginitis*. *J. A. M. A.* 100: 177 (Jan. 21) 1933.
From the Laboratory of Surgical Research, Harvard Medical School.
1 MacGilvra, W. V. *The Story of Palmaesthesia: The Effects of a Recall Acid as a Means of Recovery to Sensibility*. *Harvard Dental Record* 8: 14 (Jan. 31) 1934.
2 Shambaugh, Philip and Boggs, Robert. *The Effect of Intravenous Hydrochloric Acid upon Narcosis in Dogs*. *Proc. Soc. Exper. Biol. & Med.* 31, March 1934.

cases in which it was felt that the stimulation incident on the venipuncture might hasten the recovery rate, the control animal was merely pricked with a needle. The rate of recovery from narcosis was determined, as accurately as possible, by noting the time of the return of the wink reflex, voluntary movements of the legs,

attempts to stand, and finally the ability to stand unassisted. The results are shown in the accompanying tables. The time intervals noted were taken from the withdrawal of the anesthetic in the case of the ether and from the point of deep narcosis in the case of tribrom-ethanol and pentobarbital sodium. The hydrochloric acid was injected at the onset of the timing, and when more than one dose was given these followed at varying intervals of from five to thirty minutes.

In the case of ether anesthesia, as is noted in table 1, the recovery rate was quite rapid even without any form of treatment. This was especially true in the rabbits,

TABLE 3—Effect of Hydrochloric Acid in Tribrom-Ethanol Anesthesia

Dog	Weight kg	Dose Gm	HCl N/10 Cc	Reflexes Per cent	Legs Move 3 min	Attempts to Stand 50 min	Stands 60 min
Q 3	11.0	0.12	5 20 20 20	20 min	3 min	50 min	60 min
B 1*	11.4	0.12		30	^	60	65
Q 4	20.0	0.12	5	1	6	10	20
Z 1*	24.4	0.12		(never abs.)	0	10	15

* Control

guinea-pigs and baboons so it would necessarily be very difficult to establish the value of any form of therapy in these animals. As far as we could judge however, the acid in no case shortened the recovery period. Two of the rabbits were inadvertently overanesthetized, and in these the injection of the acid within a few seconds of the cessation of respiration was without effect. Pentobarbital sodium (table 2) was selected as representative of the barbiturates and was administered intraperitoneally, in a 3 per cent solution in physiologic solution of sodium chloride. The doses in most cases approximated 30 mg per kilogram. As in the case of ether, we found the acid to be entirely without effect even when given in massive dosage totaling in one case 350 cc. The observations in tribrom-ethanol narcosis (table 3) were likewise completely negative.²

SUMMARY

Observations on guinea-pigs, rabbits, dogs, monkeys and baboons indicate that the intravenous injection of dilute hydrochloric acid is without effect as a means of shortening the recovery period from ether, pentobarbital sodium and tribrom-ethanol narcosis.

² W. deB. MacLider in the course of his extensive investigations in dogs on the effect of intravenous hydrochloric acid on the kidneys observed no change in depth of anesthesia induced by chloroform and morphine (personal communication to the authors).

The pH of the Blood.—The reaction of the blood is normally in the resting man expressed by a pH of 7.4 slightly more alkaline than water. The pH may be raised 0.2 or 0.3 above this level by such a simple physiological means as blowing off carbonic acid in voluntary overbreathing. And it can be lowered as much by the lactic acid produced in the muscles in a short hard sprint. But if the change goes much farther in the alkaline direction the tetany of alkalosis sets in nor can much greater change in the acid direction be tolerated without the symptoms of acid poisoning. The range within which life is continuously possible seems to be the narrow zone between pH 7 and 7.8. When we consider that some molds can grow in 5 per cent sulphuric acid solution it appears that the efficiency of our complicated and delicate organism has been bought at a heavy cost in cellular hardness and adaptability. —Van Slyke D. D. Acidosis and Alkalosis. *Bull. N. Y. Acad. Med.* 10: 103 (March) 1934.

Clinical Notes, Suggestions and New Instruments

TREATMENT OF GONORRHEAL VAGINITIS IN IMMATURE GIRLS

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My purpose in this note on the treatment of gonorrheal vaginitis in immature girls is to corroborate the work and observations of Lewis.¹

Gonorrhea in young girls has always been the bugbear of the medical practitioner and seldom is cured short of months of intensive treatment. Because of the delicacy of the structures involved and the lack of cooperation on the part of the young patients, local treatment is difficult. At best, even in older girls, when cooperation is more readily obtained treatment is long and tedious and highly unsatisfactory. Perhaps the reason for this is to be found in the peculiar microscopic changes in the generative tract of the immature girl, so splendidly shown by Schaeffer and Kuhn.²

It has long been known that gonorrhea in the mature female seldom attacks the vaginal wall per se or, if it does it is of short duration. Allen³ demonstrated that estrin, when injected into immature monkeys, caused vast proliferation of the layers of the vaginal mucous membrane, producing almost an adult type of mucous membrane. Lewis utilized this knowledge and brought out the newer treatment of gonorrhea in immature females.

Results of Daily Injections of Theelin*

Name	Age	Duration of Disease Before Treatment	Visible External Discharge	Smears at Beginning of Treatment	Theelin Begun	Units of Theelin Daily	Smears at End of Ten Days	Smears at End of Twenty Days	Smears at End of Thirty Days	Local Reactions	Number of Injections
L. W.	9	8/1/29	+	+	11/10/33	50	—	—	—	No	12
D. B.	3	7/1/33	+	+	11/10/33	50	?	—	—	No	11
P. M.	10	6/17/33	—	+	12/1/33	50	—	—	—	No	10
C. B.	2	8/21/33	—	+	12/4/33	60 (11) 75 (4) 100 (16)	+	+	—	Breast ludra	31
M. S.	7	10/21/33	+	+	12/8/33	50 (14) 100 (8)	+	—	—	No	22
W. I.	9	6/14/33	+	+	12/8/33	50	—	—	—	No	8
B. T.	4	9/1/32	+	+	12/29/33	50	—	—	—	No	15

* There were no constitutional reactions, complications or vaginal bleeding.

After reading the report of Lewis I undertook to verify his results in the clinic of gonorrhea in young girls at the Broadlawn (City) General Hospital.⁴ This clinic had shown persistently unsatisfactory results as far as duration of disease and end results were concerned. I had charge of this clinic for several months about five years ago.

Seven patients had been coming two or three times a week for periods varying from months to years. One patient had been coming at regular biweekly periods for the past four and one half years and had taxed the resources of attending men and several crops of interns.

The accompanying table summarizes briefly the seven cases. Theelin exclusively was used in all cases.

I found with Lewis that none of these children had vaginal bleeding as a result of the extra stimulation of the sexual

¹ Lewis R. M. A Study of the Effects of Theelin on Gonorrheal Vaginitis in Children. *Am. J. Obst. & Gynec.* 26: 593 (Oct.) 1933.

² Schaeffer C. C. and Kuhn Clifford. Information Regarding Gonorrhea in the Immature Female. *Am. J. Obst. & Gynec.* 25: 374 (March) 1933.

³ Allen Edward. Reactions of Immature Monkeys (*Macacus Rhesus*) to Injections of Ovarian Hormones. *J. Morph. & Physiol.* 46: 479 (Dec.) 1928.

⁴ By courtesy of Superintendent Dr. Charles Sprague.

apparatus, and none had any constitutional reactions. In only one did I notice any marked turgescence of the labia majora and very slight palpable enlargement of the breasts, and that child was the youngest in the series and had the largest number of injections and the largest total quantity of units of hormone. I also found, with Lewis, that the profuse, purulent vaginal discharge frequently found in this condition disappears almost entirely after the fourth or fifth injection.

In this series no local treatment was used, not even washing of the vulva. Smears of the vagina were taken at least twice weekly during treatment.

We are still watching these youngsters with slides and cultures at varying intervals and to date these have remained negative and there has been no return of clinical manifestations of gonorrhea even several weeks since the last treatment was given. Perhaps the greatest compensation I had for my investigations was the bright and happy smiles of the youngsters as we handed them their notes that would readmit them to the common fellowship of the schoolroom after an absence of months and, in one case years.

I present this brief and necessarily incomplete report on the newer treatment of gonorrhea in immature girls with the use of theelin because there may be many practitioners still struggling with this difficult pediatric and gynecologic problem. This new treatment presents great possibilities for lessening the severity and duration of the disease and may show a way for a rapid clinical and bacteriologic cure of a heretofore distressing malady.

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BILATERAL CHYLOTHORAX AND CHYLOPERITONEUM

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Unilateral chylothorax or chyloperitoneum alone although not frequently found, has been reported several times. To my knowledge there are no cases in the literature in which chyle has been recovered in the three major cavities of the body.

REPORT OF CASE

G. B., a woman aged 19, while riding in the rumble seat of an automobile, May 14, 1933, met with an accident which resulted in a transverse fracture of the left humerus in its middle third. cursory examination showed no other injuries, and a body spica was applied following closed reduction. Roentgenograms revealed excellent position of the fragments. At the end of two and one-half weeks a roentgen recheck showed that the fragments had slipped. A general anesthetic was given and a pin was placed through the olecranon and traction applied. Symptoms of nerve paralysis appeared and accordingly, under a second general anesthetic, an open reduction was performed three weeks following the injury. A silver wire was placed through the fragments. Three weeks later (six weeks after the injury) a roentgenogram showed practically no callus. The patient now started complaining of tightness of the body cast and some shortness of breath. This was attributed to lack of exercise as the patient actually put on 12 pounds (5.4 Kg.) in weight. Two weeks later because of pressure, the body cast was removed. A roentgenogram of the arm showed the alignment to be good and a moderate amount of callus present. When the cast was removed, a moderate amount of abdominal distention was recognized but no fluid wave was obtained. Stupes and enemas failed to take the distention down. One week later (nine weeks after the injury) the patient was confined to bed with what appeared to be symptoms of influenza—slight cough, sore throat, aches and pains in the back and limbs, and an afternoon temperature of 102. Influenza therapy of catharsis, liquids, antipyretics and cough syrup was given without improvement. Three days later a definite fluid wave appeared in the abdomen which during the course of the next week progressed so rapidly that it encroached on the diaphragm. Roentgenograms of the chest revealed a small fluid level of both bases. The heart was pushed up by the diaphragm and at the right of the inferior right border of the heart was a shadow the size of a walnut, at this time unexplained.

Because of the respiratory embarrassment and the increasing distention, an exploratory laparotomy was performed, July 29 (eleven weeks after the injury), at which time a gallon and a half of milky fluid was drained out of the abdomen. The only positive observations in the abdomen were an omentum entirely denuded of fat, and a more or less hard nodular pancreas. Tissue from the pancreas was removed, and the abdomen closed with one large rubber drain inserted. Convalescence was uneventful and primary closure of the wound was obtained in eighteen days. On the eighteenth postoperative day the patient first experienced difficulty in breathing, and investigation showed both bases to be dull. This condition was confirmed by roentgen examination, and thoracentesis on alternate sides of the chest produced fluid, which, on standing, had a layer of red cells at the bottom, a milky second layer, and a third so-called cream layer. In nine days six punctures were done (four left, two right). On the ninth day (after respiratory embarrassment) she was fed back almost a quart of the chyle by mouth, and immediate improvement occurred, so much so that four days later she was allowed to sit up in a wheel chair. Relief was short lived, however, as immediately after the patient sat up the abdomen again became markedly distended, not badly enough, however, to warrant paracentesis for one week, at which time two liters of pure white fluid was obtained pathologically reported as chyle. No relief was obtained following this procedure, so that again the chest was tapped, most of the fluid now being in the right side of the chest, as compared to the left side two weeks before. Five more punctures were made in the next seven days.

The abdomen was again tapped and 300 cc. of air injected. A roentgenogram immediately following showed air below the crus of the diaphragm, both right and left, but there was an area about one inch in diameter on the right side which showed no air. This was interpreted as being a cyst continuous with the walnut sized mass reported on the inferior border of the right side of the heart. Heroic measures were instituted, two transfusions were given, and drainage of the cyst from the posterior chest wall at the level of the tenth, eleventh and twelfth dorsal spine was achieved by Dr. A. L. Brown. The patient died the next day while on the bedpan.

PATHOLOGIC REPORT

There was an interruption in the continuity of the thoracic duct 2.5 cm. above the diaphragm, with some fibrosis about the distal end of the broken area apparently occluding the lumen. The proximal end showed a tiny patent lumen, although there had been some desmoplastic reaction about it. There was chylous fluid in both pleural cavities and the peritoneal cavity, this was much thinner than in the pleural cavity.

Both lungs were collapsed. They weighed 225 Gm. each and showed massive old adhesions about the bases on each side. On the right there was a dense mass of succulent adhesions at least a month old. The liver showed cloudy swelling of the cells, the spleen showed a congested pulp, the pancreas was normal in size but was very hard owing to loss of fat. The suprarenals showed a fresh hemorrhage occupying the medulla and inner cortical zones. The kidneys were normal. The intestine showed an intense edema, vascular congestion and dilatation of the lacteals. The sex organs were normal, except for edema.

The diagnosis was ruptured thoracic duct with chylothorax, chyloperitoneum, fatty infiltration of the liver, fibrinopurulent pleuritis and terminal fatal bilateral suprarenal apoplexy.

COMMENT

This case is unusual in that there was a bilateral chylothorax and chyloperitoneum following trauma.

A new approach as to drainage was attempted, in an endeavor to obtain collateral circulation of the lymph channels, mean while taking undue pressure off the pleural cavity and the diaphragm and abdominal spaces.

Whether or not the operation is of any avail is open to discussion because of the emaciation and inanition resulting from the loss of normal chyle which cannot forever be artificially replaced and may in itself lead to eventual death.

490 Post Street

DIPHThERITIC VULVOVAGINITIS AND DIPHThERIA
OF THE SKIN, MOUTH AND THROAT

ROD H. CANTRELL, M.D., DALLAS, TEXAS

This case of diphtheritic vulvovaginitis and diphtheria of the skin is being reported because of the rarity of its occurrence. The material on the subject in the available American literature is quite limited. Shrewsbury¹ reports a case of cutaneous infection of the thigh with a diphtheroid bacillus, identical with the Klebs-Löffler bacillus in every respect except in toxin production. This lesion healed in three weeks, only after curettage and iodoform dressings. Anderson² describes a case of gangrene of the skin, due to diphtheria. Warren and Sutton³ contribute a fatal case of diphtheria of the skin, superimposed on varicella. Massey and Russell⁴ record a case of diphtheria of the skin which was the cause of an outbreak of diphtheria. Montgomery⁵ mentions a case of diphtheria of the skin about the umbilicus, in which the umbilicus of a baby 7 days old was the site of primary infection.

REPORT OF CASE

P. C., a white woman, aged 28, admitted to the urologic service of the Dallas City-County Hospital Sept. 1, 1933, complained of ulceration of the vulva and of the skin under both breasts. The ulceration of the vulva began about six weeks previous to admission, as an irritation of the skin with a foul vaginal discharge. The patient went to a physician, who gave her an ointment and told her that the disorder was due to a nervous condition. Three or four days before she came to the hospital ulcers appeared and the vulva became swollen and extremely sore, causing excruciating pain on voiding and defecating, the ulceration having extended back to the region of the anus and on the buttocks. Two days before the skin under both breasts became ulcerated and was very painful.

The patient was rather obese and anemic. The mouth showed marked pyorrhea. The tongue presented one ulcer on the right side, about 2 cm. from the tip and about 1 cm. in diameter. It was gray, on an indurated base. The right tonsil had a few small gray spots on it, similar to the one on the tongue.

The chest and heart were normal. The breasts were large and pendulous, the skin on the lower surface and on the chest wall beneath was excoriated over an area about 3 inches in diameter. These areas were very tender.

The vulva was greatly swollen and excoriated. This excoriation extended back to the region of the anus and on the buttocks. There was a rather heavy mucoid discharge between the labia but no evidence of a membrane. A very foul odor was present.

The temperature on admission was 102 F, pulse 118. The temperature ranged between 100 and 102 for four days then rose to 104.4 but came back to 100 on the fifth morning and remained about 101 until death on the tenth hospital day. The pulse ranged from 90 to 120 during the entire ten days.

September 2 the blood count revealed red blood cells, 2,700,000, white blood cells, 6,000, polymorphonuclears 72 per cent, small lymphocytes, 24 per cent, large lymphocytes 4 per cent, and hemoglobin, 55 per cent (Sahli). Examination of the urine was negative except for 30 pus cells per low power field. A smear from the vulva revealed many staphylococci, many bacilli of various types and a moderate number of leukocytes. The Wassermann test was negative.

A blood count, September 6, revealed red blood cells, 3,410,000, white blood cells 7,600, polymorphonuclears 68 per cent, small lymphocytes 16 per cent, large lymphocytes, 16 per cent, and hemoglobin 70 per cent. A smear from the throat showed many diphtheria bacilli. A smear from the vulva showed no diphtheria bacilli.

A blood count (Schilling) September 7, revealed red blood cells 3,320,000, white blood cells 6,800, polymorphonuclears

47 per cent, small lymphocytes, 36 per cent, large lymphocytes 12 per cent, hemoglobin, 65 per cent, and single lobed neutrophils, 5 per cent. A vaginal culture yielded many diphtheria bacilli. A throat culture yielded many diphtheria bacilli. Blood cultures were repeatedly negative.

On the sixth hospital day the mucous membrane on the right cheek became sore and was covered with a gray membrane and the face was badly swollen. The swelling increased and the ulceration spread to the lips and then around to the skin of the face, involving an area about 2 cm. in diameter.

As treatment, potassium permanganate, 1:5,000, as an external douche to the vulva, was used three times daily. Lights over the vulva were tried, but the patient complained. Boric acid was then used, which was more soothing. Boric acid was used on the skin of the breasts and sodium perborate was used as a mouth wash.

A transfusion with 400 cc. of blood was given, September 6.

On the sixth hospital day, 20,000 units of diphtheria antitoxin was injected into the muscle and 5,000 units intravenously, 40,000 units daily for the next two days and 20,000 units on the day of death were given intramuscularly, but the patient continued to grow weaker. The total amount of antitoxin given was 125,000 units.

September 9, pneumonia developed, and on the following day the patient died. An autopsy was not done.

This case⁶ is of interest from the standpoint of being primarily a diphtheritic vulvovaginitis, secondarily of the skin, then of the mouth and throat. The leukopenia seen is rather unusual, a moderate leukocytosis is the rule in cases of diphtheria. We thought chiefly of drug eruptions and on September 6 had Dr. A. G. Schoch see her. After questioning the patient closely about the use of drugs and obtaining negative answers to all his questions, he suggested that we get smears and cultures for diphtheria.

1310 Medical Arts Building

EXFOLIATIVE DERMATITIS FOLLOWING INTRA-
VENOUS INJECTION OF COLLOIDAL
SULPHUR WITH RECOVERY

NORMAN TOBIAS, M.D., ST. LOUIS

Primary dermatitis exfoliativa (Hebra) is rare and recovery is unusual. The secondary exfoliative dermatoses (Brocq) usually occur during the treatment of such common skin disorders as psoriasis, seborrheic dermatitis, extensive eczema, lichen planus and lupus erythematosus. This complication may supervene in certain individuals, possibly as a form of allergic response during therapy, which may be local (mercury, chrysarobin, iodoform), internal (quinine) or parenteral (antitoxins, serums, arsenicals, heavy metals).

Colloidal Sulphur (Doak) has been recently advocated for chronic arthritis, neuritis, sciatica, arsenical dermatitis and seborrheic eczema. Each 2 cc. ampule represents 5 mg. of sulphur and injection is made intravenously semiweekly.

REPORT OF CASE

Mrs. E. M., aged 26, seen in January 1933, had a chronic seborrheic dermatitis consisting of large subacutely inflamed patches on the back of the neck, left infraclavicular region, left gluteal region and right thigh. The lesions began to appear six years before and, although various ointments had been applied by as many physicians, no apparent improvement could be ascertained. After sulphur, resorcinol and tar ointments in graduated strengths had failed to influence the lesions, roentgen treatments in fractional weekly doses were given. A diet low in fats and oils was also followed.

Since there was no change for the better in any of the lesions after two months of local treatment the patient was given an intravenous injection of 2 cc. of Colloidal Sulphur (Doak). Twenty-four hours later a severe pompholyx-like eruption developed in both palms, with edema on the dorsal surfaces of both hands. Two days later the face and neck became hyperemic and in a week the entire cutaneous surface was erythematous. Then scaling followed which gradually

⁶ I am indebted to Dr. R. E. Van Duzen for permission to report this case.

Read before the Dallas County Medical Society, Oct. 12, 1933.
¹ Shrewsbury, J. F. D. A Case of Cutaneous Infection of the Thigh with a Diphtheroid Bacillus. Brit. M. J. 1: 538 (March 28) 1931.
² Anderson, J. D. A Case of Gangrene of the Skin Due to Diphtheria. Brit. M. J. 2: 800 (Oct. 31) 1931.
³ Warren, Shields, and Sutton, Lee, Jr. A Case of Diphtheria of the Skin Which Was the Cause of an Outbreak of Diphtheria. J. A. M. A. 84: 1983-1984 (June 27) 1925.
⁴ Massey, Arthur, and Russell, Gladys. A Fatal Case of Diphtheria of the Skin. Brit. M. J. 1: 992-993 (June 19) 1929.
⁵ Montgomery, J. C. Diphtheria of the Umbilicus. Am. J. Dis. Child. 40: 968-973 (Nov.) 1930.

became more marked on the trunk and lower extremities. One month after the onset the nails became dystrophic and loosened. Alopecia of the scalp and eyebrows was almost complete three months after the injection. With hospitalization, forced fluids, soothing lotions and general ultraviolet irradiation the patient made an uneventful but slow recovery, which required eight months. The hair and nails have been replaced and the original lesions of seborrheic dermatitis have disappeared. Whether they will return at some future time is a question.

While the patient was in the hospital, physical examination revealed no gross abnormalities of the internal organs. Blood examination revealed white blood cells 6,900, red blood cells 3,100,000, hemoglobin 60 per cent. Differential count revealed stab cells 7 per cent, segmented cells 63 per cent, neutrophils 70 per cent, eosinophils 3 per cent, mononuclears 6 per cent, lymphocytes 21 per cent. The nonprotein nitrogen was 24 mg. per hundred cubic centimeters, blood sugar 80. The Wassermann and Kahn reactions were negative. The urine showed a trace of albumin and an occasional erythrocyte. Biopsy was not permitted.

CONCLUSIONS

Although thousands of injections of Colloidal Sulphur have been given in this country, no reports of exfoliative dermatitis from its use could be found in the literature. In the reported case intradermal and patch tests might have revealed a possible intolerance or sensitivity.

Missouri Theatre Building

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING ARTICLE
H. A. CARTER, Secretary

PHYSICAL THERAPY COMMITTEES IN STATE AND COUNTY MEDICAL SOCIETIES

AN OUTLINE OF ORGANIZATION AND PLAN OF ACTIVITIES

RICHARD KOVACS, M.D.

NEW YORK

Physical therapy as part of the practice of medicine has made considerable advance in recent years. Systematic instruction in undergraduate and postgraduate schools, critical research in adequately equipped institutions and authoritative information issued periodically by the Council on Physical Therapy are gradually replacing objectionable propagandizing methods employed by commercial concerns. Yet in many parts of the country the profession as a whole does not evaluate properly the possibilities and limitations of physical measures. As a result there occur many errors of commission, such as the overenthusiastic and unwarranted uses of physical therapy procedures, and also errors of omission, for example, the exploitation of valuable measures by irregulars and lay persons instead of by qualified physicians.

Because educational activities by special committees organized in state or county medical societies, have proved most effective, they are a desirable means of familiarizing the general practitioner with sound methods of physical therapy. Committees of such character have been successful in New York, Pennsylvania and California. Their work might well point the way for similar activities in other state or county medical bodies.

ORGANIZATION

The initiative for the organization of physical therapy committees in county or state societies must come from among the local society membership. The appointment of such a special committee could be secured by a motion at any regular business meeting of a medical body. The resolution may stress the desirability of surveying the status of physical therapy within the county or state: (1) its employment (a) by general practitioners (b) by institutions (c) by technicians under some sort of supervision of the organized profession (d) by unlicensed practitioners and other irregulars, (2) the opportunities for education of (a) graduate physicians (b) undergraduate students, (c) nurses and other technicians. To create a larger scope of interest in some states or counties, it may be desirable to include in the scope of the committee's proposed work a similar survey of the status of x-ray and clinical laboratory work.

A physical therapy committee when appointed, should be headed by a physician who is familiar with physical measures and who enjoys the confidence of his medical confreres. Its membership should include physicians interested in general medicine, surgery and orthopedics and as a rule the number should not exceed five or six. A committee appointed by a state society may in turn recommend the appointment of special physical therapy committees in the larger county units and encourage their activity within their own sphere. Likewise, a committee appointed in one of the counties can become instrumental in securing the formation of a committee covering the entire state.

WORKING PLAN

The chief tasks confronting committees on physical therapy are to impress on the rank and file of the medical profession that (1) the rational use of physical measures is part of the practice of medicine, consequently the members of the medical profession must receive adequate postgraduate instruction in physical therapy from competent leaders, and that (2) the practice of physical therapy by unlicensed people and its independent practice by lay technicians should be prevented by medical practice statutes.

An effective method of drawing the interest of the profession to the committee's problems at the onset of activities is the making of a survey of the practice and teaching of physical therapy along the lines already indicated. A suitable questionnaire may be sent to local hospitals, institutions and medical schools.

From hospitals certain information might well be sought for example (a) as to whether or not they possess a physical therapy department or employ any methods coming within the scope of physical therapy, (b) as to what type of equipment is being used and (c) as to whether or not the department is under the direction of a qualified physician. It is a fact that in too many institutions lay technicians have been placed more or less in charge of physical therapy. In some instances this unfortunate situation was brought about by the attitude of certain poorly informed members of the hospital staff, who were satisfied if application of heat, massage and exercise was carried out according to their own or their technician's notion.

It must be realized that a well conducted physical therapy department should be capable of rendering service to all departments of a hospital, not unlike an x-ray department. The best way to insure such service is to place a widely trained physician in charge. One

who will interest his fellow members of the staff in the existing facilities. Leaving a lay technician in charge inevitably leads to the assumption of unwarranted authority, such as the prescribing of treatment and the judging of results. It also deprives patients of the benefits of intelligently supervised physical therapy.

Properly equipped and directed physical therapy departments in hospitals are also of prime importance for the practical instruction of general practitioners as well as of medical students. The committee should offer its help in the organization of new departments if the occasion arises and make available opportunities for the training of physicians who are to be in charge.

Medical schools might well be asked whether the curriculum includes any instruction for graduates or undergraduates and what features this instruction comprises. The lack of properly manned physical therapy departments so far has unfortunately retarded the training of qualified teachers as well as the development of critical research and clinical work comparable to that going on in other departments of medicine.

EDUCATIONAL ACTIVITIES

The main aim of a successful physical therapy committee should be the inauguration of suitable instruction concerning scope and methods of physical therapy. This can be done through single lectures at the stated meetings of the medical body or by special or postgraduate courses arranged for all members of the society, no charge being made. Although the content of the course may be varied to suit the local needs, the following five-lecture postgraduate program has been suggested:

First lecture Heat measures therapeutic effects

Second lecture Massage therapeutic exercise

Third lecture Hydrotherapy Physical therapy in medical conditions

Fourth lecture Ultraviolet radiations Physical therapy in surgical, gynecologic, and other special conditions, low frequency currents and electrodiagnosis

Fifth lecture Inhalation therapy Use of oxygen, carbon dioxide, and so on, in resuscitation, anesthesia and pneumonia

It was found that both single lectures and systematic lecture courses stimulated further interest in the subject, affording an opportunity to spread correct information and to counteract much of the existing misinformation. A five day seminar was held under the auspices of the Committee on Education of the Philadelphia County Medical Society. The entire series of these lectures was published in book form. Again, a one week postgraduate seminar was given under the endorsement of the Los Angeles County Medical Association. All of these lecture courses were combined with clinical demonstrations offered at physical therapy departments in hospitals.

When drawing up an outline for similar courses in other states or counties stress should be laid on the use of simple measures, such as heat massage and therapeutic exercise, suitable for the general practitioner, and too much emphasis on therapy by complicated apparatus should be avoided. If there are no suitable speakers available in the county or state, the Council on Physical Therapy is in position to offer a list of speakers, and it can also name men and institutions competent to give regular postgraduate courses suitable for those who wish more extended instruction.

In addition to these courses of instruction, provision may be made in localities where there are physical

therapy departments under qualified leadership to have these departments open for inspection by interested physicians. Lists of such institutions should be published for the benefit of the local profession from time to time.

Chairmen of the medical boards of hospitals possessing physical therapy departments might well be urged to encourage the presentation of physical therapy cases at staff meetings, in order to stimulate intelligent discussion of the values and limitations of physical measures.

At annual meetings of state societies, papers on physical therapy subjects should be placed on the program, either at general meetings or, when there is enough interest at a special half day session. The latter plan has been carried out in New York State successfully for five consecutive years and it is gratifying to observe the improvement in the type of papers and the level of discussion from year to year.

It is recommended that at scientific meetings where the papers bear relation to physical therapy, comments by an authority on physical therapy should form part of the program.

MISCELLANEOUS ACTIVITIES

Manufacturers of physical therapy and x-ray apparatus or their representatives may be asked to cooperate with the committee's efforts to raise the standards of physical therapy. Those who wish to remain in the good graces of the organized profession might well be advised to pledge themselves not to establish or promote any commercial lecture course, relying only on those which are given under the auspices of the organized medical profession. Leading manufacturers in conference with physical therapy committees have subscribed to the principle that instruction in diagnosis and therapeutics belongs solely to the province of the medical profession. The only instruction that an ethical manufacturer can consistently offer to the profession is on the manipulation and care of some certain type of apparatus.

The maintenance of acceptable standards in compensation work may also receive attention. In some of the larger centers, low grade industrial clinics and unscrupulous physicians have attempted to turn the wholesale use of physical measures into mere sources of revenue. The medical profession must be informed that in traumatic and other cases physical measures are to be employed only (1) after a complete diagnosis has been established, (2) when the existing pathologic or functional changes serve as an indication for physical therapy, and (3) when physical therapy is applied efficiently on the basis of a definite prescription and is continued no longer than it is really indicated. On the basis of these principles, cooperation with insurance carriers may be established and opportunities for good work by qualified and ethical physicians developed.

Well informed members of the medical profession have come to realize that physical therapy measures belong to the therapeutic armamentarium of the educated physician, that their efficiency when applied in suitable cases with the proper technic has been definitely established. It behooves leaders of medicine in states and counties to safeguard the interests of public health and of the medical profession by encouraging or actively promoting educational work which will lead to a more widespread and more rational use of physical therapy by the medical profession in general.

Council on Pharmacy and Chemistry

ANNUAL MEETING OF THE COUNCIL ON PHARMACY AND CHEMISTRY

The Council on Pharmacy and Chemistry of the American Medical Association held its annual meeting at the headquarters building, 535 North Dearborn Street, Chicago, Friday and Saturday, March 2 and 3, 1934. Those present were Dr. Stanhope Bayne-Jones, Dr. E. M. Bailey, Dr. H. N. Cole, Dr. Eugene F. Du Bois, Dr. C. W. Edmunds, Dr. Morris Fishbein, Dr. Reid Hunt, Dr. Ernest C. Irons, Dr. Paul Nicholas Leech, Dr. Lafayette B. Mendel, Dr. G. W. McCoy and Dr. W. W. Palmer.

Dr. Reid Hunt was reelected chairman of the Council and Dr. Torald Sollmann was reelected vice chairman.

Among the many items discussed during the meeting, the following may be of interest to both physicians and manufacturers.

Mutual Problems of the Council on Pharmacy and Chemistry and the Committee on Foods.—The Council discussed the matter of permissible claims for the various vitamins both as foods and as drugs. It was brought out that the Committee on Foods in its meeting had agreed not to permit, either on labels or in advertising, any claims for vitamin E, the so-called antisterility vitamin. The Council instructed the chairman to appoint a committee to study and report on the prophylactic and curative claims that can be recognized for each of the vitamins, particularly for vitamins B and C.

The Council discussed the question of a vitamin product the manufacturer of which wishes to include the word "certified" in the name. It was suggested that the word "assayed" might be permissible, but the referee for vitamin products pointed out that all accepted products are assayed. It was the consensus that the use of the word "certified" in the name of such a product is misleading and cannot be permitted.

Lay Advertising of Iodine Preparations for Goiter Prophylaxis.—A number of years ago the Council voted that lay advertising of iodine preparations for prophylaxis against goiter be permitted. During the past year the question was again raised in connection with the reconsideration of two accepted preparations, Iodostarine-Roché and Iodo-Casem (Sharp & Dohme), both of which have dosage forms of chocolate coated tablets containing 0.01 Gm. of iodine.

The possibility of self medication with such preparations was discussed. In discussion of the possibility of activation from the use of iodine preparations it was pointed out that this usually occurs in cases of nodular goiter in persons over 35 years of age who have been taking doses as large as 10 grains (0.65 Gm.) of potassium iodide daily for some period. It was the general opinion that any danger from the lay advertising of such prophylactic preparations as those under discussion might be avoided by adequate caution as to dosage and, further, that the matter of instructing the public in proper goiter prophylaxis is of high importance. The Council decided to reaffirm its previous action in permitting the lay advertising of iodine prophylactics against goiter, the advertising propaganda to be subject to approval by the Council's Committee on Therapeutics.

Radio Advertising of Accepted Products.—It was brought out that the Council's office has received a complaint concerning statements made in radio broadcasts advertising an accepted preparation. The manufacturer was asked to inform the Council what statements had been authorized. In reply, the firm sent a list of statements concerned directly with the Council acceptance of the product, but not the entire text of the advertising broadcast. Members of the Council found some of the statements objectionable in that they implied Council "approval," whereas according to the Council's rules acceptance does not mean recommendation of a product. Another objection was concerned with the firm's statement that the product was accepted by the A. M. A., whereas it is only the Council that does the accepting. In the discussion it was brought out that for effective control it is necessary that the complete text of radio broadcasts be considered. It was pointed out that the question of radio

broadcasts concerning Council-accepted products must necessarily be an increasing one, and means for adequate control were discussed.

It was decided that all firms doing radio advertising of Council-accepted products be informed that the Council feels obliged to pass on the complete text of all radio broadcasts before they are released to the public over the air, and that adequate arrangements will be made for prompt action on such advertising copy.

The Use of Therapeutically Suggestive Terms on Labels.—The Council does not permit the use of disease names on labels or in circulars for accepted products that lend themselves to self medication. Last year the Council voted that the terms "sedative" and "hypnotic" on labels for barbituric preparations be not permitted and that the same shall apply to folders accompanying trade packages but not to advertising literature to be sent to physicians. The question has arisen whether or not terms similar in therapeutic implication to "sedative" and "hypnotic" should have similar consideration for instance, "sedative and soporific," "cardiac stimulant," "diuretic," "anodyne," "antiseptic," "emollient."

In the discussion it was questioned whether or not entire prohibition of such terms would be the proper action, and the consensus was that such drastic action is not required. It was voted that the Council allow such designations in general but prohibit them where they appear to be distinctly harmful or tend to drug habituation by suggesting self medication.

Bismuth Preparations for the Treatment of Syphilis.—The Council's referee for bismuth preparations reported that manufacturers are submitting advertisements advocating the use of their preparations in the treatment of every form of syphilis, alone or in combination with arsphenamines. The referee favored recommendation for the use of these in any stage of syphilis but only in conjunction with arsphenamines and/or mercury preparations.

New and Nonofficial Remedies states that, although a few syphilologists are treating syphilis with bismuth compounds alone, sufficient evidence has not yet been produced to indicate that the use of bismuth preparations alone is efficacious. In order that there may be a clear understanding and particularly to aid in passing on future advertisements, the referee asked for general discussion of this matter.

After due consideration it was voted to put on record the decision that the Council is at present opposed to the use of bismuth compounds alone in the treatment of syphilis.

The referee further stated that there are several manufacturers who advance the claim that their respective compounds are absorbed in toto without change in the local tissues and that proof has not been furnished for this claim. It was felt that firms making this claim should be required to furnish evidence that any bismuth salt used therapeutically is absorbed unchanged—that so far such proof has been lacking. It was the consensus that this was a matter of demonstrable proof and that, until satisfactory evidence has been presented, no claim of absorption in unchanged form be allowed. The referee felt that any bismuth preparation is helpful in neurosyphilis but stated that he did not know whether this necessarily means that the bismuth is present in appreciable amounts in the spinal fluid and in the tissues. Although no specific action was taken on this point it was the general opinion that until more definite evidence is available the Council should disallow all claims of particular penetration into the central nervous system of bismuth compounds.

Lay Advertising of Halibut Liver Oil with Viosterol.—In the case of viosterol in oil 250 D, the Council has held that the preparation was so potent in vitamin D activity that it should be used only with the advice and under the guidance of a physician. Therefore, advertisements of viosterol in oil 250 D to the public have not been permitted.

The secretary reported that the advertising department of THE JOURNAL had recently inquired whether or not halibut liver oil (plain) or halibut liver oil with viosterol 250 D could be advertised in *Hygeia*. It was pointed out that halibut liver oil with viosterol 250 D is just as potent antirachitically as viosterol in oil 250 D, it was further pointed out that the plain halibut liver oil has an excess potency of vitamin A over cod

liver oil comparable to the excess potency in vitamin D of viosterol in oil 250 D over plain cod liver oil. The Council's referee for vitamin products expressed the opinion that the high vitamin A potency of halibut liver oil makes this product as ineligible for lay advertising as does the high vitamin D potency of viosterol in oil 250 D. The advertising department was informed that neither plain halibut liver oil nor halibut liver oil with viosterol 250 D could be advertised to the public without recommendation by the Council. As a result of the discussion, it was voted to continue the Council's rule that products as potent in vitamin activity as 250 D be not permitted to be advertised to the public at the present time.

Revision of New and Nonofficial Remedies Articles on Preparations Containing Vitamins A and/or D—The Council discussed the action to be taken in view of the forthcoming promulgation of the unitages, standards, and so on, for vitamins A and D adopted as an interim revision by the Pharmacopoeial Revision Committee. After considerable explanatory comment, the Council's referee offered the following tentative revision for the article "Cod Liver Oil and Cod Liver Oil Preparations" (N N R 1933, p 270, 1934, p 275, beginning with line 12 of the first paragraph)

The Pharmacopoeia (U S P \ Revised 1934), besides giving tests for the purity of cod liver oil also gives methods for the assay of its content of vitamin A and vitamin D; furthermore it provides that the vitamin A potency and vitamin D potency of cod liver oil when designated shall be expressed in United States Pharmacopoeia units per gram of oil and may be referred to as U S P units per gram of oil. It is also stipulated that

One United States Pharmacopoeia unit of vitamin A is equal in growth promoting and antixerophthalmic activities for the rat to one international unit of vitamin A as defined and adopted by the Conference of Vitamin Standards of the Permanent Commission on Biological Standardization of the League of Nations in June of 1931. One United States Pharmacopoeia unit of vitamin D is equal in antirachitic potency for the rat to one international unit of vitamin D as defined and adopted by the Conference of Vitamin Standards of the Permanent Commission on Biological Standardization of the League of Nations in June of 1931.

For purposes of information it may be stated that the new U S P unit of vitamin A is equivalent to 0.714 unit U S P \ (1925) the new U S P unit of vitamin D is equivalent to 3.26 A D M A units, or 0.370 so-called Steenbock units.

The Pharmacopoeia (U S P \ Revised 1934) now specifies that cod liver oil must contain in each gram at least 600 U S P units of vitamin A and at least 85 U S P units of vitamin D. Cod liver oil may be flavored by the addition of not more than 1 per cent of any one or any mixture of flavoring substances recognized in this pharmacopoeia.

Evidence has accumulated to show that it is feasible to market cod liver oil having a vitamin A potency much higher than the lower limit of the pharmacopoeial product. Accordingly all brands in New and Nonofficial Remedies are required to have a vitamin potency of at least 850 vitamin A units per gram and at least 85 vitamin D units per gram when tested by the U S P \ (Revised 1934) method.

It has been shown that an effective concentrate of cod liver oil can be made and marketed. To be acceptable for inclusion in New and Nonofficial Remedies such a concentrate should have a vitamin A potency of at least 14,000 U S P \ (Revised 1934) units per gram or 1,160 U S P \ (Revised 1934) units per tablet or other dosage unit and a vitamin D potency of at least 1,400 U S P \ (Revised 1934) units per gram or 110 U S P \ (Revised 1934) units per tablet or other dosage unit.

The Council requires that the vitamin A and vitamin D potency of accepted brands of cod liver oil and cod liver oil concentrates be declared in U S P \ (Revised 1934) units on the label of such products. Statements of the potency of tablet preparations of cod liver oil concentrate made on a per tablet basis and also on a per gram of tablet basis should appear in the firm's presentation and in New and Nonofficial Remedies. On the labels however a declaration of vitamin potency per tablet is sufficient.

The average daily dose of U S P \ (Revised 1934) cod liver oil recommended by the U S P Vitamin Advisory Board is as follows:

Average Daily Dose	
Infants	12 cc (3 fluidrachms)
Adults	24 cc (6 fluidrachms)

The consensus of the replies to a questionnaire on the subject indicates that the figures given represent the prophylactic and curative dose when the new U S P cod liver oil is used.

The referee then recommended that the following sentence be deleted from the article "Viosterol" (N N R 1933 p 427, first paragraph, N N R 1934, p 433 first paragraph)

The Council has also adopted the qualifying phrases 250 D 10 D etc to designate the vitamin D potency of the various preparations as multiples of the vitamin D potency of a cod liver oil of definite potency as determined by the rat assay method.

In explanation of this recommendation the referee pointed out that the designation "D," for example "10 D" no longer seems appropriate. The designation of the strength of viosterol should

either be given in terms of U S P X (Revised, 1934), units of vitamin D, or the equivalent of such figures as "10 D" should be added to the earlier designation, for example, "250 D" equals 9,000 U S P X (Revised, 1934) or "10 D" equals 360 U S P X (Revised, 1934) units.

After discussion of the referee's recommendations, the Council voted that this revision be published in the midsummer supplement to N N R, furthermore, that these standards be taken as standards not only for cod liver oil but for all preparations sold primarily for their content of vitamins A and D. Finally, the suggestion was made that the manufacturers who cooperate with the Council be informed of the action so that they may provide suitably for making changes in their advertising and promotional material just as soon as the Pharmacopoeia officially adopts these standards.

Glandular Therapy—It was reported that there is still a demand for the Council's book *Glandular Therapy*, which was first published in 1925 and revised in 1927. The book is now out of date. It was decided that a new edition should be published, and the chairman appointed a committee of three to draw up a list of individuals who might be asked to prepare such articles as may be needed in this field, to be published in THE JOURNAL, under the auspices of the Council, and then issued in book form. The editor of THE JOURNAL declared his willingness to cooperate in this project.

Protein Therapy—The secretary reported that the Council office is in receipt of increasing numbers of inquiries concerning nonspecific protein therapy. The subject is changing, because more recently the proteins used are being chemically treated by use of formaldehyde, nitrous oxide, and so on, rather than heat treated. The suggestion was made that it might be timely for a series of articles to be published under the auspices of the Council, dealing with nonspecific protein therapy. The suggestion met with approval and it was the general consensus that it is not necessary to have a series of articles, but one extended article dealing with protein therapy.

Bacillus Acidophilus Therapy—The Council's referee reported the progress of an investigation, sponsored by the Council, to determine the bacterial qualities of *Bacillus acidophilus* products. He hoped in the near future to report on the Council accepted *B. acidophilus* preparations in the light of this investigation.

Transfer of Radium and Radium Preparations to Purview of the Council on Physical Therapy—The secretary reported the request of the Council on Physical Therapy that the consideration of radium products be transferred to that body. The matter was discussed at length and it was agreed that such transfer is desirable. The Council voted that the consideration of radium compounds, applications and other devices be transferred from the purview of the Council on Pharmacy and Chemistry to that of the Council on Physical Therapy on Sept 1, 1934, and that should the internal use of radium be recognized at some future time, such preparations be considered under the purview of the Council on Pharmacy and Chemistry or the joint purview of the two councils.

Toxicity of Cinchophen and Related Compounds—From time to time the Council has pointed out the dangers inherent in the use of cinchophen and related drugs on account of their toxicity. At this time the question was raised as to whether in the interest of the public and the medical profession the Council should withdraw its recognition of the drug. It was pointed out that the greatest danger to the public arises from the use of cinchophen when masked or undeclared in proprietary mixtures such as the Council does not recognize. A member warned against a possible conclusion that neocinchophen is essentially safer than cinchophen pointing out that there is no available evidence to that effect. It was the general opinion that physicians should be educated to the use of this dangerous drug, as in the case of other dangerous drugs that if the Council were to withdraw recognition of all drugs which cause accidents, there would be little left for inclusion in a book such as New and Nonofficial Remedies. The Council voted to retain cinchophen in New and Nonofficial Remedies unless and until more definite reasons for its omission are available.

Reports of the Committees—Among the more noteworthy reports were those of the Committee on Nomenclature and the Committee on Rules and Procedure. The chairman of the

Committee on Nomenclature emphasized the fact that the matter of permission to use proprietary names and the use of numbers and letters for names are frequent and troublesome problems that come before the Council. He felt that the only manner in which such policies can be enforced at all is to enforce them literally and rigorously.

The chairman of the Committee on Rules and Procedure reported difficulty in interpreting the recently revised rule providing that the Council would not consider articles when they were "not found in the open market." He questioned whether the interpretation should be restricted to exclude wholesale packages on shipments. The Council voted that the present rule be reaffirmed with the understanding that the term "open market" contemplates both the wholesale and retail dispensing of drugs.

This committee report also reviewed the application of the Council's rule 11, which reads:

The Council will not accept or retain if already accepted the articles of a firm if in the opinion of the Council the policies of such firm are clearly detrimental to the welfare of the public and to medicine.

The Council continued the current discussion of the application of this rule to three firms. In the case of two of those the decision to apply the rule was reaffirmed. In the case of the third firm, it was decided to make further inquiry to determine whether the firm might be agreeable to withdrawing non-acceptable products from the market.

Committee on Foods

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS

RAYMOND HERTWIG Secretary

IRON CLAIMS FOR FOODS

Foods vary considerably in iron content, only a portion of which may be readily utilized. The value of a food for meeting nutritional needs for iron depends (1) on its iron content, (2) on the availability of the iron and (3) probably on the presence of sufficient traces of copper in the diet to insure an efficient utilization of the iron. The ability of the growing body to get iron depends on the nutritive value of the diet in other respects besides iron. A well constructed diversified diet adequate in all other respects is likely to be ample in iron and copper for normal adults. Rapidly growing children need relatively more iron than adults, and their diets should always contain some foods rich in this element.

To warrant an iron claim, a food in an amount that most adults would consume easily in a single day should furnish a substantial proportion of the daily iron requirement (approximately 15 mg. Fe). Any food that would result in an intake of less than 3 mg. of iron (as Fe) per day does not warrant special recognition in advertising.

Iron claims should be restricted to simple statements of the value of the product in comparison with common foods for contributing iron for dietary needs. They should not involve statements of any order pertaining to blood building, because of their therapeutic significance or implications.

BLOOD BUILDING CLAIMS IN ADVERTISING

Iron is an important element in blood formation, since it is a chemical component of hemoglobin, the coloring substance of red blood corpuscles. Other substances taking part in hemoglobin generation are pigment-complexes, parent substances of the hemoglobin molecule, and copper in minute traces. It is important to point out that iron, copper and the pigment-complexes are concerned only with hemoglobin formation. They in no way contribute to the many other constituents of the blood some of which are in solution as other mineral salts, proteins, amino acids and dextrose, and some in suspension as white blood corpuscles, platelets and the stroma of red blood corpuscles. Even the red blood cell stroma is only indirectly affected by iron and copper. In secondary or nutritional anemia the red

corpuscles decrease because they have no pigment to carry. Their number will increase, however, with an increase of hemoglobin, provided there is no impairment of the cell forming mechanism. It is thus evident that the food supply of iron and copper affects only the hemoglobin content of blood.

The whole process of blood regeneration is complex, involving many factors that may be affected by pathologic or disease conditions as well as by adequacy or inadequacy of the diet in iron. Anemia is a condition in which the blood is deficient in hemoglobin. It may be due to an inadequate diet, but pathologic conditions are frequently involved. Anemia and blood regeneration are not appropriate subjects for advertising addressed to the public. Blood building claims, therefore, should be excluded from food advertising.

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG Secretary

VETA-RONI

Manufacturer—Prince Macaroni Mfg. Company, Boston.

Description—Macaroni prepared from durum wheat semolina, soya bean flour, yeast and salt.

Manufacture—Durum wheat semolina, soya bean flour, yeast and salt with sufficient water are thoroughly mixed in a dough mixer, kneaded in a kneading machine and forced through dies to produce the desired forms (sea shells and spaghetti), which are dried and automatically packed in glassine bags.

Analysis (submitted by manufacturer) —	per cent
Moisture	11.7
Ash	1.5
Sodium chloride	0.2
Fat (acid hydrolysis method)	4.7
Protein (N X 5.7)	17.9
Lipoids	4.9
Reducing sugars as dextrose	0.6
Sucrose	2.4
Starch (alcohol precipitation)	53.4
Crude fiber	0.8
Carbohydrates other than crude fiber (by difference)	61.4

Calories—3.7 per gram 105 per ounce

BEECH-NUT STRAINED APRICOTS

Manufacturer—Beech-Nut Packing Company, Canajoharie, N. Y.

Description—Sieved apricots (dried without use of sulphur dioxide) retaining in high degree the natural mineral values but little of the vitamin C content of apricots.

Manufacture—California apricots, dried without the use of sulphur dioxide, are washed, soaked for two to three hours and cooked in glass-lined kettles in vacuum for about thirty minutes. The subsequent sieving and processing are the same as for Beech-Nut Strained Carrots (THE JOURNAL, Nov. 11, 1933, p. 1562).

Analysis (submitted by manufacturer) —	per cent
Moisture	7.5
Total solids	22.5
Ash	0.7
Fat (ether extract)	0.0
Protein (N X 6.25)	0.7
Reducing sugars as invert	5.9
Sucrose (copper reduction method)	10.4
Crude fiber	0.5
Carbohydrates other than crude fiber (by difference)	20.6
Calcium (Ca)	0.16
Phosphorus (P)	0.018
Copper (Cu)	0.0007
Iron (Fe)	0.0009

Calories—0.9 per gram 26 per ounce

Vitamins and Claims of Manufacturer—See these sections for Beech-Nut Strained Carrots (THE JOURNAL, Nov. 11, 1933, p. 1562).

CURTISS EASY ACES CANDY

Manufacturer—Curtiss Candy Company, Chicago

Description—Chocolate coated candy The coating contains sucrose, chocolate and cacao butter The inside contains sucrose, corn syrup, hydrogenated coconut fat, egg albumin, cocoa, salt, gelatin, and flavor (vanillin, tonka beans and coumarin)

Manufacture—The corn syrup and sucrose are melted and mixed with gelatin, albumin and water All ingredients in formula proportions are whipped in a beating machine to a maximum volume The mass is spread on steel plates, chilled and cut into pieces, which are chocolate coated, cooled to harden and wrapped

<i>Analysis</i> (submitted by manufacturer) —	per cent
Moisture	60
Ash	10
Fat (Roese Gottlieb method)	8.8
Protein (N × 6.25)	3.3
Reducing sugars as dextrose	14.4
Sucrose (copper reduction method)	45.1
Crude fiber	trace
Carbohydrates (by difference)	80.9

Calories—4.2 per gram 119 per ounce

(1) M S C BRAND FANCY GOLDEN
TABLE SYRUP

(2) M S C BRAND CRYSTAL WHITE
TABLE SYRUP

Distributor—Merchants Service Corporation, San Francisco California, Chicago and New York

Packer—D B Scully Syrup Company, Chicago

Description—(1) This syrup is the same as the accepted Banner Blue Corn Syrup with Cane Flavor (THE JOURNAL March 5, 1932, p 817), table syrup, corn syrup base (85 per cent) with refiners' syrup (15 per cent)

(2) This syrup is the same as the accepted D B Scully White Crystal Syrup (THE JOURNAL, April 15, 1933 p 1174) table syrup, corn syrup base (85 per cent) with rock candy syrup (15 per cent), flavored with vanillin and coumarin

HAWAIIAN FINEST QUALITY PINEAPPLE
JUICE (UNSWEETENED)

- (1) GOOD MORNING
- (2) LUCKY BOY BRAND
- (3) RIVAL
- (4) SNOWBALL BRAND
- (5) SUNBEAM
- (6) UNITED BRAND
- (7) WHITE VILLA

Distributors—(1) Good Morning Co Operators, Terre Haute Ind (2) Embassy Grocery Corporation New York (3) Rival Foods, Inc., Cambridge, Mass (4) G E Howard & Company, Newburgh, N Y (5) Austin Nichols & Company Inc New York (6) United Grocers Company Brooklyn (7) White Villa Grocers, Inc., Cincinnati and Dayton Ohio

Packer—Hawaiian Pineapple Company Ltd San Francisco

Description—Canned Hawaiian pineapple juice retaining in high degree the natural vitamin content, the same as the accepted Dole Hawaiian Finest Quality Pineapple Juice (Unsweetered) (THE JOURNAL June 3 1933, p 1769)

McCORMICK'S BEF BRAND PURF FOOD COLOR
A SOLUTION ALCOHOL 10%

- (a) BLUE, (b) BROWN, (c) GREEN (d) PEACH (e) PINK
(f) RED (g) VIOLET (h) YELLOW

Manufacturer—McCormick & Company Inc Baltimore

Description—Aniline colors in 10 per cent alcohol solution respectively (a) brilliant blue F C F (b) Tartrazine 640 80 Ponceau 3R, Fast Green F C F (c) Tartrazine 640 and Fast Green F C F (d) Orange I 150 and Tartrazine 640 (e) Erythrosine 773 and Amaranth 184 (f) 80 Ponceau 3R (g) Amaranth 184 and Fast Green F C F (h) Tartrazine

640 and Orange I 150, certified by the United States Department of Agriculture for use in foods

Manufacture—Aniline colors, certified by the United States Department of Agriculture for use in foods, are dissolved in distilled water, alcohol is added, and the solution filtered and bottled

<i>Analysis</i> (submitted by manufacturer) —	per cent
Moisture and alcohol	97.7
Total solids	2.3
Ash	0.1
Aniline color	2.2

Claims of Manufacturer—The colors used are certified by the United States Department of Agriculture

KREEMEX PANCAKE FLOUR

Manufacturer—Allied Mills, Inc., Kreemex Cereal Division, Greenville, Ohio

Description—A self-rising pancake flour containing standard patent soft wheat flour, soya flour, corn flour, dextrose, powdered skim milk corn starch, salt, calcium acid phosphate and sodium bicarbonate

Manufacture—Definite proportions of the formula ingredients are automatically mixed and packed in cartons

<i>Analysis</i> (submitted by manufacturer) —	per cent
Moisture	10.9
Ash	4.3
Fat (ether extraction method)	2.5
Protein (N × 6.25)	12.3
Crude fiber	0.6
Carbohydrates other than crude fiber (by difference)	69.4

Calories—3.5 per gram 99 per ounce

HEINZ STRAINED BEETS

Manufacturer—H J Heinz Company, Pittsburgh

Description—Strained beets retaining in high degree the natural vitamin and mineral content

Manufacture—Essentially the same as that for Heinz Strained Spinach (THE JOURNAL, Feb 25, 1933, p 577) and Heinz Strained Carrots (THE JOURNAL, March 4, 1933, p 663) Made from fresh vegetables only

<i>Analysis</i> (submitted by manufacturer) —	per cent
Moisture	89.5
Total solids	10.5
Ash	0.8
Fat (ether extract)	0.1
Protein (N × 6.25)	1.5
Reducing sugars as invert sugar	5.2
Sucrose (copper reduction method)	0.0
Crude fiber	0.6
Carbohydrates other than crude fiber (by difference)	7.5
Calcium (Ca)	0.02
Phosphorus (P)	0.04
Iron (Fe)	0.0016
Copper (Cu)	0.00019

Calories—0.4 per gram 11 per ounce

Claims of Manufacturer—Specially intended for infants children convalescents and for special smooth diets Only warming is required for serving

MEADS POWDERED WHOLE MILK WITH
DEXTRI-MALTOSE

Manufacturer—Mead Johnson and Company Evansville, Ind
Description—Spray dried pasteurized mixture of whole milk and Dextri-Maltose (essentially maltose and dextrins)

Manufacture—Milk produced under Chicago Board of Health inspection, is mixed with definite proportions of Dextri Maltose the mixture is pasteurized spray dried, and automatically packed in cans

<i>Analysis</i> (submitted by manufacturer) —	per cent
Moisture	2
Ash	5
Milk fat (Mojonner method)	19
Protein (N × 6.38)	18
Lactose (copper reduction method)	26
Reducing sugar as maltose	16
Dextrins (by difference)	14

* Calculated from analysis of component ingredient

Calories—4.7 per gram 133 per ounce

Claims of Manufacturer—For use in infant feeding as directed by a physician

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SATURDAY, APRIL 21, 1934

DEATHS OF PHYSICIANS PUBLISHED IN 1933

During 1933 the total number of obituaries published in THE JOURNAL was 3,354, which includes 145 Canadians. The deaths of 3,209 physicians of the United States were recorded, as compared with 3,142 in 1932 and 2,952 in 1931. The list includes 3 who died in the Philippines, 3 in China and 1 each in Hawaii, Puerto Rico, Central America, South America, Mexico, France, the Netherlands, Japan, Persia and Africa. The obituaries of 83 women physicians were published, as compared with 87 in 1932. The graduates of medical schools in the United States for the fiscal year ended June 30, 1933, numbered 4,895. Deducting the number of physicians whose obituaries were published, there was a net addition to the ranks of the profession for the year of 1,686, which, figured thus, is a decrease of 108 from 1932.

Ages—The average age at death of those classified as of the United States was 64.4, as compared with 64.1 for 1932. Two physicians lived to be 100 years old and 46 others lived to be 90 or more. Thirty-one physicians died between the ages of 25 and 29, 38 between 30 and 34, 68 between 35 and 39, 96 between 40 and 44, 179 between 45 and 49, 271 between 50 and 54, 379 between 55 and 59, 510 between 60 and 64, 445 between 65 and 69, 446 between 70 and 74, 345 between 75 and 79, 229 between 80 and 84, and 122 between 85 and 89. The month with most deaths was January, with 301.

Causes—Heart disease was again the leading cause of death, with 1,131 fatalities as compared with 1,101 for 1932. Some contributory causes are included in the tabulation, as they have been in former years. A report that the cause of death was "chronic nephritis and heart disease," for example, is so published in THE JOURNAL and is recorded on the statistical charts under both diseases. Of the deaths from heart disease, endocarditis or myocarditis was specified in 292, angina pectoris in 107 and pericarditis in 1. Cerebral hemorrhage was the second most frequent cause

reported, with 360 deaths, 18 additional deaths were reported as due to paralysis. Pneumonia was the third most frequent cause, lobar pneumonia was reported in 236 cases and bronchopneumonia in 77. Fourth on the list was cancer. Of 286 deaths caused by cancer, the stomach and liver were affected in 66 cases, the prostate gland in 32, the intestine in 27, the buccal cavity in 2, the female genital organs in 1 and the skin in 1, in 157 the part affected was not specified. Arteriosclerosis caused 248 deaths, and other diseases of the arteries 7, embolism and thrombosis caused 204, nephritis 194, of which 18 cases were specified as acute nephritis, uremia 79, diabetes 69, influenza 62, tuberculosis 56, and other diseases of the respiratory system 5, diseases of the prostate 43, and other diseases of the genito-urinary system 24, hypertension 41, appendicitis and senility 40 each, peritonitis and cirrhosis of the liver 33 each, septicemia 27, intestinal obstruction 23, and other diseases of the digestive system 28, ulcer of the stomach 21, hemorrhage 19, pernicious anemia and brain tumor 15 each, leukemia 14, gangrene and biliary calculi 13 each, asthma 12, granulocytopenia, cholecystitis and paralysis agitans 11 each, meningitis 10, chronic bronchitis 9, diseases of the liver 9, erysipelas 8, arthritis, encephalitis and hernia 7 each, pleurisy, goiter and Hodgkin's disease 6 each, cellulitis 5, benign tumors, aneurysm, diseases of the veins, softening of the brain, dementia paralytica and toxemia 4 each, undulant fever 3, Ludwig's angina, empyema, myasthenia, pellagra, epilepsy, sinusitis, otitis media, malaria, tabes dorsalis, drug addiction and mental diseases 2 each. Among other unusual causes of death given for 1 case each were typhoid, typhus, Addison's disease, actinomycosis, myelitis, paratyphoid, bronchopulmonary moniliasis, chronic muscular atrophy, acute dysentery, pancreatitis, linitis plastica, coccidioid granuloma, amebiasis, Raynaud's disease, ileus, multiple neuritis, exposure, Banti's disease, atrophic biliary cirrhosis, esophageal varices, pulmonary infarct, heat prostration, diphtheria, chronic poliomyelitis, food poisoning, lymphoblastoma, hypothyroidism, fracture, shock, tumor of the spinal cord, ruptured gallbladder and ruptured esophagus.

Accidental Deaths—One hundred and forty-eight physicians died as the result of accidents in 1933, compared with 158 in the previous year. Automobile accidents accounted for 75 deaths, 2 less than in 1932. In 1933, deaths from falls numbered 32, the second largest number due to accidental causes. Seven deaths were caused by drowning, 5 by burns, 4 by airplane accidents and 3 each from train accidents, overdoses of medicine, shooting and illuminating gas and skull fracture, and 1 each by injury to the hip, x-ray burns, electrocution, carbon monoxide poisoning and explosion. One physician met death by being kicked by a horse, and 1 by being gored by a bull. One was killed when he fell down an elevator shaft, 1 died as the result of hemorrhage due to strain sustained while

cranking a car, and 1 of laceration of his throat by a foreign body. In one case the nature of the accident was not specified.

Suicides and Homicides—Suicide was the cause of 70 deaths in 1933, 17 less than in 1932. Shooting accounted for 35 of these deaths, poison for 15, hanging and drugs 4, incised wounds and gas poisoning 3 each, jumping and chloroform 1 each, and in the remaining cases the method was not reported. There were 10 homicides by shooting, 2 by stabbing, 1 by poisoning and 1 victim was beaten.

Positions—Among the decedents were 157 who were or had been teachers in medical schools, 291 who served in the World War, 45 veterans of the Civil War, and 47 veterans of the Spanish-American War. Ninety-one had been health officers, 86 members of boards of education and 63 members of boards of health. There were 49 coroners, 44 mayors of municipalities, 21 members of state legislatures, 22 members of state boards of medical examiners, 17 members of the U. S. Army Medical Corps and 6 of the U. S. Navy Medical Corps. Twenty-nine bank presidents, 18 druggists, 17 authors, 14 missionaries, 12 members of city councils, 9 editors, 6 postmasters, 5 clergymen, 5 dentists, 2 lawyers, 1 congressman, 1 U. S. Senator, and 1 justice of the peace were included.

Association Officers—The obituaries published in 1933 of physicians who were or had been officers of the American Medical Association included 2 vice presidents, 3 trustees, 8 section officers and 4 members of councils. Twenty-one members or former members of the House of Delegates died during the year. Thirty-five presidents or former presidents of state societies and 5 state secretaries were included among the officials.

ABSORPTION AND EXCRETION OF SILICA

Although dust per se was early mentioned as a cause of pulmonary disease, and despite the fact that there has long been a tradition of hazard in the quarrying and cutting of granite and other silicious stone, according to McNally¹ it was not until 1860 that a demonstration was made of silica in lung tissue. An occupational disease of wide distribution, silicosis presents a unique problem in industrial hygiene. In spite of the numerous alleged causes of the disease, the primary factor in its etiology is still considered to be the inhalation of silica dust.² Not only is it extremely difficult to prevent or control the development of silicosis, but the details of the administration of modern industrial compensation constantly raise questions of cause of death and of culpability in proved cases.³ In bringing to bear

modern methods of research on the solution of this pressing problem in public health, it is obvious from long experience that recourse to experimental studies on lower animals is a most promising if not the only direction in which progress can be made. Of particular interest in this regard, therefore, are the recent investigations carried out by King, Stantial and Dolan⁴ in the Banting Institute at the University of Toronto.

After a quantitative method for the estimation of small amounts of silica had been devised, the concentration of this substance in body fluids and tissues was studied. The amount of silica in human urine and in the urine of cats and dogs was much less than that in herbivorous urine. That this situation is in large part referable to the intake of silica in the food was demonstrated by feeding rabbits on oats, carrots and wheat straw in one case and on white bread and tomato in the other. The urine contained from 12 to 27 mg. of silica per hundred cubic centimeters on the first ration and only from 0.7 to 4 mg. when the more refined food was consumed. The ubiquitous distribution of this substance is emphasized by its occurrence in the eggs of birds and in mammalian fetal tissues. It appears therefore, that soluble compounds of silicon are a more or less normal constituent of body fluids. Adult tissues as might be expected, vary considerably in their silica content; normal spleen contains about 15 mg. per hundred grams of dry tissue and normal lung about 140 mg. McNally states that a lung containing more than 200 mg. of silicon dioxide per hundred grams of dried tissue can be classed as silicotic.

The mechanism also of the excretion of silica was examined by the Toronto investigators. Suspensions of fine quartz dust were given by stomach tube; there was a prompt increase in the level of silica in the urine and this lasted for more than six hours. Essentially the same response was elicited when silicic acid was administered orally. It is striking that, despite the evidence of transport from the gastro-intestinal tract to the kidney, the amount of silica in the blood was changed little if any from the low normal concentration. In another experiment, silicic acid was given intravenously over a period of six hours. The urinary silica increased and there was an appreciable rise in the concentration of silica in the blood, but though the level of excretion in the urine was augmented for forty hours after the injection stopped, only about half of the silica given was accounted for.

In order to simulate the usual mode of entrance into the body, silicic acid was inspired by the experimental animal; in every case there was observed a moderately increased output of silica through the kidney. These studies have a bearing on a biochemical phenomenon long recognized but never entirely adequately explained, namely the solution and metabolism in the body of chemical compounds, like silica, which in the laboratory

¹ McNally, W. D. *Silicon Dioxide Content of Lungs in Health and Disease*. J. A. M. A. **101**: 584 (Aug. 19) 1933.
² Lanza, A. J. *Etiology of Silicosis*. J. A. M. A. **101**: 583 (Aug. 19) 1933.
³ *Silicosis: Duty of Employer at Common Law*. J. A. M. A. **101**: 1503 (Nov. 4) 1933.

⁴ King, E. J. and Stantial, H. *Biochem. J.* **27**: 990 1933. King, E. J., Stantial, H. and Dolan, M. *ibid.* **27**: 1002 1007 1933.

are noted for their resistance to chemical treatment. The foregoing studies indicate that silicon is absorbed and is promptly excreted from the body through the kidneys, i. e., the renal threshold for this element or its compounds is low.

THE LONGEVITY OF THE ERYTHROCYTE

"Without doubt, the red corpuscles have, like all other parts of the organism, a tolerably definite term of existence, and in a like manner die and waste away when the portion of work allotted to them has been performed."¹ This is a characteristic textbook statement that recognizes a "birth and decay" of the erythrocytes without formulating the details, which would be extremely interesting. How long do the colored corpuscles survive before they disintegrate? Unfortunately, one cannot earmark an erythrocyte and follow its fate in the circulation or in some secluded organ. Several indirect methods of estimating the longevity of the red cells have been applied experimentally. One of these has been to note the output of a bile pigment, bilirubin, a derivative of hemoglobin, as an index of erythrocyte destruction. The inadequacy of this plan has been discussed by several competent observers. Various factors are known to affect independently the amount of bilirubin secreted. Another procedure has been measurement of the time requisite for replacement regeneration after removal of a known fractional part of the hemoglobin or of the corpuscular volume.

From hemoglobin regeneration rates, Whipple and Robbins² have estimated that 115 Gm. of hemoglobin constitutes the portion destroyed each week as normal functional "wear and tear" (maintenance factor) in dogs having a blood volume of approximately 550 cc. They indicate that the blood overturn requires about five weeks. This approach to a solution of the problem has been criticized because studies on erythrocyte regeneration show that the hemorrhage preceding regeneration constitutes a supernormal stimulus to the erythrogenic marrow, so that fractional parts of the blood after hemorrhage are undoubtedly replaced more rapidly than equivalent parts under normal "wear and tear." Escobar and Baldwin³ of the University of Southern California, having recorded their objection to all of the preceding plans, suggest that the longevity of the erythrocyte in mammals may be determined by increasing the erythrocyte volume in the circulation by means of short exposure periods to low pressures of oxygen. The number of days elapsing from the end of the exposure period to the attainment of the normal red cell volume (or count) indicates approximately the duration of life of the erythroplastid in the circulation. The experiments on man were carried out after a sojourn for several days at altitudes

of from 9,000 to 10,500 feet. The longevity of the erythrocytes was thus found to be between eighteen and thirty days.

If this is even an approximation to the truth, it is evident that the hematopoietic apparatus must be kept rather busy during the three-score years and ten allotted to man.

Current Comment

REGISTRATION OF COLLEGES UNDER HARRISON NARCOTIC ACT

Medical colleges use opium and coca leaves and their derivatives and compounds primarily to familiarize students with the properties of such drugs, a use approximating that to which they are put by practitioners of medicine. They may use them, however, to a certain extent, for research and experimental purposes. Colleges other than medical colleges use them solely for such purposes, which approximate, according to a recent ruling of the acting commissioner of internal revenue,¹ the use of such drugs by compounders of them more closely than their use by practitioners. Medical colleges, therefore, may ordinarily be registered under the Harrison Narcotic Act as "practitioners," on payment of the annual tax for that class of registrants, \$1. When colleges, whether medical colleges or not, use such drugs for analytic and experimental work, they must be registered as "compounders" and pay the annual tax for that class, \$24 a year. Collectors of internal revenue have been instructed to ascertain, in the registration of educational institutions, the purpose for which narcotic drugs are to be used, in order to insure proper registration and tax payments.

LOSS OF HEAT FROM EXTREMITIES

The arms and legs of man are customarily thought of primarily in connection with their functions of prehension and locomotion. However, the characteristic shape of these appendages and the fact that they extend out into the surrounding atmosphere render them of particular importance in connection with those physiologic activities related to skin surface. It has been calculated that approximately two thirds of the entire surface of the body is accounted for by the area of the arms, hands, legs and feet. As about 75 per cent of the heat loss from the body takes place through conduction, radiation and convection from the skin surface, it might reasonably be expected that the extremities would assume an important role in both the conservation and the loss of heat. A recent study by Maddock and Coller¹ has yielded quantitative data bearing on this point. The movement of blood toward or away from the body surface in various localities was measured in human subjects by determining the skin temperature. Heat is produced by metabolic chemical reactions in the body and brought to the surface by the blood, where it is dissipated. It was observed that an

¹ Halliburton W. D. and McDowall R. J. S. *Handbook of Physiology*. Philadelphia: P. Blakiston's Son & Co. 1929.

² Whipple G. H. and Robscheit Robbins F. S. *Am. J. Physiol.* 72: 395-408 (May) 1925.

³ Escobar R. A. and Baldwin F. M. *The Longevity of the Erythrocyte*. *Am. J. Physiol.* 107: 249 (Jan.) 1934.

¹ Minn. 4156 (MT ST) Vol. XIII Internal Revenue Bulletin 12 Service Ruling 6713.

¹ Maddock W. G. and Coller F. A. *Am. J. Physiol.* 106: 579 (Nov.) 1933.

increase in the surrounding temperature was accompanied by an augmented skin temperature, the extent of the change was least on the skin of the forehead and trunk and greatest in the extremities. The dissipation of heat was more marked in the legs than in the arms and increased distally. The influence of the basal metabolic rate on heat loss was similarly examined in both normal and abnormal individuals. Here again an increased heat production was accompanied by a higher level of heat loss and the topographic distribution again emphasized the significance of the extremities in this respect. The toes seem especially responsive to the necessity of the body to lose heat, there was demonstrated a linear relationship between the basal metabolic rate and the dissipation of heat from the skin of the great toe. It appears that the exigencies of temperature control require movements of blood of considerable magnitude to and from the periphery. This circumstance accounts, in part, for the changes in volume of the extremities—the swelling in summer and the shrinkage in winter. As body heat must be conserved in winter and heat is lost with particular readiness from the arms and legs, one may well view with some apprehension the current habits of dress which encourage the omission of stockings from the costume, especially among little children, whose temperature equilibrium is none too secure at best.

Medical Economics

A CONSULTATION SERVICE FOR PATIENTS OF MODERATE MEANS

(Report of the First Two Years)

GEORGE BAHR, M.D.
NEW YORK

Because of the growing complexity of modern medicine, the general practitioner frequently requires additional diagnostic facilities to supplement his own resources, as well as the advice and guidance of more experienced internists and specialists. Persons of very limited means, who constitute the great majority of private patients can usually afford the additional services of a single specialist or a roentgen or other laboratory examination, if the family physician can be sure which one will solve the diagnostic or therapeutic problem. But the cost is often prohibitive for this class of patients if the condition requiring investigation is clinically obscure and requires multiple consultations and laboratory examinations in order to establish a diagnosis. The patient is then apt to gravitate from his private physician to the public wards of a hospital both for diagnosis and for therapy.

In order to keep this class of patients out of the wards and in the hands of their family physicians the medical staff of the Mount Sinai Hospital in cooperation with the trustees of the hospital, inaugurated an experiment about two years ago the details of which have been published¹ in *THE JOURNAL*. A consultation service was established for patients of moderate means differing in the following respects from other diagnostic clinics

1 It was organized by the medical staff as an independent detached unit of the hospital—not as part of a dispensary.

2 No patients are accepted unless referred by their physicians.
3 The economic level of eligibility is limited by a maximum income of \$2,400 a year for unmarried individuals and \$4,000 a year for total family income.

4 The work is limited exclusively to diagnosis.

5 No therapy is practiced, on completion of the clinical investigation the patient is returned to the referring physician with as complete a diagnostic opinion as possible, together with detailed advice concerning appropriate therapy.

6 The internists, surgeons and specialists are the members of the visiting staff of the hospital proper.

7 A minimum of 50 per cent of the gross income is available to remunerate the medical staff.

8 A flat fee of \$35 is charged for all patients regardless of the nature of their illness or the number of consultations or laboratory examinations required.

9 To avoid interference with the practice of individual consultants, the fee is set at about double the average amount charged patients of this class by a specialist for an individual consultation or major laboratory examination.

10 The hospital derives no profit, directly or indirectly, from the operation of the consultation service.

The project was designed as an experiment in placing the professional and physical facilities of a large, well equipped general hospital at the disposal of the practicing physicians of the community for the benefit of their patients of moderate means. At the time of inauguration of the consultation service it was decided that the experiment would be tried for a period of two years. Its continuation thereafter was to depend on whether its need had been established by the volume of work and the number of physicians in the community who had utilized its facilities during this period, and whether its successful operation had been carried on without evidence of conflict or criticism from the physicians of the community or the members of the medical staff of the hospital.

The present report is now made at the termination of the preliminary trial period of two years. The verdict of the medical staff of the hospital is indicated by the fact that most of them have referred patients and have voluntarily participated in the work of the consultation service, including heads of the clinical departments whenever the nature of the diagnostic problems warranted their services.

The place which the Consultation Service of the Mount Sinai Hospital has achieved in the community is indicated by the

TABLE 1—Geographic Distribution of Physicians

Manhattan	457
Bronx	100
Brooklyn and Queens	215
Richmond	19
New York state outside of Greater New York	82
Westchester	27
Long Island	46
Other parts of New York State	9
Connecticut	74
New Jersey	117
Pennsylvania	4
Massachusetts	1
Canada	1
	1,090

number of physicians who have referred patients to it. During the two years of its operation more than 1,000 physicians referred almost 2,000 patients for investigation.

Because of the cosmopolitan character of the city and its large transient population a similar tabulation of patients would show a much wider distribution. It would not give as accurate an idea of the source of work as the tabulation of the geographic distribution of the physicians from whom the patients were received.

As shown in table 1 457 of the 1,090 physicians who referred patients to the consultation service practice in Manhattan

From the Mount Sinai Hospital, New York.
1 Bahr, George. A Consultation Service for Patients of Moderate Means. *J. A. M. A.* 98: 2159 (June 11) 1931.

(42 per cent), 418 practice in one of the other boroughs of Greater New York (38 per cent) and 215 (or 20 per cent) reside outside of New York, chiefly in New York State, Connecticut and New Jersey. The out-of-town consultations have therefore come almost entirely from the suburban communities lying within the so called metropolitan area (a radius of 50 miles).

TABLE 2—Number of Patients Referred by Individual Physicians

1 physician referred 50 patients	1 physician referred 8 patients
1 physician referred 45 patients	9 physicians referred 7 patients
1 physician referred 20 patients	16 physicians referred 6 patients
1 physician referred 18 patients	20 physicians referred 5 patients
1 physician referred 14 patients	40 physicians referred 4 patients
1 physician referred 13 patients	61 physicians referred 3 patients
2 physicians referred 12 patients	193 physicians referred 2 patients
2 physicians referred 11 patients	617 physicians referred 1 patient
2 physicians referred 10 patients	
7 physicians referred 9 patients	
1 090	1 092

TABLE 3—Financial Statement

	1932	1933
Gross Income	\$30,192.40	\$33,215.00
Donations	50.00	
	\$30,242.50	\$33,215.00
Fees to clinicians	\$15,236.25	\$16,700.77
Salaries to employees	6,221.53	6,021.68
Operating costs*	14,023.06	16,625.71
Net operating loss	5,142.63	5,517.87
Loss per patient	6.94	6.86

* Operating costs include an equitable part of the cost of services shared with other departments (laboratories, maintenance, telephone, bookkeeping, laundry, insurance) but no capital or interest charges.

As is indicated in table 2 two thirds of the patients (1,335) were received from 473 physicians, the number referred by each of these men varying from two to fifty-six. This group may therefore be regarded as the regular clientele. The physicians who referred the largest numbers practice as a rule among the poor, but some of the best patrons of the service were medical consultants and specialists. They referred patients of limited means whom they had seen in consultation with family physicians and on whom they had been unable to make a diagnosis. They would otherwise have been obliged to send these patients into the public wards of a hospital for study.

In spite of the financial depression and the amount of unemployment among this class of the population, the number of patients investigated during 1933 was slightly more than in the previous twelve months (seventy-three). Furthermore, no steps were taken during the year to remind physicians of the existence of the service. As a matter of fact, considerably more patients were referred by their physicians in 1933 than in 1932, but at least 25 per cent were obliged to cancel their appointments because they were unable to pay the fee of \$35. As the operating deficit was \$5,517.87, or about \$5.86 per patient, and the diagnostic service is therefore rendered at less than cost, the fee seems to be fair.

Although the consultation service was operated at a loss of \$5.86 per patient, the cost is small if compared with the value of the services rendered to the patients and to the community. To the physicians who referred patients, the consultation service functioned as more than a mere guide to an understanding of the medical problems and the treatment of the individual cases. To many it has served as a form of postgraduate education, keeping them abreast of the modern methods of diagnosis and therapy.

The consultation service may be regarded as a contribution to the study of the widely discussed problem of 'the costs of medical care,' concerning which there has been much talk and but little experiment. Many of the patients would previously

have found their way into the wards of the hospitals. The cost of the diagnostic investigation both to the patients and to the hospital would have been much larger. None of the physicians who participated in the clinical studies would have been compensated for their services and the family physicians would have risked the permanent loss of their patients. The patients, if employed, would have been prevented from earning their living during the period of hospitalization which, one can assume, would have averaged at least ten days. At the ward rate of \$3 a day, the diagnostic investigation would have cost them at least \$30. At the same time the cost of this patient to the hospital would have been about \$3 more a day than the maximum ward rate or a total of not less than \$30 per patient compared with a net cost of \$5.86 per patient in the consultation service.

The service has been protected as far as possible from abuse by the fact that patients are accepted if referred by physicians who have been acquainted with the economic limitations of eligibility, and the patients are interrogated before admission. To our knowledge the service has rarely been abused. This is indicated by the fact that only one patient in about 2,000 subsequently entered the private pavilion of the hospital for a short period, although a great many who were found to require hospitalization for operation or special forms of therapy were referred by their physicians to the semiprivate and public wards.

By furnishing a diagnostic service of unlimited thoroughness at low cost to persons of limited means, the institution has given these patients a type of complete service which they could not otherwise have secured or it has enabled them to conserve their slender resources for the subsequent treatment of their disease. In this manner it has undoubtedly enabled a large number of physicians to retain private patients whom they might have lost to the public wards and clinics.

Fifth Avenue and One Hundredth Street

Association News

ANNUAL CONGRESS ON MEDICAL EDUCATION, LICENSURE AND HOSPITALS

Thirtieth Annual Meeting held in Chicago Feb. 17 and 18, 1934
(Continued from page 1234)

DR. G. M. WILLIAMSON, Grand Forks, N. D., in the Chair

THE FEDERATION OF STATE MEDICAL BOARDS OF THE UNITED STATES

Traffic in Narcotics by Licensed Physicians

MR. H. J. ANSLINGER, Washington, D. C. One of my duties as Commissioner of Narcotics is to determine, with the advice of the United States Public Health Service, the quantities of crude opium and coca leaves that shall be imported into the United States under the Narcotic Drugs Import and Export Act. No supply of these drugs is permitted to be imported for other than medical and scientific needs, and no morphine, codeine or cocaine or any other opium or coca leaf derivative may be imported under any circumstances.

The average normal medical need of the United States, in the absence of epidemic conditions, is represented by 120,000 pounds of crude opium and approximately 225,000 pounds of coca leaves. The average total sales of morphine and codeine, the more important opium derivatives, are about 100,000 ounces of the former and about 140,000 ounces of the latter per annum. Almost the entire quantity of these drugs is dispensed or prescribed by the medical profession, although an appreciable quantity is manufactured into the so-called exempt preparations which may be sold directly to the consumer for medical purposes by the retail druggist.

Restriction of the manufacture, sale and use of narcotics to medical needs is not only an independent national policy, as

outlined in the provisions of the federal narcotic laws but also a definite international obligation under the Hague Opium Convention of 1912 and the more recent Manufacturing Limitation Convention of 1931.

Under the Harrison law there are about 150,000 registrants in the practitioner class, which includes physicians, dentists, veterinary surgeons and hospitals. It gives me pleasure to report that, with respect to the great majority of these, little, if any, difficulty is had in the matter of due observance of the federal narcotic laws. Some practitioners, however, step over the borderline of ethics and sell or dispense narcotics without reference to bona fide professional practice. About three years ago I caused to be made an informal survey of persons registered as practitioners or druggists, concerning whom there were reasonable grounds for believing that drug addiction existed. The names of about 1,700 such registrants were furnished, most of them being in the practitioner class. The survey made in this country checks with a recent survey made in Germany, which reported to the League of Nations in April 1932 that the prevalence of addiction in the medical profession reached one in every 100. In the general population of the United States the Public Health Service has estimated that there is about one addict in every 1,000. In the general population in Germany there is an addict in every 10,000, according to their German survey. The bureau seeks the assistance of the state boards in eliminating these sources of diversion of narcotic drugs by revocation of licenses to practice theretofore issued to the offending physicians. Some of your boards have no power to revoke licenses for narcotic violations. We did report to the state licensing boards over the period from Oct 1, 1930, to Dec 31, 1932, the names and the facts in the cases against 360 physicians who had been convicted of violating the federal narcotic law, and of 302 other physicians who were found to be narcotic drug addicts according to our investigations. Twelve additional physicians were also reported who had not been convicted but against whom there was evidence of gross narcotic irregularities. We have only reported the flagrant cases, and we have tried to be fair. Of those 705 cases reported, there were revoked, 39 suspended 5, placed on probation, 24, admonitions, 20, dismissed no action taken 66, not licensed, 42. I want to make special mention of the effective action taken in cases involving narcotic irregularities by California and Oregon and, particularly at this time to express our appreciation for the intense cooperation of Dr Pinkham. We have received a fair degree of cooperation from Colorado, Illinois and Kansas, but, generally, the results have been discouraging and I wish to solicit your valuable cooperation to the end that prompt action may be taken in all cases to eliminate the unfit members of the profession when the facts justify the procedure.

DISCUSSION

DR WALTER L. TREADWAY, Washington, D. C. More satisfactory results in the professional use of habit-forming narcotic drugs might be obtained through the medium of instruction to professional students and to practitioners, and through the medium of an authoritative memorandum for guidance in this problem. It is probable that a great deal may be accomplished in this field through a concerted educational program within the profession. Such an educational program bears upon the subject of preventing further addiction. The desirability of a concerted educational program becomes more apparent when it is realized that the abusive use of habit-forming narcotic drugs is widespread throughout the United States. Drug addiction constitutes a medicosocial problem of importance. Although federal agencies are charged in law with certain functions respecting this medicosocial problem it is nevertheless of sufficient importance to enlist the support of local and state governments, of local state and national associations and particularly of those agencies concerned with licensing and regulating the practice of medicine. Experiences have indicated that ambulatory treatment of drug addiction is unsound and impracticable of application. The experiences of clinics established in New York and other places throughout the country for the purpose of furnishing addicts with drugs in nondiminishing doses proved impracticable and undesirable.

The migration of addicts to the areas served by these clinics an increased traffic in drugs occasioned by the policy, and the abuses and conniving of officers, addicts and others made it necessary for the federal government eventually to condemn the practice. Sometimes well meaning but misguided physicians have, through sympathy, furnished addicts with drugs to satisfy addiction and subsequently found themselves overwhelmed with individuals demanding drugs. As a result, the physician accidentally finds himself in the position of a trafficker in these substances. An educational program may prevent these accidents. The Federation of State Medical Boards can be of great assistance in these matters.

DR H. M. PLATTER, Columbus, Ohio. I should like to ask Mr. Anslinger whether, in case a physician has been convicted of a violation of the narcotic law, federal officers have the right to withhold from him his narcotic permit, or is it necessary for state boards to suspend or revoke it in order to protect him?

MR. ANSLINGER. We have not the power to withhold registration of any doctor who wants to register, after conviction, or carry on and order narcotics after conviction. We have no power to stop him. He may go down to the Collector of Internal Revenue and get his tax stamp. Sometimes the court orders the man not to register for a certain period.

DR PLATTER. Suppose we cite a man before a state hearing for revocation or suspension of his license and he agrees with us not to reapply for a permit except with our endorsement. Could that be done?

MR. ANSLINGER. He could register nevertheless.

DR T. J. CROWE, Dallas, Texas. I want to compliment Mr. Anslinger for the work he has done for the medical profession. Last November we had before the Texas board forty men who were addicts. Commissioner Anslinger had his force in our meeting to present the evidence on these men, as a result of which we revoked the licenses of seven and have thirty on probation. Commissioner Anslinger and his department refuse to give a narcotic permit to any practitioner of Texas who is not registered in the state board, which is a wonderful help.

DR E. J. ENGBERG, St. Paul. I hope that the department will in the future furnish us as promptly as possible the names of all whose licenses are revoked in any of the states for drug addiction or violation of the narcotic law. If we get that information quickly we are justified in acting, but if it comes six years after conviction it is not proper that we should take any more action than to get in contact with that man and let him know that he is under supervision.

MR. ANSLINGER. We are going to prepare a list of the physicians whose licenses have been revoked in the several states and send them out to the state medical boards.

DR WALTER L. BIERRING, Des Moines, Iowa. May I ask to what extent narcotic permits are issued to osteopathic physicians?

MR. ANSLINGER. It depends on the law of the particular state. For instance, if under the state law the osteopath is permitted to handle narcotic drugs and he is licensed by the state board he can be registered under the Harrison act, but that is something which must be corrected in the state laws. We have no power to deny registration to osteopaths when the state law permits it.

DR BIERRING. In Iowa they are operating under a previous ruling of the attorney general permitting osteopaths to prescribe morphine.

MR. ANSLINGER. That holds true in other states.

DR G. M. WILLIAMSON, Grand Forks, N. D. In North Dakota the attorney general of the state ruled that an osteopath could not prescribe drugs or use narcotics so all the narcotic licenses or permits that had been issued to osteopaths in North Dakota were recalled. Osteopaths cannot get a permit in North Dakota.

DR W. C. WOODWARD, Chicago. The rule is that if a person is authorized by state law to prescribe narcotic drugs the Bureau of Narcotics and the Commissioner of Internal Revenue of the United States have no authority but must register him. If the courts of the state have interpreted the

state law, then the interpretation of the courts is binding. However, if the attorney general, in the absence of a court decision, has interpreted the state law, I believe you will find that the opinion of the attorney general will be binding until some one raises the issue in the courts of the state.

DR J W BOWERS, Fort Wayne Ind. In Indiana we rely on court findings because they appeal their case, and it is always reversed, or invariably so. We cannot suspend but must revoke, and we can always make it stick under those circumstances.

MR ANSLINGER. A compromise is always an admission that one can go through with the prosecution. Cases are compromised for a number of reasons. Sometimes witnesses are in another jurisdiction or have died or have left the service. We never compromise a case unless the United States attorney definitely makes a statement that he does not believe the case should be prosecuted.

DR IRVIN D METZGER, Pittsburgh. In Pennsylvania our chairman of the bureau reported to us some time ago that there are seventy-five doctors of the state on this list of suspected addicts. We have established this regulation in our hospitals, so far as interns are concerned, that no dose of narcotics shall be repeated excepting after the patient has been seen by a physician in a hospital, an intern probably, and the chief shall check up when he returns the following day, to see whether or not he approves that prescription. In other words, that is not permitted to be determined by the nurses. Let us get these young fellows started right and we shall have relatively little trouble with them later. We have had to revoke a number of licenses, in all cases we have had the heartiest cooperation by the federal department. The worst cases are the traffickers, fellows that simply have no conscience in the matter and who have no sense of responsibility, and, believe me, that is the last type of person that should practice medicine of any kind.

MR ANSLINGER. Outside of Pennsylvania, California is the only state where there is a central state agency to which the federal government can go and put its problem on the table. In the other states there isn't any central body to which we can go. In some states the state board of health is supposed to administer the law, but we don't have any particular individuals like the man in charge of your bureau and like the man in charge of the bureau in California where we have almost weekly correspondence about certain cases.

The Use of the Injunction Procedure in Enforcing Medical Practice Acts

F MANLEY BRIST, LL B, St Paul. A writ of injunction for the purpose of this discussion, may be defined as an order of court forbidding the defendant to engage in the practice of medicine unless he is lawfully licensed so to do. The writ forbids the practicing and makes the defendant liable to punishment for contempt of court if he thereafter engages in the practice, contrary to the order of the court. Several states are using this method of regulating the practice of medicine so far as nonlicensed individuals are concerned, the outstanding example perhaps being the state of Iowa.

Every one engaged in the enforcement of laws pertaining to the practice of medicine without a license is familiar with the difficulties encountered, some of which are: 1 Lack of cooperation on the part of local authorities. 2 Misguided confidence reposed in quacks by persons in the local community. 3 Delay in bringing the defendant to trial with the result that invariably he continues to practice in the meanwhile. 4 Difficulty encountered in convincing some juries beyond a reasonable doubt that the law has been violated and that the defendant is guilty. 5 Disadvantage of the state not having the right to appeal in the event of an adverse decision.

The most frequent objection offered by the defendants to the use of the injunction is that it deprives them of a trial by a jury. The use of the writ of injunction involves the obtaining of sufficient evidence on the part of the state to make out a prima facie case that the defendant is engaged in the unlawful practice of medicine. The facts are usually presented to the court in the form of a petition or bill in equity praying that a writ of injunction issue against the defendant. The writ is

served on the defendant and requires him to appear in court at a specified time. The matter is then heard on the merits by the court without a jury.

The use of the injunction to control the unlawful practice of medicine has demonstrated in several states that it has many advantages, some of which are that it (1) affords a speedy remedy in a civil proceeding before the court without a jury, (2) gives the state the right of appeal in the event of an adverse decision in the lower court, (3) produces greater cooperation between state and local enforcement agencies, (4) still leaves available criminal prosecution if necessary or desirable, (5) minimizes the likelihood of "local influence" and (6) is less expensive to the state by eliminating jury costs.

DISCUSSION

DR CHARLES E HUNISTON, Chicago. In Illinois the quo warranto proceeding has been run through to a very logical end and the records are available to any state board that would like them. The whole thing is in a form that is ready to be served up in any court. The practice of medicine by a corporation is illegal in every state because a corporation cannot qualify. What are we going to do in the case of corporations? Quo warranto is effective if it is followed up. The injunction might be part of the follow up, and the injunction is effective. One way or another, warfare on the medical underworld should be more active. I do not share all of this peaceful attitude of letting criminals have their way.

DR W C WOODWARD, Chicago. Lest the representatives of our boards of examiners go home with too great expectations of what they may accomplish by the use of injunction proceedings, I call attention to the fact that where injunction proceedings have been successful, with a single exception so far as I know, they have been based on statutes. If you are going to be successful in your proceedings under the laws relating to injunctions, the first thing that is requisite is to go to your legislatures and procure adequate statutes for that purpose. The law does not prohibit the practice of the healing arts but the most that it can do is to regulate it. So the law says only that a person who desires to practice medicine may do so, but he must do so under these conditions and in the following manner, and that is as far as the state is able to go. The very basis of the injunction proceeding is to proceed against a person for something he has not done, in other words, it is to prevent him from doing something that will work an injury that cannot be satisfied by prosecution criminally or cannot be satisfied by damages in civil prosecution. Under those conditions the law says that the court may enjoin this person from working this injury. Obviously, if there is anything that cannot be satisfied by payment in damages, it is the loss of life or the loss of health. It is worth while for you to go home and examine your medical practice acts and your statutes relating to the issue of injunctions to see whether it may not be expedient to ask for legislation that will enable you to proceed along that line.

(To be continued)

MEDICAL BROADCASTS

National Broadcasting Company

The American Medical Association broadcasts on a coast to coast network each Monday afternoon from 4 to 4:15 Central standard time (5 o'clock Eastern standard time, 3 o'clock Mountain standard time, 2 o'clock Pacific standard time).

The next three broadcasts will be as follows:

April 23 Sanitation Goes Modern W W Bauer M D
April 30 Science Saves Babies Morris Fishbein M D
May 7 Hospital Day W W Bauer M D

Columbia Broadcasting System

The Association broadcasts on a Western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4:30 to 4:45 Central standard time. The next three broadcasts will be as follows:

April 26 Million Murdering Death W W Bauer M D
May 3 Facts or Fallacies W W Bauer M D
May 10 Things Men Fear Morris Fishbein M D

UNIVERSITY OF WASHINGTON
SCHOOL OF NURSING
HARBORVIEW DIVISION
MEDICAL NEWS

VOLUME 102
NUMBER 16

1309

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS EDUCATION PUBLIC HEALTH ETC.)

ARKANSAS

Society News—Dr Edward William A Ochsner, New Orleans, addressed the Pulaski County Medical Society, January 18, on "Acute Cerebrocerebral Injuries," and, January 22, Dr Roland M Klemme, St Louis, "Diagnosis and Treatment of Brain Tumors" The physiology, pathology and treatment of hypertension were discussed at a meeting of the society, February 19, by Claude H McDonald, DSc, Dr Harvey S Thatcher and Dr Leonidas F Barrier—At a meeting of the Sebastian County Medical Society, February 13, Dr Paul L Mahoney, Little Rock, discussed "Hoarseness as a Symptom"—Speakers before the Mississippi County Medical Society at Blytheville, February 6, were Drs Peter Whitman Rowland Jr and Joseph A Crisler Jr, Memphis, on "Early Recognition of Disturbances of Coronary Circulation" and "Atypical Hyperthyroidism," respectively

CALIFORNIA

Personal—Dr William C McBride Jr has been appointed health officer of Dorris in Siskiyou County, succeeding Dr Dragutin D Todorovic—Dr George Thomason, Los Angeles, has been appointed a member of the state board of medical examiners, succeeding Dr Charles T Sturgeon, Los Angeles, resigned—Dr George Parrish has been named health officer of Los Angeles, succeeding Dr Charles W Decker Dr Parrish held the position several years ago—Dr William J Blevins, Woodland has been appointed health officer of Yolo County, succeeding Dr Fred R Fairchild who held the position for many years—Dr Donovan C Oakleaf has been appointed health officer of Cloverdale, succeeding Dr Ira A Wheeler

State Medical Meeting at Riverside, April 30-May 3—The sixty-third annual session of the California Medical Association will be held at Mission Inn, Riverside, April 30-May 3, under the presidency of Dr George G Reinle, Oakland Three general meetings will be held At the opening one, Chester Rowell, editor of the San Francisco Chronicle will speak and Dr Alfred K Haywood, superintendent of Vancouver General Hospital, Vancouver, B C, will give an address on "Voluntary Canadian Plans—Studies and Developments", at the second, the speakers will be Drs Russell L Cecil, New York, and Irvine McQuarrie, Minneapolis, on "Modern Aspects of Focal Infection and Convulsive Disorders Related to Disturbances of Metabolism," respectively Six plans for medical hospital service sponsored by county medical societies will be discussed at the third meeting by Drs Alson R Kilgore, San Francisco, William E Mitchell Oakland, John Hunt Shephard, San Jose Axel E Anderson Fresno, and Cornelius Van Zvalenburg Riverside Dr Phoebe Berman, Los Angeles, will speak on 'The San Fernando Plan', Dr Walter M Dickie, work of the department of public relations, and Mr John M Pierce Los Angeles the future status of county hospitals There will be a community meeting Monday evening April 30, at which the following program will be presented

Dr Alson R Kilgore San Francisco What the California Medical Association Is Doing About Cancer
Dr John D Camp Rochester Minn Use of X Rays in Medical Diagnosis
Dr Russell L Cecil New York The Arthritis Problem
Dr Francis M Pottenger, Monrovia The Benefits of Preventive and Curative Medicine

A symposium on arthritis will be presented at a joint meeting of the sections on general medicine and radiology, Monday afternoon, with the following speakers Drs Cecil and Camp Lovell Langstroth, Arthur L Bloomfield and James F Rinehart, San Francisco Ellis W Jones Los Angeles and Rodney F Atsatt and Luella E Patterson Santa Barbara The sections on medicine and pathology will have a symposium on annual borne diseases Wednesday afternoon with speakers as follows Drs John C Ruddock, Los Angeles on undulant fever, LeRoy H Briggs San Francisco relapsing fever James B Luckie, Pasadena psittacosis Hiram E Miller San Francisco, tularemia Edward L Munson San Francisco Rocky Mountain spotted fever, Wilfred H Kellogg Berkeley plague

and Frederick Proeschler, San Jose, rabies Conferences will be conducted by the cancer commission of the association Sunday April 29, one dealing with pathology, the other with radiology

COLORADO

Immunization Campaign—A drive to immunize children against diphtheria and smallpox was recently launched in the city and county of Denver In compliance with the request of the Rocky Mountain Pediatric Society, an immunization committee was appointed from the Denver County Medical Society Every physician in the city was invited to attend specially arranged demonstrations of technic All patients are to be reported to the health department Physicians thus certified are given cards entitling them to vaccine from a distribution center According to the April issue of *Colorado Medicine*, 200 Denver physicians have thus far participated in the plan Publicity is carried on through the theaters, newspapers, radio and parent-teacher organizations, and twenty nurses are visiting parents to create the proper attitude toward immunization

CONNECTICUT

Personal—Dr John F Fulton professor of physiology, Yale University School of Medicine, New Haven, delivered the annual lecture of the Alpha Omega Alpha Honorary Medical Society at Washington University School of Medicine, St Louis, Mo, April 4 his subject was "The Frontal Lobe Its Past, Present and Future"

Hartford County's Annual Meeting—Charles-Edward A Winslow, Dr PH, Anna M R Lauder professor of public health, Yale University School of Medicine, New Haven, gave the principal address before the Hartford County Medical Association at its one hundred and forty-second annual meeting in Hartford, April 3 His subject was "Group Purchase of Medical Care" Dr Oran A Moser, the retiring president, spoke on "The Family Doctor"

Institution for Mental Patients Needed—A meeting was called in Hartford, March 19, to discuss the need of a new institution to care for the feeble-minded of the state It was pointed out that the Mansfield State Training School for the mentally deficient is inadequate to care for the hundreds of defective children and adults urgently in need of institutional care and treatment There are at present more than 1000 persons on the waiting list Speakers at this special meeting included Stanley P Davies Ph.D, general director, Charity Organization Society of New York Dr E Van Norman Emery, medical director of the Connecticut State Society for Mental Hygiene, and Judge Walter H Clark, president of the state department of public welfare, who presided

DISTRICT OF COLUMBIA

Medical Bills in Congress—S 450, empowering the health officer of the District of Columbia to authorize the disinterment and reinterment of bodies in cases in which death has been caused by contagious diseases has been reported to the Senate, with recommendation that it pass (S Rept 672) S 2006 has passed the Senate and House authorizing the Commission on Licensure to Practice the Healing Art in the District of Columbia to license Della D Ledendecker to practice chiropractic in the District of Columbia

GEORGIA

Hospital News—A medicolegal unit will be added to the laboratories of clinical pathology in the department of pathology at Grady Hospital, Atlanta under the direction of Dr Jack C Norris, associate professor of pathology and public health Emory University School of Medicine The chemical function of poisons will be studied in the new unit

Society News—Dr Montague L Boyd presented a paper before the Fulton County Medical Society, April 5 on "Anatomy of Prostatic Hypertrophy and Resection of the Prostate Through the Urethra" Dr John Funke gave a clinical talk on 'The Increased Metabolic Rate Due to the Effect of Intestinal Intoxication on the Thyroid Gland'—The Clarke County Medical Society was addressed in Athens February 2, by Drs William H Cabanis and Henry W Birdsong, Athens on 'Inflammatory Conditions of the Eye and Reduction of Difficult Fractures' respectively—At a recent meeting of the Macon Medical Society Dr Roy R Kracke, Emory University spoke on 'Agranulopemic State'—Dr George S Murray Columbus addressed the Randolph County Medical Society in Cuthbert March 1 on 'Treatment of Chronic Arthritis'

ILLINOIS

Society News—A symposium on acute intestinal obstruction constituted the meeting of the Adams County Medical Society in Quincy, April 9, with Drs James F Merritt, Frank Cohen, Ralph McReynolds and Earl L Cuddick as speakers

Chicago

University News—Chumcev D Lenke, Ph D, professor of pharmacology, University of California Medical School, San Francisco, gave the first annual Phi Beta Pi lecture under the auspices of the University of Chicago Medical Schools and Delta Chapter of Phi Beta Pi, April 12, at Billings Hospital, on "The Relations of Medicine and Fine Art"

Memorial for Dr Williamson—Funds are being solicited to establish a memorial in honor of the late Dr Charles Spencer Williamson, professor of medicine at the University of Illinois College of Medicine. It is hoped to accumulate a fund of \$500 for a suitable portrait of Dr Williamson, to be hung in the library of the university, and a sum between \$5,000 and \$10,000 to establish a lectureship in internal medicine. The dean of the medical school has approved the plan and the committee, composed of Drs Carroll C L Birch, Ernest S Moore and Adolph Hartung, chairman, urges former patients, students and colleagues of Dr Williamson to contribute. Dr Williamson who was associated with the medical school for thirty one years, died Feb 15, 1933

Society News—Drs Harry L Parker, Rochester, Minn., and Arno B Luckhardt, among others, addressed the Chicago Neurological Society April 19 on "Traumatic Encephalopathy in Professional Pugilists" and "Physiology and Pathological Physiology of the Pituitary Gland and Adjacent Structures," respectively—Drs Julius H Hess and Otto Saphir, among others, addressed the Chicago Pediatric Society, April 17 on "Celac Disease—A Series of Pathologic Studies"—Carl R Moore, Ph D, and Dr William Harcourt Browne addressed the Chicago Gynecological Society, April 20, on "Hormones in Relation to Reproduction" and "Use of Follutem in Dysmenorrhea," respectively—Speakers before the Chicago Society of Internal Medicine, April 23, will be Drs Robert W Keeton, on "Effects of Diets Low in Calories Containing Varying Amounts of Protein on the Weight Loss and Metabolic Rate of Obese Patients", William F Petersen, "Clinical Significance of Pressor Episodes", and Alexander J Nedzel, "Experimental Production of Vegetative and Ulcerative Endocarditis"

INDIANA

Society News—A symposium on medical legislation will be presented before the Indianapolis Medical Society, April 24, by Drs William N Wishard Sr, Frank W Cregor, Indianapolis, and William R Davidson, Evansville—Dr William E Lower, Cleveland, spoke before the Tiptecanoe County Medical Society in Lafayette, April 12, on "Endocrine Factors in Prostatic Function"

Annual Graduate Meeting—The third annual graduate educational meeting of the Indiana State Medical Association will be a joint session with the First District Medical Society at the Elks Home, Evansville, April 26. The following physicians, among others, will participate in the program

Willis D Gatch Indianapolis Value of Postgraduate Study
Harry P Ross, Richmond Obstetrical Mortality in General Practice
Carl E Badgley Ann Arbor Mich Orthopedics for the General Practitioner
Albert F Clements Evansville Ear Pain and Its Causes
Burton D Myers Bloomington The Anatomy of the Endocrines
Roscoe L Sensesich South Bend Interrelationship of the Endocrine Glands
Earl A Menninger Topeka Kan Psychoanalysis and Neuropsychiatry
Leon G Zerfas Indianapolis New Developments in Diagnosis of Blood Disturbances
Ralph L Lochry Indianapolis Value of X Rays to the General Practitioner
Cleon A Nafe Indianapolis Methods of Diagnosing and Handling Acute Surgical Problems

Dr Roy Wesley Scott, Cleveland will be the dinner speaker on "Some Observations on Heart Disease"

IOWA

Personal—Dr Charles W Sanders, Northwood, completed fifty years in the practice of medicine, March 7—Dr Jacob Breid physician and superintendent of the Sac and Fox Tuberculosis Sanatorium, Toledo, since Jan 1, 1920 retired from active service April 1, having reached the age limit of 65 years. Dr Ira D Nelson, formerly superintendent of the Indian Hospital at Claremore, Okla succeeded Dr Breid

MAINE

Typhoid at Augusta—Newspapers reported, April 2, that forty cases of typhoid with three deaths had occurred in Augusta after a milkman's son contracted the disease by drinking water from the Kennebec River. Seven members of the milkman's family took the disease and all cases in families served by this dealer were traced to milk distributed by him. More than 4,000 persons in the city and its environs were inoculated. A special isolation ward was established at the Augusta General Hospital

MARYLAND

Full Time County Health Service—With the appointment of Dr Louis S Welty as health officer of Caroline County, all the counties in the state are now on a full time health basis. There are twenty-three counties in Maryland.

Society News—Dr Leonid Andreyev, who has been conducting research work at McGill University, Montreal for two years, addressed a meeting at the Phipps Clinic, Baltimore, March 7, on conditional reflexes—A symposium on the autonomic system was presented before the Baltimore City Medical Society, February 2, by Drs Bertram M Bernheim, Raymond A Taylor, Thomas P Sprunt and Philip Bard, Ph D—Dr Richard P Strong, Boston, delivered the guest lecture in medicine at the meeting of the Johns Hopkins Medical Association in Baltimore, February 23, on "Clinical and Public Health Aspects of American Onchocerciasis"

Mental Hygiene Clinics—The first of a series of mental hygiene clinics, planned by a group of Maryland psychiatrists as a special project, was held in Salisbury, March 2. The state has been divided into districts, with three or more counties in a district. Principal efforts will be directed toward children. Physicians are working as a volunteer group and are not connected with any state activity in this project. Some physicians, particularly heads of institutions, are expected to delegate much of the actual work to their staffs. Those in charge of the clinics are

Dr J H Mason Knox Jr, chief bureau of child hygiene state department of health
Dr Ralph C P Truitt director Maryland Mental Hygiene Clinic and executive secretary Mental Hygiene Society of Maryland
Dr Esther L Richards, associate professor of psychiatry Johns Hopkins University School of Medicine Baltimore
Dr Ross McC Chapman professor of psychiatry, University of Maryland Medical School Baltimore
Dr Robert E Garrett superintendent Spring Grove State Hospital
Dr Hosea W McAdoo superintendent Springfield State Hospital
Dr Manfred S Guttmacher, chief medical officer Supreme Bench of Baltimore
Dr George H Preston, commissioner of mental hygiene of Maryland

MICHIGAN

Graduate Courses—April 15 marked the opening of a series of graduate courses sponsored by the department of postgraduate medicine of the University of Michigan Medical School and the Michigan State Medical Society. The initial course is a medicomilitary refresher course and will extend to April 28. Others in the series are

Ophthalmology and Otolaryngology University Hospital Ann Arbor April 23-28
Diseases of Metabolism University Hospital Ann Arbor May 21-26
Clinic on Speech Defects Northern Michigan Children's Clinic Marquette April 26
Proctology Receiving Hospital Detroit May 28
Obstetrics Gynecology and Gynecological Pathology Receiving Hospital Detroit June 4-9
Practitioners' Course Receiving Hospital Detroit June 18-23
Surgical Diagnosis Receiving Hospital Detroit June 25-30

Society News—Dr Norman F Miller, Ann Arbor, addressed the Kalamazoo Academy of Medicine, March 20, on "Complications of Parturition"—A symposium on the disturbances of menstruation was presented before the Wayne County Medical Society, April 16, by Drs Lewis E Daniels, Harold Henderson and Milton A Darling. Dr Malcolm T MacEachern, Chicago, will address the surgical section of the society, April 23, on "Individual Responsibility of the Physician to Organized Medicine and Advancement in His Scientific Knowledge"—Speakers before the Tuscola County Medical Society, March 8, in Caro were Drs Edward Dowdle and W P Woodworth, Detroit, on "Acute Abdominal Conditions" and "Common Problems of Ophthalmology"—Dr Clyde K Hasley, Detroit, spoke before the Livingston County Medical Society, March 2, on skin diseases and their treatment—At a meeting of the Calhoun County Medical Society, March 6, Dr Joseph Brennemann, Chicago, discussed treatment of emphysema in children

District Conferences—The Michigan State Medical Society and the department of graduate medicine of the University of Michigan Medical School, Ann Arbor, sponsored

a graduate conference in the eleventh district at Muskegon, March 21, with the following program

- Dr. Dewey R. Heeders, Grand Rapids: Acute Infections of Throat and Neck
- Dr. Charles I. Brown, Ann Arbor: Recent Factors in Treatment of Cardiac Lesions
- Dr. Eugene B. Potter, Ann Arbor: Acute Lesions of the Abdomen
- Dr. Thomas D. Gordon, Grand Rapids: Recent Measures in Prevention and Treatment of Acute Infectious Diseases
- Dr. William J. Butler, Grand Rapids: Acute Infections of the Urinary Tract

At a similar conference in the thirteenth district in Petoskey, March 8, Dr. Albert C. Furstenberg, Ann Arbor, discussed "Acute Suppurations of the Mouth, Pharynx and Cervical Region" and "Tumors and Cysts of the Head and Neck." Dr. Raphael Isacacs, Ann Arbor, "Diagnosis Symptoms and Treatment of Anemia," and Dr. Norman F. Miller, Ann Arbor, "Obstetrical Emergencies" and "Postnatal Care." A public meeting in the evening was given over to discussion of "Preventive Measures for Community Health." The names of the speakers were not available.

MISSISSIPPI

Society News—A recent meeting of the Central Medical Society was addressed by Drs. James B. Anderson, Yazoo City, on "Diagnosis and Treatment of Sacro-Iliac Arthritis," James T. Rainer, Yazoo City, "Treatment of Intracranial Hemorrhage," and Gilruth Darrington, Yazoo City, "Gonorrhea in the Male."—Speakers before the Issaquena-Sharkey-Warren Counties Medical Society in Vicksburg, March 13, included Drs. Thomas E. Wilson Jr., Jackson, on "Blood Supply of the Heart," Doctor A. Pettit, Vicksburg, "Pyelitis," and Preston S. Herring, "The Handling of a Normal Obstetric Case."—A symposium on cancer constituted the meeting of the Northeast Mississippi Thirteen Counties Medical Society in Pontotoc, March 20, with Drs. Giles S. Bryan, Amory, and Shields Abernathy, Memphis, Tenn., as the speakers.—Speakers before the Tri-County Medical Society (Copiah, Lincoln and Walthall) included Drs. Edwin E. Benoit, Natchez, on diseases of the gallbladder, and Richard S. Savage, Brookhaven, significance of laboratory interpretation. The next meeting will be held in Tylertown in June.

MISSOURI

State Medical Meeting at St. Joseph, May 7-11—The seventy-seventh annual meeting of the Missouri State Medical Association will be held at St. Joseph, May 7-11, under the presidency of Dr. Warren L. Allee, Eldon. Lecture sessions will be at the Robidoux Hotel and clinical sessions at the Missouri Methodist Hospital. Guest speakers include Drs. Walter L. Biering, Des Moines, President-Elect, American Medical Association, on "Coronary Artery Disease," George H. Ewell, Madison, Wis., "Carcinoma of the Prostate," Dean M. Lierle, Iowa City, title to be announced, John H. Musser, New Orleans, "Treatment of Diseases of the Blood," and Charles M. Swab, Omaha, "Ocular Complications of Gonorrhea." Missouri physicians who will participate in the program include the following:

- Arthur Glenn Davis, Senath: Tertian Malaria with Unusual Type of Skin Manifestations
- Rutherford B. H. Gradwohl, St. Louis: The Blood Platelet Count and Postoperative Venous Thrombosis
- Jonas Curtis Lyter, St. Louis: A Working Basis for the Therapeutics of Angina Pectoris
- Wilson A. Myers, Kansas City: Diaphragmatic Hernia with Special Reference to Esophageal Hiatus Hernia
- George Wise Robinson Jr., Kansas City: The Neurotic—A Challenge
- William J. Stewart Jr., Columbia: Abduction Traction Treatment of Congenital Dislocated Hips

Rev. Alphonse M. Schwitalla, Ph.D., dean, St. Louis University School of Medicine, St. Louis, will address a public meeting. Table demonstrations will be an innovation in the program this year and will be conducted by Drs. Frederick B. Campbell, Charles C. Dennis, Edward H. Skinner and Delon A. Williams, all of Kansas City. The Buchanan County Medical Society will entertain the association Wednesday evening and other entertainment planned will include a golf tournament and a trap shoot.

NEW JERSEY

Bills Passed—The following bills have passed both the assembly and the senate: S. 94, proposing to amend the law providing liens in certain cases for hospitals by raising to 50 cents the fee required to be paid on filing a claim of lien; and A. 245, to amend the dental practice act by proposing among other things, to add to the grounds on which a license to practice dentistry may be revoked, a violation of any of the

rules or regulations which the state board of registration and examination in dentistry may hereafter adopt with respect to the practice of dentistry.

NEW MEXICO

Personal—Dr. George H. Buer, Mountain Air, was appointed health officer of Torrance County, February 21, to succeed Dr. James H. Wiggins, Estancia.

NEW YORK

Bill Introduced—A resolution, introduced in the senate by Mr. Esquirol on April 9, and referred to the committee on finance, proposes to create a joint legislative committee to study the laws of New York, of the United States and of foreign countries relative to narcotic drugs and to recommend to the legislature such revision, if any, of the laws of New York as may be necessary.

Bills Passed—The following bills have passed the assembly and the senate: A. 417, to amend the pharmacy practice act by proposing (1) that a drug shall be deemed to be misbranded within the meaning of the act if the package fails to bear a statement of the percentage contained therein by quantity of barbituric acid and (2) that the act shall not apply to the manufacture and sale of proprietary medicines except those containing poisons deleterious and/or habit-forming drugs and chemicals, A. 1377, proposing to prohibit a corporation from using the word "doctor" or "Dr." as a part of its corporate name.

Personal—Dr. William S. Hartigan has been appointed police and fire surgeon of Rochester, succeeding Dr. John A. Stapleton, who retired after thirty-four years in the position.—Dr. Henry W. Tobias, recently clinical director of the veterans' facility at Newington, Conn., has been made chief medical officer of the new facility at Batavia.—Dr. James E. Perkins, for several years epidemiologist on the staff of the Minnesota Department of Health, has been provisionally appointed to a similar position with the New York State Department of Health.—Dr. Edwin A. Simonds, Carthage, completed fifty years in the practice of medicine, March 1.

Society News—Drs. Robert L. Dickinson and Eric M. Matsner, New York, addressed the Medical Society of the County of Nassau, Mineola, February 27, on "The Doctor as Marriage Counselor" and "Certain Aspects of Maternal Welfare," respectively.—Dr. Russell L. Cecil, New York, addressed the Medical Society of the County of Westchester at Valhalla, February 20, on "Serum Treatment of Pneumonia."—Dr. James A. Cahill, Jr., Washington, D. C., addressed the Chemung County Medical Society, Elmira, February 8, on "Acute Diseases of the Abdomen."—At the meeting of the Medical Society of the County of Albany, February 28, Dr. Rudolph Ruedemann, Jr., spoke on "Diagnosis and Treatment of Early Syphilis," and Drs. Victor C. Jacobson and Arthur W. Wright reviewed recent advances in laboratory sciences.—Dr. Edward C. Reifstein, Syracuse, addressed the Jefferson County Medical Society, Watertown, March 8, on treatment of anemias.—The New York State Association of Public Health Laboratories will hold its eighteenth annual meeting at the University of Rochester School of Medicine and Dentistry, May 7.

New York City

Bronx County Lectures—To take the place of its scientific meetings which have been temporarily discontinued, the Bronx County Medical Society has inaugurated a program of afternoon lectures at various hospitals. The first series, dealing with obstetrics, is as follows:

- March 22: Dr. Maurice O. Magid: Prenatal Care
- March 29: Dr. Irving Smiley: Management of Normal Labor
- April 5: Dr. Harry Aranow: Toxemia of Pregnancy
- April 12: Dr. Samuel S. Rosenfeld: Hemorrhage During Pregnancy
- April 19: Dr. Murray L. Brandt: Prevention and Treatment of Sepsis
- April 26: Dr. Milton J. Goodfriend: Indications and Use of Forceps

Dr. Anna Williams Retired—Dr. Anna W. Williams, assistant director of laboratories in the New York City Department of Health since 1905, was retired March 23, having passed the age limit for city employees. She will continue her research in the laboratories on a pension. Dr. Williams was graduated from the Women's Medical College of the New York Infirmary for Women and Children in 1891 and for several years practiced in New York, spending some time also in graduate study in Europe. In 1895 she became bacteriologist in the health department and in 1905 was appointed assistant to Dr. William H. Park. She is the author of "Pathogenic Microorganisms," collaborated with Dr. Park as author of "Who's Who Among the Microbes" and has contributed many articles to scientific periodicals.

Committee on Chronic Illness—Creation of a committee of medical authorities and social workers to plan and put in action a program for better care of the chronically ill in New York has been announced by the Welfare Council. This action is the result of a survey made recently in which it was shown that there are at any time 70,000 persons in the city incapacitated by chronic illness. Provision for care of this large section of the population was found to be inadequate. The committee wishes to create new attitudes in the public, develop better facilities for care and more adequate coordination of services for prevention and cure of chronic illness. Medical members of the committee are Drs. Ernst P. Bois, George Baehr, Margaret S. W. Barnard, Mark L. Fleming, John E. Jennings, William Ropes May, Herbert B. Wilcox and I. Ogden Woodruff.

Society News—Dr. Hugh Cabot, Rochester, Minn., addressed the New York Society of the American Urological Association, April 4, on "Effect of Drainage by Nephrostomy upon Kidney Function."—A symposium on transplantation of tissue was presented before the American Society of Plastic Surgeons at a meeting at the New York Academy of Medicine, April 3, by Drs. Fred H. Albee, Karl Winfield Ney, Walter A. Coakley and Maxwell Maltz.—Drs. Elliott C. Cutler, Boston, and Nathaniel P. Rathbun addressed the Medical Society of the County of Kings, March 20, on "Experiences with Total Thyroidectomy for Heart Disease" and "Present Status of Operative Procedures for Obstructive Lesions of the Neck."—Dr. Isador W. Kahn addressed the Society of Medical Jurisprudence, February 13, on "Medicolegal Aspects of Criminal Abortion in New York City."—Dr. Oswald S. Lowsley addressed the International Association of Industrial Surgeons, March 1, on "Low Back Pain as Related to Urologic Pathology."—A symposium on recent progress in leukemia research was presented at a meeting of the New York Pathological Society, April 5, at which speakers were Drs. Richard H. Jaffe, Chicago, Lloyd F. Craver, Maurice N. Richter and Jacob Furth.—A symposium on methods of treatment available to the general practitioner in the field of otolaryngology was presented at a meeting of the Medical Society of the County of New York, March 26, by Drs. Samuel J. Kopetzky, Marvin F. Jones and Charles J. Imperatori.

OKLAHOMA

Personal—Dr. Charles E. White, Muskogee, has been appointed health commissioner of Muskogee County to succeed Dr. Edwin H. Coachman, resigned.—Dr. Charles M. Pearce, McAlester, has resigned as health commissioner of Pittsburg County to engage in private practice.

Academy of Medicine Organized—The Muskogee Academy of Medicine was organized at a meeting, February 9, for the promotion of scientific medicine in the territory of Muskogee. The first scientific program was held April 5, with the following guest speakers: Drs. Willis C. Campbell, Memphis, Tenn., on fractures of the femur and orthopedic principles, Arthur B. Chase, Oklahoma City, heart disease, and John Zahorsky, St. Louis, pediatrics.

Society News—Dr. Leroy Long, Oklahoma City, addressed the Craig County Medical Society, February 6, on "The Bile Tract Area."—Dr. E. Albert Aisenstadt, Picher, discussed management and treatment of burns before the Okfuskee-Okmulgee County Medical Society, Henryetta, in February.—Dr. Richard B. Ford, Holdenville, addressed the Hughes County Medical Society, Calvin, February 9, on diseases of the gallbladder.—At a meeting of the Carter County Medical Society in Ardmore, March 5, speakers were Drs. Leonard S. Willour, McAlester, on benefits of organized medicine, Arthur W. White, Oklahoma City, peptic ulcer and Leroy Long, Oklahoma City, toxic goiter.

PENNSYLVANIA

Society News—The Medical Society of Cumberland County met, March 13, at the Army Field Service School, Carlisle, at the invitation of the commandant, Gen. Matthew A. Delaney. Dr. Henry P. Carter, Dr. Morrison C. Staver and Lieut. Paul E. Zuver spoke on medicomilitary subjects.—Dr. Francis C. Grant, Philadelphia, addressed the Northumberland County Medical Society, March 7, on "Treatment of Cranial Trauma."—Dr. Burton T. Simpson, Buffalo, addressed the Berks County Medical Society, Reading, February 13, on "Responsibility of the Medical Man in the Control of Cancer."—The Montour County Medical Society met at the Danville State Hospital, March 16, with Drs. Henry F. Hunt, Sydney J. Hawley and Robert R. Hays as speakers on blood dyscrasias.—Dr. deWayne G. Richey, among others, addressed

the Pittsburgh Academy of Medicine, March 13, on "Pneumococcus Pseudomembranous Pharyngitis."—Dr. Howard L. Stitt, Cincinnati, addressed the Erie County Medical Society, Erie, March 6, on bronchiectasis.—Dr. Elliott B. Edie, Uniontown, read a paper on "Spontaneous Hyperinsulinism" before the Fayette County Medical Society, Uniontown, March 1.—Dr. Henry M. Ray presented a paper before the Pittsburgh Urological Society, March 12, on "Interpretation of Biochemical Findings in Urologic Disease."—Drs. George F. Gracey, Jacob Landis Zimmerman and Walter D. Hawkins presented a symposium on diseases of the upper respiratory tract at the meeting of the Dauphin County Medical Society, Harrisburg, March 6.—Dr. Harry M. Eberhard, Philadelphia, addressed the Harrisburg Academy of Medicine, March 20, on "What Has the Gastro-Enterologist Contributed to Medicine?"

Philadelphia

Packard Lecture—Dr. Anton J. Carlson, Chicago, delivered the annual Frederick A. Packard Memorial Lecture of the Philadelphia Pediatric Society, April 10, on "The Mechanism of Appetite, Hunger and Thirst."

Personal—Dr. Benjamin Franklin Stahl was the guest of honor at a reception given by the Philadelphia College of Pharmacy and Science, March 19, in honor of the fiftieth anniversary of his graduation from the school. President Wilmer Krusen presided and speakers included Drs. Alfred Stengel, William Pepper and Moses Beland. Dr. Stahl is a former president of the Philadelphia County Medical Society.

Annual Diphtheria Immunization Campaign—The Philadelphia County Medical Society is conducting its annual campaign for diphtheria immunization during April and May. Through the cooperation of the department of health, temporary distributing centers have been established to supply toxin-antitoxin free to physicians during this period. The health department refers to private physicians all patients who come to the health centers and who are able to pay. The society's commission on medical economics has suggested a form letter to be sent by physicians to their own patients urging that children be immunized. A recommendation adopted by the commission stated that members should be advised that it is not only ethical but also their duty to solicit their patients to present themselves for periodic health examinations and for immunizations and to cooperate with the department of public health in all matters of preventive medicine.

The Gross Prize in Surgery—The Philadelphia Academy of Surgery announces that essays will be received in competition for the Samuel D. Gross Prize until Jan. 1, 1935. This prize of \$1,500 is awarded every five years to the writer of the best original essay not exceeding 150 printed pages on some subject in surgical pathology or surgical practice founded on original investigations. Candidates must be American citizens. It is stipulated that the winner shall publish his essay in book form and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery. The essay must be written in English by one author, typewritten, marked by a motto and accompanied by a sealed envelop bearing the same motto and containing the name and address of the writer. The committee reserves the right to make no award if no essay is considered worthy. Unsuccessful essays will be returned if claimed by the authors or their agents within a year. Manuscripts should be addressed to the Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, College of Physicians of Philadelphia, 19 South Twenty-Second Street, Philadelphia.

RHODE ISLAND

Bills Passed—The following bills have passed the Senate: S. 123, to repeal the laws relating to narcotic drugs and to enact the uniform narcotic drug act, and S. 177, to amend the medical practice act by proposing that in an appeal from an order of the board of medical examiners refusing to issue or revoking a license to practice medicine the Supreme Court may review the evidence presented before the board and may in its discretion affirm, overrule or modify the order of the board but the order shall remain in full force and effect during the pendency of the appeal.

SOUTH CAROLINA

Bill Enacted—S. 770, the uniform narcotic drug act, was approved by the governor, April 12.

Society News—Speakers at the annual meeting of the South Carolina Pediatric Society, Florence, January 30, were Drs. Joseph I. Waring, Charleston, on "The Newer Concept of Allergy," Alfred R. Shands Jr., Durham, N. C., "Minor

Orthopedic Conditions in Children", Olm B Chamberlain, Charleston, "Chorea and Habit Spasms," and Christopher Johnston, Durham, "Cardiac Diseases in Children"—Dr Julian P Price, Florence, was elected president of the South Carolina Pediatric Society in January

TENNESSEE

Society News—Drs Elliott P Joslin, Boston, and John S Coulter Chicago, addressed the Nashville Academy of Medicine, February 14, on diabetes and physical therapy in rehabilitation of the disabled, respectively—Dr Wallace S Duncan, Cleveland, was the speaker, March 20, on "Sacro-Iliac Disease—Its Etiology, Treatment and Review of End-Results"—Dr Hermon Hawkins, Jackson, presented a paper on diseases of the gallbladder before the Madison County Medical Society, February 7—Drs Lewis L Neblett, Clarks-ville and Paul W Wilson addressed the Montgomery County Medical Society, March 9, on "Treatment of Carbuncle" and "Laryngeal Diphtheria," respectively—Dr Carey O Foree, Athens, addressed the McMinn County Medical Society, Athens, March 8, on "Penetrating Wounds of the Chest"

TEXAS

Society News—Dr Willard Bartlett, St Louis, and W T Dawson, A M, Galveston, addressed the Galveston County Medical Society, Galveston, January 15, on "The Psychiatric Approach to Surgery" and "Atebrm in the Treatment of Malaria," respectively—The Ector-Midland-Martin-Howard Counties Medical Society at a meeting in Big Springs, January 12, voted to reorganize to include Andrews and Glasscock counties in a new society—Drs Everett C Fox, Dallas, and Judson T McRee, Longview, addressed the Gregg County Medical Society, Longview, February 8 on diagnosis and treatment of syphilis and acute surgical conditions in the abdomen, respectively—The Wilbarger County Medical Society was reorganized at a meeting in Vernon recently, with Drs Albert C Rogers and Harold Lindley, Vernon, as president and secretary, respectively

WISCONSIN

University News—Dr William Allen Pusey, professor emeritus of dermatology, University of Illinois College of Medicine, Chicago, gave the first annual Marquette University Memorial Lecture, February 22, at the school of medicine, on medicine and culture

Fund for Cancer Research—The University of Wisconsin has recently received a bequest of \$300,000 for the establishment of a cancer research center through the will of Miss Jennie Bowman, Wisconsin Dells, who died February 12. The university plans to extend studies carried on by Prof Michael I Guyer, Ph D, for the past eight years

GENERAL

National Academy of Sciences—The annual meeting of the National Academy of Sciences will be held in Washington D C, April 23-25, at the academy building. Among subjects of medical interest to be presented are the following

Dr Simon Flexner New York Source and Mode of Infection in Polymyositis

Drs Francis G Benedict and Howard F Root Boston Potentialities of Extreme Old Age

Drs Francis Peyton Rous and Joseph W Beard New York Neoplastic Traits of a Mammalian Growth Due to a Filtrable Virus—the Shope Rabbit Papilloma

Dr Eugene F Du Bois and James D Hardy New York Surface Temperature and Radiation of Heat from the Human Body

Warning Spurious Advertising Representatives—Certain unauthorized persons are operating in the East, particularly in New York City, and claiming to be duly accredited advertising representatives for publications of the American Medical Association. An executive of one firm has reported that one of these spurious representatives attempted to secure an advertising contract by high pressure methods and failing in this dropped the threat that the American Medical Association might bring some sort of pressure if he refused to go along. All such representations are false and business firms are hereby advised that any duly accredited advertising representative for the American Medical Association is prepared to show credentials. If unable to show credentials he should be regarded as an impostor

Pediatrics Journal Fifty Years Old—The *Archives of Pediatrics* celebrated the fiftieth anniversary of its founding in the February issue by reprinting articles published during the first year of its history. There are articles by Drs Abraham Jacob, William T Plant and J Lewis Smith clinical lec-

tures by Drs John M Keating, Frederick Forchheimer and Louis Starr, and clinical memoranda by the late Dr Luther Emmett Holt and Drs William P Northrup, New York, and Henry Dwight Chapin, Bronxville, N Y. Translations and abstracts of literature of fifty years ago are also included. The first issue of this journal, said to be the first in this country devoted exclusively to pediatrics, was dated Jan 15, 1884. The founder and first editor was Dr William Perry Watson, Jersey City

Medical Bills in Congress—Change in Status H R 7833, to provide revenue and equalize taxation, has passed the Senate, with amendments. One of the Senate amendments would impose an excise tax on the domestic processing of "imported fish oil (excepting cod and cod liver)." Bills Introduced H R 9069, introduced (by request) by Representative Celler, New York, provides for the establishment of unemployment and social insurance. The Secretary of Labor is authorized by the bill to provide for the establishment of social insurance for the purpose of paying workers and farmers insurance for loss of wages because of part-time work, sickness, accident, old age, or maternity. H R 9122, introduced by Representative Pierce, Oregon, provides for the sanitary inspection of the manufacture of oleomargarine and for taxation of oleomargarine containing foreign produced ingredients

News of Epidemics—Scarlet fever has been epidemic in Milwaukee for several weeks, 640 active cases were reported by the health department March 31. The city council granted a special emergency appropriation of \$15,000 to the health department, March 19, for a campaign of testing for susceptibility and of immunization in the schools. The Milwaukee County Medical Society is cooperating in the program—Forty-five men in Civilian Conservation Corps Camps in central New York were stricken with scarlet fever in March, there was one death. The epidemic was reported to be under control, March 20. It was reported that the infection was traced to impure milk—The Civilian Conservation Corps camp at Fort Hunt, near Washington, D C, was quarantined for the week preceding April 4, after two youths developed measles—The Danville State Hospital for Mental Diseases, Danville, Pa, was quarantined, March 27, when five cases of scarlet fever developed among patients and nurses

Society News—Dr Warren H Lewis, Baltimore, of the Carnegie Institution of Washington, D C, was elected president of the American Association of Anatomists at the annual meeting in Philadelphia, March 30. Vice presidents elected were Edmund V Cowdry, Ph D, St Louis and Bradley M Patten, Ph D, New York, Dr George W Corner, Rochester, N Y, was reelected secretary—Dr William Boyd, Winnipeg, Canada, was elected president of the American Association of Pathologists and Bacteriologists at the annual meeting in Toronto, March 29-30, and Dr Howard T Karsner, Cleveland secretary. The association will meet in New York, April 18-19 1935—Dr Samuel J Crowe, Baltimore, was elected president of the American Otological Society at the sixty-seventh annual meeting in Atlantic City, April 7. Dr Francis R Packard, Philadelphia, vice president, and Dr Thomas J Harris New York, reelected secretary—The theme of the annual convention of the Western Hospital Association in Sacramento, Calif, April 9-13 was "The New Era in Hospital Service." Speakers at various sessions included Rev Alphonse M Schvittalla, St Louis Michael Davis, Ph D, Dr Malcolm T MacEachern and Mr Paul Fesler, all of Chicago

Rural Health Conservation Contest—In cooperation with the American Public Health Association the U S Chamber of Commerce has announced an interchamber rural health conservation contest, to further the development of sound rural public health work in order that community health services may be improved. This is in addition to the interchamber health conservation contest for cities, which has been held annually for several years. The contest is open only to rural whole time counties or district health units and the county must be enrolled by the local chamber of commerce or similar organizations affiliated with the U S Chamber of Commerce. A fact-finding schedule, similar to that used in the city health conservation contest but which is adapted to rural areas, will form the basis for grading the counties or district health units. Advisory field services will be rendered to those enrolled counties or districts which request such services specifically. The interchamber rural health contest has been made possible through a grant by the W K Kellogg Foundation of Battle Creek, Mich. Information may be had from the insurance department of the U S Chamber of Commerce Washington D C or the committee on administrative practice American Public Health Association 450 Seventh Avenue, New York

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 24, 1934

Positions Open at the British Post-Graduate Medical School

The senate of the University of London has invited applications for four chairs tenable at the British Post-Graduate Medical School. They are the chair of medicine (salary \$12,500 a year), chair of surgery (salary \$12,500 a year), chair of obstetrics and gynecology (salary \$12,500 a year) and chair of pathology (salary \$10,000 a year). Applications (twelve copies) must be received not later than May 4. Candidates must possess qualifications registrable in Great Britain and their applications must be accompanied by the names of not more than three persons to whom reference may be made. Any referees resident abroad should be asked to write direct to the academic registrar. The holder of the chair will have the title of Professor in the University of London and Director of the Surgical (or other) Unit at the British Post-Graduate Hospital and Medical School. The chair will be a whole time appointment and the professor may not hold any other public appointment or engage in any other professional work without the approval of the governing body of the school. He is subject to an age limit of 60 years, with the proviso that on the advice of the governing body the appointment can be renewed until a later age. The professors will be required to organize a department of clinical research and do all in their power to promote the advance and study of their subjects.

Death from Treatment for Reducing Weight

An inquest has been held on the body of a young woman, a cabaret artist, who died while undergoing treatment to reduce her weight. This included steam baths, massage, radiant heat and Dekrysil capsules. The treatment was prescribed by a physician in the first instance but she afterward bought the capsules on her own account from a pharmacist. She bought a bottle of twenty-five on February 1 and another on February 20. She died on February 22. The pharmacist had received a warning from the manufacturers that the capsules should be taken under medical advice and he told the deceased so. Evidence was given by the chief chemist of "Crooke's Laboratories," the manufacturers of the capsules. He said that their purpose was to increase metabolism with a view to what was called slimming. They were put on the market in 1933 and the label on the bottle read "To be administered only on medical prescription." There was also issued with the capsules a leaflet stating that the effects should be carefully studied and that nausea or intolerance to the drug should lead to special investigation. The dosage was given as one capsule daily and it was added that if the metabolic rate was increased to more than 50 per cent the treatment should at once be stopped. It appeared that the deceased had taken as many as seventeen capsules since February 20, as only eight remained in the bottle found after death. In September 1933 the manufacturers suggested to the authorities that Dekrysil should be put on the Poisons List so that it could be bought only on a medical prescription. Dr. Roche Lynch, government analyst, stated that he had found traces of nitrophenol in the stomach and intestine. All drugs of the nitrophenol type were liver poisons, and he understood that they had only recently been used for slimming purposes. They were dangerous and should be under control. Death was due to taking an excessive quantity. So much fluid was exuded in the trachea and bronchi as to cause "internal drowning." The coroner said that modern

feminine fashion demanded a slim figure and that some women would do anything to attain it. But in this case the motive was not so much vanity as that the woman's employment as a dancer made it imperative that she should remain slim. In the first instance she sought medical advice and had she continued to follow it she might have been alive today. The proper way to cut down fat was by diet and exercise. The nitrophenol drugs were still in the experimental stage and dangerous even under skilled supervision.

The Pathology and Treatment of Asthma

The work of the Asthma Research Council has been reported in previous letters. One of the research clinics is maintained at Guy's Hospital under the supervision of Dr. A. F. Hurst and employs a team of physiologist, clinical pathologist, biochemist, radiologist and physician. Dr. A. F. Hurst, who is the physician, states in a paper contributed to *Guy's Hospital Gazette* that during 1933 there were 5,575 attendances at the clinic with about 450 new cases. In an analysis of 500 patients who passed through the clinic, Dr. Witts found two characteristics: (1) frequency of protein hypersensitiveness, as revealed by cutaneous reactions and in the personal and family history, (2) a high incidence of morbid changes in the upper and lower respiratory tract. But he does regard treatment directed to the respiratory tract as of much success. On the other hand, desensitizing treatment has not given encouraging results except in pollen asthma in which it is possible to ameliorate the symptoms in about two thirds of the cases and to give complete relief in about one third.

Dr. Hurst thus enumerates objections that might be raised to the view that the treatment of an allergic disease consists in discovering the substance to which the patient is hypersensitive and desensitizing him to it. 1. There are a multitude of potential allergens. Always there is the problem of asthma patients in whom no skin reactions can be demonstrated and the flora and fauna of the home and surroundings have to be searched over anew. 2. Multiple sensitization is present in two thirds of the patients. 3. The interpretation of skin tests is difficult. A patient may give positive reaction to substances which do not affect him clinically and negative reactions to those which do. Negative skin reactions are frequent in patients who are food sensitive. 4. Desensitization is difficult. 5. The morbid diathesis is persistent and new sensitization develops. In asthma, single sensitization is unusual, specific desensitization is arduous, and the relief from it is rarely more than transient. While the patient is being desensitized to one allergen, fresh sensitizations may develop. Protein sensitization is more widely diffused than has been appreciated, and the asthmatic person differs from many of his healthy fellows only in the severity of the manifestations. 6. The severest cases of asthma are often those in which there is the least evidence of protein sensitivity. 7. Asthma is relieved by epinephrine. Burn has suggested that the allergic state in general is not due to the presence of unusual substances in the blood but to deficiency in epinephrine. It is known that all skin reactions are difficult to obtain after injection of epinephrine. But Witts does not go so far as Burn and attribute the pathology of asthma entirely to biochemical or humoral defect. The etiology of disease is not always a single unit, and he suggests an external as well as an internal cause, analogous to the extrinsic and intrinsic factors in pernicious anemia.

The International Status of Science

Prof. A. V. Hill, the physiologist, delivered the Huxley Memorial Lecture, taking for his subject the International Status and Obligations of Science. Professor Hill said that science and learning have for several centuries been regarded by all civilized communities as entitling their followers to

immunity from persecution. Science was a common interest of mankind. It transcended the bounds of nationality. If science lost its intellectual honesty and political independence, if it became tied to emotion or the propagation of particular social or economic theories, it would cease to have its general appeal. The coercion of scientific people to certain specified political opinions, as in Russia, Germany or Italy, might lower the standard of scientific honesty. Scientific men and scholars had been persecuted or dismissed from Germany for reasons of race or for independence of opinion. If there was one single idea that by common consent represents the contribution of England to the common welfare of the world, that idea was freedom. The American commonwealth was founded by English people on the same idea. Professor Hill had wanted closer cooperation with Germany in science, but this was rendered impossible by her offending against the fundamental rule of freedom of thought and research. It might have seemed impossible that in a highly civilized country reasons of race, creed or opinion could lead to the drastic elimination of a large number of the most eminent men of science, many of them of the highest standing, good citizens, good human beings. Freedom itself was again at stake. Would man ultimately destroy in his folly all that he has built up? Professor Hill thinks that the only hope is the cooperation of intelligent people of good will in the various countries. The pterodactyl's achievements in aviation did not save it from extinction, it had some fundamental unfitness. Man's amazing achievements in controlling the forces of nature might be neutralized by domination of the intellect by the passions. Professor Hill thinks that the hope of the future lies in friendly rivalry and cooperation of Britain with the United States.

The New British Pharmaceutical Codex

In an address to the British Pharmaceutical Society, Mr. C. E. Corfield said that during recent years the Codex had proved of ever increasing value as a standard book of reference. The society formed a Codex revision committee in 1930 and throughout the revision it was borne in mind that the book was a work of reference for pharmacists and physicians, as well as one of standards and drugs not included in the British Pharmacopoeia. A feature of the new Codex was the inclusion of a series of requirements and tests under the heading of "Standard" which provided manufacturers and all engaged in the preparation of medicaments with a more uniform standard than had been available. The general index of drugs based mainly on their therapeutic uses, had been discontinued and replaced by a list based as far as possible on pharmacologic principles. The index of proprietary substances was an important feature. It contained many substances met in commerce or used in medicine only under proprietary names.

Native Physicians Trained in Fiji

At Suva, in Fiji, a central medical school has been established by the government under the control of British physicians, for the training of selected students as native medical practitioners for work in Fiji and the neighboring islands. The object is that they may carry out medical and health work in their own group of islands and thus not only bring medical help within the reach of a large number of their countrymen out of reach of other medical assistance but also by preventive measures raise the general standard of health throughout the islands. Graduate courses also are provided. The experiment has been quite successful. A monthly journal the *Native Medical Practitioner* is published by the school. The February issue contains useful and practical articles contributed by natives, such as 'A Case of Strangulated Inguinal Hernia (with successful operation in the remote island of Rotuma)' 'Intestinal Parasites Masquerading as Other Diseases (hookworm infestation is almost universal and roundworm general)

BERLIN

(From Our Regular Correspondent)

Feb 26, 1934

Promotion of Marriages in the New Reich

The new attitude toward marriage has been referred to in previous letters. Now that this subject has become clarified, it is interesting to learn the views of Professor Kuhn, hygienist of Giessen. In an address before the medical society of Frankfurt-on-Main, he emphasized that, in order to effect a eugenic transformation of the whole people, not only negative measures, such as the new sterilization law, are needed, but the most significant thing is to increase the birth rate and to preserve child life. Marriage consultation and marriage promotion are important aids. The individual physician is the natural center for marriage consultation, but there must be specialists for consultations pertaining to hereditary biology. The training received by a specialist in this field must be different from that of a general hygienist. The efforts to improve the hereditary qualities of the whole people will prove successful through the creation of chairs of race hygiene, as has recently been done in Berlin and Munich. The marriage consultation centers must be available for information concerning questions pertaining to future marriage and to sex relations, and, for married couples, concerning questions pertaining to married life.

The promotion of marriages has been accomplished in recent decades by advertisements in the press and by commercial marriage bureaus, whose activities are looked at askance by many persons. For the development of a people on a eugenic basis however, it is proper that persons wishing to marry be aided in the search for a mate. Centers must be created that will aid truly German citizens to find a life partner. In German Southwest Africa there was a consultation center before the World War. The ladies' aid of the deutsche Kolonialgesellschaft sent thousands of girls to Southwest Africa during the years 1898-1914, to become the wives of German farmers. During the World War there was an official marriage promotion center in Magdeburg. Such organizations will, in the future be entrusted to the bureaus of health, which have to deal also with questions of race hygiene.

The new trend has its effect on marriage. An increased willingness to marry has been observed. In the fifty-one German cities of more than 100,000 population, 15 per cent more marriages took place in July 1933, 30 per cent more in August, and 53 per cent more in September, than in the corresponding months of 1932. In November there were 19,805 marriages, or 41 per cent more than in November 1932, and in December 25,900 or 50 per cent more than in the corresponding month of the previous year. For the year 1933 about 40,000 more marriages were contracted (208,700 as against 168,655 in 1932), the main increase having been in the second half year, or after the law for the furtherance of marriages went into effect. The year 1933 brought, in the large cities of Germany, the largest number of marriages since the postwar years 1919-1922. There is no doubt that this gratifying increase is due chiefly to the loans to married couples, although the readjustment process that has taken place, whereby an endeavor has been made to supply work for as many men as possible and thus to facilitate marriage for the women who lose their positions has played a part.

The government loans for the furtherance of marriages and for the elimination of women from the labor market have led to interesting results. The finance ministry had counted on granting 20,000 such loans per month, but the demand has exceeded expectations. During the first six months (August 1933 to January 1934) 183,000 loans were granted, which constituted an average of 30,500 per month. The special tax imposed on single persons does not cover the cost of this legislation. The federal finance ministry has decided to sus-

pend the granting of marriage loans until March 31, 1934. During the following twelve months no more than 250,000 new loans are to be granted. The finance minister is endeavoring to induce employers to grant marriage benefits to women who give up their positions, and, in return for such benefits, he promises relief from taxes. Recent statistics on intermarriage between members of various religious bodies do not completely bring out racial distinctions. A recent report of the federal bureau of statistics shows that there were in 1931, in a total of 515,403 marriages, 83,014 (16 per cent) marriages between persons of different faiths. The percentage of such intermarriages has been constantly increasing since 1920. The major portion of these mixed marriages were entered into by a Protestant and a Catholic (75 per cent). The number of members of Evangelical bodies united in marriage with members of various other Christian sects was 1,732 (2 per cent), with Jews, 891 (1 per cent) and with persons professing no religious faith, 17,247 (22 per cent). The percentage in 1905 of marriages between Protestants and persons making no religious professions was 0.11 and in 1928 was 20. Since 1928 the increase has been slower. These figures concern civil marriages. The mixed marriages with church weddings present a different picture. Weddings were held in the Evangelical church in 1925 in 34 per cent of all mixed marriages, and in 1931 in 28 per cent.

Since August 1933 there has been an increase in the birth rate of the large cities. In the third quarter of 1933 the decline in the birth rate in Prussia was brought to a halt. The increase in the birth rate, it is assumed in official quarters, is due to a great extent to the fact that criminal abortion has been greatly checked. The year 1933, as a whole showed a birth rate of 10.9 per thousand of population or 0.1 per thousand more than in 1932. The city of Berlin is resorting to many new measures to lift the birth rate. One new measure adopted is for the city to serve as godmother to all children born within its boundaries. The care of godchildren is to be extended over a period of years and will be continued if the family is for any reason compelled to change its residence (within Germany).

Reintroduction of Titles

When the German republic was established, all titles and orders, at least so far as any special honors were concerned were abolished. Now a decree of the president of the republic, dated January 30, provides that "for special services promoting the welfare of the people and state" titles may be bestowed on officials and members of the liberal professions. Such honors will be conferred solely on persons who at all times are ready and eager to support the national state. Few titles, however, are to be conferred. It has been arranged that the title of "geheimer rat" may be bestowed on professors in government universities and directors of government scientific institutes. Furthermore persons devoting themselves to the liberal sciences and arts may, as a reward for special merit, receive the title of professor, and persons devoting themselves to liberal medicine (or to veterinary science) may be given such titles as "sanitätsrat" and "geheimer sanitätsrat".

Reorganization of the Society of Psychotherapy

After Professor Kretschmer, as a result of the great political upheaval in Germany, had resigned from the chairmanship of the Allgemeine ärztliche Gesellschaft für Psychotherapie and from the management of the *Zentralblatt für Psychotherapie* fundamental changes were brought about. The chairmanship of this international society was taken over by Dr. C. G. Jung of Küsnacht-Zürich. Also a German Allgemeine ärztliche Gesellschaft für Psychotherapie has been created as a chapter on the basis of the "leader principle," as approved by the new

German government. The new society is under the leadership of Professor Goring of Eberfeld. The society plans to publish special numbers of the *Zentralblatt*. The German society has received the commission, by the holding of consultations, addresses and lectures, to mold the thoughts of the nation on scientific and psychotherapeutic lines. The two societies are independent of each other but cooperate. The secretary, Dr. W. Cimbal of Altona, states that the separation of the two societies seemed to be the only possible way to develop psychotherapy in a uniformly scientific and practical manner. The mutual relations of the German and the international society will be worked out in detail at the psychotherapeutic congress in Nauheim in April. As the editor of the *Zentralblatt* states, "The congress will serve to develop a Germanic system of psychiatry and psychotherapeutics." Also the new editor of the *Zentralblatt für Psychotherapie*, Dr. C. G. Jung, says, "The widely different conceptions of the Germanic and Jewish psychology, of which persons of insight have long since been aware, will no longer contend with each other, which will certainly advance the cause of science."

The Plight of the Midwives

A decree of the Prussian minister of the interior and observations of the newly founded Aufklärungsamt für Bevölkerungspolitik und Rassenpflege give evidence that the midwife service in Germany is not fully appreciated. Furthermore, owing to the decline in the birth rate and the abolition of some provisions of the Prussian law pertaining to midwives, the profession of midwifery has suffered impairment. Many midwives are no longer in a position to provide the necessary aids for the practice of their profession and their continued professional training. Although the law requires them to respond to every call, they have no assurance that they will be paid for their services, owing to the reduced financial status of portions of the population. The midwives are often so poor that they are not able to pay their dues for old age insurance. Every endeavor must be put forth to reestablish the midwife service on a solid footing. Otherwise there is a danger that mothers will not receive proper care during childbirth.

ITALY

(From Our Regular Correspondent)

Jan 31, 1934

National Congress of Urology

The Società Italiana di Urologia held its twelfth national congress in Pavia, under the chairmanship of Prof. U. Gardini. The chief topic was endoscopic treatment of hypertrophy of the prostate. The subject was treated under two heads, the official paper on the first being assigned to Professor Caporale of Turin, and the second to Professor Bonanome of Rome.

Caporale recalled that for the treatment of obstructions preventing the normal flow of urine many methods, surgical and conservative, have been proposed. Among the former, prostatectomy during the past thirty years has won the favor of surgeons and has brought relief to a great number of patients. Today there is a tendency to replace total removal of the prostate with partial prostatectomy, for which many methods and instruments have been proposed. The speaker had studied 597 cases of partial interventions—supplied, in part, by Italian or foreign colleagues—and had found that the greater part of the patients were treated with electrocoagulation. The remainder of the patients were subjected to electroresection, with various types of apparatus. To his own patients, the speaker applied resection with the resectoscope or the electrotome, or diathermocoagulation. The technic must be precise if satisfactory results are to be secured. Great importance attaches to the generator of the current. In establishing the indications, one must take account, in addition to the general and local clinical

examination the age of the patient and the urethral and rectal exploration and not rely solely on the urethrocystoscopic examination. The preoperative medical treatment to apply in case of partial prostatectomy is the same as that used in the total operation. A complete anesthesia is the principal factor of success. The most used forms are epidural, rachianesthesia, local urethral and vesical and prostatic, general anesthesia being reserved for special cases. The postoperative treatment must be meticulous, as in a major operation. The complications are chiefly hemorrhage and infection. The latter is frequent in endoscopic interventions and develops mainly in the urinary organs. In the cases studied by the speaker, pyuria occurred in all the patients, in a few cases there was orchiepididymitis or phlebitis. The speaker did not encounter either retention or incontinence of the urine. He concluded that endoscopic interventions in disorders of the neck of the bladder and of the prostate should be assigned an important place in urologic practice, although he would not contend that prostatectomy should be entirely abandoned.

Professor Bonanome spoke on the transurethral treatment of obstructions of the neck of the bladder, describing the instruments used and the more important methods employed. The speaker is an advocate of the modern instruments for resection and expressed his preference for the McCarthy and the Kirwin types, the former for resection in an anteroposterior direction and the latter for use in a rotatory direction. The endoscopic method is a welcome addition, particularly in the application of electric surgery, but at present it cannot replace the surgical operations, for the same dangers are involved. It cannot be performed ambulatorily. It is not true that endoscopic treatment should be applied only to patients who, owing to the unpaired condition of the kidneys and heart, cannot be subjected to a surgical operation. One should be distrustful of such patients, for their already unstable equilibrium may easily be disturbed.

Chaudano reached the conclusion that, for prostates of average size, the only feasible intervention is prostatectomy.

Luis of Paris, who was the first surgeon in Europe to apply endoscopic resection of the prostate by the natural routes under sight control, communicated the results of his experience. With his method of perforating the prostate in a series of 299 interventions he observed 80.4 per cent of excellent results and 19.6 of incomplete results.

Lasio of Milan concluded that endoscopic treatment of hypertrophy of the prostate cannot compete, as yet, with the surgical methods.

Nisio of Bari emphasized the value of diathermocoagulation in disorders of the neck of the bladder. With respect to hypertrophy of the prostate, he thinks that the resector and the associated instruments do not constitute a suitable method.

Rome was chosen as the place of meeting for the next session, in October 1934. The chief topic on the program will be "Study on Renal Functioning in Connection with Urinary Surgery."

Enrico Burci

The death of Prof. Enrico Burci, occupant of the chair of clinical surgery at the University of Florence, is announced. He graduated at Pisa in 1885 and in 1899 he received a call to the Clinica chirurgica of Padua. In 1903 he removed to the Clinica chirurgica in Florence. He was the author of 127 publications on various subjects of surgery. His chief merit was the transformation, a number of years ago, of his institute into a surgical polyclinic in which he surrounded himself with assistants who were specialists. As a result the students secured a complete instruction in the various specialties. His pupils occupy at present five chairs of general clinical surgery. Three others hold other chairs. Many are directors of important surgical departments in foreign and Italian hospitals.

During the war he served with the rank of "generale medico." A former pupil, Prof. Domenico Taddei, clinical surgeon in Pisa, has been called as his successor.

Center for the Treatment of Sterility

A center for the treatment of sterility was recently established at Turin, and the example will doubtless be followed by other cities. The center is located at the Clinica ostetrico-ginecologica universitaria. It is the first institute of the kind to be organized in Italy and consists essentially of an ambulatorium for the rendering of advice to sterile couples. The center will provide gratuitously for medication for actinic or diathermic treatment and for surgical interventions when needed. By means of frequent visits the effects of the treatment will be controlled. The institute is subsidized by the University of Turin and by the Clinica ginecologica.

MOSCOW

(From Our Regular Correspondent)

March 6 1934

Vaccination Against Exanthematic Typhus Fever

The Charkov Bacteriologic State Institute has finished a study of antityphus vaccine. Experiments have shown that guinea-pigs, after they have been inoculated with the vaccine are immune to infection with typhus blood. Experiments were made on men who had never had exanthematic typhus. They were injected subcutaneously with brain tissue from guinea-pig, experimentally infected with typhus after the third and eighth passage. A reaction was observed in only two cases. In one case a typical picture was obtained of typhus after a period of eight days. Some other experiments with guinea-pig virus produced a typical form of typhus. Not one person who was inoculated first with experimental virus and later with blood from typhus patients became ill. The experimental virus produces in man an immunity to typhus. The next series of persons received subcutaneously killed experimental virus. No reactions were noticed. After a period of three and one-half months this series of men was inoculated with the blood of a typhus patient on the sixth day of the disease. Only one man from this group became ill, and he had a light form of typhus. At present these vaccinations are widely used. Further experiments on large numbers of men are planned, and after this the preparation of antityphus vaccine will proceed.

The Fourth International Congress on Rheumatism

The third International Antirheumatic Congress took place in Paris in 1932. The next congress will take place in Moscow in May of this year. About 200 scientists from twenty-three countries are expected to take part. The following subjects will be discussed: 1. Acute joint rheumatism. 2. Spa methods of treating rheumatism. 3. The rheumatism of workers in metallurgic plants.

Work preliminary to the congress is now in progress. In many towns committees have arranged clinics and conferences with specialists and general practitioners. A conference was held at Moscow, December 25-29, at which many papers were read.

New Sources of Vitamin C

The vitamin department under the guidance of Prof. B. A. Lavrov of the Institute of Communal Nourishment at Moscow has finished a series of experiments on the sources of vitamin C which was found in sorrel, black current and pine wood. The institute is preparing jam, preserves and liquors from pine wood. These products have practical value as prophylactic measures to prevent scurvy in the northern regions of Russia and in arctic expeditions. The irradiation of yeasts with ultraviolet rays from quartz lamps markedly increases their activity, making yeast much more effective than cod liver oil.

RIO DE JANEIRO

(From Our Regular Correspondent)

Feb 15, 1934

Cancer Research in Brazil

The wealthy Guinle family has created the "Foundation Oswaldo Cruz Against Cancer" and a large building for this work has been under construction for four years.

Dr Carlos Botelho Jr, originator of the Botelho test for the serodagnosis of cancer, has for eight years been studying the problem of treatment of cancer. He began his investigations in Paris, where he succeeded in transmitting to horses malignant tumors of man by means of a special technique. He thus was enabled to obtain a serum that was used with favorable results in many cancer patients at the Hotel-Dieu. Three years ago Dr Botelho came to Brazil and established at his own expense the "Botelho Institute of Cancer" in São Paulo, where he was to pursue his studies. He developed a product with which cancer in animals was successfully treated. On the basis of results obtained in animals, Dr Botelho decided to extend his investigations to man and he was invited to continue his study in Rio de Janeiro, where a wealthy citizen, Dr Guilherme Guinle, constructed a pavilion in the Hospital of the Foundation Gaffree-Guinle, exclusively for Dr Botelho's study and investigation of cancer. This institute has been functioning now six months with regularity. It is completely equipped for its purpose and is divided in two sections: scientific research laboratory and a clinic and dispensaries.

Dr Botelho and his collaborators have published nothing as yet from the institute, but the results obtained have already been heard abroad and they offer encouragement in the campaign against this scourge.

Research on Alastrim

Dr Henrique de Aragão, chief of service of the Oswaldo Cruz Institute, who has for years made microbiologic studies on smallpox and alastrim, has made an interesting report on his investigations. He has had occasion to study the virus of alastrim in lesions produced in *Macacus rhesus* inoculated intravenously with pus from the pustules of man. Some rhesus monkeys inoculated intravenously and intradermally have presented characteristic eruptions. The examination of slides made from material in the pustules on inoculated macacus monkeys has revealed large numbers of the elementary corpuscles of alastrim like those previously observed and described by the author in human cases. They are small, round corpuscles, are numerous, and stain well by Loeffler's or any other analogous method. This once more confirms the opinion of the author expressed previously that these corpuscles are in reality the virus of alastrim and the causal agent of this disease of the smallpox group, to which he has given the name *Chlamydozoon ribasi*.

Ten cases of alastrim in a recent small epidemic at Rio presented the opportunity to study the virus. These ten patients had pustules in different stages of evolution. Examination of the pus once more confirmed the fact that the bacteria that infect these pustules coincidentally with the virus are *Staphylococcus aureus* and albus, contrary to what occurs in smallpox, in which the prevalent microbe in the pustules is the streptococcus. In alastrim this microbe was found by the author in only three cases from among dozens that he had seen. Thus a differentiation is established between alastrim and smallpox through the bacterial flora existing in the pustules.

An International Leprosy Center Established

An international leprosy center will be established this month in this city under the auspices of the League of Nations. There are almost 300,000 lepers in the world, according to calculations

based on an official census. Argentina has less than 8,000 lepers, while India has more than 102,000.

At a meeting in Geneva it was decided to nominate as director of the center Prof Carlos Chagas of Brazil and to permit him to remain also as director of the Instituto Oswaldo Cruz. The center will undertake any work that may contribute to the prevention of leprosy, taking especially into account its treatment. Scientists and hygienists of various countries will be invited to take a course of instruction and to promote cooperation in a campaign against the disease. Mr Guilherme Guinle and the Brazilian government will each pay 50,000 Swiss francs annually for ten years to defray the expenses of the center, or a total amount of 300 millions of Brazilian paper reis. The league has announced that it is ready to send specialists in leprology to Rio de Janeiro and to pay their traveling and maintenance expenses, which will approximate 50,000 francs a year. The offer to install the international center came from the Brazilian government, which wrote to this effect to the council of the league, April 15, 1931. The sanitary organization of the league has described Brazil as one of the most advanced countries as regards the campaign against leprosy. The governing body of the leprosy center includes Sir George Buchanan, Surg-Gen H. S. Cumming, Prof Ricardo Jorge, Mrs Janet Campbell, Dr J. J. Jotta, Prof A. Lutrario, Prof Leon Bernard and Professor Bastianelli. The commission of administration includes seven members under the presidency of Mr Guinle, with Prof E. Burnet representing Mr Avenol, general secretary of the League of Nations. The commission suggests that the sanitary organization of the league obtain the greatest possible cooperation from other South American countries in the campaign against leprosy.

Public Hospitals

The corner stones of the polyclinic hospitals of Gavea and of Villa Isabel were laid some days ago with appropriate ceremony. The hospital of Gavea on Mario Ribeiro Street will contain 500 beds and an outpatient service, which will serve not only the ward of Gavea but also the wards of Leblon, Botafogo and Copacabana. The Villa Isabel Hospital will be situated on the grounds of João Alfredo Institute. It will serve the wards of Andaraí and Tijuca and the center of the city until the completion of the Central Hospital on the Place of the Republic.

Marriages

WALTER THOMAS VANDAMET, Bloomington, Ind., to Miss Audrey Wettergren of Jeffersonville, recently.

JOHN RUSSELL MARTIN, Scottsboro, Ala., to Miss Elizabeth Ferrell of Memphis, Tenn., February 5.

HOMER WOOLERY to Mrs Maude Hughes, both of Bloomington, Ind., in Columbus, February 17.

SIDNEY E. STOUT, Fort Worth, Texas, to Miss Helene Earldine Robb of Pampa, February 14.

ADRIAN VAN DYKE HAGAMAN to Miss Sue Griffith, both of Jackson, Miss., in February.

SAMUEL SIMON ALTSZULAR to Miss Constance Wemberger, both of Detroit, March 4.

CARL JOHN GLASPEL to Miss Violet Mohagen, both of Grafton, N. D., recently.

JAMES H. BYRAM to Miss Elizabeth Patterson, both of Atlanta, Ga., March 17.

EUGENE E. SMITH, Waterloo, Iowa, to Miss Betty Groeger of Omaha, February 7.

MARLIN LESTER PURDIN, West Union, Ohio, to Miss Ruth Davidson, January 31.

JOHN W. PARSONS to Miss Isabella G. Hunner, both of Baltimore, March 17.

Deaths

Charles Dewey Center @ Quincy, Ill., Rush Medical College, Chicago, 1894, president elect of the Illinois State Medical Society, past president of the Adams County Medical Society, fellow of the American College of Surgeons, served during the World War, attending surgeon to the Blessing Hospital, aged 64, died, March 31, of a skull fracture received when he was struck by an automobile

Robert C J Meyer, Moline, Ill., Cleveland College of Physicians and Surgeons, Medical Department of the University of Wooster, 1891, Rush Medical College, Chicago, 1892, at one time county coroner, and justice of the peace of Coe Township formerly secretary of the staff of St Anthony's Hospital, Rock Island, aged 68, died, March 4, of pyonephrosis

Don De Witt Knapp, Flint Mich., University of Michigan Medical School, Ann Arbor, 1906, member of the Michigan State Medical Society, past president of the Genesee County Medical Society, formerly health officer of Flint, on the staff of the Hurley Hospital, aged 52, died, March 19, of heart disease

John Sabert Mott, Kansas City, Mo., University of Michigan Medical School, Ann Arbor, 1867, an Affiliate Fellow of the American Medical Association, member of the American Academy of Ophthalmology and Oto-Laryngology, Civil War veteran, aged 89, died, January 7, of acute dilatation of the heart

William Harrison Weirich, Jacksonville, Ill., Bennett Medical College, Chicago, 1909, member of the Illinois State Medical Society, served during the World War, aged 48, on the staff of Our Savior's Hospital, where he died, March 17, of meningitis, following an operation for mastoiditis

Harry Aldes, St Paul, College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1912, member of the Minnesota State Medical Association, aged 50, on the staff of the Bethesda Hospital, where he died, March 21, of acute cholecystitis and hepatitis

William Daniel Atkins, Holdenville, Okla., Vanderbilt University School of Medicine, Nashville, Tenn., 1903, member of the Oklahoma State Medical Association, for many years health officer of Hughes County and Holdenville, aged 59, died, March 15, of cerebral hemorrhage

William Henry Aten @ Brooklyn, Long Island College Hospital, Brooklyn 1883, on the staffs of the Carson C Peck Memorial Hospital, Prospect Heights Hospital, Cumberland Hospital and the Brooklyn Nursery and Infants Hospital, aged 72, died, March 27, of heart disease

Jesse Fred Bond, St Louis, St Louis University School of Medicine, 1912, veteran of the Spanish-American War, formerly on the staff of the Alexian Brothers' Hospital, aged 53, died, March 14, in the Veterans' Administration Facility, Jefferson Barracks, of gastric ulcer

Dilver E Douglas @ Greensburg, Ind., Kentucky School of Medicine, Louisville, 1897, on the staff of the Odd Fellows Home Hospital, formerly member of the state legislature, for many years secretary of the city board of health, aged 63, died March 5, of heart disease

Francis Clark Penoyar @ South Haven, Mich., University of Michigan Medical School, Ann Arbor, 1903, past president of the Kalamazoo Academy of Medicine part owner of the Penoyar Memorial Hospital, aged 63, died suddenly, March 13, of coronary thrombosis

George S Wattam, Warren, Minn., Victoria University Medical Department, Coburg, Ont., Canada 1884, member of the Minnesota State Medical Association past president of the Northern Minnesota Medical Association, aged 77, died, March 17, of heart disease

George D Grant, Springfield, Ohio, Pulte Medical College, Cincinnati, 1878, member of the Ohio State Medical Association, for two years member of the board of education, aged 77, died, March 6, at the City Hospital of hypertrophy of the prostate

Robert Moses Clark, New Britain, Conn., University of Pennsylvania School of Medicine, Philadelphia 1891 member of the Connecticut State Medical Society, aged 63, died Dec 5 1933, in the Masonic Home, Wallingford, of cerebral hemorrhage

William Frederick Manuel, Pasadena, Calif., Harvard University Medical School, Boston, 1921, aged 39, died March 1, in St Vincent's Hospital Los Angeles, of subdural

phragmatic abscess and empyema following gastric resection for peptic ulcer

Amos William Shelley, Port Royal Pa., Bellevue Hospital Medical College, New York, 1874, member of the Medical Society of the State of Pennsylvania president of the Juniata County Medical Society, bank president, aged 83, died, March 1, of influenza

Charles Orin W Bartine, Philadelphia, Hahnemann Medical College and Hospital of Philadelphia, 1903, formerly public school physician for the city board of health, served during the World War, aged 54, died, March 8, of heart disease

Frank Amenzo Walters, Wisconsin Veterans Home, Wis., Hahnemann Medical College and Hospital, Chicago 1890 formerly mayor of Stevens Point, served during the World War, aged 69, died, January 30, of a self-inflicted bullet wound

James Wofford Sanders, New Iberia, La., Tulane University of Louisiana Medical Department, New Orleans, 1899, member of the Louisiana State Medical Society, aged 57, died, January 14, of cerebral hemorrhage and hypertension

Alonzo Slat Tredwell, Brooklyn, Long Island College Hospital, Brooklyn, 1893, member of the Medical Society of the State of New York, aged 65, died, March 8, in the Doctors Hospital, New York, of carcinoma of the esophagus

Berlie Wesley Mercer, Tiffin, Ohio, Eclectic Medical Institute, Cincinnati, 1897, member of the Ohio State Medical Association, on the staff of the Mercy Hospital, aged 68, died suddenly, March 9, of cerebral hemorrhage

Allen Franklin Mowery, Ashland, Ohio, Cleveland College of Physicians and Surgeons, Medical Department of the University of Wooster, 1886, aged 75, died, February 27, of arteriosclerosis and chronic myocarditis

George Edward Gerken, Toledo, Ohio, University of Michigan Medical School, Ann Arbor, 1921, county jail physician, aged 37, died, February 26, in St Vincent's Hospital, of peritonitis, following an operation

Allen Joseph Fox, Norwood, Ohio, Eclectic Medical College, Cincinnati, 1917, served during the World War, aged 47, died, February 17, in the Bethesda Hospital, Cincinnati, of myocarditis and Hodgkin's disease

Edward Beecher Finck, Philadelphia University of Pennsylvania School of Medicine, Philadelphia, 1903 member of the Medical Society of the State of Pennsylvania, aged 77, died, March 24, of heart disease

Clinton J Hancock, Greenup, Ill., Medical College of Ohio, Cincinnati, 1897, member of the Illinois State Medical Society, aged 67, died suddenly, March 17, in a hospital at Effingham, of heart disease

Joseph Dunsmore Monteith, Stratford, Ont., Canada, Trinity Medical College, Toronto, 1895, member of the board of education of Stratford for eight years, formerly mayor, aged 68, died, January 8

William M Hilton, San Francisco, State University of Iowa College of Medicine, Iowa City, 1873, aged 86, died, January 11 in San Fernando, of chronic nephritis and hypertrophy of the prostate

William Clarence Matthews, Roswell, N M., National University of Arts and Sciences Medical Department, 1913 served during the World War, aged 59, died, suddenly, March 6, of angina pectoris

William E Herrin, Dallas, Texas (licensed in Texas, under the Act of 1907) member of the State Medical Association of Texas, aged 60, died, March 7, of carcinoma of the base of the tongue

Ernest F Crummer, Essexville, Mich., Detroit College of Medicine, 1894, village president for four years and postmaster for sixteen years, aged 67, died suddenly, March 10 of cerebral hemorrhage

Elias Sterling Cooper, Los Angeles, Jefferson Medical College of Philadelphia, 1877, Bellevue Hospital Medical College, New York, 1883, aged 81, died, February 12, of cerebral hemorrhage

James Riley Swisher, Healdsburg, Calif., University of California Medical Department, 1877 member of the California Medical Association, aged 84, died, January 31 of chronic myocarditis

Floyd Percy Brockett, Palmdale, Calif., Kansas Medical College, Medical Department of Washburn College, Topeka, 1906, aged 53, died, January 7, in Lancaster, of lobar pneumonia

Charles Edwin Park ⊕ New Haven, Conn., Yale University School of Medicine, New Haven 1881, aged 76, died, March 19, in the Hospital of St. Raphael, of carcinoma of the rectum

Cyril Justin Marshall ⊕ Orlando, Fla., University of Nashville (Tenn.) Medical Department, 1907, aged 51, died February 19, at his home in Sanford, of a self-inflicted bullet wound

Raschid S. Baddour ⊕ Brooklyn American University of Beirut School of Medicine, Beirut, Lebanon, Syria, 1893, aged 68, died, March 1, of arteriosclerosis and cerebral hemorrhage

Daniel Simpson Hager, Los Angeles, Bennett College of Eclectic Medicine and Surgery Chicago 1898 Rush Medical College, Chicago, 1900, aged 70, died, March 15, of pneumonia

Isaac M. George, El Dorado, Ark., Arkansas Industrial University Medical Department, 1896, aged 73, died, March 3, in the Warner-Brown Hospital, of acute nephritis and sclerosis

Curtis Nelson ⊕ Barrington, Ill., Rush Medical College Chicago, 1928, aged 31, died, March 2, when he fell from a fifth story window of the Presbyterian Hospital, Chicago

John Darling Churchill ⊕ Plymouth, Mass. Harvard University Medical School, Boston, 1900, aged 59, died March 2, in the Jordan Hospital, of uremia and acute nephritis

Carleton Yates Ford, Montreal, Que., Canada, Queen's University Faculty of Medicine Kingston Ont., 1900, served during the World War, aged 57, died, February 19

Bert Haughwout, Derry, Pa., Medico-Chirurgical College of Philadelphia, 1893, member of the Medical Society of the State of Pennsylvania, aged 66, died January 26

William Austin Schooley, Waldron Ind. Medical College of Ohio, Cincinnati, 1888, aged 68, died, March 7, of cerebral hemorrhage and hypostatic pneumonia

Ira Jacob Mizer ⊕ Columbus Ohio Ohio Medical University, Columbus, 1902, aged 60, died, March 12, in the White Cross Hospital, of heart disease

Henry Artelt, Philadelphia, University of Pennsylvania School of Medicine, Philadelphia, 1897, aged 65, died March 10, of carcinoma of the throat and tongue

Henry John Hollison, Carmel Calif. Herms Medical College, Chicago, 1906, aged 59, died, January 1, of pyonephrosis and transverse myelitis

Clarence Watson Mercer, Dillonville Ohio Starling Medical College, Columbus, 1891, also a druggist, aged 64, died, March 10, of heart disease

Franklin P. H. Akers, Collegepark Ga. Jefferson Medical College of Philadelphia, 1876, aged 81, died, March 25, of myocarditis and hypertension

John Thomas Binkley, San Diego Calif. Medical College of Ohio, Cincinnati, 1883, aged 70, died March 8, of angina pectoris and arteriosclerosis

John Frederick Moore ⊕ New York Bellevue Hospital Medical College, New York, 1888, aged 67, died suddenly, March 12, of heart disease

Albert D. Edwards, Walkertown N. C. University of Maryland School of Medicine, Baltimore 1903, aged 56, died, February 15, of pneumonia

John Clark Michaux, McMinnville Ore. Kentucky School of Medicine, Louisville, 1889, aged 76, died January 14, of cerebral hemorrhage

William Dennis Colby, Kansas City, Mo. Missouri Medical College, St. Louis, 1890, aged 72, died, January 16, of cardiac hypertrophy

Calvin F. Heffington, Havana Ark. Eclectic Medical Institute, Cincinnati, 1891, aged 82, died February 27, of heart disease

Neal McLain Draper, St. Louis St. Louis University School of Medicine, 1903, aged 58, died, March 5, of mitral insufficiency

Charles Lucian Kreeger, Kansas City, Mo. Kansas City Medical College, 1894, aged 63, died January 8, of angina pectoris

Charles E. Hubbard, Fayette Ohio Detroit College of Medicine, 1893, aged 64, was found dead March 12, of heart disease

Leonard Oscar Hayes, Fremont N. C. University College of Medicine Richmond, Va. 1897, aged 62, died, January 26

Charles D. Potts, St. Louis St. Louis College of Physicians and Surgeons 1892, aged 63, died February 19, of heart disease

Bureau of Investigation

MISBRANDED "PATENT MEDICINES"

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the United States Department of Agriculture

[Editorial Note The abstracts that follow are given in the briefest possible form (1) The name of the product, (2) the name of the manufacturer, shipper or consigner, (3) the composition (4) the type of nostrum, (5) the reason for the charge of misbranding and (6) the date of issuance of the Notice of Judgment—which may be considerably later than the date of the seizure of the product]

Acetphenine Tablets—Llewellyn Laboratories Inc., Philadelphia. Composition Aspirin and caffeine. False statement of composition—[N J 20394 December 1933]

Adlum Active Radium Ointment—Adlum Products Inc. Battle Creek, Mich. Composition Essentially petrolatum and powdered mineral matter with negligible trace of radium. For pimples, ulcers, ringworm, piles, etc. False statements of composition, fraudulent therapeutic claims—[N J 20732 February 1934]

Asthmans—Philadelphia Capsule Company and Joseph McManus Philadelphia. Composition Minute quantities of calcium iodide and caffeine citrate. For asthma, whooping cough, etc. False claims for composition—[N J 20748 February 1934]

Bis Ma Cal—Llewellyn Laboratories Inc. Philadelphia. Composition Magnesium carbonate, bismuth subnitrate, calcium carbonate. False claims for composition—[N J 20394 December 1933]

Collins Plasters—John on & Johnson New Brunswick N. J. Composition Capsicum oleoresin, starch and rubber spread on cloth fabric attached to two metal strips, one of zinc, the other of copper. For relief of pain, inflammation, rheumatism, lumbago, etc. Fraudulent therapeutic claims—[N J 20100 December 1933]

Cyslittans—Philadelphia Capsule Company and Joseph McManus Philadelphia. Composition Tormin for cystitis, prostatic irritation, etc. Fraudulent therapeutic claims—[N J 20748 February 1934]

Dalgerine—Philadelphia Capsule Company and Joseph McManus Philadelphia. Composition Aspirin and acetphenetidin. For influenza, rheumatism, etc. False statement of composition, fraudulent therapeutic claims—[N J 20748 February 1934]

Ergot Anol—Cermak Drug Company, Bayonne N. J. Composition Essentially material derived from plants including in oil such as opium and one such as saffron. Contains no ergot alkaloids. For amenorrhea, dysmenorrhea, menstrual disorders, etc. Fraudulent therapeutic claims—[N J 20351 December 1933]

Frick's Eez All—Adolph F. Frick, San Francisco. Composition Alcohol 16 per cent, plant extracts and water. For pimples, boils, carbuncles, eczema, dandruff, psoriasis, rheumatism, gonorrhea, etc. Fraudulent therapeutic claims—[N J 20700 February 1934]

Hale's Household Pills—Kenyon & Thomas Company, Adams N. J. Composition Irritative drugs such as aloes, podophyllum and anise. For liver complaint, etc. Fraudulent therapeutic claims—[N J 20339 February, 1934]

Healthagain—Healthagain Laboratories Inc. Wellsburg W. Va. Composition Epsom salts, laxative drugs such as jalap, senna and rhubarb, sugar, alcohol and water. For high blood pressure, diseases of the liver, anemias, rheumatism, etc. Fraudulent therapeutic claims—[N J 20734 February 1934]

Hutchinson's Big Head Liniment—Hutchinson Medicine Company, Texarkana Texas. Composition Essentially kerosene oil of turpentine and trace of bicloride of mercury. For rheumatism, sciatica, lumbago, etc. Fraudulent therapeutic claims—[N J 20740, February 1934]

Hydrophn—Bika Biochemical Laboratories Philadelphia. Composition Tablets of milk sugar, organic nitrogenous material, plant material, calcium phosphate, traces of potassium, sodium, iron and manganese chlorides and sulphates. For dropsy, pericarditis, peritonitis, etc. Fraudulent therapeutic claims—[N J 20741 February 1934]

Kalmolax—Llewellyn Laboratories Inc. Philadelphia. Composition Phenolphthalein. False statement of composition—[N J 20394 December 1933]

Kemozone—Select Drug Products Company, Brooklyn. Composition Essentially oxyquinoline sulphate (chinosol) and water. For killing germs, leucorrhea, douching, etc. Fraudulent therapeutic claims—[N J 20365 December 1933]

Lymphin—Bika Biochemical Laboratories Philadelphia. Composition Milk sugar, starch, ground plant material, nitrogenous material, iron, calcium, sodium, potassium and magnesium phosphates, sulphates and chlorides. Alleged hormone stimulant. Fraudulent therapeutic claims—[N J 20742 February 1934]

Menthoform—Turst Mc Ness Company, Freeport Ill. Composition Volatile oils including cassia oil and menthol, formaldehyde, glycerine and alcohol. For psoriasis, sore throat, hemorrhoids, leucorrhea, etc. Fraudulent therapeutic claims—[N J 20363 December 1933]

Merchants Gargling Oil Liniment—Merchants Gargling Oil Company Lockport, N. Y. Composition Extracts of plant drugs a tarry substance tar oil turpentine oil, eucalyptol camphor ammonia and alcohol For rheumatism scurvy pleurisy sore throat, humors sore nipples toothache, ingrown toenails etc Fraudulent therapeutic claims —[N J 20376 December 1933]

Miller's Anti Mole—Miller Manufacturing Company, Lincoln Neb. Composition Nitric acid 65 per cent acetic acid 10 per cent and water For removing moles Fraudulent therapeutic claims —[N J 20372 December 1933]

Newton's Nerve—DeVore Manufacturing Company, Columbus Ohio Composition Bromides of ammonium sodium potassium and strontium extracts of plant drugs benzoate of soda and water For epilepsy sleeplessness delirium tremens etc Fraudulent therapeutic claims —[N J 20377 February 1934]

Oi De Vita—Bika Biochemical Laboratories Philadelphia Composition Essential oils including peppermint For killing germs Was not germicidal Fraudulent therapeutic claims —[N J 20744 February 1934]

O Quaka—Sigler Drug Company Springfield Mo. Composition Epsom salt extracts of plant drugs including laxative drugs and water sweetened with saccharine and preserved with a benzoate Cure all Fraudulent therapeutic claims —[N J 20393 December 1933]

Or Aid—Warners Renowned Remedies Company Minneapolis Composition Zinc chloride zinc sulphate boric acid and water Was not antiseptic For destroying germs pyorrhea etc Fraudulent therapeutic claims —[N J 20352 December 1933]

Orange Honey Compound Cough Syrup—McKesson Langley Michaels Company San Francisco Composition Tartar emetic alum honey alcohol and water Fraudulent therapeutic claims —[N J 20384 December 1933]

Orth's Prescription for the Stomach—Orth Laboratory Company East Liverpool Ohio Composition Baking soda magnesium carbonate and ginger Fraudulent therapeutic claims —[N J 20399 December 1933]

Osteon—Bika Biochemical Laboratories Philadelphia Composition Milk sugar, starch organic nitrogenous material inorganic material talc calcium phosphate potassium sodium magnesium iron and manganese sulphates and chlorides Sold as glandular stimulant Fraudulent therapeutic claims —[N J 20743 February 1934]

Painallay—Painallay Company Kansas City Mo. Composition Cresol 1 per cent small proportions of glycerine and saccharine and water 98 per cent For pain pyorrhea trench mouth etc False claims for composition and fraudulent therapeutic claims —[N J 20556 December 1933]

Petro Colon Antiseptic—Estes Surgical Supply Company Atlanta Ga. Composition Mineral oil and alcohol Possesses no therapeutic properties Fraudulent therapeutic claims —[N J 20397 December 1933]

Photo Synthetic Tea—Photo Synthetic Tea Company Lancaster Pa. Composition Ground up horsetail (*Equisetum orense*) For diabetes Fraudulent therapeutic claims —[N J 20360 December 1933]

Pyro Sana—Alhosen Chemical Company St. Louis Composition Water, 97 per cent with glycerine guaiacol and sugar For pyorrhea trench mouth etc Fraudulent therapeutic claims —[N J 20383 December 1933]

Radium Ointment—Denver Radium Service Denver Composition Potassium carbonate small proportion of isopropyl alcohol quinine camphor eucalyptol menthol soap paraffin compounds water and a radioactive substance False claims for composition since radium content was negligible —[N J 20351 December 1933]

Rheumatus—Philadelphia Capsule Company and Joseph McManus Philadelphia Composition Claimed to contain 5 grains of strontium salicylate actually contained less than 4 grains For rheumatism and gout False claims for composition and fraudulent therapeutic claims —[N J 20748 February 1934]

Rice's Remedy—Rice Colic Remedy Company Springfield Mass. Composition Alcohol about 84 per cent peppermint oil ether extracts of plant drugs For stomach and bowel trouble etc Fraudulent therapeutic claims —[N J 20587 December 1933]

Salacephan—Llewellyn Laboratories Inc Philadelphia Composition Said to contain 2 grains acetylphenetidin to the tablet actually contained not more than 17 grains False claims for composition —[N J 20594 December 1933]

Sanalt—Winsol Inc Boston Composition Epsom salt extracts of plant drugs including nuxvomica and licorice alcohol sugar and water Blood purifier etc Fraudulent therapeutic claims —[N J 20591 December 1933]

Silver Pine Healing Oil—Vicksburg Chemical Company Vicksburg Miss Composition Tar oil and turpentine oil Fraudulent therapeutic claims —[N J 20751 February 1934]

Sister Mary's Compound—Stanley Griffin Company (William R Griffin) Lowell Mass. Composition Small parts of extracts of plant drugs sulphur cream of tartar charcoal and menthol glycerine sugar and water Cure all Fraudulent therapeutic claims —[N J 20750 February 1934]

Stekettes Plin Worm Destroyer—Hazeltine & Perkins Drug Company Grand Rapids Mich. Composition Potassium nitrate 24 per cent sulphur 20 per cent phenolphthalein 17 per cent seed hulls 29 per cent chenopodium and calcium carbonate Fraudulent therapeutic claim —[N J 20561 December 1933]

Thynn Tabs—Obesity Research Bureau Inc Newark N. J. Composition A laxative drug such as rhubarb other powdered vegetable material including marine algae sugar, inorganic material with a trace of iodine Obesity cure Claim that it contained no drugs declared false Therapeutic claims fraudulent —[N J 20361 December 1933]

Trileasco Rx—Trileasco Laboratories Chicago Composition Potassium iodide ammonium acetate small proportions of a magnesium compound and a cathartic resin a trace of salicylate, sugar and water Cure all Fraudulent therapeutic claims —[N J 20396 December 1933]

Vapex—E. Fougere & Company Inc New York Composition Volatile oils including lavender and menthol and 67 per cent alcohol Misbranded because the alcohol content was not declared —[N J 20371 December 1933]

Vin Iodine Comp—Llewellyn Laboratories Inc Philadelphia Composition Claimed to contain $\frac{1}{16}$ of a grain of iodine $\frac{1}{16}$ of a grain of bromine and $\frac{1}{100}$ of a grain of phosphorus found to contain $\frac{1}{4}$ of a grain of iodine no free bromine and no free phosphorus For rickets etc Fraudulent therapeutic claims —[N J 20394 December 1933]

Vital Salve—Bika Biochemical Laboratories Philadelphia Composition Petrolatum paraffin peppermint oil and methyl salicylate For skin eruptions rheumatism etc Fraudulent therapeutic claims —[N J 20744 February 1934]

Zenar Remedies—Bika Biochemical Laboratories Philadelphia There were various products under this name described by number for whooping cough diabetes women's diseases goiter heart disease hardening of the arteries rheumatism impotency pulmonary troubles nerve and bladder remedies All declared sold under false and fraudulent claims —[N J 20729 February 1934]

Zo Ro Lo—Zo Ro Lo Inc Ada Ohio Composition Essentially epsom salt magnesium citrate citric acid glycerine menthol and benzoic acid and water Cure all Fraudulent therapeutic claims —[N J 20598 December 1933]

Correspondence

APPENDICITIS

To the Editor—In a communication in THE JOURNAL, March 17, page 862, Frederick L. Hoffman states that the question is being raised "as to whether many of the operations for appendicitis are justified and necessary." That can be easily answered by clinicians. Obviously an unnecessary appendectomy as evidenced by the absence of gross infection would hardly be a factor in increasing the death rate as corroborated by the accompanying table of cases of acute appendicitis, which shows 1,084 clean cases or closed incisions with one death.

Cases of Acute Appendicitis at Harbin Hospital

	Clean	Deaths	Drainage	Deaths	Abcess	Deaths	Total Cases	Deaths	Rate
1909 1912	35 (68%)	0	10	2	6	0	51	2	3.9%
1913 1916	64 (67%)	0	16	2	15	1	98	3	3.1%
1917 1920	134 (68%)	0	22	2	40	3	196	6	3.0%
1921 1924	102 (66%)	1	72	12	55	4	317	17	5.3%
1925 1928	325 (67%)	0	105	10	37	1	467	11	2.4%
1929 1932	334 (75%)	0	73	7	19	3	446	10	2.2%
Total	1 084 (68%)	1	319	36	170	12	1 572	49	3.1%

This table shows but little change in the death rate from year to year and the same observation may be made in many well ordered clinics where intelligent classifications are made. In the main surgical practice still adheres to convictions formed over a decade ago after much controversy on this particular point that is, to operate when a reasonable diagnosis has been made. The impossibility of an early diagnosis in certain cases, such as extremes of ages obesity and complications, constitutes an unavoidable hazard and another hazard at times exists in the absence of definite symptoms in the presence of grave pathologic developments. The hazard of extraneous conditions should be reckoned. An encouraging sign of the times may be observed in the absence in the newspapers of so many comic references to appendicitis as a fad.

It is timely for such discussions of nonsurgical writers to appear for no reliable authority claims to be able to prevent appendicitis. The menace is here to stay and safety lies only

in early diagnosis and prompt surgical treatment notwithstanding the possibility of unnecessary operation, yet operative observations cannot predicate the ultimate pathologic history of an early acutely inflamed appendix.

R. M. HARBIN, M.D., Rome, Ga.

To the Editor—Under this title in *THE JOURNAL*, March 17, Dr Frederick L. Hoffman refers to a statement in the *New Health Magazine*, London, quoting me as stating that "Appendicitis is now causing more deaths than cancer, with one person in the United States dying every twenty-nine minutes from appendicitis." As the *New Health Magazine* misquoted the statement which I made during the meeting of the American College of Surgeons last October, I wish to correct this statement. In my presentation on appendicitis, I quoted Willis (Willis, A. M. Is Progress Being Made in the Surgical Treatment of Acute Abdominal Conditions, *Virginia M. Monthly* 49:573 [Jan.] 1923) as having stated that prior to the age of 50 the mortality rate from appendicitis was four times as great as from cancer. The figure that there is one person in the United States dying every twenty-nine minutes from appendicitis was obtained by dividing the number of minutes in the year by the number of deaths during the year.

It is because of the quotation in the *New Health Magazine* being so incorrect that I wish to correct it. I have written to Dr Hoffman, informing him of the misquotation.

ALTON OCHSNER, M.D., New Orleans

TREATMENT OF DECUBITUS ULCERS WITH TANNIC ACID

To the Editor—The article by Dr Latimer on the treatment of decubitus ulcers with tannic acid (*THE JOURNAL*, March 10, p. 751) impels me to add a few pertinent suggestions as to the extension and wider scope of this treatment, which has been very successful and efficacious in my hands.

It seems incredible that, when tannic acid was first used in the treatment, and the basis for its use first outlined, it was not extended to the treatment of areas in which there were large superficial denudations of tissue. It occurred to me a few years ago that if tannic acid could tan the dead tissue of burned areas it should be of equal value in the treatment of large superficial abrasions, such as those following motor accidents, as well as in the treatment of bedsores. I have since used this method in a large number of cases and have been highly gratified at the results obtained. It has greatly facilitated the nursing care, greatly relieved pain and to a large extent decreased infections if certain procedures are used.

In the method outlined by Dr Latimer, one of the difficulties first encountered was to maintain a proper temperature. This is highly important and, if not followed, accidental burns are obtained which sometimes are more serious than the original wound. An attempt was at first made to control this by strapping an ordinary thermometer to the affected part, but this was found to be clumsy and not quite satisfactory. Also it was difficult to control the temperature if a heat lamp was used, and many accidental burns frequently result owing to the movement of the patient, so that constant shifting of the distance of the lamp is necessary. Also since no dressings and practically no clothing can be used, many are disinclined to the necessary exposure of the patient. This type of treatment also prevents the patient from moving about, forcing him to lie in a more or less constant position. As decubitus ulcers are common in debilitated patients, this enforced restraint of motion may lead to the onset of more serious trouble.

For this reason, instead of using the heat lamp a tent is made about the bed. This is easy to erect by means of two vertical bars and one longitudinal bar covered over with

blankets and bed sheets, leaving open an area at the head of the bed for air. Here the patient can lie comfortably in a constant temperature, which is easy to adjust. It has been found much better not to have any clothing or at least a minimum of clothing on the patients. They do not object to this, as the bed is enclosed on all sides and shielded from public view. The temperature is controlled by means of six 60 watt bulbs connected in parallel and not in series along the longitudinal bar. This type of connection is important, as it allows very fine adjustments of the temperature by turning on or off one of the electric bulbs. At the same time it makes the patient more comfortable by not focusing all the heat on only one area of the body but provides for an even distribution. It is good policy not to place any of the bulbs too close to the head of the bed. The patient's comfort may also be helped by placing a sheet under the lights and thus taking away the glare and the direct radiation of the heat on localized areas. A thermometer should be hung in the bed and the temperature kept within 105 to 110 F. This is very easy to do. In this tent the patient can move about quite comfortably and shift to varying positions depending on the location of the wounds. It is also of benefit to have a small flap at the head of the bed situated on the side, which the patient can lift and thus look outside without exposing himself. This is also helpful in nursing care and in feeding.

A great many errors are made in the use of tannic acid. This should be prepared fresh daily and left in the ward or at home in the form of a powder. Roughly, a tablespoonful to an ordinary atomizer makes an efficacious solution, approximately 10 per cent. This should be sprayed every fifteen to thirty minutes and no dressings used. I have found it best to spray for longer than the usual twenty-four hours and frequently do so for days. This is of value, as it helps to keep tanned the cracks and breaks that frequently form and thus lowers possible infection. Another error is frequently found at this point and that is the discontinuance of heat. The continued use of heat is essential until the wound heals entirely. The heat keeps the area dry, lowers the risk of infection and at the same time promotes healing, and obviates any need of dressings or clothing over a partially healed area, which in themselves are conducive to infection.

BENJAMIN POLLACK, M.D., Willard, N. Y.

Senior Assistant Physician,
Willard State Hospital

MENSTRUATION AND OVULATION

To the Editor—The article in *THE JOURNAL*, February 10, by Emil Novak, together with your editorial in the same issue, concern the possibility of estimating the time of ovulation in the twenty-eight day menstrual cycle, thereby making use of the theoretical nonfertilizable periods previous to and following the discharge and death of the ovum.

Your reference to the work of Wilfred Shaw leaves an impression, which I believe erroneous, that the time of ovulation in the regular cycle is made definite by the finding of follicles in which the stage of development enables the placing of the time of rupture at the fourteenth day. The value of Shaw's observations is decreased by the small number of ovaries examined (thirty-six cases) and by the difficulty of being certain of the time of discharge of the ovum by estimating the stage of development of the corpus luteum. The degree of proliferation possible in the corpus luteum of menstruation is variable within wide limits, and apparently alterable by circulatory and inflammatory factors to which the female genital organs are peculiarly subject.

Any pathologist of considerable experience in the routine examination of ovaries removed surgically has encountered, as I

have, two and sometimes more recently ruptured follicles in one pair of ovaries. There is always the possibility that more than one ovum may be discharged within one menstrual cycle, not concomitantly as must arise in some twin pregnancies but separated by an interval of several days or longer.

I believe the anatomic evidence is insufficient for reliance to be placed on the existence of a safe period of any definiteness, even in the regular twenty-eight day cycle. I have in mind two recent cases of fertilization occurring in the week before the expected period in women with regular cycles. Such cases make very dubious the value of an otherwise interesting attempt at correlating the menstrual and ovulatory cycles.

LAWRENCE SOPHIAN, M.D., New York

[The communication of Dr. Sophian was submitted to Dr. Novak, who replies.]

To the Editor.—My paper was an evaluation of a method of contraception which is now widely practiced, more especially by those who, for such reasons as religion, are not willing to resort to the more commonly employed mechanical and chemical methods of birth control. For example, it is the only one, aside from absolute continence, which can be employed by the conscientious Catholic. My appraisal of it was based on the available evidence, clinical and physiologic. Contrary to Dr. Sophian, I feel that anatomic evidence indicates the general reliability of the plan of periodic abstinence, especially in women with regular cycles. To take extreme examples I have never, in the study of many thousands of ovaries, seen the earliest stage of corpus luteum formation (indicative of recent ovulation) in the immediately premenstrual or immediately postmenstrual phase. When dealing with later stages of corpus luteum development, no one would care to venture an estimate of the exact time at which ovulation had occurred, but there need be no hesitancy in assuming recent ovulation when one finds young corpora, such as I described in a paper in *THE JOURNAL* as far back as 1916 (October 28 of that year, p. 1285). It is on the study of such young corpora that the knowledge as to the time of ovulation was originally based, though there has been ample confirmation by other methods since then (study of early embryos, recovery of human ova by washing out the genital canal, studies on monkeys with menstrual cycles identical with the human, and so on).

The discharge of two ova, as indicated by two corpora of the same stage of development, occurs occasionally, though not often. That an interval of days should occur between the ovulations is contrary to what is known of reproductive physiology. Furthermore, multiple corpora lutea in one cycle are always, in my experience, quite identical in their histologic characteristics. Dr. Sophian's assumption of a superovulation of this sort, therefore, is a rather gratuitous one, and, so far as I know, quite original with him.

The ultimate proof of the degree of fallibility of the Ogino-Knaus method of biologic contraception will come after accurate reports are available of large numbers of cases in which it has been employed. The clinical reports thus far published come chiefly from such champions of the method as Ogino and Knaus themselves, but they are apparently accurate and they indicate the value of the plan. In Baltimore a considerable number of couples have been practicing the method with success, but always with the explanation that its degree of fallibility—for I feel quite sure it is not infallible—has not yet been determined, and that so to speak, I will not be responsible for any pregnancies which may be incurred.

Finally, a word as to Wilfred Shaw to whom I am glad Dr. Sophian makes reference, because my reply to the latter gives me the opportunity of at least a brief reference to the ungracious comments by Shaw in his paper in the *British Medical Journal* of Jan. 6, 1934 on American gynecologists in

general, and, in particular, on the views of Corner, Hartman and myself as to the possibility of anovulatory menstruation. Incidentally, I quite agree with Dr. Sophian as to the inadequacy of Dr. Shaw's study, on a small material, of the time of ovulation.

THE JOURNAL, in its editorial on the subject, quoted a harsh paragraph from Shaw concerning my views on anovulatory menstruation, so clearly established in both the human being and the monkey, as I showed in my paper. Further confirmation has just come from studies in Schroder's clinic, as reported by Tietze at the recent meeting of the German Gynecologic Society. I have already replied to Shaw's paper in a communication published in the *British Medical Journal* of March 3, having been moved to do this by the sneering attitude exhibited by Shaw toward American gynecologists and by the oracular role which he assumes in the disposition of these still much discussed problems.

His chief complaint seems to be that we persist in including, under the term "menstruation," cases in which ovulation and corpus luteum formation do not occur, even though the menstrual bleeding is just as rhythmic as in the other more common type, so that there is no possibility of making a clinical distinction. In other words, we cling to the time-honored definition of menstruation as a rhythmic physiologic discharge of blood from the uterus, while he prefers to limit the term to those cases in which the periodic bleeding is associated with ovulation and corpus luteum formation. There is, of course, no objection to an expression of honest difference of opinion of this sort. I believe that American gynecologists will resent the tone of Shaw's paper, in which any new idea emanating from America is scoffed at, and apparently for that reason. The interrelations of British and American gynecologists have always been much too pleasant to permit the thought that Shaw's views are shared by any number of his colleagues.

EMIL NOVAK, M.D., Baltimore

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted on request.

USE OF ROENTGEN RAY IN ERYSIPELAS

To the Editor.—Kindly give me your opinion of the treatment of erysipelas with x-rays. Please omit name. M.D. Texas

ANSWER.—The roentgen treatment of erysipelas is a well established method. Among others, Magelhaes and Schmidt both reported excellent results in 1917. Hesse reported further successes in 1918, Schrader in 1921, and more recently Harbinson and Lawson in 1927 (*California & West Med* 26:485 [April] 1927), Platou Schlutz and Collins (Erysipelas. A Clinical Study of the Treatment of This Disease, *Am J Dis Child* 34:1030 [Dec.] 1927) and Notger von Oettingen (*Munchen med Wchenschr* 79:1640 [Oct. 7] 1932). All these reports agree in stating that within twelve to twenty-four hours a large percentage of the cases become afebrile, in a smaller group the fever gradually diminishes and is lost after several days, and in all these the pain, swelling and discomfort disappear in a few days. In some of them there is a recurrence of the fever but most of these cases yield to a second irradiation. The percentage of failures is small.

Although erysipelas is a disease notably eccentric in its course which makes the evaluation of therapeutic measures difficult the good results of roentgen therapy are too prompt and occur in too large a percentage of the cases to be explainable as coincidence or spontaneous improvement.

The report of Platou Schlutz and Collins is of particular interest because they give a comparison of the results of roentgen treatment with the older methods and with the antitoxin treatment. Temperature was reduced most promptly by roent-

gen rays, returning to normal in an average of 15 days, as against 22 days for the antitoxin treatment and from three to four days for the older methods. Symptoms subsided on an average in two days after roentgen treatment, 38 days after antitoxin and on an average in eight days after the older methods of treatment. The mortality in infants was 80 per cent under old methods and 50 per cent under roentgen treatment. The general mortality in their series was 23 per cent for cases treated by other measures and 6 per cent each for roentgen rays and antitoxin. The diseased area extended after the beginning of treatment in 24 per cent of the cases treated by roentgen rays, in 40 per cent of those treated by antitoxin, and in 68 per cent of those given other treatment. In ten particularly severe cases they combined roentgen treatment with the use of antitoxin with good results and they believe that this is the best method of treatment for erysipelas.

In the older series the dosage of roentgen rays was high, a full erythema dose in all and more in some series, but in the latest report cited, that of von Ottingen, excellent results are reported for moderate doses, not over a fourth of the erythema dose repeated not more than once. This author points out that there is no value in waiting a week before giving the second dose, as some stipulate, but that the second exposure should be given on the second day after the first one if results have not been satisfactory. Most authors state that they used about 100 kilovolts unfiltered, and Harbison and Lawson point out the necessity of including a 3 cm margin of apparently uninvolved skin in order to include all infected areas.

Favorable reports have been made of the value of ultraviolet irradiation in early erysipelas, although Finsen failed to obtain good results in his early experiments. It must be conceded that the use of roentgen rays, antitoxin and ultraviolet radiation has made possible a much more cheerful prognosis for the sufferer from erysipelas than was possible before.

FASCIA LATA IN FRACTURE OF PATELLA

To the Editor—Would you kindly give me information concerning the use of fascia lata in the repair of fracture of the patella? M D

ANSWER—Some of the best articles on the use of fascia lata in the repair of fracture of the patella are those by Gallie and LeMesurier in the *British Journal of Surgery*, October, 1924, and in the *Journal of Bone and Joint Surgery*, January, 1927. They believe that transplants, when given an adequate supply of lymph, continue to live practically unchanged. They heal to whatever structure they are placed in contact with by ordinary scar, the strength of which depends on the degree to which the surfaces that come in contact with it are denuded of areolar tissue and the scarification area of these surfaces.

The technic is as follows. The fascia lata is obtained from the outer surface of the thigh by long incision or by using the fascia lata strippers designed by Masson—a modification of the Mayo vein stripper.

Holes are drilled into the patella and the fascia lata, threaded on a special needle, is inserted into these holes. A splint is applied.

In their operation the bone fragments are drawn as closely together as possible and are held in this position by a heavy loop of fascia lata passed through drill holes. The ends of the loop are freed from areolar tissue and woven through each other and sutured with catgut.

By this means the continuity of the quadriceps is established and a considerable portion of the normal extensor power restored.

If the ununited fracture is close to the upper or lower border of the patella the drill holes are made in the large fragment only, and the loop of fascia is drawn through the quadriceps tendon or the ligamentum patellae, through a transverse tunnel made with a narrow knife. The presence of a small flake of bone on the end of the tendon prevents the loop from coming out.

The operation consists in bringing the freshened surfaces of the fragments together and inserting a loop of fascia lata 1 inch in width through two vertical holes in the upper fragment and transversely through the ligamentum patellae just below the lower fragment. The transverse rent in the lateral expansion of the quadriceps tendon and the capsule of the knee joint is closed with a living suture of fascia threaded on the needle. Gallie and LeMesurier transfix each stitch combining it with a single hitch. They end the suture by passing it through itself, splitting and tying the ends in a triple knot and transfixing the whole by a catgut or silk suture.

It is interesting to note that Hoguet has used fresh fascia lata from one patient to another with complete satisfaction.

Alcohol-preserved fascia may be used for the repair when, for any valid reason, autogenous grafts cannot be used.

Masson's method of obtaining fascia lata for living suture is indicated when only a small amount is necessary. In any case in which it is necessary to use three or four living sutures more than 20 cm in length, it is advisable to make a long incision on the side of the thigh.

After the removal of the necessary amount of fascia lata the opening in the fascial sheath should be closed in order to prevent a muscle hernia. In closing such a wound, a strip of fascia can be carried from one side to the other and back to the original side at a point situated at about the middle of the wound, or it can be closed by interrupted or continuous catgut sutures, reducing in great measure any bulging of the vastus lateralis muscle.

Masson's original article appeared in the *Proceedings of the Staff Meetings of the Mayo Clinic* (489 [March 20] 1929).

Fascia lata is obtainable commercially in tubes containing strips 8 inches long and from one-fourth inch to one half inch wide.

VITAMIN A FREE DIET FOR RABBITS

To the Editor—I am desirous of obtaining a vitamin A free diet for rabbits. I have tried unsuccessfully to obtain this information and finally remembered that you might be so kind as to help me out. Kindly omit name. M D Pennsylvania.

ANSWER—An extensive study of the effect of diets devoid of vitamin A on rabbits has been conducted by V E Nelson and his co-workers at the Iowa State College Experiment Station in Ames. (The results are reported by Nelson, V E, and Lamb, A R. *Am J Physiol* 51:530 [April] 1920 and Nelson, V E, Lamb, A R, and Heller, V G, *ibid* 59:335 [Feb] 1922.) Rabbits were compared with rats as to their requirements of vitamin A by the use of a ration consisting of commercial casein 20, dextrin 70, salts 5, wheat embryo 5 and alfalfa meal 25 parts. The alfalfa meal was extracted with hot alcohol for ninety-six hours to remove vitamin A, but the casein was not purified. This diet proved capable of supporting slow growth in rats for two or three months, but rabbits varying in age from 3 to 8 weeks developed xerophthalmia in from two to eight weeks, depending on the age of the animal at the beginning of the experiment, and died in from two to three months.

Another ration consisting of oats 60, gelatin 10, agar 5, salts 5, dextrin 20, and extracted alfalfa 20 parts, produced a chronic form of xerophthalmia in rabbits.

To compare the vitamin A requirement of growing pigs, rabbits and rats, the following ration was used: white corn 55, linseed meal 22, ground oats 15, tankage 5, and salt mixture 3 parts. A sow was fed this ration during the gestation and suckling period. Four pigs were farrowed, three of which lived but remained unthrifty and grew slowly. No signs of eye trouble were observed at any time, but when the ration of one of the pigs was supplemented with an allowance of about 10 Gm of butter fat, rapid improvement in condition resulted. The same ration when fed rabbits caused xerophthalmia and death in one case after six weeks and in another case slight xerophthalmia, which was cured by the addition of 5 per cent of butter fat to the ration. Four rats on the same ration grew fairly well to maturity but the young that were born were not suckled and died in a few hours. The authors conclude that the pig may be classed with the rat in requiring less vitamin A than the rabbit.

FACIAL PARALYSIS AFTER MASTOIDECTOMY

To the Editor—I should like to secure possible information from you on the incidence (statistical) of facial paralysis following radical mastoidectomy together with the medicolegal aspects and any cases of such a nature that have been tried. I would greatly appreciate a review of the literature on this subject from a medical standpoint. M D Wis

ANSWER—It has been impossible to obtain definite data regarding the incidence of frequency of facial nerve paralysis following radical mastoidectomy. Many cases are not reported in the literature, partly, no doubt, because a patient in whom paralysis has occurred seeks the advice of various physicians, so that the original operator may not have the opportunity to follow up the cases in which the postoperative paralysis has developed. A number of cases have at various times been abstracted in the medicolegal department of *THE JOURNAL*, as for instance the case of *Schoening v Smith* (N D) 231 N W 278 (*THE JOURNAL*, April 25, 1931, p 1432), in which the Supreme Court of North Dakota upheld the trial court in finding that the plaintiff had failed to substantiate his claim,

basing his decision on the well settled rule that a patient must connect his injury with negligence on the part of the physician.

In another case, *Brant v Sweet Clinic*, 8 P (2d) 972, decided by the Supreme Court of Washington, 1932, and abstracted in *THE JOURNAL*, Oct 15, 1932, page 1380, the defendant clinic was held liable for damages to the patient for facial paralysis following the removal of a branchial cyst.

Generally speaking, one may say that a suit arising as a result of injury to the facial nerve following a mastoidectomy does not differ in principle from a suit arising out of any other operation. In every instance it may be claimed that the physician was negligent, that he lacked due knowledge and the proper amount of skill or failed to exercise that skill, that he did not use his best judgment and that the patient was actually injured because of a fault on the part of the physician. Unless the plaintiff can prove that the physician failed in any of these requirements, he is not entitled to recover damages as a result of the operation. Among references in the literature are the following:

- Hjelmman G. Therapy of Postoperative Facial Paralysis. *Acta Soc med Scand* (series B fasc 3 art 6) 17:1 1933.
Smith J M. Decompression of Facial Nerve for Postoperative Facial Paralysis. Two Cases. *Ann Otol Rhin & Laryng* 40:1179 (Dec) 1931.
Arrive J T. Successful Treatment of Postoperative Paralysis of Facial Nerve. *Bull Vet Adm* 8:404 (May) 1932.
Smith J M. Decompression of Facial Nerve for Facial Paralysis Following Operation. *Cases Laryngoscope* 41:358 (May) 1931.
Key K W. Facial Paralysis and Decompression of the Facial Nerve. *Laryngoscope* May 1922.
Duel A B. History and Development of Surgical Treatment in Facial Palsy. *Surg Gynec & Obst* 56:382 (Feb No 2A) 1933.
Ballance C. Note on Operative Treatment of Facial Palsy with Account of Some Animal Experiments. *Brit M J* 1:787 (April 30) 1932.
Ballance C, and Duel A B. Operative Treatment of Facial Palsy by Introduction of Nerve Grafts into Fallopiian Canal and by Other Intratemporal Methods. *Arch Otolaryng* 15:1 (Jan) 1932.
Duel A B. Surgical Treatment of Facial Palsy. Ballance Duel Method. *Laryngoscope* 42:579 (Aug) 1932.
Duel A B. Clinical Experiences in Surgical Treatment of Facial Palsy by Autoplastic Nerve Grafts. Ballance Duel Method. *Arch Otolaryng* 16:767 (Dec) 1932.
Duel A B and Ballance C. Note on Result Which Follows Grafting of Raw Peripheral end of Divided Cervical Sympathetic Nerve to Another Nerve in Vicinity. *Brown* 55:226 (June) 1932.

ERGOSTEROL AND STONE FORMATION

To the Editor—Is there any experimental or reliable clinical evidence that the administration of ordinary doses or large doses of irradiated ergosterol causes or is followed by the formation of stone in the uro genital tract?

THOMAS W. MALONEY, M.D., Geneva N Y

ANSWER—In a paper by W E Dixon and J C Hoyle on the effects of irradiated ergosterol in large doses (*Brit M J* 2:832 [Nov 10] 1928) there is a report of the production of calculi in animals after administration of large doses of viosterol (irradiated ergosterol). The authors stated that in their experiments lack of vitamin A was certainly not the explanation of the formation of calculi. All the animals were given a correct diet, with an adequate allowance of vitamins A, B, C and D. The control animals were in every way normal, and infection of the urinary tract was present in no case, control or experimental. In these experiments the origin of the stones must be entirely different from that of those previously described, in that it must be due to excess of viosterol. The authors regard it as probable that the viosterol facilitates the absorption of calcium and phosphate from the intestine. They add: "All this evidence suggests that calculi formation may accrue by the excretion from the kidney of larger amounts of calcium and phosphate than can be held in solution by the urine and this we believe is the explanation of the present observations."

They also add that the amounts of viosterol necessary to cause urinary calculi were so large that the condition has obviously little clinical importance. The German observers, however, obtained much more marked changes with smaller doses and if their experiments are valid an excess of vitamin D may not be without clinical interest.

The occurrence of calculi is also described by J C Hoyle (*Toxic Effects of Irradiated Ergosterol J Pharmacol & Exper Therap* 38:271 [March] 1930).

There is evidence of marked histologic changes in the kidneys after the use of large doses of viosterol. Spies and Glover (*Renal Lesions with Retention of Nitrogenous Products Produced by Massive Doses of Irradiated Ergosterol Am J Path* 6:485 [July] 1930) conducted experiments on rabbits with a product having 1,000 times the antirachitic potency of ordinary cod liver oil. This produced severe toxic manifestations. Extensive pathologic changes occurred in the renal tubules. Calcium was deposited in and near the basement membrane of many of the severely damaged tubules and to some extent

within the degenerated epithelium. The collecting tubules showed large hyaline casts containing calcium. There was calcification of the glomerular capsules. Whether calcareous debris or stone was actually found in the bladder is not recorded. Somewhat similar results are described for rats by Shohl, Goldblatt and Brown (*J Clin Investigation* 8:505 [June] 1930). The calcium deposits appear to be a manifestation of metastatic calcification. Nothing comparable to this has been described for "ordinary doses" of viosterol.

RESISTANT URTICARIA

To the Editor—I am writing to ask whether there is anything else you can suggest for a case of erythema multiforme of the urticarial type which has run since July 1932. The patient has been skin tested for everything I can think of he has had cultures of the nose throat blood and stool with intradermal tests of the organisms recovered. He has been on elimination diets. I gave the vaccines made from his cultures over a period of time without benefit. Absolutely the only contributing factor known was that he had some exceedingly severe attacks following hikes in the mountains as has been his custom. In these attacks after the lesions had become confluent the ankles and feet and wrists and hands swelled massively. Any exercise seems to bring on the lesions in direct proportion to the amount of the exercise. However the attacks come in waves at intervals of from one to three weeks with periods of comparative freedom between. He has had salicylates, calcium viosterol solution of anterior pituitary and histamine injections among other things. I have tried epinephrine and atropine without relief. The only relief seems to be in soaking the hands and feet in very hot water. Alcohol helps a little. The patient is 34 years of age married and making a fair living. He has an allergic history in that he had had hives hay fever and a little asthma before. I have wondered whether it might not be significant that he was taking bay fever pollen for the fourth year when this disease began. In fact he took it during the winter of 1931-1932 and had just attained his maximum dose. He stopped at once and had a little hay fever that summer but none in 1933 (with no pollen). He suffers intensely. The lesions have appeared everywhere except on his face and when they appear on the palms and soles the itching burning pain that results is terrible. He has no conflicts that I know of. Although I recognize the essential neurotic element in the condition he has seen a very capable dermatologist who told him he would probably recover in time and offered no additional treatment. Of course I can find no foci of infection. His general condition remains very good. He weighs 175 pounds (80 Kg) for instance and is 5 feet 11 inches (180 cm) tall. I might say that I had him play golf regularly last summer with the idea of immunizing him against exercise with possibly a little benefit. I would greatly appreciate any help. Please omit name and address.

M D Washington

ANSWER—The patient has one of the obstinate types of urticarial eruptions. He has an allergic background, and the picture is further complicated by the fact that physical exertion provokes an angioneurotic type of eruption. Assuming that all foci of infection have been ruled out (roentgenograms of the teeth revealed no abscesses) and there is absolutely no ingestion of drugs, such as those in the coal tar group, or cathartics containing phenolphthalein, the following additional therapy is suggested. The use of autologous therapy by withdrawing 10 cc of the patient's own blood, and reinjecting it intramuscularly. This may be given once or twice weekly. If there is no response, then the antianaphylactic effect of peptone in 0.5 Gm doses in capsules, twenty minutes before meals, should be considered. This may be combined with mercury with chalk, 0.065 or 0.13 Gm, after meals. Further therapy consists of limiting animal foods and giving *Bacillus acidophilus* by mouth. Rest and freedom from nervous and emotional factors are essential to any scheme of treatment in this case.

GLYCOSURIA AND POTENTIAL DIABETES

To the Editor—In an otherwise normal examination a trace of sugar was found in the urine. The following day 100 Gm of dextrose was given by mouth and the two hour urine sample showed 0.4 per cent sugar. Four days afterward a sugar tolerance test was run (John Wu) with the following results: fasting 90 mg per hundred cubic centimeters one hour 148 mg two hours 118 mg. Should this case be classified as one of renal glycosuria or of potential diabetes? Kindly omit name.

M D Missouri

ANSWER—It is always safer to regard a case such as this as one of potential diabetes until proved otherwise. The data as furnished suggest a normal response to the sugar tolerance tests. The fasting blood sugar of 90 mg must be considered normal. The fact that there was 0.4 per cent sugar following the ingestion of 100 Gm of dextrose is not conclusive evidence for a differential diagnosis between renal glycosuria and alimentary glycosuria.

There are further criteria that must be established before one is justified in accepting a final diagnosis of renal glycosuria. These are first a relatively slight or no parallelism between intake and excretion of sugar. Whereas in true diabetes the patient will ordinarily excrete sugar in a quantitative relation-

ship to the amount of carbohydrate taken in, the patient with renal glycosuria will show no such quantitative comparisons, and it will be found extremely difficult to make the glycosuria disappear completely even on a strict diet. Also it is important to note the absence of the usual diabetic symptoms in a patient with renal glycosuria, and a final test is that this patient does not develop diabetes.

BRAZERS' CHILLS OR METAL FUME FEVER

To the Editor—Can you give me any information on brazer's chills? I have a patient who has had four or five seizures within the past year. He uses a Tobin bronze brazing rod which is a compound composed principally of brass and zinc. The zinc passes off in fumes which are inhaled and produce a severe chill lasting from three to six hours. If you have any literature please give me references as I am interested in learning more on the subject.

O VAN DER VELDE M D Holland Mich

ANSWER—Tobin bronze is likely to contain 60 per cent of copper, 38 per cent of zinc and 0.66 per cent of tin. "Brazers' chills" are one form of 'metal fume fever'. This occupational disorder is likely to arise around welding operations, metal founding, torch metal cutting, and galvanizing. Zinc is perhaps the commonest cause of the disturbance, possibly because of the relatively low temperature at which zinc is volatilized. "Zinc chills," "brass founders' ague" and "brazers' chills" are all descriptive of the same type of ailment, for which there are many other descriptive terms. In the typical case, symptoms commonly do not arise until after the end of work exposure. These include marked chilling somewhat similar to a malarial chill, weakness, lassitude and profound thirst followed after a few hours by sweating and still later by a distaste for food. No chronic form of the disease is known and ordinarily the worker does not lose time from his employment. At times there is mild inflammation of the eyes and respiratory tract. Apparently workers continuously exposed become less susceptible. Conversely, new workers readily may be affected. In foundries the condition is more prevalent during the winter months and during wet, snowy weather. Further discussion may be found in "Industrial Health," by Kober and Hayhurst, Philadelphia: P. Blakiston's Son & Co., 1924 and "Industrial Poisons in the United States" by Alice Hamilton, New York, Macmillan Company, 1929. Numerous articles have appeared in the *Journal of Industrial Hygiene* during the past ten years under such titles as "metal fume fever," "zinc poisoning" and "brass founders' chills."

TIMING IN IMMUNIZATION AGAINST INFECTIOUS DISEASES

To the Editor—Would you kindly give me the following information on immunizations. I should like to know just how much time should be allowed between the prophylactic treatments for smallpox, diphtheria and whooping cough (Sauer vaccine). Since it takes anywhere from two to four months to acquire these various immunities, I am not exactly sure as to whether the specific antibodies will form simultaneously or whether it is best to wait until one immunization is acquired before starting another one. Please omit name. M D, Massachusetts

ANSWER—The best plan is to allow four months to intervene after each of these three important immunization procedures. Because whooping cough causes more deaths in children under 2 than do diphtheria, measles and scarlet fever combined, it is prudent to immunize first against whooping cough—preferably during the second half year of life. Four months later a single alum toxoid injection against diphtheria should be given. Four or more months thereafter, when the Schick test is performed (preferably in the spring or autumn), the smallpox vaccination should be done.

TREATMENT OF WORMS IN DOGS

To the Editor—Kindly outline a simple and effective treatment of round and flat worms in dogs. Please omit name. M D, Pa

ANSWER—Perhaps the commonest roundworm in the dog is *Ascaris mystax* and the commonest flatworm *Dipylidium caninum*, although many other tenias may be found. The principles of treatment are the same as for man, i.e., the administration of an anthelmintic after a comparative fast as in the morning followed by a cathartic in two or three hours. Some of the commonly used anthelmintics for roundworms are santonin, thymol, carbon tetrachloride and oil of chenopodium and for flatworms oleoresin of aspidium and pelletierine tannate. These may be given in approximately the same dose as for man to adult dogs, and proportionately less for young puppies. Suitable cathartics are mild mercurous chloride, magnesium sulphate, and so on.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD OF DERMATOLOGY AND SYPHILIGOLOGY Written Examinations will be held in various cities April 30. Oral Cleveland June 11-12. Sec. Dr. C. Guy Lane, 416 Marlboro St. Boston.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY Oral (all candidates), Cleveland, June 12. Sec. Dr. Paul Titus, 1015 Highland Bldg. Pittsburgh.

AMERICAN BOARD OF OPHTHALMOLOGY Cleveland June 11 and Butte Mont. July 16. Application must be filed at least 60 days prior to date of examination. Sec. Dr. William H. Wilder, 122 S. Michigan Bldg. Chicago.

AMERICAN BOARD OF OTOLARYNGOLOGY Cleveland June 11. Sec. Dr. W. P. Wherry, 1500 Medical Arts Bldg. Omaha.

ARKANSAS Basic Science Little Rock May 7. Sec. Mr. Louis E. Gebauer, 701 Main St. Little Rock. Regular Little Rock May 14-15. Sec. Dr. A. S. Buchanan, Prescott. Homeopathic Little Rock May 8. Sec. Dr. Allison A. Pringle, Eureka Springs. Eclectic Little Rock May 8. Sec. Dr. L. L. Marshall, 820 W. 14th St. Little Rock.

CALIFORNIA Reciprocity San Francisco May 16. Sec. Dr. Charles B. Pinkham, 420 State Office Bldg. Sacramento.

CONNECTICUT Basic Science New Haven June 9. Prerequisite to license examination. Address: State Board of Healing Arts, 189 Yale Station, New Haven.

IOWA Iowa City June 5-7. Dir. Division of Licensure and Registration Mr. H. W. Grefe, Capitol Bldg. Des Moines.

NATIONAL BOARD OF MEDICAL EXAMINERS The examinations in Parts I and II will be held at centers in the United States where there are five or more candidates. May 7-9 (limited to a few centers). June 25-27 and Sept. 12-14. Ex. Sec. Mr. Everett S. Elwood, 225 S. 15th St. Philadelphia.

NEBRASKA Basic Science Omaha May 12. Medical Omaha June 8-9. Application must be filed at least fifteen days prior to date of examinations. Dir. Bureau of Examining Boards Mrs. Clark Perkins, State House, Lincoln.

NEVADA Carson City May 7. Sec. Dr. Edward E. Hamer, Carson City.

WYOMING Cheyenne June 4. Sec. Dr. W. H. Hassel, Capitol Bldg. Cheyenne.

ADVISORY BOARD FOR BOARDS CERTIFYING SPECIALISTS

Announcement is made of the formation of the Advisory Board for Medical Specialties, previously referred to editorially in THE JOURNAL. The purpose of this advisory board is to coordinate the activities of the various official groups already concerned with postgraduate medical education in the specialties, and to standardize their methods of work and the certification of medical specialists by the existing examining boards.

It is composed of representatives from the following groups: the Association of American Medical Colleges, the American Hospital Association, the Federation of State Medical Boards of the United States, the National Board of Medical Examiners, the American Board of Ophthalmology, the American Board of Otolaryngology, the American Board of Obstetrics and Gynecology, the American Board of Dermatology and Syphilology, and the American Board of Pediatrics. Examining boards in other specialties may be eligible for representation on this board on meeting certain high standards of qualification.

The officers are president, Louis B. Wilson, Rochester, Minn.; vice president, J. S. Rodman, Philadelphia; secretary and treasurer, Paul Titus, Pittsburgh; members of the executive committee, W. P. Wherry, Omaha, and W. B. Lancaster, Boston.

The Advisory Board for Medical Specialties should have an important influence on undergraduate medical education as well as on graduate education in the specialties. It will assist in the active investigation and listing of postgraduate training facilities both in the United States and in Canada, and to a lesser extent abroad, much of which has already been done in this country by the Council on Medical Education and Hospitals of the American Medical Association. It should be an important influence in effecting a general improvement in the standards of practice in the various specialties.

It is expected and planned that the Advisory Board for Medical Specialties will be reportable to and work under the general direction of the Council on Medical Education and Hospitals of the American Medical Association.

The next edition of the American Medical Directory plans to publish information about the acceptable special boards as well as to indicate those physicians who are diplomates of the boards. Plans are likewise being formulated for the proposed publication of a directory of diplomates which shall also contain

information regarding postgraduate training facilities, special residencies available, and general qualification necessary for certification and such official recognition as a specialist in any given branch of medicine

The next meeting of the Advisory Board will be held in Cleveland, Sunday, June 10, or immediately prior to the next annual session of the American Medical Association

Kansas December Report

Dr C H Ewing, secretary, Kansas State Board of Medical Registration and Examination, reports the written examination held in Topeka, Dec 12-13, 1933. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Ten candidates were examined, all of whom passed. Eight physicians were licensed by reciprocity. The following schools were represented:

School	PASSED	Year Grad	Per Cent
Howard University College of Medicine	(1933) 83	84	85
University of Illinois College of Medicine	(1933)		88
University of Kansas School of Medicine	(1933)		91
St. Louis University School of Medicine	(1933)		86
Washington University School of Medicine	(1924)		85
Meharry Medical College	(1933)	84	86

School	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Bennett Medical College Chicago	(1912)		Illinois
Northwestern University Medical School	(1920)		Illinois
University of Kansas School of Medicine	(1932)		Louisiana
University Medical College of Kansas City Missouri	(1913)		Missouri
N Y Univ Univ and Bellevue Hosp Med College	(1922)		Missouri
Univ of Okla School of Medicine (1931)			Oklahoma
Baylor University College of Medicine	(1931)		Texas

Louisiana December Report

Dr Roy B Harrison, secretary, Louisiana State Board of Medical Examiners, reports the written and practical examination held in New Orleans, Dec 7-9 1933. The examination covered 12 subjects and included 100 questions. An average of 75 per cent was required to pass. Twenty-nine candidates were examined, all of whom passed. Eight physicians were licensed by reciprocity. The following schools were represented:

School	PASSED	Year Grad	Per Cent
Emory University School of Medicine	(1933)		83
Northwestern University Medical School	(1930) 83		81
University of Illinois College of Medicine	(1933)		78
University of Kansas School of Medicine	(1933)		85
University of Louisville School of Medicine	(1933)		82
Louisiana State University Medical Center	(1933) 79		83*
Tulane University of Louisiana School of Medicine	(1932)		77
87 8† (1933) 81 5 82 2 82 9 83 9 84 6			
Johns Hopkins University School of Medicine	(1932)		84
Harvard University Medical School	(1932)		81
University of Minnesota Medical School	(1932)		85
Meharry Medical College	(1932) 75		79
University of Tennessee College of Medicine	(1932)		83
84 7 (1933) 82 4			
Vanderbilt University School of Medicine	(1933)		84
Baylor University College of Medicine	(1933)		77
University of Texas School of Medicine	(1933)		84
University of Virginia Department of Medicine	(1933)		85
University of Wisconsin Medical School	(1932)		79

School	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Rush Medical College	(1926)		Illinois
Tulane University of Louisiana School of Medicine	(1931)		Alabama
Bellevue Hospital Medical College	(1897)		Alabama
University of Rochester School of Medicine	(1931)		Maryland
Western Reserve University School of Medicine	(1920)		Ohio
Jefferson Medical College of Philadelphia	(1923)		Georgia
University of Tennessee College of Medicine (1928)	(1931)		Tennessee

* This applicant has completed his medical course and will receive his M.D. degree and Louisiana license on completion of internship
† License withheld pending completion of citizenship

Montana October Report

Dr S A Cooney, secretary, Montana State Board of Medical Examiners, reports the written examination held in Helena Oct. 3-4 1933. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Four candidates were examined, all of whom passed. Seven physicians were licensed by reciprocity. The following schools were represented:

School	PASSED	Year Grad	Per Cent
Rush Medical College	(1931)		86
University of Minnesota Medical School	(1933)		85
Long Island College Hospital	(1925)		83
University of Oregon Medical School	(1932)		86

School	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
University of Colorado School of Medicine	(1932)		Colorado
Northwestern University Medical School	(1933)		Washington
University of Michigan Medical School (1925)	(1928)		Michigan
University of Nebraska College of Medicine	(1931)		Kansas
McGill University Faculty of Medicine	(1932)		Colorado

Book Notices

Neurology By Roy R Grinker Associate Professor of Neurology the University of Chicago Cloth Price \$8.50 Pp 979 with 401 illustrations Springfield Ill & Baltimore Md Charles C Thomas 1934

This volume presented primarily as a textbook for students of medicine, will also be found by general practitioners to be exceedingly practical as a reference work for them. It is developed according to a simple plan, which adapts it especially to such use. It begins logically with the embryology and anatomy of the central nervous system, including a discussion of the cerebrospinal fluid. There is a chapter on the reflexes and the pathology of the nervous system, followed by an outline of the technic of neurologic examination. The author then discusses the various portions of the nervous system in detail. There is a chapter on tumors of the peripheral nerves and spinal cord, and also one on muscle tone and posture, which are associated with chapters on the cranial nerves and the cerebellum. The latter half of the volume concerns the anatomy and physiology of the blood supply to the central nervous system and the diseases of the cerebrospinal vascular system. Succeeding chapters are concerned with infection, syphilis, trauma, atrophies, epilepsy, headaches, dyscrasias, toxins, degenerative diseases and developmental defects.

The book is exceedingly well written and the illustrations, while not profuse are practical. They are selected with a view to aiding comprehension of the text. The language is didactic. For example, the treatment of intracranial tumors begins, "There is but one logical treatment for neoplasms, intracranial or otherwise, which endanger the life and health of the patient and that is their complete removal." Then, however, follows a consideration of the indications for operative procedure which points out when such operations are unwarranted. There are also discussions of the use of roentgenotherapy. Each of the chapters is followed by a well selected bibliography of the periodical and book literature of the subject concerned.

Of special interest to the general reader are the chapters on epilepsy and headaches. The classification of epilepsy is based on the vast periodical literature of recent years. Each of the hypotheses is discussed thoroughly in relationship to practical considerations. In his therapy of epilepsy the author considers dietary control, the use of various types of drugs, surgical methods and dehydration, and the question of institutionalization. It is interesting to observe that he has but little to say relative to the treatment of migraine on an allergic basis.

Altogether, the book must be considered a most useful volume for the general reader, largely because of the simplicity and directness of the presentation and also because it is written so definitely with the needs of students and beginners in mind.

Erkrankungen des Herzmuskels und der Herzklappen 11 Oeynhau sener Arztevereinskurs 6 und 7 Mal 1933 Herausgegeben vom Arzte veretn zu Bad Oeynhau sen Paper 1 rlee 5 marks Pp 94 with 10 illustrations Dresden & Leipzig Theodor Steinkopff 1933

This is a collection of lectures recently given at Bad Oeynhau sen. H. Reins lecture is a brief summary of his recent excellent work on the physiologic factors governing coronary circulation. F. Büchners lecture presents the present status of the relation of the anatomic lesions to the clinical and electrocardiographic observations in coronary thrombosis and sclerosis. The author emphasizes that the pain in angina may be due to disseminated focal necrosis of the heart muscle when obvious gross infarcts are absent. A. Röhl gives an authoritative succinct summary of the modern knowledge of metabolism as related to heart disease. E. Laquer in a lecture on endocrine disorders of the heart has brought down to date the relation of the thyroid gland to cardiac disorders and has briefly presented the effects of the other endocrine glands on the circula-

tion. F. Volhard discusses the differential diagnosis of valvular defects. This lecture is a clear evaluation of the various physical signs to be found in patients with valvular disease. Emphasis is placed on the fact that the diagnosis of the valve lesion is only the beginning of the problem facing the physician. Throughout, the thought is stressed that too much attention should not be paid to the auscultatory observations at the risk of overlooking other physical signs. The other three lectures, given by C. Kroetz, C. Hegler and O. Krayer, are less instructive than the lectures just discussed. The collection of lectures has sufficient merit to warrant recommending the book to the internist interested in heart disease. The lecturers are cognizant of the important part the American school has taken in advancing knowledge in these fields. The attempt of these lecturers to incorporate the recent advances in physiology in a clinical presentation is commendable and might easily serve as a stimulus for similar attempts in this country.

The Modern Treatment of Syphilis. By Joseph Earle Moore, M.D., Assistant in Medicine, The Johns Hopkins University. Cloth. Price \$5. Pp. 73, with 41 illustrations. Springfield, Ill. & Baltimore: Charles C. Thomas, 1933.

Some one has said "There are lies, damned lies and statistics." This monograph goes far to dispute the truth of this assertion. What more natural than that the author, brought up under the shadow of Raymond Pearl, should use a statistical approach to his subject? Not that the reader will in any way find the book hard reading—the contrary is the case. The text is extremely well written, is interesting, and, owing to the data furnished, is most convincing.

It is impossible in the limits of a book review to discuss the monograph as it deserves. The volume has the marks of a master hand and is a real contribution from American medicine to world syphilology. The chapters on the prognosis of syphilis, untreated and treated, the treatment of early syphilis and the treatment of latent syphilis are exceedingly well done. The author, however, reaches his real heights in discussion of the treatment of syphilis complicated by pregnancy and the treatment of cardiovascular syphilis and in the chapters devoted to neurosyphilis. One gathers from reading these chapters that Moore feels that the Wassermann test is not used as universally as it deserves, and that many times a case of syphilis, if it had been diagnosed earlier, would have been far more amenable to treatment. Yet as the convincing data are spread before the reader, syphilis is, after all, not so hopeless a problem. Thus, uncomplicated syphilitic aortitis recognizable on the basis of symptoms and signs, has a probable average duration of life of from ten to twenty years if adequately treated (p. 281). The author shows that much can be hoped for in ocular syphilis if proper treatment is instituted. The discussion of the treatment of syphilis of the central nervous system shows the touch of a real student of the subject. After all, much of the ravages of this disease in nerve tissue can be either avoided or warded off if diagnosed early and treated properly with the medicaments now at hand.

It may be noted that throughout the volume the author recommends only such antisyphilitic drugs as are recommended by the Council on Pharmacy and Chemistry of the American Medical Association.

Moore feels that sodium thiosulphate is of no value in combating arsenical reactions, at least, one can hardly agree with his views that it is useless when injected locally in arsenical extravasations. And one must certainly object to the author's stand that excretion studies of heavy metals are "only of value to determine possible dangers of toxic effects." Outside of bismarsen, Moore uses and recommends bismuth salicylate suspension in oil as his sole bismuth salt for the treatment of syphilis. Excretion studies show that the salicylate is but slowly absorbed and has a low excretion curve running for many weeks or even months after a few injections. There are many occasions when other more suitable bismuth salts should be used. Mention is made on page 123 of sclerosing myositis from mercury salts, with the statement that, since bismuth was being employed, these were no longer seen. Would not 'paraffinoma' be a better term for these cases? The reason they are no longer seen is not that bismuth instead of mercury is used but rather that vegetable oils are used instead of

mineral oils as suspending agents. The dosages suggested for the arsphenamines are perhaps higher than some syphilologists use, and certainly higher than those recommended by the Council on Pharmacy and Chemistry. The author evidently feels that higher dosages are justified in some instances. On page 144 it is stated that a Wassermann test may be taken even after an arsphenamine injection. It is doubtful whether this is good practice. Moreover, it is surprising that the effects of nonspecific therapy in interstitial keratitis are not more clearly evaluated—especially malaria. As to the suggested use of x-rays for this affliction, as recommended by some German investigators, though not used personally by Moore, the objection arises of probable cataract formation at a later date. In discussing congenital syphilis the author might well have placed more emphasis on the use of neoarsphenamine administered subcutaneously in the scalp. Reference is made of third generation syphilis by way of a congenitally syphilitic mother. While the possibility of syphilis in the third generation through this route is conceivable, there are many other contingencies that enter into the problem.

But these are only minor criticisms of a monograph that deserves to be in the hands of every physician. The book is a classic for which a prediction of many editions is made. The binder and the printer have done their work well. The numerous charts and illustrations are well arranged.

Ärztliche Fragen. Vorlesungen über allgemeine Therapie. Von Viktor von Weizsäcker. Paper. Price 1.80 marks. Pp. 90. Leipzig: Georg Thieme, 1934.

This brochure represents a course of lectures on general therapeutics in which the author attempts to orient his audience as to the nature of treatment. "There is one therapy only; the remedies merely are multiple." The subject is presented with rather involved, often definitely obscure, diction and a strong leaning toward abstract philosophy. The propositions, for instance, that health has something to do with truth, and sickness with untruth, he attempts to establish by sophistries. A considerable amount of thought is devoted to the adjustment of medical practice to "Kassenpraxis," now almost universal in Germany. Indeed the most interesting portions of these lectures are those dealing with the relation of medicine to the state, and these breathe the spirit of the new Germany in such phrases as: "It is the state which asks the question as to the individual's maintenance-worthiness (erhaltungswürdigkeit) and which executes its own decisions. Neurotic inability to work is a much more serious charge against the social order than gross organic disease. In the newly developing world, the policy of destruction of undesirables, of prevention of their propagation, and of maintaining a high degree of working capacity will be largely in the hands of the medical profession so that medicine and politics will have to go hand in hand. Psychotherapy and social therapy will have to be added to medical practice, and special pathology and therapy must be kept from disintegrating effective treatment by analysis into incompatible factors. From time to time the physician will have to sacrifice care and help for the individual to the demands of the body politic."

A Handbook of Psychiatry. By John H. Ewen, M.R.C.P., D.P.M., Assistant Medical Officer, Surrey County Mental Hospital, Netherne. Cloth. Price \$4.75. Pp. 267. Baltimore: William Wood & Company, 1934.

This volume is intended to do for psychiatry what the synopsis of Tidy has done for medicine. It is a brief outline in the 1, 2, 3 fashion, of the various mental disorders, each treated as an entity, which are outlined in the usual textbook method of etiology, pathology, symptomatology and treatment. There will always be some question as to the value of outlines. Many teachers feel that they should be withheld from the student, but certainly they have their place as brief "refreshers." For this reason the present volume can be commended, in spite of a few typographical errors and the necessary brevity, which leaves new and unusual topics unexplained. The psychoneuroses are insufficiently discussed, malingering is given only two pages, and for the American reader, some of the terminology and the medicolegal aspects will be found to be solecistic. The glossary is too short and, although authors are cited, the book is not annotated.

Röntgentherapie in Tabellenform Von Dr. Immanuel Markovits Vorstand des Röntgenlaboratoriums im Krankenhaus des Stadt Armenhelfes in Budapest. Paper. Price 10 90 marks 1 p 1+3 with 40 illustrations Leipzig Georg Thieme 1934

In line with the author's previous publications, introducing the tabular analysis of the pathologic, clinical and roentgen observations in various bone and joint diseases and in internal medicine, there now appears this acceptable volume on roentgen therapy in tabular form. The author calls attention to the ever changing standards in radiation therapy and the necessity of keeping up with the developments in physical, biologic and clinical advances. There is a brief history of the development of roentgen dosage and measurements. Many of the radiation effects are adequately explained, but the author admits that a number of the indications are empirical and that the method by which the rays produce their good effect is not clear. He particularly refers to the effect of radiation therapy in the relief of pain, which is entirely unexplained but a fact. The various indications include the blood dyscrasias, angina pectoris, asthma, thyroid disease, diabetes, Mikulicz disease, pyloric stenosis, hyperacidity, duodenal and gastric ulcer, and a number of other internal disorders, acromegaly, brain tumors of various kinds, multiple sclerosis, syringomyelia and other neurologic diseases, a long list of surgical and orthopedic lesions, in many of which the x-rays have not in the experience of some workers proved to be of great help, a number of gynecologic indications with none of which exception could be taken and a series of urologic, pediatric, rhinolaryngo-ophthalmologic, odontologic and dermatologic indications. Each disease is considered under the heads (1) nature of the disease, (2) nature of the radiation effect, (3) indication, (4) effect on the patient, (5) dosage, (6) radiation technic (7) precautions against undesired radiation effects, (8) best time for radiation therapy, (9) details of the radiation effect (10) by-effects, (11) accessory treatment and (12) contraindications. This is a really valuable work which can be highly recommended.

Textbook of Abnormal Psychology By Roy M. Doreus, Associate in Psychology, Johns Hopkins University, and G. Wilson Shaffer, Psychologist, Sheppard Enoch Pratt Hospital, Towson, Maryland. Cloth. Price \$4. Pp. 389 with illustrations. Baltimore: Williams & Wilkins Company, 1934.

Periodically textbooks on the subject of abnormal psychology appear. A few of them can be considered adequate but most of them are impossible. The present volume seems to be of the first class, and it covers the usual topics dealt with in books of this kind: first disorders of the various mental functions such as judgment, thought and motor activity; and, second, gross pathology of the personality as manifested in sensory neuroses and feeble-mindedness. Such a book as this written for the student of psychology rather than the psychiatrist is bound to be oversimplified and the discussions of mental diseases repeat what is found in the usual psychiatric textbooks. Long case histories are given which serve to exemplify in rather adequate fashion the chief features. To commend this book are its readability and the careful manner in which it has been put together. The chapters discussing motor disorders and interpreting disorders of the mental sphere present new points of view and for this reason may be found to be stimulating to those dealing with psychiatric problems although some of the material presented is of questionable significance. The fact that these authors stress the fact that a competent medical man is needed to diagnose and treat psychologically abnormal states is highly commendable. Except for those portions dealing with individual mental disorders the book should prove to be of much interest to psychiatrists.

Problèmes théoriques et pratiques de la transfusion sanguine. Dix leçons. Indications, groupes sanguins, accidents, technique, organisation, hémothérapie, phylactotransfusion, immunotransfusion. Par Armand Tzanek, médecin des hôpitaux de Paris. Paper. Price 3 francs. Pp. 217 with 34 illustrations. Paris: Masson & Cie, 1933.

The author considers the general indications for blood transfusion. In his experience the blood groups are permanent for each individual but careful and repeated testing is necessary to avoid error. When reactions have occurred further tests have usually shown that some technical error was made. The various causes of complications following transfusions are considered. The technic usually preferred for transfusions is described as well as a number of alternate methods. The citrate method of

indirect transfusion is given preference. Technical difficulties are considered and methods of avoiding them. The method of organization of donors in large and small centers of population, with a description of their card of identification is described. The various conditions for which blood transfusions are used such as general infections for which specific and nonspecific antibodies may be of value, are included. The amount of blood in severe shock must not be too large but in severe hemorrhage multiple and massive transfusions may be necessary. A summary in the form of twenty-eight aphorisms is particularly worth while. The author has produced a clear and concise work, emphasizing the tremendous value obtained from properly performed and correctly indicated blood transfusions.

Medicolegal

Malpractice: Volkmann's Contracture Following Fracture—The plaintiff, 3 years old, fractured his arm just above the elbow joint. The defendant reduced the fracture and treated it, but a Volkmann's contracture followed. The patient, by his next friend, sued, charging negligence on the part of the defendant in that he flexed the forearm so acutely as to impair the circulation, tied too tightly around the wrist the bandage that was carried around the neck to support the arm across the chest, and left that bandage so long that sores developed, injuring the ulnar nerve and neglected to discover and treat the sores that developed. The defendant physician contended that the condition of the plaintiff's arm was due to an injury to the brachial artery at the time of the fracture and that it could not have been prevented by the most skillful treatment. The trial court, however, gave judgment for the plaintiff. The defendant appealed to the Supreme Court of Michigan.

The trial court permitted a witness for the plaintiff to testify, on the basis of a hypothetical question that acute flexing of the forearm for too long a time, under the conditions stated by the plaintiff, would produce certain results. To the question and answer the defendant noted an exception claiming that to answer the question was an invasion of the province of the jury. The appellate court held to the contrary. The witness was properly permitted to testify that certain conditions would, might or could produce certain results. He was not asked what did produce the results complained of by the plaintiff. That was the question for the jury to determine. The defendant physician complained further that the court allowed the plaintiff's counsel to ask one of the defendant's medical expert witnesses whether Scudder said¹ that an arm should be taken down if after a fracture such as that from which the plaintiff suffered swelling and discoloration occur. Swelling and discoloration had occurred in the present case according to the claim of the plaintiff, and the defendant had not taken the arm down. The defendant complained therefore, that even though his medical expert witness was not required by the court to state what Scudder said the asking of the question alone had prejudiced the defendant's case, because it suggested that Scudder did not approve of the treatment the defendant had given. But said the court the witness brought on himself the question propounded by the defendant's counsel when the witness volunteered information not required by any question of the plaintiff's counsel concerning the treatment recommended by Scudder.

The defendant complained that the verdict was against the great weight of the evidence and was excessive. But the Supreme Court held to the contrary. The defendant produced several expert witnesses and the plaintiff called only one. The proof of the controlling fact in the case however did not depend on professional testimony. All witnesses agreed that the condition of the plaintiff's arm was caused by impairment of the circulation and as to the possible causes of such impairment it was either the defendant's treatment or an injury to the brachial artery at the time of the fracture. The claim of an injury to the artery was supported by the defendant's own

¹ Probably in Scudder's *Treatment of Fracture*, ed. 10 Philadelphia: W. B. Saunders Company, 1926.

testimony that after he had reduced the fracture he could not feel the radial pulse. On his testimony, his medical experts based their opinions that the artery was injured at the time of the fracture and by the fracture. The plaintiff's father, however, who was present when the fracture was reduced, testified that the defendant told him that he could feel the radial pulse. If there was a radial pulse, the artery was not injured at that time and the impairment of the circulation must have been caused by the defendant's treatment. So, said the court, on this vitally important question the only testimony was that of the defendant and of the plaintiff's father. No expert witness testified that the treatment shown by the plaintiff's testimony was proper. In fact, said the court, even laymen would know that it was not.

All the medical experts agreed that the condition of the plaintiff's arm and hand was permanent. The muscles of the forearm were atrophied and he had what is known as a claw hand, without any sense of feeling except partial in the thumb. The arm would never be of any use to him. He must carry this humiliating deformity with him throughout his life. He endured intense pain and suffering for many weeks after the injury. For these reasons, the court did not regard the verdict of \$8,750 as excessive.

The judgment of the trial court in favor of the plaintiff was affirmed.—*Van Der Bie v Kools (Mich.)*, 250 N W 268

Accident Insurance "Poisoning" Defined.—The life of the deceased was insured by the appellant insurance company by a policy providing double indemnity if she died by accident other than "poisoning, bacterial infection, illness or disease of any kind." She died from unconsciously and involuntarily breathing carbon monoxide fumes emanating from a natural-gas heater. In the suit that followed the refusal of the insurer to pay double indemnity, the insurer contended, on appeal, that death from inhaling carbon monoxide is death from poisoning and as such exempted the insurer from double liability. The beneficiary under the policy, however, contended that death from the accidental inhalation of gas that results in fatal asphyxiation is not death from poisoning, and that the word "poisoning," as commonly used, does not include asphyxiation through the involuntary, accidental and unconscious inhalation of poisonous gases or fumes. The use of the word "poisoning," said the beneficiary, rendered the double indemnity clause ambiguous and made it mandatory on the court to give it the construction most favorable to the insured.

That the death of the insured was accidental was admitted. The sole question presented was whether it was within the exception in the policy that relieved the insurer from liability if the death of the insured resulted from "poisoning." The word "poisoning" in the policy, said the court of appeals of Texas, Amarillo, can hardly be said not to have been intended to include poisoning by gas. The meaning of the word "poisoning" is not so doubtful as to call for the application of the rule of strict construction in favor of the insured when the meaning of a policy is obscure. The courts have frequently passed on policies containing exceptions saving insurers from liability in cases of death from "inhaling gas or taking poison." With practical unanimity they have held that the words "inhale" and "take" import only voluntary or intentional inhalation or taking. In the present policy, however, the exemption of the insurer from double liability is contingent, not on "inhaling poison" or on "taking poison," but simply on "poisoning." The use of the word "poisoning" alone imports an intention to include any involuntary taking or inhalation of poison and to relieve the insurance company from liability. Judgment was rendered in favor of the insured.

On a motion for a rehearing, the beneficiary under the policy contended that the broad interpretation given by the court to the word "poisoning" might be made the basis for a claim that death from any poison was a "poisoning" as death from typhoid fever contracted through drinking water or ordinary blood poisoning. The court in overruling the motion restricted its construction of the word "poisoning" to the circumstances of the present case where a substance generally known as poison was introduced into the body and directly caused death without any intervening cause.—*United Fidelity Life Ins Co v Roach (Texas)* 63 S W (2d) 723

Society Proceedings

COMING MEETINGS

- American Medical Association Cleveland June 11 15 Dr Olin Wet.
535 North Dearborn Street Chicago Secretary
American Academy of Pediatrics Cleveland June 11 12 Dr Clifford
G Grulice 636 Church Street Evanston Ill Secretary
American Association for the Study of Gonorrhea Cleveland June 12
Dr J R Young 670 Cherry Street Terre Haute Ind Secretary
American Association of Genito Urinary Surgeons Hot Springs Va
May 14 16 Dr H L Sanford 1621 Euclid Ave Cleveland Secretary
American Association on Mental Deficiency New York May 26 29 Dr
Groves B Smith Beverly Farms Godfrey Ill Secretary
American Bronchoscopic Society Cleveland June 10 Dr Louis H
Clerf 110 South 10th Street Philadelphia Acting Secretary
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Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

47 1260 (Jan) 1934

- Treatment of Anemia in Children with Ferric and Ferrous Compounds. Reduced Iron and Cupric Sulphate. M C Lottrup Copenhagen Denmark —p 1
- Blood Lipids in Children with Scarlet Fever and Rheumatic Disease. A D Kaiser and Mary Steussy Gray Rochester N Y —p 9
- Treatment of Obesity in a Group of Children. Hannah Mulier and Anne Topper New York —p 25
- So-Called Thymic Hyperplasia. IV. Follow Up Study of Thirty Cases. G L Waldbott and G E Anthony Detroit —p 34
- So-Called Thymic Death. VI. Pathologic Process in Thirty Four Cases. G L Waldbott Detroit —p 41
- *Calcium and Phosphorus Studies. VI. Observations on Treatment of Late Rickets with Viosterol Based on Study of Twenty Three Cases. D H Shelling and Katharine B Hopper Baltimore —p 61

Treatment of Rickets with Viosterol—Shelling and Hopper state that twenty-two of twenty-three patients having late rickets treated with viosterol were cured completely. The one exception was a 10 year old girl who was treated with a moderate daily dose of viosterol for only forty-five days. The greater prevalence of rickets among Negro children is evident from the fact that, in their series, twenty-one were Negro and only two were white. In one of the white children the rickets was a complication of celiac disease. Some of the children received usual amounts of vitamin D before viosterol therapy while others had not received previous therapy. The usual amounts of vitamin D, even when administered over a long period produced only partial healing but when larger amounts of viosterol were administered healing occurred fairly rapidly and completely. In none of the patients treated with fairly large doses of viosterol was clinical evidence of toxicity noted, even when the therapy was continued for more than a year. In seven of the cases osteotomy or manual osteoclasia was performed for the correction of rachitic deformities before or during viosterol therapy. Complete union at the site of operation occurred in all cases. The corrective results, however were much better in the cases in which rapid healing was induced by larger doses of viosterol, since the rigidity which the legs thus acquired enabled them to withstand the weight of the body without yielding. The authors discuss the factors that enhance or hinder the activity of viosterol in late rickets and call attention to the inadvisability of using vitamin D preparations in renal rickets.

American Journal of Hygiene, Baltimore

19 1278 (Jan) 1934

- Cataphoretic Velocity and Virulence of Streptococci Isolated from Throats of Human Beings from Raw Milk Flies Water Sewage and Air During Epidemics of Common Autumnal Cold. E C Rosenow Rochester Minn —p 1
- Effects of Environmental Changes and Disinfectants and Antiseptics on Trichomonas Hominis in Culture and in Feces. R Hegner Baltimore —p 22
- Specificity in Genus Balantidium Based on Size and Shape of Body and Macronucleus with Descriptions of Six New Species. R Hegner Baltimore —p 38
- Intestinal Lesions Associated with Amebic and Balantidial Infection in Man and Lower Animals. H L Ratcliffe Philadelphia —p 68
- Production of Fatal Infestations in Rabbits with Trichostrongylus Coleratus (Nematoda). M P Sarles Princeton N J —p 86
- Effect of Various Temperatures on Eggs and Larvae of Strongyloides. J M Cordi and G F Otto Baltimore —p 103
- Studies on Subject of Prenatal Trichinosis. D L Augustine Boston —p 115
- Comparative Studies on Susceptible and Insusceptible Culex Pipiens in Relation to Infections with Plasmodium Cathemerium and P Relictum. C C Huff Chicago —p 123
- Heterophile Antigen in Various Bacterial Species. Mary Shaw Shorob and G H Bailey Baltimore —p 148

- Further Observations on Lipoid Antigens. M Armangué P Gonzalez T Morato and R de Tejada Barcelona Spain —p 184
- Canine Distemper Disease and Nature of Virus. D R A Wharton and Martha Washburn Wharton New York —p 189
- Self Disinfecting Power of the Skin. L Arnold and A Bart Chicago —p 217
- Variation in Growth in Rabbit Brain of Two Orchilipines Derived from a Strain of Smallpox Vaccine. Margaret Beattie and Alice Potter Berkeley Calif —p 229
- Use of Diphtheria Antitoxin Immediately Following Intracutaneous Virulence Test with Field Cultures. Ellen Kimberly and Margaret Beattie Berkeley Calif —p 240
- Immunology of Staphylococcus Toxin. W A Jamieson and H M Powell Indianapolis —p 246
- Observations and Experiments on Mosquito Breeding in Pit Latrines in Panama. L Schapiro —p 254
- Nutritive Deficiencies of Gelatin. H D Kruse H G Day and E V McCollum Baltimore —p 260
- Specific Immune Serums as Inhibitors of Infections of a Metazoan Parasite (Cysticercus Fasciolaris). H M Miller Jr St Louis —p 270

American Journal of Physiology, Baltimore

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- Fatty Acids of Human Duodenal Bile Their Quantitative Separation Estimation and Effect of Foodstuffs on Their Secretion. C W McClure Mildred E Huntsinger and Alison T Fernald, Boston —p 1
- Studies on Effects of High Oxygen Pressure. I. Effect of High Oxygen Pressure on Carbon Dioxide and Oxygen Content, Acidity and Carbon Dioxide Combining Power of the Blood. A R Behnke L A Shaw C W Shilling R M Thomson and A C Messer, Boston —p 13
- Id. II. Effect of High Oxygen Pressure on Sugar Phosphorus Non protein Nitrogen Chloride Creatinine Calcium and Potassium Content of the Blood. C W Shilling R M Thomson A R Behnke L A Shaw and A C Messer Boston —p 29
- Acidosis Acid Intoxication or Acarbia? Y Henderson and L A Greenberg New Haven Conn —p 37
- Fecal Fat and Its Relation to Fat in the Diet. A Krakower, Montreal —p 49
- Lung Extract and Blood Clotting. H P Smith E D Warner and K M Brinkhous Iowa City —p 63
- Effect of Carbon Monoxide on Tissue Respiration. F O Schmitt and Mary G Scott St Louis —p 85
- Effects of Administration of Pure Foodstuffs and Inorganic Substances on External Secretory Activities of the Liver, Pancreas and Stomach. C W McClure, Mildred E Huntsinger and Alison T Fernald Boston —p 94
- *Excessive Gonad Stimulating Hormone and Subnormal Amounts of Estrin in Toxemias of Late Pregnancy. G Van S Smith and O W Smith Brookline Mass —p 128
- Zinc in Nutrition of the Rat. W R Todd C A Elvehjem and E B Hart Madison Wis —p 146
- Action of Histaminase on Gastric Secretory Response to Histamine and to a Meal. A J Atkinson and A C Ivy Chicago —p 168
- Does the Ventricle Exert a Suction Action in Diastole? F S Cotton Cleveland —p 178
- Ovarian Cycle and Adrenal Glands. E L Corey and S W Britton, Charlottesville, Va —p 207
- Respiratory Failure Following Denervation of Carotid Sinus Regions. D B Witt L N Katz and L Kohn Chicago —p 213
- Effect of Altering Renal Blood Pressure on Glomerular Filtration. Grace Medes and C J Bellis Minneapolis —p 227
- Electrical Measurements Concerning Muscular Contraction (Tonus) and Cultivation of Relaxation in Man. Studies on Arm Flexors. E Jacobson Chicago —p 230

Gonadotropic Hormone and Estrin in Toxemias of Pregnancy—The Smiths analyzed forty-six serums and forty-four twenty-four hour specimens of urine from forty-two women in the last third of pregnancy for their content of the gonadotropic hormone (prolan) and estrin. Of these women fifteen were normal twenty-two had toxic symptoms without convulsions and five had eclampsia. One of the patients having toxic symptoms was definitely nephritic and showed normal levels of prolan and estrin. In no case diagnosed as toxemia or eclampsia were both estrin and prolan within the limits of values found in the normal women at the same period of gestation. In a number of the toxemic women there was unquestionably a nephritic element. All but one of twenty-six toxemic and eclamptic patients or 96 per cent showed excessive amounts of prolan in the urine and serum and eighteen of them or 69 per cent presented subnormal levels of estrin. The urines and serums of one toxemic patient were analyzed monthly from the second month of pregnancy to term. During the sixth month an abnormal increase in prolan and a decrease in estrin appeared which continued with fluctuations until delivery. This patient did not develop toxic symptoms until the eighth month. A quantitative imbalance of these two hormones due to excessive amounts of prolan and less consistently to subnormal levels of estrin is typical of the toxemias of late pregnancy.

Annals of Surgery, Philadelphia

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- Lewis Stephen Pilcher Biographic Picture of a Master of Medical Literature J P Warhase, Brooklyn—p 1
- Disruption of Abdominal Wounds with Protrusion of Viscera F L Meloney and E L Howes New York—p 5
- Disruption of Abdominal Wounds R Colp, New York—p 14
- Id R V Grace New York—p 28
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- Death from Appendicitis Mortality from Appendicitis and Causes of Death Following Appendicitis E I Hayes St Louis—p 47
- Cancer of the Mouth C Eggers New York—p 69
- Epithelioma of the Lip with Particular Reference to Lymph Node Metastases R H Kennedy New York—p 81
- Palatoplasty Using Extra Oral Tissues A D Davis San Francisco—p 94
- Preservation of Innervation and Circulation Supply in Plastic Restoration of Upper Lip J F S Lasser Monroe Prince—p 101
- *Air Embolism Complicating Thyroidectomy L M Larson and M Nordland Minneapolis—p 112
- Malignant Neoplasms of Thyroid Gland B F Schreiner and W T Murphy Buffalo—p 116
- *Experimental and Clinical Studies of Relationship of Thyroid Disease and Pancreatic Function H J W Hinton P C Morion and C Weeks New York—p 126
- Stab Wounds of the Heart E G Ramsdell New York—p 141
- Operation of Cardiolytic in Adhesive Pericarditis with Pick's Syndrome M H Pierson G C Griffith F J O'Hara and W E Lee Philadelphia—p 152
- Surgery of the Inferior Vena Cava Clinical and Experimental Studies W Walters and J T Priestley Rochester Minn—p 167
- Causation and Treatment of Multiple Adenomatosis of the Colon J P Lockhart Munnery London England—p 178
- Surgical Treatment of Varicocele J Londra Rio de Janeiro Brazil—p 185
- Genito-Anorectal Lymphogranulomatosis of the Male W I Contis Santiago Chile—p 188
- Restoration of Hand Function After Traumatic Injury J E Iulid New York—p 195

Air Embolism Complicating Thyroidectomy—Larson and Nordland believe that in a thyroidectomy it is strongly advisable to ligate securely any vessels of size before they are divided, and at the completion of the operation to have the patient cough or strain, so that bleeding points may be detected and secured. After air embolism has taken place, artificial respiration and cardiac stimulation with digitalis or caffeine is indicated. The use of epinephrine administered directly into the heart is no doubt of considerable aid. As indicated in experimental work, it is theoretically possible to aspirate air from the right ventricle and this procedure when followed by intracardial injection of epinephrine should be the treatment of choice. The prognosis depends directly on the amount of air aspirated.

Relationship of Thyroid Disease and Pancreatic Function—Hinton and his associates observed both from animal experiments and from the clinical cases that there is a definite interrelation between the thyroid and the digestive processes. Dogs with their pancreatic ducts ligated, and without medicine develop colloid goiters with a high iodine content in the gland, and progressively lose weight and usually die within from six to twelve weeks. The administration of potassium iodide, tyramine or diiodotyrosine will result in death in animals that have their pancreatic ducts ligated within from ten days to three weeks, whereas animals without their ducts ligated tolerate these medicines without ill effects. Dogs that are given thyroxine, intravenously, after ligation of the pancreatic ducts maintain their weight and clinically are in a good state of health over a long period and rarely die if thyroxine is administered regularly. From clinical observations of typical cases of hypothyroidism a much more satisfactory response was found to the intravenous use of thyroxine, with thyroid by mouth, than in cases treated with thyroid without the intravenous use of thyroxine. In the cases of undersecreting thyroids with abdominal pain it is rarely possible to relieve the symptoms by the oral administration of thyroid but the response is most favorable to thyroxine intravenously and to thyroid by mouth. The cases of peptic ulcer treated by the authors were markedly relieved symptomatically as a result of thyroxine and thyroid therapy. They do not claim that this is a cure for ulcers, but from their limited clinical experience it has proved quite satisfactory. This may be explained on the basis of a chronic pancreatitis associated with the ulcer. Chronic

pancreatitis is the only real indication for surgical intervention in patients suffering from ulcers, and they feel that there is a pancreatic involvement in a much higher proportion of these cases than has generally been admitted.

Archives of Internal Medicine, Chicago

53 1164 (Jan.) 1934

- Clinical and Pathologic Differentiation of Acute Leukemias with Especial Reference to Acute Monocytic Leukemia C E Forkner Peiping China—p 1
- Cardiac Output Its Related Functions in a Case of Coarctation of the Aorta A Grollman and J P Ferrigan Jr Baltimore—p 35
- *Myasthenia Gravis Effect of Treatment with Glycine and Ephedrine Third Report W M Boothby Rochester Minn—p 39
- Aluminosis of Calcium Deposition in Diabetes Mellitus H F Root Priscilla White and A Marble Boston—p 46
- Liver Extract Therapy in Cirrhosis of the Liver Relation of Liver Dysfunction to Nonstorage of Antirheumatic Substance in Producing a Blood Picture Resembling Pernicious Anemia in a Patient Secreting Free Hydrochloric Acid S M Goldhamer Ann Arbor Mich.—p 54
- Physiology of Vitamins VIII Effect of Lack of Vitamin B Complex on Secretion of Gastric Juice in Dogs with Gastric Pouches G R Cowgill and A Gilman, New Haven Conn—p 58
- Blood in Normal Pregnancy I Blood and Plasma Volumes W J Dieckmann Chicago and C R Wegner St Louis—p 71
- *Rheumatoid (Atrophic) Arthritis Bacteriologic Cultures of Synovial Fluid and of Tissues J E Blair and Francis A Hallman New York—p 87
- Clinical Consideration of the Etiology of Peptic Ulcer A B Rivers Rochester Minn—p 97
- Angina Pectoris Some Clinical Considerations with Especial Reference to Prognosis E C Eppinger and S A Levine Boston—p 170
- Relapses in Chronic Ulcerative Colitis Causes and Prevention B M Banks Boston and J A Birger Rochester Minn—p 131
- Coronary Thrombosis Perforation of the Infarcted Interventricular Septum R V Sager New York—p 140
- Insulin and Sugar Tolerance in Thin People H Blotner Boston—p 153

Treatment of Myasthenia Gravis with Glycine and Ephedrine—Boothby states that, of twelve patients suffering from myasthenia gravis treated with ephedrine and glycine, ten have shown definite improvement, and four of these have shown marked improvement. Two did not respond to treatment except that the progress of the disease was apparently arrested, one of the two died from causes not directly attributable to the myasthenic syndrome. The author believes that by the careful use of either ephedrine or glycine, and more often of the two, the condition of most patients having myasthenia gravis can be improved sufficiently to permit them to return to work or at least to enjoy a useful life. Time alone will tell whether this improvement can be maintained. The disease occurs much more frequently than is generally supposed.

Rheumatoid Arthritis Cultures of Synovial Fluid and of Tissues—Blair and Hallman summarize the results of 232 cultures of synovial fluid and tissue made during the past three years. In a series of fifty-seven cultures of synovial fluids and tissues from chronic multiple arthritis (fifty five from rheumatoid arthritis and two from Still's disease), a total of forty-one (74.5 per cent) remained sterile and fourteen (25.4 per cent) yielded positive cultures. The micro-organisms obtained in the positive cultures included streptococci diphtheroid bacilli gram-positive cocci incapable of growth on subculture and an occasional gram negative bacillus associated with the aforementioned bacteria. In a series of 175 cultures of synovial fluids and tissues from a variety of chronic infectious and noninfectious conditions of the joint other than rheumatoid arthritis, 142 (81.1 per cent) were sterile and thirty three (18.8 per cent) were positive. The positive cultures included *Staphylococcus aureus* indifferently streptococci gram positive cocci incapable of growth on subculture and diphtheroid bacilli. No direct etiologic significance is attached to any of the organisms obtained in this series. It is felt that at the present time no specific bacteriologic agent may be considered to have been demonstrated as the etiologic cause of rheumatoid arthritis particularly in view of the multiplicity of results and the lack of general confirmation of any one report.

Insulin and Sugar Tolerance in Thin People—Blotner discusses the effect of insulin on sugar tolerance in twenty five thin persons who gained weight by the use of this drug. Tests were made before treatment in nine cases, after one to twelve weeks of continuous administration of insulin in sixteen cases and finally from three days to two years after the

cessation of administration of insulin in all cases. Three types of curves for sugar tolerance were obtained. In one the curves for blood sugar were normal, and the urine remained sugar-free during all the periods of observation. In the second the curves for blood sugar were normal during the various periods of study, but during the period of administration of insulin glycosuria appeared, usually one or two hours after the ingestion of the dextrose. In the third type the curves for blood sugar were normal either before or after the use of insulin, but during the period of treatment with insulin there developed a considerable increase in the concentration of the blood sugar in one half or one hour after the ingestion of dextrose; this was associated with glycosuria which usually appeared in one or two hours. The cause of the temporary decrease in tolerance induced by insulin is a matter of speculation. The author suggests that the type of tolerance associated with glycosuria and normal curves for blood sugar is due to a decreased renal threshold, and the type associated with glycosuria and hyperglycemia to either an increased absorption of sugar from the gastrointestinal tract or a temporary suppression of pancreatic function. Regardless of the cause of the glycosuria and hyperglycemia encountered, the observation was of no practical significance, since the sugar tolerance invariably returned to normal shortly after insulin was omitted. Decrease in tolerance to the customary diets employed by these patients while they were taking insulin for the purpose of gaining weight was not observed even though the diets contained abundant amounts of carbohydrate.

Archives of Ophthalmology, Chicago

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- Problems in Physiology of Visual Acuity F H Adler Philadelphia—p 6
Bilateral Glioma Treated by Radium H Barkan San Francisco—p 20
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Cyst of the Optic Nerves and Chiasm Associated with an Epithelioma of Rathke's Pouch C C Coleman and E Hill Richmond Va—p 42
Etiology of Glaucoma S Duke Elder and Lady Duke Elder, London England—p 49
Cataract and Tetany Following Parathyroid Disturbance E C Ellett Memphis Tenn—p 58
Intracapsular Extraction in Highly Myopic Eyes A Elsching Prague Czechoslovakia—p 64
First Medical Refractionists H Friedenwald Baltimore—p 67
Visual Sensation Produced by Roentgen and Radium Rays S R Gifford and E E Barth Chicago—p 81
Rupture of the Sphincter Portion of the Iris Produced by Blunt Trauma H S Grady Chicago—p 92
Extraction of Cataracts E de Grosz Budapest Hungary—p 102
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Prevention of Spontaneous Retinal Detachment K Jindner Vienna Austria—p 148
Subretinal Fluid in Idiopathic Detachment of the Retina A Magitot Paris France—p 159
Persistence of Capsulopupillary Vessel as a Factor in the Production of Abnormalities of the Iris and Lens Ida Mann London England—p 174
Comparative Results in Extraction of Senile Cataracts Using Combined Simple and Knapp-Torok Intracapsular Methods W R Parker Detroit—p 183
Leuoglaukoma and Epinephrine Bitartrate in the Treatment of Glaucoma L T Post St. Louis—p 187
Blindness and Papilledema in Cuernavaca Calves Second Communication C E de Schweinitz and P De Long Philadelphia—p 194
Schüller-Christian Disease (Xanthomatosis) Report of Case with Post-mortem Observations J M Wheeler New York—p 214

Visual Sensation Produced by Roentgen and Radium Rays—Gifford and Barth found that roentgen and radium rays are visible to the dark adapted eye. There is a difference in their visibility in that the roentgen rays may be localized accurately and that small radiopaque objects may be recognized in their light. The radium rays produce only a vague luminous sensation which cannot be correctly localized. Examination of the vision by means of roentgen rays gives some information as to the function of the peripheral retina in patients with opaque media. It does not however serve in judging of the macular function and in certain patients the results are unreliable. Care must be taken to avoid injury to the eyes especially in the lenses are clear and not more than from 10 to 15 milliamperes of current should be employed for not more than three

minutes. In patients having cataract, this amount may be exceeded. It seems probable that the sensation produced by roentgen rays is due to a direct photochemical effect on the rods.

Prevention of Spontaneous Retinal Detachment—Lindner points out that, if clinical experience is considered in the light of mechanical experiments, the prevention of detachment must consist in the prevention of the retinal tear. If the vitreous is mostly liquefied or detached and shrunken into a small remnant behind the lens, the presence of the flap hole alone is sufficient to cause detachment when the eye moves. It is self evident that the spread of spontaneous detachment can be stopped in most cases by simple immobilization of the eyeball with the aid of suitable glasses. This often prevents the formation of secondary, sometimes invisible, holes and thus assures a good prognosis for operation. The author believes that at some future time one will be able to detect the eyes in which the danger of detachment is imminent, and in these one would not hesitate to perform an operation. At present he is trying glasses which are only slightly roughened around the clear pupillary area, so that the patient sees through the other parts of the glass, but vision is somewhat foggy. They are less conspicuous than other types of spectacles.

Archives of Pathology, Chicago

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- *Mechanism of the Formation of Pure Cholesterol Gallstones H B Weiser and C R Gray Houston Texas—p 1
Histologic Observations in Case of Old Gunshot Wound of the Brain C B Courville and T S Kimball Los Angeles—p 10
Action of Vitamin D and of Parathyroid Hormone on Calcium Metabolism as Interpreted by Studying the Effect of Single Doses on the Calcification of Dentin I Schour Chicago and A W Ham Toronto—p 22
Some Abnormalities in Rats Subsisting on Diets Poor in Mineral Nutrients A M Yudkin Lucille Reed Farquhar and A J Wakemann New Haven Conn—p 40
Urea Clearance After Unilateral Nephrectomy in Dogs H F Karsner R F Hanzal and R A Moore Cleveland—p 46
*Amyloidosis Experimental Studies H G Grayzel M Jacoby H B Marshall M Bogin and H Bolker Brooklyn—p 50
The Lungs and the Macrophage System B M Fried New York—p 76

Formation of Pure Cholesterol Gallstones—The experiments of Weiser and Gray on the mechanism by which precipitated cholesterol may be collected into a unified coherent mass show that 1 Precipitation of cholesterol in the gallbladder is in itself altogether inadequate to account for the formation of pure cholesterol concretions. 2 Experimental observations have been made which furnish the basis of a mechanism to account for the formation of such concretions during biliary stasis resulting from anatomic or physiologic abnormalities. 3 By the proposed mechanism, gallstones have been synthesized which simulate the natural concretions in both macroscopic and microscopic appearance and in properties. 4 Particular attention has been called to the importance of fat in the formation of pure cholesterol concretions both as a collecting agent for the minute particles of precipitated cholesterol and as a solvent that is responsible for the growth of interlacing crystals into a concretion.

Experimental Studies in Amyloidosis—Grayzel and his associates found that amyloidosis can be produced in all albino mice by subcutaneous or intramuscular injections of a 5 per cent aqueous suspension of sodium caseinate. The earliest amyloid appears within the fixed and wandering cells of the reticular system. As these cells disintegrate extracellular amyloid appears, grows in amount and finally replaces the parenchyma of the organ involved. Amyloidosis is probably the result of an endogenous protein metabolic disturbance. When the rate of formation of these catabolic products exceeds the ability of the tissues to dispose of them amyloid appears. With the present technique amyloidosis cannot be produced in albino rats. Except in albino mice showing precursors or early evidences of amyloidosis no spontaneous resorption of amyloid in definite cases of amyloidosis was observed. Albino mice given a preparation of powdered whole liver in their diet showed resorption only when the degree of amyloidosis was no more than moderate. No retrogression of the disease was noted in advanced cases. Comparative studies indicate that a cell

balanced, thoroughly adequate diet exerts a retarding influence on the production of amyloidosis. The addition of a preparation of desiccated powdered whole liver to the stock diet results in delay in the formation of amyloidosis. Inadequate or deficient diets do not accelerate the development of amyloidosis. Mice fed a synthetic and the so called stock diet to which vitamins A and B were added showed definite evidence of retardation of the production and formation of amyloidosis.

Arch. of Physical Therapy, X-Ray, Radium, Chicago

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- Effect of Diathermy on Secretion of Bile M. Couperus and F. B. Moor, Loma Linda, Calif.—p. 5
Some Problems of Electropyrrexia A. Ifalphen and J. Anclair, Paris, France—p. 16
The "Microdynameter" Alleged Detector of Disease and Therapeutic Indicator K. Schulhof, Chicago—p. 19
Laryngeal Tuberculosis J. F. Kemler, Baltimore—p. 24
Comparative Value of Therapeutic Measures in Laryngeal Tuberculosis G. Wilson, Saranac Lake, N. Y.—p. 29
Ultraviolet Treatment of Oral Abscesses and Periapical Infections F. Folstein, New York—p. 37
Low Voltage Currents in Treatment of Diseases of the Nose, Throat and Ear G. B. Rice, Boston—p. 42
New High Frequency Cutting Electrode for Treatment of Cervicitis H. E. Kimble, Chicago—p. 46

Colorado Medicine, Denver

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- Menace to Life and Health from Improper Sewage Disposal in Colorado E. N. Chapman, Colorado Springs—p. 4
Avoidance of Pulmonary Complications from Intravenous Arsenicals G. C. Shivers, Colorado Springs—p. 11
Tumors of the Thyroid Gland P. M. Ireland, Pueblo—p. 15
Thrombo Angitis Obliterans: Review of Ten Cases W. Darley and C. T. Burnett, Denver—p. 18

Florida Medical Association Journal, Jacksonville

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- Evaporated Milk in Infant Feeding: Clinical Study of Three Hundred and Forty Cases W. Quillian, Miami—p. 291
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Illinois Medical Journal, Chicago

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- Embryonal Adenocarcinoma of Kidney in Childhood H. T. Mostrom and J. C. West, Batavia—p. 21
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Is Hay Fever a Public Health Problem? T. Nelson, Chicago—p. 44
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Surgical Treatment of Ruptured Gastric Ulcers E. Jonas, Chicago—p. 67
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Use of Cow's Horn in Internal Fixation of Fractures

—A year ago Fowler began the use of cow's horn as an internal fixation material in fractures that required open reduction because of extensive interposed tissue. The bones involved were one clavicle, two humeri, one radius, one femur, three ulnas and one tibia. After the incision and exposure of the fracture, a hole is drilled through the cortex from 1 to 3 inches distant from and reamed obliquely toward the fracture. The medullary tissue is drilled or reamed from 1 to 3 inches each way at the fracture to receive the corticomedullary horn splint. While the bone fragments are held in line, the splint rod of horn is passed or lightly driven through the cortex along the medullary canal beyond the fracture from 1 to 3 inches, depend-

ing on the size and length of the bone involved. The surplus horn protruding is cut moderately close to the cortex. The subcutaneous structures are approximated and, if necessary to close any dead spaces, a few fine plain gut sutures are inserted. The skin is closed with dermal sutures and a plaster cast is applied as in a simple fracture. All nine fractures united promptly with what appeared to be a superabundance of callus. No complication occurred. In the first patient, operated on a year ago, the end of the horn in the ulna was palpable under the skin over the olecranon for a period of six months.

Johns Hopkins Hospital Bulletin, Baltimore

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- Prolongation of Pregnancy and Complications of Parturition in the Rabbit Following Induction of Ovulation Near Term F. F. Snyder, Baltimore—p. 1
Death of Fetus in Utero A. F. Dippel, Baltimore—p. 24
Experimental Exophthalmos and Hyperthyroidism in Guinea Pigs: Clinical Course and Pathology H. B. Friedgood, Baltimore—p. 48

Journal of Bacteriology, Baltimore

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- Influence of Cations on Aerobic Sporogenesis in a Liquid Medium F. W. Tablin and C. S. Bryan, East Lansing, Mich.—p. 543
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Bacteriostatic Action of Gentian Violet and Its Dependence on Oxidation-Reduction Potential Mary A. Ingraham, Madison, Wis.—p. 573
Systematic Study of Fusiform Bacteria L. W. Stanetz and L. F. Rettger, New Haven, Conn.—p. 599
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Journal of Bone and Joint Surgery, Boston

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*Correction of Severe Equinus Deformity L. Mayer, New York—p. 46
Treatment of Rheumatoid Arthritis with Hyperthermia Produced by a High Frequency Current Edith E. Nicholls, K. G. Hansson and W. J. Stainsby, New York—p. 69
New Treatment of Intracapsular Fractures of Neck of Femur and Legg-Calvé-Perthes Disease: Technique E. J. Bosman, New York—p. 75
*Decancellation of the Os Calcis, Astragalus and Cuboid in Correction of Congenital Talipes Equinovarus F. E. Curtis and F. Muro, Detroit—p. 110
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*Simple Method of Treatment of Common Metatarsal Disabilities J. T. Rugh, Philadelphia—p. 151
*New Method of Osteotomy for Correction of Long Standing Bony Deformity at the Knee A. Whitman, New York—p. 155
Chronic Synovitis of the Knee with Persistent or Recurring Effusion and of Undetermined Etiology A. B. Gill and T. E. Orr, Philadelphia—p. 159
*Treatment of Surgical Tuberculosis with Splenic Extract J. S. Barr, Boston—p. 173
Effect of Local Calcium Depot on Osteogenesis and Healing of Fractures J. A. Key, St. Louis—p. 176
Bacillus Proteus Osteomyelitis of the Spine S. Selig, New York—p. 189
Simple Method of Applying a Body Cast in Fractures of the Spine J. Penn, Knoxville, Tenn.—p. 205
Use of Modified Hospital Bed for Treating Fractures of the Spine R. F. Patterson, Knoxville, Tenn.—p. 207

Treatment of Fractures of Upper End of Humerus—Howard and Eloesser point out that in fractures of the upper end of the humerus one has control of the short fragment by virtue of the long head of the biceps bridging the fragments and the remaining untorn periosteum. Clinical experience indicates that when the arm is abducted, the pull of the abductor muscles makes approximation difficult to obtain and still more difficult to preserve. Accurate approximation can be obtained and maintained by downward traction, a fact demonstrated on the phantom model and by clinical experience. The integrity of the long head of the biceps tendon is necessary for the use of this method. Reduction under local anesthesia for fractures of the upper end of the humerus may be accomplished by the

following maneuver With the patient sitting upright, supporting the injured arm across the body with the opposite hand, a folded face towel is placed over the forearm just below the elbow A 4 or 6 inch heavy muslin bandage is looped over the towel and tied in a sling, so that its lower end hangs from 8 to 12 inches from the floor An assistant grasps the wrist of the injured arm and, bringing the forearm at right angles to the body in the sagittal plane, maintains right-angled flexion of the elbow The surgeon then places one foot in the sling, grasps the upper arm with both hands below the line of fracture, and slowly and steadily increases the amount of pressure on this foot The two hands grasping the arm below the fracture are used to force the upper end of the distal fragment laterally, anteriorly or posteriorly, as required by the displacement For the dressing, a small pad is placed in the axilla and along the arm The forearm is held flexed by a sling, while the arm is loosely bound to the body, the elbow is left free to allow the weight of the arm to act as a traction force

Correction of Severe Equinus Deformity—Mayer presents a new method of overcoming severe equinus deformity in cases of congenital clubfoot or of paralytic equinus, which consists of driving a nail or wire through the posterior part of the os calcis, by means of which the os calcis can be firmly grasped The nail is included in the plaster-of-paris cast applied at the time of manipulation A manipulation period of six weeks is usually sufficient to correct the most marked degree of equinus Thus far the author has employed this method in fifteen cases The age of the patients ranged from 9 months to 4 years In each instance the patient had been under treatment at the hands of a skilled orthopedic surgeon who had been unable to correct the equinus deformity Two of the cases were paralytic in origin, the others were congenital In all complete correction of the deformity has been secured

Correction of Congenital Talipes Equinovarus—To obtain better functional results and shorten the period of disability in congenital clubfoot, Curtis and Muro performed the following operation on fifty-one children and on sixty-nine feet A short incision is made in front of the external malleolus on a line with the tubercle on the anterior portion of the os calcis and extending over the cuboid The peroneus longus and brevis tendons are retracted toward the sole of the foot The short dorsal flexor muscles (extensor brevis digitorum) are separated from their origin on the lateral side of the os calcis and retracted toward the top of the foot, thus giving exposure of the neck of the astragalus, the anterior portion of the os calcis, and the cuboid A small puncture wound is made in the three bones With successively larger curets, all the cancellous bone is removed from the cuboid while from the os calcis and astragalus only the anterior portion is removed The foot is then forcibly overcorrected by manipulation with a Thomas wrench To correct the metatarsus varus and decrease the convexity of the outer border of the foot, manipulation is done over a rectangular bar When visible collapse of the bones is not evident after manipulation the outer shell of the cortical bone of the cuboid and os calcis is split vertically, with scissors to allow collapse If necessary, in older children a section of the outer shell is removed and the articulating surface is not disturbed The dissected muscle is then sutured in place and the skin is sutured with plain catgut The leg is placed in a plaster-of-paris cast extending from the mid thigh to the toes, with the foot dorsiflexed and everted the tibia rotated externally and the knee flexed The first plaster cast is removed at the end of three weeks, reapplied under anesthesia after the foot has been manipulated to the overcorrected position and worn for four months, after which an inside upright and outside T strap brace is applied Physical therapy and muscle education are then carried on to develop the peroneal and dorsal flexor muscles of the foot The brace is worn and muscle education continued until such time as the patient is able to place the foot actively in the fully overcorrected position In summarizing the results of this operation the authors feel that (1) it allows full correction of the clubfoot at an early age (2) it is particularly applicable to the resistant and neglected clubfoot (3) it leaves the foot with a good range of motion and stiffness does not result as from multiple manipulative procedures (4) it shortens the period of treatment and (5) there is no interference with the growth of the bones operated on

Treatment of Common Metatarsal Disabilities.—Rugh uses gas anesthesia, cutting the plantar-flexor tendons with a long shanked, narrow-bladed, sharp tenotome An assistant holds the foot and makes pressure against the ball The little toe is first pulled straight, the tenotome inserted on the outer side of the base of the toe and the tendon cut The blade is pushed forward and the tendons of the fourth, third and second toes are cut in the same manner The tenotome is withdrawn and pressure is made with a pledget of gauze over the puncture to control the bleeding The other foot is similarly treated It is now possible to dorsiflex the toes when they are held straight with the fingers and, when the patient stands barefooted, the toes lie out straight A small dressing is held in place with adhesive plaster and suitable stockings and shoes are put on After a rest of a few minutes the patient may be sent home and advised to continue walking about In three days the dressing is removed, the feet are soaked daily in hot water and the toes are drawn strongly by the fingers into dorsal flexion to prevent recontraction Proper shoes of sufficient length are fitted to the feet In a month or six weeks the corns disappear and later the calluses also, and the feet function painlessly The test for contraction is inability to dorsiflex the straightened toes with the fingers when the foot is held at right angles to the leg, by upward pressure on the ball of the foot Section of the plantar flexors relieves the flexion and dislocation, does not incapacitate the patient and, when proper shoes are worn, gets rid of the corns and calluses The author corrected three cases of Morton's toe with the same treatment

Correction of Long Standing Bony Deformity at the Knee—Whitman reports two cases that showed solid bony ankylosis of the knee joint, with the tibia fused at a right angle to the femur The first patient was a child of 11 with ankylosis of four years, while in the other one, a man of 55, the deformity dated back forty years Removal of a bony wedge sufficient to correct the angulation would have caused great shortening of the limb as well as running grave risks of compromising the circulation It occurred to the author that the principle of lengthening short limbs—gradual alteration of the structure of bone—was applicable In the first case two 3 inch incisions curving downward were made lateral to the patella The upper surface of the femur was exposed and the periosteum stripped back A Gigli saw was then passed across the bone, subperiosteally, the patella sawed through its attachment to the femur, and the saw passed curving down and backward in such a manner as to approximate the original outline of the femoral condyles The flexion deformity was then easily reduced to an angle of 135 degrees A plaster spica was applied Within the next eight days the plaster was wedged The next day a roentgenogram taken after manipulation and correction to 170 degrees showed full correction Eight days later the patient began bearing his weight in a plaster cast and was discharged on the following day He is now walking without apparatus and his leg is fully extended on the thigh The other patient's knee is ankylosed at an angle of 160 degrees, which enables him, with a high heel in an ordinary shoe, to walk without apparatus—the first time in forty years that he has had his foot on the ground The deformity might have been fully corrected had the posteriorly projecting portion of the tibia been removed However, the extremity was converted from a useless to a weight bearing one which gave its owner satisfaction

Treatment of Surgical Tuberculosis with Splenic Extract—In order to determine the effect of splenic extract in tuberculosis Barr selected twenty children each with acute tuberculosis of the hip or spine Ten were used as experimental subjects treated with splenic extract and the other ten as controls Each patient was paired with a control as carefully as possible for age, duration and extent of the disease prognosis and so on There were no cases of amyloid disease or secondarily infected sinuses in either group Of the ten pairs, seven were considered to have made almost identical progress and were in approximately the same local and general physical condition In one case the child fed splenic extract was found to be much better generally and locally than the control, while in two cases the reverse was true i e the control child seemed to have done better than the one fed splenic extract The author feels justified in discontinuing the use of splenic extract in such cases until further proof of its usefulness is adduced

Journal of Clinical Investigation, New York

13 1 192 (Jan.) 1934

- *Blood Lipids in Postabsorptive State and After Ingestion of Fat in Normal Human Subjects and in Case of Disseminated Cutaneous Xanthomas I. L. Chaikoff, T. H. McGavack and A. Kaplan San Francisco—p. 1
- Studies on Relationship Between Oxygen Consumption and Nitrogen Metabolism III In Polycythemia Vera Adelaide Brater W. D. Paul and C. W. Baldrige Iowa City—p. 15
- Effect of Diiodotyrosine on Basal Metabolism in Myxedema W. O. Thompson, J. M. Alper, Phebe K. Thompson and Lois I. A. Dieck Chicago—p. 29
- *Production of Pain in Exercising Skeletal Muscle During Induced Anoxemia M. Kissin Chicago—p. 37
- Fibrinolytic Activity of Hemolytic Streptococci Development of Resistance to Fibrinolysis Following Acute Hemolytic Streptococcal Infections W. S. Telford, L. B. Edwards and R. I. Garner Baltimore—p. 47
- Antibody Response to Infections with Type III and Related Type VIII Pneumococcus M. Finland and A. W. Winkler Boston—p. 79
- Antibody Response to Infections with Type II and Related Type V Pneumococcus M. Finland and A. W. Winkler Boston—p. 97
- Antibody Response to Infections with Newly Classified Types of Pneumococci (Cooper) A. W. Winkler and M. Finland Boston—p. 109
- Relation Between Physical Constitution and Incidence of Disease Disease Groups Include Peptic Ulcer, Cholecystitis and Diabetes Mellitus J. Feigenbaum and D. Howat Montreal—p. 121
- Observations on Calcium and Phosphorus Metabolism in Certain Diseases of Bone W. de M. Seriver and Eleanor M. Venning Montreal—p. 139
- *Antistreptolysin Content of the Blood Serum in Rheumatic Fever and Rheumatoid Arthritis W. A. Myers and C. S. Keefer Boston—p. 155
- Studies of Total Pulmonary Capacity and Its Subdivisions V. Normal Values in Female Subjects A. Hurtado, W. W. Gray, N. L. Kaltreider and W. D. W. Brooke New York—p. 169

Blood Lipids After Ingestion of Fat—Chaikoff and his associates studied the normal fat metabolism in twelve young adults, ten men and two women, varying in age from 17 to 39 years, and investigated the metabolism of a patient presenting cutaneous xanthomas in the following respects: (1) the levels of the blood lipids in the postabsorptive state during a prolonged period of observation; (2) the effect of a short fast on the blood lipids; (3) the quantitative relation of total fatty acids, free cholesterol and ester cholesterol of the blood; and (4) the response of the blood lipids to ingested fat. Whole blood lipids were determined by means of oxidative procedures in the twelve normal subjects in the postabsorptive state. The influence of the ingestion of 100 cc of olive oil on the blood lipids in normal subjects was determined. Marked variations in the response of the fatty acids in different individuals were observed. The maximal increase in the fatty acid content of the blood during an observation period of ten hours was 35 per cent. In six out of the seven normal subjects so studied the ingestion of fat had no appreciable effect on the cholesterol level of the blood. The limitations in the use of the curve of alimentary lipemia as an index of altered fat metabolism are discussed. The level of the blood lipids in the patient having cutaneous xanthomas was followed for fourteen weeks. During this period the total lipid values fluctuated from a minimum of 1,160 mg to a maximum of 2,180 mg per hundred cubic centimeters. The main constituent affected in this rise was the fatty acid portion, which throughout the period of observation constituted from 72 to 79 per cent of the total lipids. The total cholesterol portion varied from 322 to 470 mg per hundred cubic centimeters of whole blood and constituted from 21 to 28 per cent of the total lipids. On two occasions the cholesterol fraction in relation to total lipids was definitely below the lowest value found in the case of the normal subjects. The proportion of cholesterol in the esterified form was somewhat higher than that obtained in normal subjects. The response of the blood lipids to the ingestion of 100 cc of olive oil was determined on four different occasions in the patient presenting xanthomatous tumors. No abnormality as compared with normal subjects was observed. In three experiments no appreciable rise in the blood fatty acids was noted whereas in a single instance a delayed rise of a prolonged nature was obtained. The cholesterol level was not altered by the absorption of fat. The nature of the lipemia in xanthomatosis is discussed.

Pain in Exercising Muscle During Anoxemia—Kissin induced a progressive generalized anoxemia in eight normal subjects by having them rebreathe the air from a 20 liter tank connected in series with an 8 liter spirometer. The

accumulation of carbon dioxide was prevented by passing the expired air over soda lime. As a control, each subject, while breathing room air, repeated his exercise at the same rate and as nearly as possible in the same position as in the anoxemia experiments. The author observed that generalized anoxemia without ischemia can induce pain in an exercising skeletal muscle. Within certain limits the severity and rapidity of onset of the pain varies with the degree of anoxemia and with the rate of exercise of the muscles involved. The pain appears to be due to accumulation of products of muscular metabolism that require oxygen for their disposal.

Antistreptolysin in Blood Serum in Arthritis—According to Myers and Keefer, in proved hemolytic streptococcus infections the blood serum generally contains antistreptolysin in higher titer than in normal persons or than in patients with infections caused by other microorganisms. Patients with acute rheumatic fever, who have had a streptococcus infection present antistreptolysin titers in their sera comparable to those observed in scarlet fever, erysipelas or acute follicular tonsillitis. Rheumatoid arthritis and certain other forms of joint disease are not accompanied by an increase in the antistreptolysin titer of the blood serum. Antistreptolysin was shown to be an antibody separate and distinct from streptococcus antitoxin or the antibodies responsible for streptococcus agglutination. Antistreptolysin is not related to the skin sensitivity to the nucleoprotein of *Streptococcus scarlatinae*.

Journal of Industrial Hygiene, Baltimore

16 1 66 (Jan.) 1934

- Toxicology of Chromium K. Aizawa and L. T. Fairhall Boston—p. 1
- *Microchemical Detection of Lead Modifications of the Fairhall Method R. U. Harwood and Doris Brophy Montreal—p. 75
- Some Accurate Methods of Determining the Number and Size Frequency of Particles in Dusts H. I. Green London, England—p. 79
- Prevention of Traumatic Neuroses F. W. Dershimer New York—p. 40
- Electrical Injuries Interpretation of Field Notes H. W. MacLachlan Toronto—p. 52

Microchemical Detection of Lead—Harwood and Brophy describe modifications of the Fairhall method of the hexanitrite test for the detection of lead. At least 5 cc of cerebrospinal fluid is evaporated to dryness on the water bath in a silica crucible of about 25 cc capacity. To the residue is added about 0.5 cc of redistilled nitric acid dropwise so as to saturate all the residue. The contents of the crucible are again evaporated to dryness. The addition of a few drops of nitric acid, followed by evaporation to dryness, is repeated until only a white crystalline residue remains. About 2 cc of redistilled hydrochloric acid is added, rinsing down the sides of the crucible. This is again taken to dryness, in order to destroy any excess of nitric acid or of nitrates. The inorganic residue is then dissolved in about 2 cc of twice normal hydrochloric acid and is transferred to a 15 cc Pyrex centrifuge tube. The crucible is rinsed out with redistilled water bringing the contents of the centrifuge tube to a volume of about 6 cc, then 1 cc of a saturated solution of ammonium chloride is added and the solution is neutralized until just acid to methyl orange by the use of about fifth normal ammonium hydroxide. A drop of 2 per cent cupric acetate solution is then added and hydrogen sulphide is passed into the solution in a slow stream for about ten minutes. The sulphides are centrifuged and washed at least three times by decantation, each time 2 cc of the solution (0.01 normal hydrochloric acid saturated with hydrogen sulphide) being used. The washing must be thorough and the liquid must be drained completely from the sulphide precipitate each time. Two drops of redistilled nitric acid is added and the tube is covered with a short Pyrex test tube and placed in boiling water until the precipitate is completely dissolved. About one third of the solution so obtained is drawn into a capillary pipet and is evaporated to dryness on a microscope slide. About 10 cmm of a 1 per cent solution of sodium acetate is then added. The material is again evaporated to dryness giving a rim of about 4 mm in diameter in which the greater part of the salts are concentrated. The slide is then chilled on ice. Not more than 5 cmm of a 10 per cent solution of acetic acid and a tiny crystal of potassium nitrite are added to the center of the residue. The nitrite solution is evenly distributed inside the rim of salts by means

of a glass needle. A cover glass is placed on the preparation and the nitrite solution is allowed to diffuse slowly to the outer edge. This allows the small dark brown squares and cubes of lead hexanitrite to form under optimal conditions. These crystals are usually found at the outer rim scattered among the sodium and copper acetate crystals.

Journal of Infectious Diseases, Chicago

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- Relapsing Fever in California. II Immunity. C E Coleman. San Francisco—p 1
- Virulence of *Salmonella Pullorum*. W N Plastridge and L F Reltger, Storrs Conn—p 2
- Differentiation of Various Strains of *Monilia* by Cultural Methods. M Wachowiak, J Marr, O E Hagebusch, W A Randall and M S Fleisher, St Louis—p 35
- Isolation of Bacteria of *Brucella* Group from Apparently Healthy Swine. W H Feldman and C Olson Jr. Rochester Minn—p 45
- Copper and Iron in Motivation of Cellular Metabolism. A Locke, D O Rosbash and L E Shinn, Chicago—p 51
- Changes in Titers of Agglutinins for Enteric Organisms in Blood Serum in Poliomyelitis. J A Toomey, Cleveland—p 74
- Application of Serologic Techniques to General Biologic Research. W H Manwaring, Stanford University, Calif—p 81
- Salmonella Arterzyche* in Colitis of Foals. P R Edwards, Lexington Ky—p 85
- Cataphoretic Time and Velocity of Streptococci and Pneumococci Studies on Organisms Isolated in Cases of Common Cold, Influenza, Bronchopneumonia and Lobar Pneumonia. E C Rosenow, Rochester Minn—p 91
- Proteolytic and Deaminizing Enzymes of *Clostridium Sporogenes* and *Clostridium Histolyticum*. O A Bessey and C G King, Pittsburgh—p 123
- Photography of Bacterial Colonies with Transmitted Light. T Thjotta, Oslo, Norway—p 128
- Small Colony Variants or G Forms of *Eberthella Dysenteriae*. Sonne S A, Koser and R B Dient, Chicago—p 131

Agglutinins for Typhoid Organisms in Blood Serum in Poliomyelitis.—In ascertaining the relative agglutinin titer for colon paratyphoid organisms of poliomyelitis patients, Toomey found that the convalescent serums of fifty five of eighty eight patients showed an increase in agglutinin titer or agglutination in the higher suspensions than was present in the same comparative dilutions of serum and antigen from patients in the acute stage (group I). The convalescent serums of thirty one patients gave about the same agglutinin titer as did the serums obtained during the acute stage (group II), while the serum of two patients showed a slightly better titer when obtained in the acute stage as compared with convalescent serum and antigen (group III). Of seventy four patients with diseases other than poliomyelitis, sixty-five showed no comparative increase of the agglutinin titer. Three patients having scarlet fever showed a slight increase, while six others (8 per cent) showed marked increases in the colon agglutination titers in the specimens obtained in the convalescent stages. These increases occurred in patients who had received horse serum in the form of diphtheria or erysipelas antitoxin. This fact could easily account for the increase in agglutinin. The sameness of agglutinin reactions obtained in these specimens with serums from the acute and from the convalescent stages was in decided contrast to the difference in reaction obtained with serum from patients in the acute and in the convalescent stages of poliomyelitis against the same organisms. Twelve monkeys that received injections of vaccine suspension and filtrate showed a marked increase in the agglutinin titer of their blood serum against the eight organisms (paratyphoid A and B 208 209 1 11, 14 and 42) used when the blood serum was tested immediately after injections of vaccine filtrate and before the injection of the virus of poliomyelitis. Poliomyelitis developed in all but one animal. Eleven specimens of blood serum obtained from the animals within the first few days after the disease began showed a marked drop in agglutinin titer of the serum for the various typhoid organisms used. Specimens obtained when animals were in the moribund state rarely contained any agglutinins though in the 1:20 and 1:40 dilutions a clearing of the suspensions without any deposit of organisms on the bottom of the tube was found sometimes.

Military Surgeon, Washington, D C

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- Additional Medical Department Officer Procurement in the National Guard for a Major Emergency. D C Hilton—p 1
- After Fifty. H H Rutherford—p 2
- The Allergy Clinic Army and Navy General Hospital Hot Springs National Park, Arkansas. W B Meister—p 30

New England Journal of Medicine, Boston

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- *Cancer of the Stomach. F H Lahey and Sara M Jordan. Boston—p 59
- Acute Pancreatitis. Review of Fifty Four Operative Cases. P E Truesdale, Fall River, Mass—p 66
- The Public and Our Profession. E H Cary, Dallas, Texas—p 72
- The Association of Diabetes and Tuberculosis. II Pathology and Etiology. H F Root, Boston—p 78
- Arteriosclerosis in the Arthritic. H A Nissen and K A Spencer, Boston—p 92
- Progress in Diagnosis and Treatment of Syphilis 1931-1932. A W Cheever, Boston—p 97

Cancer of the Stomach.—Lahey and Jordan state that, following the removal of the distal portion of the stomach and anastomosis of the jejunum to the remaining gastric stump, a long loop of jejunum may be brought up over the transverse colon and anastomosed to the cut end of the stomach (anticoilic Polya anastomosis) or the transverse colon may be brought out on the abdominal wall and an incision made in its posterior root, through which is passed a loop of jejunum to be anastomosed to the cut end of the stomach. The point that they wish to suggest in connection with this is that after an opening has been made in the posterior leaf of the transverse mesocolon the jejunum, where it emerges from its retroperitoneal portion, is put on the stretch, the ligament of Treitz demonstrated and the ligament cut by scissors up to its root. The incision of the ligament of Treitz then makes possible the transplantation of the proximal loop of jejunum entirely above the transverse mesocolon so that, after the anastomosis is complete, the proximal section of the jejunum that is sutured to the lesser gastric curvature is entirely above the posterior leaf of the transverse mesocolon and but a single loop of intestine, the distal loop of the jejunum that runs from the greater curvature down into the peritoneal cavity, emerges through the rent in the transverse mesocolon. This makes possible the approximation of the rent in the transverse mesocolon about a single loop of intestine, preventing the danger of hernia and making the course of the proximal loop of intestine an unangulated one. The authors used this method of dealing with the proximal jejunal loop in gastric resections in more than twenty cases. It has proved a satisfactory one.

Northwest Medicine, Seattle

33 136 (Jan) 1934

- Treatment of Peptic Ulcer. A H Gordon, Montreal—p 1
- *Pain of Peptic Ulcer. Preliminary Report. A B Rivers, Rochester Minn—p 6
- Modern Theory of Menstruation. C F Flubmann, San Francisco—p 10
- Trichomonas Vaginalis. Simplified Treatment and an Explanation for the Frequency of Recurrences. W K Ruble, Seattle—p 14
- Study of End Results Following Cholecystectomy. O F Lamson, Seattle—p 16
- Sacro Iliac Slip. T E P Goehner, San Francisco—p 20
- New Phase of Vitamin D Milk. F B MacKenzie, Seattle—p 22

Pain of Peptic Ulcer.—Rivers points out that the clemat-cut syndrome generally accepted as being diagnostic of peptic ulcer usually indicates an uncomplicated ulcer. When the pain of gastric ulcer shifts definitely to the left, slightly upward or to the back, when the pain of a duodenal ulcer radiates toward the right, upward over the area of the liver or through to the back, when the pain of a gastrojejunal ulcer extends downward or through to the back, one usually can correctly assume deep penetration or partial perforation of the lesion. The presence of two distinctly separated areas of pain, especially if the pain is projected from elsewhere to these two widely separated areas, frequently is indicative of two peptic lesions, such as associated duodenal and gastrojejunal ulcer, or such as gastric ulcer high on the lesser curvature associated with a perforating duodenal ulcer. Uncomplicated peptic ulcer probably indicates its presence as a visceral phenomenon, which asserts its presence over the splanchnic nerves. The radiating pains of perforating peptic ulcers are in all probability the results of direct stimulation of the intercostal branches of sensory spinal nerves. It is conceivable that the distortion of the approved syndrome of ulcer in such instances is influenced by the accumulation of impulses of varying intensity that are carried over both the splanchnic nerves and the spinal sensory system.

Pennsylvania Medical Journal, Harrisburg

37 279 364 (Jan) 1934

- Normal and Pathologic Development of the Sinuses J J Shea Memphis Tenn—p 279
- Management of Acute Upper Respiratory Infections F W Davis Danville—p 283
- Treatment of Advanced Carcinoma of the Cervix C A Behney, Philadelphia—p 289
- Salvaging the Hard of Hearing Child D Macfarlan, Philadelphia—p 294
- Newer Aspects of Hypogonadism in the Male J F McCahey Philadelphia—p 295
- Keratomycosis Blepharorrhagium Report of Cases B A Goldmann Pittsburgh—p 299
- Treatment of Convergent Strabismus with Especial Consideration of the Possible Loss of Vision H M Langdon Philadelphia—p 302
- Coronary Disease Clinical Diagnosis of Coronary Disease H G Schleiter Pittsburgh—p 304
- Electrocardiographic Diagnosis of Coronary Occlusion T C Wood Philadelphia—p 309
- Treatment of Coronary Artery Disease Including Thrombosis C H Miner Wilkes Barre—p 311
- Study of Commissary Fed Children in a Central Pennsylvania Town Preliminary Report Mary Riggs Noble, Harrisburg—p 313
- Influence of Anesthetic on the Risk of Operation G P Miller, Philadelphia—p 317
- *Nonsurgical Treatment of Diabetic Gangrene and Infections of the Lower Extremity E S Dillon and L H Hitzrot, Philadelphia—p 321

Nonsurgical Treatment of Diabetic Gangrene and Infections of the Lower Extremity—Dillon and Hitzrot remove all pressure from the local lesion and this usually means that a shoe cannot be worn. In all but the mildest cases the patients should go to bed. If the patient sits up the foot should be kept at the level of the thigh. The leg should not hang down. Circular garters and rolled stockings are to be avoided. The foot should be kept warm. This is usually accomplished best by a cradle and electric light, the temperature of the air being kept between 90 and 95 F. The electric light must be kept well away from the foot, as burns occur easily. Dry heat is usually preferable to moist heat. Warm moist dressings may be used in treating lymphangitis, but lymphangitis usually means that surgery is necessary. Moist dressings may be used to aid in the removal of crusts under which there is infection. Moist dressings, however, usually cause undesirable maceration of the tissues. All salves and ointments are to be avoided, as these only serve to seal up the infection. Likewise all powerful irritants are to be avoided, as the sound tissues are easily damaged. Treating an infected area with surgical solution of chlorinated soda is often useful, but usually in cases in which surgery has been used. Buerger exercises, consisting in cycles of alternately raising and lowering the limb from the horizontal position are useful. The economic consideration is a serious one in these cases. Of the authors' forty-three patients, the average stay in the ward was thirty-four days.

Psychiatric Quarterly, Albany, N Y

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- Educational Activities of the Psychiatric Institute C O Cheney New York—p 5
- Service for Children in Psychiatric Hospital H W Potter New York—p 16
- *Treatment of Dementia Praecox by Continuous Oxygen Administration in Chambers and Oxygen and Carbon Dioxide Inhalations L E Hinsie A L Barach M M Harris E Brand and R A McFarland New York—p 34
- Bacillus Tuberculosis in Psychotic Patients N Kopeloff New York and E Loewenstein Vienna Austria—p 72
- Hereditary and Environmental Factors in Causation of Dementia Praecox and Manic Depressive Psychoses H M Pollock B Malzberg and R G Fuller New York—p 77
- Mental Mechanisms in Depression J R Blalock New York—p 98
- Trend Situations in Manic Depressive Psychoses and Their Interpretation O H Boltz Binghamton N Y—p 111
- Family Constellation as a Predisposing Factor in Psychosis S E Katz New York—p 121
- Prepsychotic Personality of Manic Depressive Patients J L Smalldon Poughkeepsie N Y—p 129
- Pupil Guidance V V Anderson Staatsburg N Y—p 148
- Some Pertinent Problems in Administration of Physical Education for the Mentally Ill J E Davis Perry Point Md—p 158
- Census of Resident Patients in the New York Civil State Hospitals B Malzberg New York—p 167

Treatment of Dementia Praecox by Continuous Oxygen Administration—Hinsie and his associates observed five patients who resided continuously for two and a half months in an oxygen chamber at a concentration of approximately 50 per cent oxygen. During this period they received treat-

ments of carbon dioxide and oxygen daily. After each carbon dioxide inhalation attempts, extending over four to five hours were made to establish communicability with the patients. Two of the five patients gained a state of remission, the clinical history of these two patients had indicated a favorable prognosis. A second group of five patients was treated similarly in an oxygen dormitory, except that no attempts to establish communicability were made. None of these showed clinical improvement. A third group of five patients resided in the oxygen dormitory at a concentration of approximately 50 per cent oxygen, without carbon dioxide treatment and without attempts made to establish communicability. None of these patients showed clinical improvement. A fourth group of five patients, living under normal atmospheric conditions and the usual hospital routine was given daily inhalations of carbon dioxide and oxygen. Of this group one patient showed clinical improvement but did not gain a remission. In all patients the arterial oxygen content and oxygen saturation were within normal range before treatment was instituted. The effect of inhalation of 50 per cent oxygen on the arterial oxygen saturation was not dissimilar to its effect on normal persons. The arterial carbon dioxide content of the patients ranged within normal limits both before and after oxygen, and oxygen and carbon dioxide treatments. In the patients treated by oxygen alone there was generally a decrease of from 10 to 15 per cent in the circulating hemoglobin. Except in one instance, the hemoglobin in those patients who received inhalations of oxygen and carbon dioxide did not show a diminution. Chemical studies of the blood showed no effect of long continued oxygen inhalation on the urea nitrogen, uric acid or blood sugar content of venous blood. Basal metabolic determinations varied so much that no consistent conclusions could be drawn. Under various psychologic tests no consistent improvement was observed in the patients who did not gain a remission. Physiologic measurements, involving respiration, pulse and blood pressure, were generally within normal range, both before and after the treatment administered.

Radiology, St Paul

22 1130 (Jan) 1934

- Correlation of Clinical and Roentgenologic Observations in Pulmonary Tuberculosis H L Sampson Trudeau N Y and L Brown Saranac Lake N Y—p 1
- Irradiation Therapy in Cancer of Mouth Technique and Results G E Pfahler and J H Vastine Philadelphia—p 15
- *Roentgen Diagnosis of Atelectasis with Especial Reference to Ground Glass Shadow and Degree of Pulmonary Shrinkage C M Van Allen Peiping China W A LaField and P S Ross Cleveland—p 27
- Changes in Electric Potentials and Rates of Oxidation of Skin Subsequent to Roentgen Irradiation M M D Williams and C Sheard Rochester, Minn—p 41
- Correlating Anatomy and Roentgenology O V Batson, Philadelphia—p 49
- *Diffuse Interstitial Calcinoses Report of Case with Review of Literature T Scholz New York—p 54
- Roentgen Ray Treatment of Inoperable Carcinoma of Breast by Method of Multiple Converging Beams E T Ieddy Rochester Minn—p 67
- Influence of Antiquity of Cell on Cell Resistance to Radium and X Rays R H Millwee Dallas Texas—p 74
- Blastomycosis of Skeletal System Brief Review of Literature with Report of Three Additional Cases E L Rypins Iowa City—p 77
- Heat Production in Diathermy Treatments A Hemingway Minneapolis—p 84
- Lead Poisoning in Infants and Children Roentgenologic Findings E C Vogt and C F McKhann Boston—p 87
- Effect of Radon Implants on Cytology of Liver of the Albino Rat J C T Rogers and G M Higgins Rochester Minn—p 93
- Irradiation and Electrosurgery in Management of Carcinoma of Urinary Bladder J T Stevens Montclair, N J—p 99

Roentgen Diagnosis of Atelectasis—Van Allen and his associates show that the difficulties in the roentgen diagnosis of atelectasis are due largely to two causes: lack of agreement in the definition of atelectasis and lack of pathognomonic signs. The preference of the authors as to terms is stated and some recently acquired facts as to the degree of shrinkage of the diseased section of the lungs in pneumonia as compared to that in atelectasis are introduced. The differential diagnosis of atelectasis is outlined with special reference to the manner of use of the ground-glass lung and of the degree of pulmonary shrinkage. They describe a new sign (ground-glass lung) in which the roentgenogram has the appearance of glass with a

finely ground unpolished surface. Their observations have shown that the shadow of an area of atelectasis—congenital obstructive or compressive, in dog or in man—always exhibits the ground glass roentgen shadow, provided (1) the dosage of x-rays is such as to obtain penetration of the tissues and demonstration of their radioconsistency (which is usually the case with the standard thoracic roentgenogram) and (2) the shadow of the lesion is large enough to permit discernment of its consistency. Many of the common consolidating lesions of the lung that are confused with atelectasis present a distinctly heterogeneous consistency of shadow because of residual air. Some lesions besides atelectasis present ground-glass shadows, but these are usually distinguished from the presence of other signs. In short, the ground-glass sign enters into the diagnosis of pulmonary lesions to the extent that it indicates complete airlessness of the field ordinarily occupied by the lung or of such part of that field as is large enough for the composition of the roentgen shadow to be recognized.

Diffuse Interstitial Calcinosis—Scholz presents a case of diffuse interstitial calcinosis clinically characterized by small, hard, subcutaneous nodules that show a tendency to open spontaneously and to discharge greasy pus, leaving slowly healing ulcers. It may occur in a localized form, involving practically any part of the body, or a diffuse form, which may gradually extend over the entire body. The appearance of the nodules may be preceded or followed by scleroderma-like cutaneous changes, which may become a prominent clinical feature. Roentgenologically it presents characteristic evidence of calcification. The latter is most common in the extremities. Pathologically the condition is characterized by hypertrophy and degeneration of the interstitial connective tissue, with secondary deposition of calcium salts in the fibrous tissue elements. Notwithstanding its characteristic clinical, roentgenologic and pathologic signs the condition probably is not to be classified as a separate clinical and pathologic entity but as an advanced stage of a chronic inflammatory condition that may be the basic lesion common to all the members of the scleroderma group. Necropsy evidence shows that in interstitial calcinosis the calcium salts are deposited only in degenerated fibrous tissue and that muscle fibers, no matter how degenerated they may be, do not contain any calcium. This tends to support the theory that in the dystrophic type of calcification pathologic connective tissue is the sole carrier of the deposited calcium salts.

Rhode Island Medical Journal, Providence

16 179 194 (Dec) 1933

Some Present Day Views Concerning Mental Disease A P Noyes
Howard—p 179

Diagnosis and Treatment in Two Children Where a Question of Epilepsy Is Raised H F Corson Providence—p 184

17 1 16 (Jan) 1934

The Colon as a Focus of Infection F A Cummings Providence—p 1

Rhinologic Treatment of Asthma J N Fishbein Providence—p 5

Rhinologic Treatment of Asthma—Tamponage augmented by diathermy has been found by Fishbein to be the most effective method of treatment. The colloidal silver solution employed passes through the membrane without ill effects and is capable of destroying bacterial life without injury to the tissues. Leaving the tampons in place for about an hour enhances the use of diathermy and the time of treatment is reduced to about fifteen or twenty minutes. The tampon is saturated with the colloidal silver solution and inserted into the middle meatus as far back as possible in the direction of the sphenoid sinus. Preceding this a smaller tampon is inserted high into the olfactory fissure. The indifferent or dispersive electrode is placed on the forehead by means of a head band. The electrode consists of a piece of block tin about 1½ by 6 inches. The two ends of the diathermy tape from the nostrils are attached to one of the poles and the tape from the dispersive electrode to the other terminal. A current of from 250 to 450 milliamperes is employed and left on for about twenty minutes. Many conditions such as acute or chronic infections of the nasal accessory sinuses are benefited. When the patient is found to be hypersensitive to some dust or food an attempt is made at desensitization to the specific substance. When no specific substance is found nonspecific treatment is given consisting of the parenteral injection of a nonspecific protein.

South Carolina Medical Assn Journal, Greenville

30 1 28 (Jan) 1934

The Value of Vital Statistics M B Woodward Columbia—p 3

Review of Peptic Ulcer J M Preston Lancaster—p 5

Arachnoidism or Spider Bites N O Eaddy Pamphico—p 9

Discussion of Abdominal Cesarean Section J D Parker Greenville—p 11

Southern Surgeon, Atlanta, Ga

2 177 254 (Sept) 1933

Problems Confronting the Proctologist C Rosser Dallas Texas—p 177

Acute Mercurial Poisoning with Anuria Report of Case with Decapsulation of Kidney and Recovery W H Parsons and T P Sparks Vicksburg Miss—p 189

Recognition and Treatment of Postoperative Complications J F Erdmann New York—p 193

Effect of Splenectomy in Purpuric Diseases R R Kracke Atlanta Ga—p 203

Essential Principles in Modern Proctology C D Gaston Birmingham Ala—p 212

Relative Value of Sclerosing Agents in Treatment of Varicose Veins A Ochsner New Orleans—p 217

Interrelationship of Pituitary and Ovarian Hormones B T Beasley, Atlanta Ga—p 225

Granulopenia Associated with Carcinoma of the Pancreas C H Richardson Macon Ga—p 234

Diagnostic Curettement with Especial Reference to Uterine Bleeding About or After the Menopause Analysis of One Hundred Cases J T Witherspoon New Orleans—p 239

Glaucoma Technic of Various Operations D Roy Atlanta Ga—p 244

2 255 320 (Dec) 1933

Pulsion Diverticulum of Esophagus and Hypopharynx C Jackson and C L Jackson Philadelphia—p 255

Leukorrhea Its Etiology and Treatment C Rigby Spartanburg S C—p 267

Peptic Ulcer G Crile Cleveland—p 273

*Pancreatic Lithiasis Case Report T H Thomason Fort Worth Texas—p 281

Horseshoe Kidney Case Reports R E Cone, Galveston Texas—p 287

Diurnal Incontinence in Women C J Miller New Orleans—p 293

*Congenital Anomalies of Ileocolic Region with Especial Reference to Chronic Manifestations C W Roberts Atlanta Ga—p 301

Pancreatic Lithiasis—Thomason presents a case of pancreatic lithiasis with a history of similar attacks of pain in two members of the family. A brother, operated on three years ago, had had attacks of high epigastric pain, nausea and constipation. He had an extreme grade of movable cecum with partial obstruction of the hepatic flexure and large mesenteric glands. No pancreatic disease was observed. Symptoms were completely relieved by appendectomy and cecopexy. A cousin, a young boy, also had attacks of pain, and at operation an inflamed gallbladder with an enlarged, hard pancreas was found. This boy continues to have occasional attacks of pain. The fact that no calculi were demonstrated in the roentgenograms of the author's patient two and a half years ago suggests that previous attacks (that is, since the age of 5) were due to a recurring pancreatitis, the calculi being a relatively late complication. It is conceivable that developmental defects present in the girl and her brother, and doubtless in her cousin may have been an etiologic factor. In both children, appendectomy and cecopexy were followed by prompt relief of constipation of long standing. The removal of innumerable small calculi throughout the entire gland substance, which are present is impossible. The future efforts must be directed toward relief of the pancreatitis rather than toward the removal of all the stones. Diabetes looms as ultimately inevitable as symptoms of an insatiable appetite and craving for sweets together with a greatly diminished dextrose tolerance are present. If attacks of pancreatitis continue unabated complete destruction of the pancreas by fibrosis is imminent and an existence maintained by diet and insulin will be all that the future can offer.

Congenital Anomalies of Ileocolic Region—Roberts believes that stasis in the intestine subjects the organism to the same potential dangers that attend obstructive lesions in other excretory systems of the body. Though wide variations in habit are commonly seen there must necessarily be a physiologic normal in which minimal intoxication occurs. Good function rests on a structural pattern that guarantees adequate muscle tone, ordered permeability and uninterrupted gradients of peristaltic motion. The anatomic deficit regularly associated with the intestinal invalid is not susceptible to appreciable alteration by operative attack. These patients belong to the

sphere of the internist and the psychiatrist. In a large proportion, however, much depends on the surgeon's interest in the developmental anomalies of the intestine, and the symptoms will be found due wholly or in part to mechanical factors susceptible to correction by the application of only sound surgical principles. When the toxic intestinal tide flows uninterruptedly until the compensation of vital organs, such as the liver, is lost, there arises a vicious chain that will not yield to attack on the focus in the intestine alone.

Surgery, Gynecology and Obstetrics, Chicago

58 128 (Jan) 1934

- Barbiturates and Other Hypnotics in Labor F C Irving S Berman and H B Nelson Boston—p 1
- Cyst Formations of the Skull J Chorobski Warsaw Poland and L Davis Chicago—p 12
- Acute Appendicitis in Childhood Critical Analysis of Two Hundred and Fifty Cases U Mies T F Hojce and Elizabeth M McFetridge New Orleans—p 32
- *Venous Plexus of Esophagus Its Clinical Significance D I Kegaries Rochester Minn—p 46
- Diagnostic Value of Double Contrast Enema with Especial Reference to Diagnosis of Early Neoplastic Lesions of the Colon H Shriv and J Cershon Cohen Philadelphia—p 52
- *Etiology of Uterine Fibroids with Especial Reference to Frequency of Their Occurrence in the Negro A Hypothesis J T Witherspoon and Virginia W Butler New Orleans—p 57
- Technic of Splenectomy R Maingot London England—p 62
- *Destruction of Urethra and Loss of Vesical Control Associated with Vesicovaginal Fistula Technic for Its Correction C C Ward New York—p 67
- Pelvic Outlet Its Practical Application J W Davis New York—p 70
- Adenomatous Polyps of the Stomach with Especial Reference to Malignant Degeneration F B Benedict and A W Allen Boston—p 79
- *Epiphyseal Separation of Long Bone L L Elson and I A Ferguson Philadelphia—p 85
- Primary Osteogenic Sarcoma of Thyroid Gland Report of Case A C Broders and J de J Pemberton Rochester Minn—p 100
- Operative Treatment of Bilateral Nephrolithiasis Indications and Results T Hrynselink Vienna Austria—p 103
- Uterine Cancer Report Covering the Period June 1927 to June 1932 C G Johnson and C H Tyrone New Orleans—p 113

Venous Plexus of Esophagus—Kegaries demonstrated the submucous venous plexus of the esophagus in eight of sixteen cases by injection through the coronary vein of the stomach. The presence of a periesophageal plexus of veins was not demonstrated but rather a system of large venous trunks with the absence of cross anastomoses. Conclusive evidence of a channel of anastomosis between the portal and caval circulation at the cardio esophageal junction in the absence of portal obstruction has been demonstrated. Results of other workers concerning a connection between the spleen and the esophageal veins through the veins that accompany the vasa brevia have been confirmed. From this work, the author concludes that the venous plexus of the esophagus is a vulnerable structure and hemorrhage may occur in conditions other than portal hypertension, such as cardiac decompensation, diseases of the spleen and trauma or ulceration of the esophagus.

Etiology of Uterine Fibroids—In a previous paper Witherspoon and Butler offered evidence from 150 cases of fibroids in white women which they believe to be convincing in support of a hypothesis that ovarian follicle cyst formation with hyperestrin secretion, is an etiologic factor in fibromyomatous changes in the myometrium, provided the stimulation is prolonged sufficiently. They feel that their observations in 125 cases of fibroids in the Negro are additional evidence which confirm the original hypothesis. Their belief is that development of uterine fibroids in the white and Negro woman has the same source but that the Negro presents a greater frequency of occurrence of fibroids because chronic pelvic infection, resulting in ovarian damage and dysfunction, is more common than in the white woman, and this abnormal ovarian secretion the stimulation of which remains permanent, is prolonged sufficiently to be the igniting factor in the development of fibromyomas. The authors believe that ovarian follicle cyst formation in the white woman is the result of a general glandular disturbance, inherent in the organism as a whole. They doubt that this ovarian damage in the white woman need necessarily be permanent. Often it is not prolonged sufficiently to cause latent fibromyomatous myometrial changes even though the immediate hyperplastic endometrial changes are present since women who in early life exhibited hyperplasia

of the endometrium and, necessarily, ovarian follicle cysts later pass through the normal reproductive process, and the former glandular disturbance readjusts itself. As an explanation for the frequency of fibroids in the Negro woman, the authors offer the fact that ovarian follicle cyst formation, resulting from mechanical blocking due to a thickened capsule or disturbed blood supply from chronic pelvic inflammation, is a frequent observation, and when once initiated the hyperestrin secretion persists, since the damage is permanent, as long as ovarian tissue remains active. In the white woman, ovarian pelvic inflammation is a much less frequent observation, and often the ovarian follicle cyst formation is a result of general glandular upset and therefore is not permanent if a glandular readjustment can be obtained.

Vesicovaginal Fistula Technic for Its Correction—Ward reports the case of a married woman of 26 in whom a difficult forceps delivery resulted in a dead baby, a vesicovaginal fistula and the loss of the urethra. She had been operated on eight times in four years all operations ending in failures. In November 1932 the author operated as follows: An incision was made on the anterior vaginal wall above the fistula outlining a quadrangular flap 25 cc wide and 3 cc long. This flap was dissected from the vaginal wall up to the fistula leaving it attached with the upper margins slanting obliquely to the superior border of the vesical defect. The flap was formed into a tube by suturing the margins together after the technic suggested by Farrar. A soft rubber catheter was passed through this tube and into the bladder through the fistula. The site of the original urethra was dissected out so as to form a deep U shaped groove and the newly constructed tube was laid in this groove and its end with the catheter was brought out of the external meatus, which had been previously denuded of mucosa and sutured to it. The margins of the groove were brought together over the urethral tube and sutured with interrupted sutures. A Kelly mattress stitch of linen was placed at the neck of the bladder for control and the edges of the vaginal denudation were united with interrupted sutures. The wound healed by primary union with a perfect restoration of the urethral canal and closure of the fistula. The patient had some control of the bladder, but when on her feet the control was insufficient. Slight pressure on the urethra completely stopped the flow of urine and a satisfactory control was obtained by the use of a Thomas-Hodge pessary inserted in the reverse position. The exact amount of necessary pressure on the urethra was easily obtained by softening the pessary in boiling water and bending the bulbous end to the required angle. The patient has been perfectly dry and comfortable with the pessary ever since and she removes it for cleansing and replaces it herself whenever necessary.

Epiphyseal Separation of Long Bones—Elson and Ferguson analyze 110 cases of epiphyseal separations and make relative comparisons between the incidence of these injuries and fractures in the region of the joints in the growing age. Of the cases followed, 85.3 per cent obtained good anatomic and functional results. The results were fair or poor in 13.3 per cent the majority of these being in epiphyseal injuries of the lower humerus. Three cases of premature ossification resulted in excellent function but have been classed with the poor results because of the slight anatomic deformity. From the results obtained in the treatment of these epiphyseal injuries the authors draw some conclusions which may be useful in the future management of such cases. 1 Perfect reposition of the displaced epiphysis does not necessarily insure subsequent normal growth. 2 In most instances in which a single epiphysis forms the joint surface, partial reposition of the epiphysis was followed by normal subsequent growth (from two to eight years). This statement is particularly true of the lower radial epiphysis. Especially in the younger age groups nature seems able to compensate for considerable displacement. 3 Perfect reposition is most desirable in those areas in which several ossification centers are involved in the formation of the entire epiphysis e.g. lower humeral epiphysis. Displacement of these epiphyses and subsequent abnormal overgrowth may give marked impairment of motion in such a complicated joint. 4 Injuries in the region of the joints during the age of growth even in the absence of roentgen evidence, should be considered possible epiphyseal separations without displacement. Treatment

should be carried out with this possibility in mind. The prognosis of peripheral injuries should be guarded because of the danger of premature ossification and because the extent of the injury cannot always be determined at the time of injury.

Western J Surg, Obst & Gynecology, Portland, Ore

12 166 (Jan) 1934

- History of Hysterectomy Presidential Address A Mathieu Portland Ore—p 1
Review of Cesarean Sections Alice F Maxwell San Francisco—p 14
The Left Ovary E N Fwer Oakland Calif—p 29
Differential Diagnosis Between Chronic Diffuse Glomerulonephritis and the Toxemia of Pregnancy A Holman Portland Ore—p 34
Influence of Pregnancy on Experimental Tumor Growth in the White Rat Volumetric Studies on Adenofibroma and Fibroma L A Emge and I M R Wulff San Francisco—p 45
*Cystocele Modification of the Neel Rawls Muscle Overlapping Technique H N Shaw Los Angeles—p 55

Cystocele—The modification of the Neel-Rawls technic used by Shaw, which was first described by Bissell, consists in denuding the mucosa from the muscle on one side only. The raw surface is drawn under the opposite flap by mattress sutures, and the combined flap of mucosa and muscle sutured to the cut edge of mucosa with a lock stitch. Overlapping the subvesical muscle for the cure of cystocele gives an excellent anatomic result, with relief of symptoms in a high proportion of cases. Denudation of mucosa from only one flap has two advantages over the Neel Rawls technic: (1) There is less interference with the blood supply of the tissue and (2) the time required for the operation is considerably less. In cases of prolapse, when childbirth or marital relations need not be considered, the author prefers vaginal hysterectomy to the interposition operation. He has operated in 134 cases of cystocele, using this modification and obtaining an excellent anatomic result, with relief of bladder symptoms in 125. In two cases, one diabetic, there was complete failure; in another vesicovaginal fistula developed; three patients died and three developed enterocoele.

Wisconsin Medical Journal, Madison

33 176 (Jan) 1934

- Glioma Retinae (Neuro Epithelioma) Report of Case R C Smith and G Berdez Superior—p 24
Radiation Therapy in Medical Practice II Carcinoma of the Lung E A Pohle Madison—p 29
Observations on Abdominal Conditions in Childhood S Anberg Rochester Minn—p 31
Roentgenology in Diagnosis of Thoracic Lesions R P Potter Marshfield—p 34
*Bronchoscopic Examination Aid in Obscure Pulmonary Conditions J S Gordon Milwaukee—p 37
Congenital Syphilis R P Schowalter Milwaukee—p 39
Treatment of Tuberculosis in General Practice A L Banjai Wauwatosa—p 42

Bronchoscopy in Obscure Pulmonary Conditions—Gordon states that the bronchoscopic examination of obscure pulmonary conditions is applicable to all ages is done without anesthesia affords the opportunity for removal of pus and secretion in the bronchial tree gives the opportunity for the direct inspection of the trachea and large bronchi enables one to secure uncontaminated specimens for bacteriologic study and permits the introduction of iodized oil in known amounts in either or both bronchi as indicated. A bronchoscope is introduced in the usual manner. All secretion is removed by suction. A small amount of anesthesia is applied to the tracheal bronchial mucosa. Then specimens for bacteriologic study are taken. Next a small cannula similar to the suction cannula is passed through the bronchoscope and the oil is injected first into the left bronchus if both are to be injected and then into the right. In children the quantity of oil injected must be graduated in accordance with age. The position of the oil cannula should be well above the division to the upper lobes and the oil should be about body temperature to make it flow more easily. The position of the patient on the table is important. The head and shoulders should be about 10 degrees lower than the horizontal plane and turned to the side to be injected. This permits the upper lobes to receive a sufficient amount of oil to give a good shadow. When the full amount of oil has been injected the table is slowly raised to about 15 degrees above the horizontal plane. The patient is then turned on his back. The bronchoscope is removed the patient is cautioned not to cough violently and the roentgenograms are taken.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

46 152 (Jan) 1934

- *Kaposi's Varicelliform Eruption W H Brown—p 1
*Id A D McLachlan—p 8
Primary Cutaneous Actinomycosis Note on Bacillus Actinomycetem Comittans R Klaber—p 12
Treatment of Superficial Staphylococcal Infection by Toxoid J I Connor and Margot McKie—p 20

Kaposi's Varicelliform Eruption—Brown says that no case of Kaposi's varicelliform eruption has been reported in the American literature. He gives the salient features in the cases reported first by Kaposi and later by Juliusberg, Galewsky and Rasch. The age incidence is that of infancy. In the case of Rasch and in that of the author the ages were 4 and 9 months, respectively. The condition seems to be a rare complication of infantile eczema. Almost all the cases recorded have presented eczema for some weeks prior to the onset of this unique eruption. The onset is sudden. There is elevation of temperature and pulse for at least twenty-four hours before the eruption appears. The eruption develops with great rapidity; a large crop may appear overnight and is most profuse on the face and head. There is high fever for from one to two weeks, with temperatures ranging from 102 to 104 F, then the temperature falls by lysis. The pulse shows a corresponding rise in rate from 130 to 150. There was no marked prostration in the author's patient. The clinical features of the eruption are described as varicelliform, vacciform or varioliform. Kaposi states very definitely that the lesions are like varicella but that they undoubtedly do not belong to this class. Rasch also described the eruption in his case as being like varicella but judging from the illustration the eruption appears also like variola. At no time in the course of the author's case did the eruption resemble varicella. No clear vesicles were present. The lesions were opalescent from the start and became rapidly pustular and varioliform in character. The main part of the eruption seems to develop over the previously eczematized skin but discrete lesions may appear elsewhere. Complete resolution takes place in the majority of cases, though Kaposi and Juliusberg each record a death. In addition to the eruption, Kaposi and others mention the presence of diffuse edema of the skin. This was present in a marked degree in the case here reported by the author. Some degree of pitting, such as is seen in variola, seems to be a feature in Kaposi's disease.

Kaposi's Varicelliform Eruption in an Adult—McLachlan reports a case of Kaposi's varicelliform eruption in a young woman. The clinical evidences presented by this patient were almost a reproduction of the case reported by Brown. Apart from the pustules being even more strikingly varioliform in the case of the child, the appearances were alike. This disorder does not appear to have been previously recorded in an adult, and its appearance in adult life in this case seems to be the only unusual feature. The preexisting eczematous state, the sudden onset and rapid course of a varioliform eruption, accompanied by acute edema and the subsequent scarring in the affected sites strongly support the diagnosis of Kaposi's varicelliform dermatitis. From the clinical appearances presented however, the term varioliform would seem to be more applicable to this uncommon ailment.

British Medical Journal, London

2 1153 1196 (Dec 23) 1933

- Vision of Brightness and Color J S Haldane—p 1153
*Ketogenic Diet in the Treatment of Infections of Urinary Tract Review of Sixteen Cases D C Robb—p 1158
Erythema Nodosum W R I Colli—p 1162
Relation Between Renal Histology and Clinical Picture in Nephritis J Gray—p 1165

Ketogenic Diet in Treatment of Infections of Urinary Tract—Robb employed the ketogenic diet in sixteen cases of infection of the urinary tract. The diet had the effect of increasing the hydrogen ion concentration of the urine in all cases except one. The effect on the urinary pH was characterized by a rapid initial fall and a maintained low general level lasting till the end of the third week when there was a tendency

for the p_n to become irregular and to stand at a slightly higher level. Acetone bodies were produced in the urine in all cases but varied greatly in amount in individual cases. Acetone appeared in greatest amount during the first five days after the p_n had fallen and by the end of three weeks had become very much diminished. Five patients were cured completely by treatment with the ketogenic diet. The urinary figure was maintained about p_n 54 and acetone bodies were produced in satisfactory quantity. Four patients were cured following the addition of ammonium nitrate to the treatment two following the addition of methenamine and five were improved but the urines were not sterile. Of these, three left the hospital before treatment was completed, one was suffering from a subacute condition which interfered with metabolism and one failed completely to take the diet. Treatment with the ketogenic diet improved the symptoms and the characters of the urine rapidly. No symptoms were caused by the hyperacid urine. It was found desirable to increase the diet by stages according to the ketogenic-antiketogenic ratio, in order to avoid nausea and vomiting. Only one patient had any gastric upset. Two of the patients were nursing mothers. The milk was found to be of normal composition, and no gastro-intestinal symptoms were shown by the babies. Every patient was in excellent health on discharge from the hospital.

East African Medical Journal, Nairobi

10 253 284 (Dec.) 1933

- Dietetic Problems in East Africa J I Gilks—p 254
Observations on Dysentery in Nairobi H C Trowell bacteriologie notes by F P G de Smidt—p 265
Lymphangioma of the Tongue Case C A Brumbridge—p 276
Hemorrhagic Purpura in a Mkumba Native Case R A W Procter and G M Hargreaves—p 277

Edinburgh Medical Journal

40 569 646 (Dec.) 1933

- *Chronic Nephrosis F Matthew and J D S Cameron—p 569
*Does Pregnancy Hasten Fatal Termination in Rheumatic Heart Disease? A R Gilchrist and R M Murray Lyon—p 587
Toxic Gout: Analysis of Results of Surgical Treatment H L Wallace and L B Weill—p 598
Typhoid in Rural Area Epidemiologic Note J Ritchie—p 616

Chronic Nephrosis—Matthew and Cameron attempt to separate nephrosis from all other forms of nephritis and indicate that a definite diagnosis depends on the congo red test. Congo red is eliminated in the urine only in the small group of cases regarded as nephrosis. If nephrosis is an entity, there is still doubt as to its etiology and also as to the cause of various symptoms and signs present. The authors are of the opinion that certain changes in the kidney itself are primarily responsible for nephrosis and that the site of the lesion is the glomeruli and not the tubular epithelium. The permeability of the glomerular membrane (including Bowman's capsule and capillary wall) is increased and, in consequence, substances of larger molecular size than usual escape from the blood. With a damaged membrane showing increased permeability, serum albumin of molecular weight 67,500 will pass and appear in the urine while serum globulin which has larger molecules of about 103,000 cannot escape. As a result, in nephrosis excessive quantities of albumin are found in the urine but no globulin, and correspondingly there is a serious fall in plasma albumin but no change in plasma globulin. In addition, albumin exerts an osmotic tension approximately six times that of globulin. The decreased protein in the blood is due to the loss of albumin, and so there is a great fall in its osmotic power. The blood is unable to hold its normal amount of fluid, and water passes from it to the tissue cells in increasing amount, so that progressive edema occurs. It is believed that in the attempt to restore the osmotic tension hypercholesterolemia ensues. Thus the authors regard altered glomerular permeability as the primary renal change in nephrosis and make various suggestions to account for the change. They believe that the sequence of events ending in nephrosis would therefore be (1) an infective condition (2) degeneration of the glomerular membrane ending in increased permeability, which allows the escape of serum albumin but not of serum globulin or fibrinogen (3) marked fall in plasma albumin no fall in plasma globulin (4) fall in osmotic tension of the plasma, (5) edema that tends to increase and become very marked and (6) hypercholesterolemia. They

suggest that nephrosis is merely syphilis of the kidney. In their two patients only one had had syphilis, and in addition, other patients having albuminuria were undoubtedly syphilitic, yet none had the typical nephrosis congo red response. Nephrosis undoubtedly occurs in nonsyphilitic subjects and although albuminuria occurs often in syphilis, this does not constitute nephrosis. Cases in the literature bear out this argument.

Pregnancy and Rheumatic Heart Disease—Gilchrist and Murray-Lyon analyzed 109 cases of fatal cardiac rheumatism in an endeavor to discover the effect of repeated pregnancies on the course of the disease. A comparison has been made between men, nulliparous women and parous women regarding their average age at death, mode of dying, duration of the cardiac disease and the rate of progression to the fatal termination. All the patients suffered from mitral stenosis either alone or in association with other valvular lesions. No significant difference was found in the duration of the disease in nulliparous and parous women. The course of the disease appeared to be shorter in the male patients. Auricular fibrillation is not necessarily an indication that an additional burden has been placed on the heart during the child-bearing period. Its incidence is largely determined by the length of survival from the time of the first involvement of the heart. Congestive heart failure was the mode of death in 92 per cent of the whole group. The fact that these parous women dying from congestive heart failure had families averaging 4.5 children each would support the contention that repeated child bearing accelerated their earlier death. Cerebral embolism accounted for all the remaining deaths with two exceptions. Parous women dying from this cause lived an average of twelve years longer than those who died from congestive heart failure. In spite of their longer life their families averaged only 1.7 children. It would appear that by escaping the burdens of a large family they guard themselves against the risk of congestive heart failure until the age of about 38 years, only to die from embolism twelve years later. This would appear to be about the maximal span of life for the individual dying from rheumatic heart disease. While pregnancy should be avoided in the severer grades of rheumatic heart disease, the authors conclude that one or two children may be borne without detriment by the majority of women suffering from cardiac complications. Repeated pregnancies however, tend to shorten the span of life in women suffering from rheumatic heart disease and ultimately increase the risk of death from congestive heart failure.

Glasgow Medical Journal

3 148 (Jan.) 1934

- Bearing of Experimental Induction of Cancer on Our Conceptions of Its Nature and Causation J A Murray—p 1
Cholelithiasis A Summary J A G Burton—p 14

Journal of Laryngology and Otology, Edinburgh

49 172 (Jan.) 1934

- *Associated Paralysis of the Vocal Cord H Burger—p 1
Progressive Ulcerative Reticulosis of the Palate I S Hall—p 55

Associated Paralysis of the Vocal Cord—Burger states that there can be few laryngologists and not a single neurologist who without consulting books, can tell exactly the difference between the syndromes of Jackson Collet, Vernet and Schmidt. Even those who write about them often mix them up. These names are impractical, are incorrect and lead to confusion. When, by a progressive process at the cranial base, today the vagus tomorrow the accessory later on maybe the hypoglossus, and eventually the glossopharyngeal nerves are attacked it is pointless to speak of the transition of the syndrome of Avellis into that of Schmidt, into that of Jackson, or into that of Collet. And as each of these can be accompanied by disorders of the sympathetic facial and auditory nerves and, for instance, of the pyramidal tract the list remains hopelessly incomplete. Such progress may be observed with degenerative diseases in the medulla oblongata as well as with syphilitic and neoplastic processes at the cranial base. Similarly with disturbances on the side the skull. Lemaitre who in a progressive process in the cervical glands watched the symptoms of paralysis successively traverse new nerve territories points out the artificiality of this classification into syndromes. Neurologists are in daily

contact with associated paralyses of cranial nerves, but they do not fetter their minds by trying to fit every combination into a little compartment with a name of its own. The only serviceable classification is that according to the typographic situation of the maladies: syndrome of the bulbar nerves, syndrome of the jugular foramen syndrome of the parapharyngeal space and vocal cord-diaphragm syndrome.

Journal of Pathology and Bacteriology, Edinburgh

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- Infectivity of Neurotropic Yellow Fever Virus for Animals G M Findlay—p 1
Primary Small Round Cell Sarcoma of Small Intestine J Gray—p 7
Medullo-Epithelioma (Bailey and Cushing) with Especial Reference to Relative Malignancy of This Type of Tumor Two Cases J G Greenfield—p 11
Transplantation of Liver G R Cameron and C L Oakley—p 17
Histologic and Experimental Observations on Generalized Vacuina in Man J H Dible and H H Gleave—p 29
Aneurysm of Pulmonary Artery with Patent Ductus Arteriosus (Botall's Duct) Report of Two Cases and Review of Literature R D Aunoy and E von Haam—p 39
Pneumococcal Hemolysin Its Extracellular Nature Production and Properties S T Cowan—p 61
Investigations on Gravis Mitis and Intermediate Types of Corynebacterium Diphtheriae and Their Clinical Significance D T Robinson and F N Marshall—p 73
Adjustment of Blood Volume After Transfusion A E Boycott and C I Oakley—p 91

Medullo-Epithelioma (Bailey and Cushing)—Greenfield reports two cases of medullo-epithelioma of the cerebrospinal system. One was a supratentorial growth subjected to partial operative removal less than two years after the onset of symptoms, showing evidence of regrowth three years after operation and then arrested for two and one-half years by roentgen therapy. The other originated in the sacral canal, where it continued to grow without greatly enlarging the canal for about six years. It then spread to the subarachnoid space, where it rapidly produced numerous secondary growths over the spinal cord and brain. Such evidence as to rate of growth and relative malignant condition of the medullo-epitheliomas as these two cases afford halts between the opinions expressed by Bailey and Cushing and those by Roussy and Oberling. While giving no support to the contention of the former that medullo-epitheliomas are more malignant than medulloblastomas it does not favor the view of the latter that medullo-epitheliomas (a form of their neuro-epitheliomas) are in general tumors of slight malignant manifestation. Nor does the second case support their contention that when a neuro-epithelioma takes on the characters of a frankly malignant growth it evolves toward the type of neurospongionoma (medulloblastoma) as there was little change in the structure of the tumor from that seen in the old standing sacral growth to that of the recent rapidly growing cerebellar metastases. On the whole however these cases support the view of the French authors that medullo-epitheliomas are dysembryomas (dysembryomes evolutifs) whereas medulloblastomas are true cancers of the nervous tissue. This view is in accordance with that expressed by Davie who while producing no fresh evidence as to rate of growth discussed the position of medullo-epitheliomas among tumors of the nervous system. At the same time his suggestion that medullo-epitheliomas may turn out to be relatively benign and slow growing is not fully substantiated. All that the present two cases show is that the rate of growth of this form of tumor is subject to various influences, only some of which appear to be explicable on physical grounds. They resemble the more malignant growths in being radiosensitive and in the power of rapid growth under favorable conditions but they are probably more susceptible to restraining influences of various kinds than the anaplastic growths of nervous tissue.

Pneumococcus Hemolysin—The investigations of Cowan indicate that hemolysin is found in the fluid part of young broth cultures of the pneumococcus. The maximal titer occurs immediately after the phase of logarithmic growth. The relation of the curve of the titer of hemolysin to the curves of the total and viable counts indicates that hemolysin is given off into the surrounding medium by the pneumococcus and that its presence there is not essentially the result of autolysis. The fall in titer of hemolysin in older cultures is due in part to its inactivation by oxidation. Its activity can be restored

by reduction with sodium hydrosulphite. Hemolysin deteriorates during storage if oxidation is permitted, it can be kept satisfactorily in sealed ampules if air is excluded. Hemolysin is not type specific and the capacity of a strain to produce hemolysin varies independently of virulence. Hemolysin filters readily, is rapidly destroyed at 55 C and is antigenic. Of twenty-eight strains examined only two failed to produce hemolysin. It is possible that individual pneumococci in any culture differ in their capacity to produce hemolysin. The addition of blood to the medium in which a strain is maintained in subculture assists the retention of its capacity to produce hemolysin. The erythrocytes of man are somewhat more sensitive to hemolysin than those of the rabbit or guinea-pig. Hemolysin is adsorbed almost immediately by erythrocytes and by pus, and is not usually demonstrable in inflammatory exudates.

Journal of Physiology, London

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Influences Which Affect the Form of the Respiratory Cycle in Particular That of the Expiratory Phase M Hammond and W H Wilson—p 261
Submaximal Responses of the Single Muscle Fiber S Gelfan—p 285
Behavior of the Liver Glycogen During Decerebration Hyperglycemia and the Influence of Atropine and of Ergotamine on This Condition M Louisa Long—p 296
Effect of Diet Insulin and Thyroxine on Adrenalin Content of Suprarenal Glands H A F Gohar—p 305
Correlation Between the Action of Insulin and Adrenalin on Muscle and Liver Glycogen K M Daoud and H A F Gohar—p 314
Effect of Splanchnotomy and of Phlorhizin on Decerebration Hyperglycemia M G Forster—p 323

Effect of Diet, Insulin and Thyroxine on Suprarenals—The experiments of Gohar indicate that the epinephrine content and the weight of the suprarenals are affected by variations in the diet. While a high protein diet has no marked effect a fat diet leads to a diminution of the absolute content of epinephrine and of the total weight of the glands. The relative amount of epinephrine per gram of gland is also slightly diminished. A carbohydrate diet also leads to a diminution of the absolute content of epinephrine, the weight of the suprarenals is strikingly diminished so that the relative amount of epinephrine per gram of gland is considerably increased. The repeated administration of insulin in subconvulsive doses leads to an increase in the weight of the suprarenals and of their epinephrine content. In convulsive doses, insulin leads to a depletion of the epinephrine store. This effect of insulin is produced through the nervous system as well as by peripheral action on the suprarenal bodies. The repeated injection of thyroxine also leads to an increase in weight and of epinephrine content of the suprarenal bodies.

Journal of State Medicine, London

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- Technic of Blood Transfusion and Organization of a Public Transfusion Service G Keynes—p 685
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Journal of Tropical Medicine and Hygiene, London

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- Blood Grouping of Central Australian Aborigines 1932 Series J B Cleland—p 377
Further Note on Action of Normal Human Blood Serum on Trypanoma Rhodesiensis in Relation to Cyclic Passage Through Tsetse Flies J F Corson—p 378
Nephrosis in Malaria T B Menon and D R Annamalai—p 379

Nephrosis in Malaria—Menon and Annamalai report a case of nephrosis in which the demonstration of malarial parasites in the spleen smear and of malarial pigment in sections of the spleen liver and other organs and the characteristic morphologic changes in the liver and spleen showed a massive infection with malaria. The degenerative change in the tubules of the kidney with but slight change in the glomeruli is in consonance with the view that a necrotizing type of nephrosis is the actual lesion in the kidney. The marked enlargement of

the kidney the presence of necrosis and the formation of casts all show that the change is not a mere fatty degeneration such as is encountered in anemias. The absence of proliferation or crescent formation in the glomerular tuft and Bowman's capsule is quite unlike the appearance encountered in the large white kidney of subacute glomerulonephritis. The demonstration of neutral fat and of double refracting fat is conclusive that the change is a degenerative type of nephropathy. Bell has pointed out that nephrosis is not a distinct entity but a form of glomerulonephritis in which the injury to the glomerular capillaries is of such a type that no reactive proliferation occurs but their permeability is affected, so that albumin is allowed to escape in large amounts. The presence of malurial pigment in the epithelial cells of the proximal convoluted tubules raises the possibility that this is the hypothetical toxin that is responsible for the nephrosis. The only possible explanation of its presence in this part of the tubule, in which resorptive functions are not great, is that the pigment is being excreted by the kidney and has caused severe degenerative changes during the process. The malurial infection is apparently of long standing. The fact that the patient was unconscious when brought to the hospital raises the question of uremia as a cause of death.

Lancet, London

2 1355 1410 (Dec 16) 1933

Electrosurgery A H Burgess—p 1355

Artificial Pneumothorax Treatment Some Results and Conclusions G Jessel—p 1360

*Cutaneous Reactions to Products of Hemolytic Streptococcus in Scarlet Fever and Erysipelas J P McGibbon—p 1363

Observations on Treatment of Climatic Bubo and Allied Diseases E R Sorley and P L Gibson—p 1365

Cutaneous Reactions to Products of Hemolytic Streptococcus—McGibbon has found it possible to demonstrate a condition of hypersensitiveness to products of the hemolytic streptococcus during the course of scarlet fever. He used an extract representing the soluble intracellular products of the organism freed from all diffusible substances. About 90 per cent of seventy-four cases, including all the patients more than 7 years of age have shown a positive reaction by the fourth week. The author discusses the relationship of this allergic state to scarlatinal nephritis and arthritis and its possible importance in the development of the rheumatic state. A total of 160 persons not suffering from scarlet fever have also been skin-tested. In all cases age has an important influence on the results. Retests both in health and in a wide variety of diseases have produced no material change in the reaction. The latter appears to be inhibited in chronic cardiac disease and wasting conditions, but not in acute infections, unless these are of great severity. The results in erysipelas contrast sharply with those in scarlet fever. In erysipelas the reaction to the hemolytic streptococcus extract is positive in the first week and appears to remain so throughout the disease. In the absence of extreme illness, a negative reaction in an adult patient should therefore question the diagnosis of erysipelas.

2 1411 1462 (Dec 20) 1933

Electrosurgery A H Burgess—p 1411

Late Results of Treatment by Artificial Pneumothorax L S T Burrell—p 1414

Ipodystrophia Progressiva W Hartston—p 1416

Benign Strictures of the Rectum I E C Norbury—p 1418

Cutaneous and Other Complications of Chronic Alveolar Infection H C Semon and L D Wright—p 1421

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Workmen's Compensation Its Medical Aspect J Collie—p 1463

Hay Fever Mechanism of Specific Desensitization D Harley—p 1469

Familial Asthenic (Paralytic) Type of Thorax with Congenital Ectopia of Lenses a Condition Allied to Arachnodactylia F P Weber—p 1472

Peripheral Reflexes in Disease J J Evans—p 1474

*Transplantation of Suprarenal Glands in Addison's Disease F d Abreu—p 1478

Nature of Functional Disturbance in Cocaine Hallucinations K Zucker—p 1479

Transplantation of Suprarenals in Addison's Disease—Although the grafting of the suprarenals in d Abreu's case of Addison's disease eventually failed, owing to suppuration around the grafts, a definite though temporary improvement was caused by the transplantation. The patient was in an advanced stage of the disease and in an unsatisfactory condition for a

successful result. The only available suprarenals were those of a woman of 73 who was not an ideal subject and from a still born infant who was premature and poorly developed. Therefore the author feels that the amount of improvement noted in this case, in which conditions were unfavorable, and the results in the three cases reported previously by other authors warrant the further trial of this operation in cases of Addison's disease. Points in the actual technique of the operation which, from a consideration of this case and the available literature, seem to be worthy of attention are as follows: 1 The graft should be removed from the dead patient as soon after death and with as much care for asepsis as possible. Opportunities for using a suprarenal of a patient still alive must be so rare that the possibility should not, to the author's mind, be considered for general application. 2 From the behavior of grafts in general it is seen that grafts in strips are more likely to function than whole glands, as a functioning graft is that which is actually penetrated by the blood vessels of the host, such penetration rarely exceeding a depth of 2 mm. Preferably, on general grounds, the donor and recipient should be of the same blood group. 3 In view of the harmonious working of the testicles and the suprarenals and the success of such a graft as that reported by Hurst, the testicles seem to be the most favorable site. In ruling this, a site between the peritoneum and the muscles of the abdominal wall should be employed.

Medical Journal of Australia, Sydney

2 837 866 (Dec 23) 1933

Blood Culture in Tuberculosis W J Penfold and Hildred M Butler—p 837

Ichthyosis A J Gibson—p 843

2 867 896 (Dec 30) 1933

Appendicitis and Its Treatment H R Pomroy—p 867

Causes of Blindness J Barrett—p 872

Salmonella Infection (Bacillus Typhi Murium) in Stock of Experimental Mice with Observations on Morbid Anatomy and Epidemiology R D Wright—p 875

Early Surgeons of Sydney Hospital Thomas Henry Frasca A

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Control of Diphtheria in a Residential Institution H M L Murray

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Tubercle, London

15 145 192 (Jan) 1934

*Value of Sanoerysim in Therapeutic Pneumothorax J Cribbin—p 145

Memorandum on Asbestosis E R A Merewether—p 152

Value of Gold Therapy in Therapeutic Pneumothorax—Although Cribbin feels that the actual number of cases (nineteen) investigated is too small to warrant conclusions the investigation has a particular value in that it emphasizes the essential criterion from which an absolute evaluation of the therapeutic efficacy of a double thiosulphate of sodium and gold ("Sanoerysim") may be gained. The results offer convincing support in favor of combined pneumothorax and double thiosulphate of sodium and gold therapy. Recent experimental investigations that are of considerable importance to chemotherapeutic study have assigned to the reticulo endothelial system an important part in the mechanism of chemotherapeutic action. The action of double thiosulphate of sodium and gold on the reticulo endothelial system has not as yet been made the subject of special study. Schroder states that it does stimulate the reticulo endothelial system. Hughes and Shrivastava, Houghton and many others have demonstrated that definite changes in the blood elements following its administration may occur—in favorable cases associated with an increase of lymphocytes (reticulo endothelial cells) and in unfavorable cases with an increase of monocytes. Sabin shows that an increasing lymphocytosis occurs with a well maintained resistance (immunity). It is conceivable that the power of double thiosulphate of sodium and gold to cause an increase of lymphocytes is greater than is possible with other stimuli (tuberculin albumin horse serum), and that as a result the changes induced are more helpful and beneficial to the natural defenses of the body. A comparison of the death rates of patients treated with it and those not treated with it is of practical importance. Thus, Clarke found that 69 per cent (moderate and advanced groups combined) who were treated with it were alive, as contrasted with 46 per cent who did not have it. An immunologic response with subsequent increased resistance must be at least a partial explanation of the difference in the death rates.

Archives de Médecine des Enfants, Paris

37 65 128 (Feb) 1934

Treatment of Diphtheria J Comby —p 65

*Influence of Intercurrent Infections on Evolution of Kala Azar P Giraud and R Poinso —p 81

Influence of Intercurrent Infections on Kala-Azar—Giraud and Poinso report eleven cases of kala-azar in which treatment with various antimony compounds failed to cause notable amelioration, but the appearance of febrile intercurrent infections (measles, pneumonia, bronchopneumonia and so on) resulted in marked improvement. In one case, resistant to antimony, febrile reactions followed each of ten injections of acetarsone. The size of the spleen decreased, the patient became fever free and the general condition was improved. In ten other cases, intercurrent infections had definitely unfavorable results and the patients died. The authors believe that under certain circumstances intercurrent infections can produce marked amelioration of the kala azar by means of the hyperpyrexia. This is especially true in those cases which are antimony resistant. Further studies are necessary to prove whether artificially produced hyperpyrexia is to be of value in antimony-resistant cases of kala azar.

Presse Medicale, Paris

42 249 264 (Feb 14) 1934

Intramuscular Autoserotherapy in Asthma and Its Equivalents A Jacquelin and G Bonnet —p 249

*Blood Chlorides and Postoperative Toxic Syndrome H Chabanier and C Lobo Onell —p 251

Blood Chlorides and Postoperative Toxic Syndrome Chabanier and Lobo-Onell, although unwilling to admit that the usual decrease in blood chlorides is of no importance, believe that it does not constitute the primary factor in the toxic postoperative state. Their reasons are threefold. In some instances of postoperative toxemias the blood chlorides may be normal or higher than normal. Inversely it is not uncommon to observe lowering of the blood chlorides postoperatively without toxic symptoms. Finally the independence of the toxic state and blood chlorides are manifest in therapeutic rechloridation. The authors suggest that the common cause is the general anesthesia. A vicious cycle is set up which involves more vomiting, more appearance of chlorides in the tissues where the toxic substances (probably nitrogenous) are liberated and appear in the circulation with accentuation of the toxic syndrome, and more vomiting. They conclude that the primary factor in the toxic postoperative syndrome consists in the liberation into the circulation of toxic substances at the seat of the operation. This effect is soon reinforced by the appearance of insufficiently split nitrogenous substances liberated from the tissues.

Policlinico, Rome

41 323 362 (March 5) 1934 Practical Section

*Pathogenesis of Chronic Pancreatitis C Rossi —p 323

Tumors of Prostate and Urinary Bladder and Their Surgical and Roentgen Treatment G Improbato —p 326

New Conceptions of Pathogenesis of Parotitis G Milani —p 329

Contribution to Bone Surgery New Aneurysm Needle P Bosi —p 335

Choice of Technic for Better Selection of Irradiations V Palumbo —p 336

Pathogenesis of Chronic Pancreatitis—Rossi believes that when pancreatitis is associated with ulcer and with cholecystitis, it does not represent a morbid succession of the latter but a distinct localization of the right abdominal syndrome. As causes of chronic pancreatitis in the literature the author found chronic intoxications, acute hematogenous diseases, specific chronic diseases (syphilis and tuberculosis) and primary inflammation of the pancreas. He acknowledges the importance of these factors but maintains that most chronic pancreatitides are secondary to diseases of nearby abdominal organs. In a simple right abdominal syndrome or in a right abdominal syndrome associated with cholecystitis or ulcer, the inevitable change in the internal and general function of the pancreas is manifested by the lipolytic power of the serum and by an increase of the glycemic curve during fasting. Thus the pancreatitis does not depend on the ulcer or cholecystitis

but on the lesions of the right abdominal syndrome which in turn may have produced the ulcer and the cholecystitis. The infection may arrive at the pancreas by way of the lymphatic system, the blood stream, by direct extension or through the omentum. The lymphatic route, however, seems the most logical way of explaining a chronic infection transferred from the appendix to the pancreas.

Archivos de Medicina, Cirugia y Espec, Madrid

37 141 168 (Feb 10) 1934

*New Interpretations of Value of Glycemic Curves F Jimenez Garcia —p 141

Bilateral Endothelial Syndrome L Jaso Roldan —p 156

Diaphragmatic Hernia and Its Treatment J Lazarraga —p 158

New Interpretations of Glycemic Curves—Jimenez Garcia states that, in order to obtain the best diagnostic value of the curves of the provoked hyperglycemia test in pancreatic insufficiency, prediabetic conditions and diabetes, it is advisable to administer to the patient a restricted diet containing from 100 to 120 Gm of carbohydrates daily for four days immediately before the performance of the test. The exact amount of dextrose to be given to the patient is 50 Gm dissolved in 250 cc of water. The dose of 20 or 25 Gm of dextrose is too weak for diagnosis in doubtful cases. Doses of 100 Gm of dextrose are unnecessary, since the hyperglycemia figures are the same after the administration of 50 Gm as after the administration of 100 Gm of dextrose. Fixed doses of dextrose are more useful and are best compared with one another than doses calculated per kilogram of body weight. The long glycemic curves with five determinations of glycemia during three hours are useful, since they permit the observations of all the changes of glycemia during the test. Periods of one or two hours are not sufficient to determine all the changes of the glycemia during the test, since in a large percentage of the cases the glycemic curves have not reached their maximal value during the first hour and have not shown the phase of reactional capacity of the pancreas that takes place before the second hour. More than three hours is unnecessary because in all cases after three hours the descent of the glycemia to the initial figures has begun. According to the author's method, curves should be considered normal if they are within the maximal and minimal figures given by the author in graphic instead of fixed figures, as other authors have advised, since some of these curves may either begin or end in 11 Gm and yet be as normal as those having lower values. To obtain the maximal diagnostic information of a glycemic curve, one must observe the figures given by the initial glycemia, ascending and reactional phases of hyperglycemia and the greatest height of the glycemia with the patient prepared as previously indicated. With all the preceding factors one has an exact idea of the importance of the glycemic curve in frank cases and the risk of false diagnostic interpretations of the curves decreases considerably in doubtful cases. The highest figure of glycemia in relation to that of the initial glycemia marks the degree of insufficiency of the glyceregulatory complex having diagnostic value. The reactional change of glycemia that denotes the functional capacity of the pancreas is of great prognostic value.

Deutsche medizinische Wochenschrift, Leipzig

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Gastritis H Kalk —p 236

*Viper Bites S Frey —p 240

Gas Gangrene Following Intramuscular Injection of Epinephrine W Neuwiler —p 246

New Dilators for Cervical Canal E Bergmann —p 247

Treatment of Pollen Allergy—Hansen shows that specific desensitization is a highly effective therapy which if the correct doses are given is successful in more than 75 per cent of cases. Failures occur in less than 10 per cent and he thinks that even this number may be reduced if all factors are given careful consideration.

Viper Bites—Frey relates observations on thirteen viper bites. The measures that had been taken either by lay persons or by a physician before arrival at the clinic were tying off of the injured extremity in six cases, sucking of the wound in three cases, application of poultices in three cases, excision of

the wound in two cases, cauterization in one case, injections of potassium permanganate around the wound in one case, and injection of serum in one case. Three patients had received no aid whatever before arrival at the clinic. The author maintains that the efficacy of sucking the wound is largely illusory and of just as little avail as it would be to try to weaken a too strong morphine injection by sucking the injection puncture. He thinks that there might be a result if immediately following the bite two incisions could be made and the sucking could be done with a suction cup, but incision by a lay person is certainly dangerous and suction with the lips involves the danger of facial infection. The tying off of the extremity he considers likewise of little help not only because he considers the underlying theory as not well founded but also because he observed in some of the patients in whom the member had been tied off that the general reactions were unusually severe. To the infiltration of the tissues with chemical substances he likewise ascribes little value. In the clinic the treatment generally consisted in immobilizing bandages, serum injections and general therapeutic measures. In three cases stasis was employed, incision was done in two cases and cauterization in one. Thus there was an opportunity to estimate the efficacy of several methods and the author concludes that immobilizing wet dressings, general measures and especially serotherapy constitute the best treatment. Serotherapy is employed in the form of intramuscular injection of 10 cc of serum near the bite. If threatening general symptoms have developed already a dose of 40 cc should be injected intravenously, provided the patient does not have a hypersensitivity to horse serum. The shutting off of the poison focus by means of injections of the patient's own blood around the focus was tried in three cases in which the bites were on the fingers or toes. A definite evaluation of this autohemotherapy is as yet difficult but it was observed that one of these cases took an unusually favorable course.

Munchener medizinische Wochenschrift, Munich

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 Use of Electro Aspirator in Gynecology. Bela Iorincz —p. 215
 Internal Diseases in Acute Erythematous Lupus. H. Wendt —p. 217

Gastric Neurosis.—Doerfler combines all disorders under the term gastric neurosis in which pain in the gastric region is complained of and in which anatomic changes can be excluded but he admits that the physician is never sure even in the most exact roentgenologic examination, whether a gastric or duodenal ulcer is present or whether the disorders are of neurotic origin. This is the more understandable as even the gastric ulcer is now considered a phase of a vagoneurotic syndrome. In practice it is essential to make a differentiation between a functional and an anatomic disorder, for in gastric neuroses the result of the treatment is largely dependent on the suggestive power of the physician because in disturbances that have developed by way of the central nervous system that is by autosuggestion only a higher suggestive power can be effective. The author considers a constitutional inferiority manifested in the relations of the central nervous system to the sympathetic nervous system the underlying cause of gastric neurosis. Persons who are affected in that manner may react to irritating influences in the mode of living, overexertion, anxiety, vexations, unsatisfied ambitions and nervous toxins, such as nicotine and alcohol with painful hyperfunction or hypofunction of one or several organs that have a sympathetic innervation. If a patient complains of prolonged gastric disturbances the physician should first try to get a picture of the personality of the patient. A patient with cancer or ulcer generally describes his symptoms more quietly and complains of not being able to tolerate certain heavy

foods while the patient with neurosis occasionally admits that a particularly heavy meal was well tolerated. It is characteristic for the neurotic patient that his pains frequently disappear when his interests are directed into other channels, particularly when he enjoys himself or is well entertained. This is not the case in patients with cancer or ulcer. If the physician is convinced of the nervous origin of the gastric disorder he should not tell the patient outright that everything is due to nervousness. He should be told of the spastic conditions that exist. The patient should not be put on a restricted diet but should be encouraged to eat heartily. If the patient fears a heavy meal, he may be encouraged by simultaneous medicinal treatment.

Auto-Infection in Carriers of Diphtheria Bacilli.—Lausecker observed two diphtheria carriers who transferred the bacilli to small skin defects: the first child to a smallpox (vaccination) pustule, the second to rhagades at the angle of the mouth. As a result, ulcerations developed. In the first case local application of antitoxic serum effected a cure within a few days. The child's general condition was only slightly impaired. The second child was given intramuscular injections of antitoxin. During the severest stage the child had a temperature of 39 C (102.2 F), but after the serum injection the fever decreased and on the second day it had entirely disappeared. The Schick test was positive in both children and both harbored diphtheria bacilli in the nose. The bacilli detected in the skin lesions were definitely identified as diphtheria bacilli for they failed to ferment saccharose and they were identified also in the animal experiment.

Spontaneous Fractures of Neck of Femur Following Roentgen Irradiation.—Kropp relates the history of a woman, aged 67, who three years previously had undergone Wertheim's radical operation because of carcinoma of the uterine cervix. This operation had been followed by three radium and six roentgen irradiations. In the following years the patient was examined regularly but pathologic conditions were absent and she felt well. When she came for a new examination at the end of 1933 she related that three months previously, when walking down hill she had suddenly felt a severe jolt and pain in the left thigh. A physician, consulted at the time, could detect nothing. When she came for a regular examination, a roentgenogram showed a median fracture of the neck of the left femur. The author emphasizes that in determining the pathogenesis of such fractures one should not overlook that spontaneous fractures occur in aged persons and that the neck of the femur is the site of predilection for such fractures. Even slight traumas may produce such fractures. However, in the case reported not the slightest trauma could be found. Changes due to aging must be taken into account, although they were not evident in the roentgenogram. The author emphasizes that during the irradiations only the heads of the femurs lay within the region of the rays but he admits that in other cases with different size relations the rays may strike the necks of the femurs. At any rate he thinks that in corresponding complaints of patients who have been treated with roentgen rays, spontaneous fractures should be looked for.

Wiener klinische Wochenschrift, Vienna

47 225 256 (Feb. 23) 1934

- Intoxication and Infection. Eppinger, Kaunitz and Popper —p. 22
 Tonus of Urinary Tract and Diuresis. F. Fuchs —p. 229
 *New Method for Treatment of Multiple Sclerosis. L. Horn —p. 231
 *Calcium Therapy of Rheumatic Disorders. I. Zenoff —p. 235
 *Diagnosis of Polymyositis in Preparturient State and Its Specific Treatment. J. Siegl —p. 237
 Changes of Voice in Disturbances of Larynx. E. Wessely —p. 238
 Diseases of Vessels, Blood and Ear. E. Urbantschitsch —p. 247
 Problem of Padding Plaster of Paris Cast. Indications for Plaster of Paris Cast. F. Mandl —p. 243
 Incipient Symptoms of Extramedullary Intracranial Tumors of Spinal Cord. M. Pappenheim —p. 244

New Method for Treatment of Multiple Sclerosis.—Horn, in treating patients having multiple sclerosis, noted that the injection of silver preparations effected temporary improvements. In order to make the favorable effect of the silver therapy more lasting he decided to combine the silver treatment with injections that would reduce the silver. In the evening and in the morning an hour before the first injection

the patient is given a teaspoonful of sodium bicarbonate. The first injection, consisting of 5 cc of an electrolyzed colloidal silver preparation, is given at 9 o'clock, and until this time the patient should have no food. At 11 o'clock 10 cc of a 33 per cent solution of dextrose is injected. On the following morning, likewise on an empty stomach, the patient is given an intravenous injection of 10 cc of water, in which 0.5 Gm of sodium thiosulphate has been dissolved. After an interval of from four to seven days, the same procedure is repeated. In the further course of the treatment the doses of the electrolyzed colloidal silver and of the dextrose solution are gradually increased, while the dose of sodium thiosulphate remains the same. The author reached the maximum of 12 cc of electrolyzed colloidal silver and 20 cc of dextrose solution at the eighth injection. He advises from eight to twelve repetitions of the combination of the three injections. Only one of the eight cases treated by him was an incipient one, in all the others the symptoms had been present for a number of years. In the incipient case, complete remission was obtained and the other patients showed various degrees of improvement. The longer the disorder had existed, the slighter was the improvement. At any rate, the treatment brought about remissions in cases that had been refractory to all other treatments.

Calcium Therapy of Rheumatic Disorders—Zenoff resorted to calcium therapy to effect desensitization. He controlled the curative process by determining the sedimentation speed of the erythrocytes and found that particularly in the acute forms of rheumatism the accelerated sedimentation was gradually normalized under the influence of the calcium therapy. Fifty-five patients with acute articular rheumatism were given daily injections of 10 cc of calcium gluconate (in all, from fifteen to twenty-five injections). In addition to this they were given sodium salicylate by mouth, on the first few days 12 Gm and later less. This treatment counteracted the fever in from ten to twenty-six days. Injections of calcium gluconate were used as the only therapeutic procedure in twenty-three cases of acute and twenty-eight of chronic rheumatism. In these cases the first few injections of calcium gluconate frequently caused an acute exacerbation, but finally the calcium injections effected a complete remission. Aside from counteracting the pain and from restoring the mobility of the joints, the treatment has the advantage that cardiac impairments develop only in extremely rare cases. When the treatment was conducted in the proper manner (control of sedimentation of erythrocytes), relapses were never observed within a year. The author recommends the treatment for further trials.

Poliomyelitis During Preparalytic State—Specific Treatment—Siegl shows that, since the specific serotherapy of poliomyelitis is fully effective only if it is given during the preparalytic stage, it is important that the disorder should be diagnosed during this stage. After a symptomless incubation period of from seven to ten days, the prodromal symptoms appear and consist usually of a slight rise of temperature, increase in vomiting, headaches and pharyngitis. In the majority of cases there exists constipation, diarrhea is comparatively rare. These symptoms, which vary in severity, persist for one or two days. Then there frequently follows a symptomless period for several days, which in turn is followed by the preparalytic stage, but even during this stage the symptomatology is at first not clear. The symptoms of the upper respiratory tract and the gastro-intestinal symptoms may lead to an incorrect diagnosis, for fever and blood picture are still lacking the characteristic aspect of poliomyelitis. During an epidemic the development in two periods may draw attention to the possibility of a poliomyelitis. Otherwise a definite diagnosis can be made when the spinal meningeal symptoms, the rigidity of the neck and of the spinal column, the generalized or localized hyperesthesias and the atactic tremors appear. The pains are localized particularly in the back and in the lower extremities. There may be a pressure sensitivity of certain nerve trunks and a feeling of weakness in the extremities. Hypersensitivity of the skin in the form of profuse perspiration, temporary redness and occasionally exanthems may also appear. The preparalytic stage the symptoms of which vary in severity and may even be lacking entirely, as a rule lasts from two to five days and is followed by the development of the paralytic symp-

toms. The author advises lumbar puncture in all cases in which poliomyelitis is suspected for the cerebrospinal fluid shows inflammatory changes during the initial stages. The pressure is generally increased. The fluid is either clear or slightly clouded as with dust, the latter being the result of an increase in cells, particularly lymphocytes. The protein reactions are usually positive. The sugar values are normal or increased but never reduced, the latter factor may be helpful in the differentiation from other forms of meningitis. In discussing the serotherapy, the author maintains that treatment with convalescent serum, especially mixed serums, is the best. He considers intraspinal administration of from 10 to 20 cc the most effective method but advises that simultaneously from 20 to 50 cc should be given intramuscularly. If the intraspinal administration is not feasible, from 20 to 60 cc should be injected into the muscle. In the event that convalescent serum is not available, horse serum may be given. Shottmüller has recommended blood transfusions, persons who have had poliomyelitis serving as donors.

Zeitschrift für Urologie, Leipzig

28 73 144 (No. 2) 1934

- Primary Tumor of Renal Pelvis. Five Cases. G. Nicolich—p. 73
 *Renal Glycosuria in Patient with One Kidney and Renal Aglycosuria. L. Strauss—p. 84
 *Isolated Actinomycosis of Kidney. H. Schneider—p. 105
 Double Kidney and Hypernephroma. E. Simon—p. 111

Renal Glycosuria in Patient with One Kidney—Since reports on unilateral renal glycosuria are rare, Strauss describes a new case, which differs from the others in that the patient had only one kidney, the other one having been removed several years ago. The glycosuria persisted for several days but later on even a dextrose tolerance test did not produce glycosuria. The blood sugar was low at first and slowly increased to normal values. During the dextrose tolerance test the blood sugar curve was abnormal (low peak of curve and rapid descent below the starting point). The hyperglycemic stage was not much below the blood sugar value at which formerly sugar elimination had taken place. As the cause of this renal glycosuria a pancreatic diabetes could be excluded with certainty, but an involvement of the central organ of the sugar regulation could not be completely excluded. The author calls attention to the observation that an injury of the anterior portions of the dorsal vagus nucleus may be followed by a reduction in the blood sugar, but he also points to the possibility of a modification of the metabolic processes by an acute infection. He admits that the occurrence of hypoglycemia in the course of acute infections could perhaps be explained by hyperinsulinism, but this does not explain the glycosuria. The presence of only one kidney as cause of the pathologic sugar metabolism can be rejected on the basis of blood sugar tests before and after nephrectomy on patients without metabolic disturbances. In the absence of tangible causes of the glycosuria in case of a low blood sugar content the author classifies the case with cases of renal diabetes. He contrasts with this case of glycosuria with low blood sugar postoperative cases of aglycosuria with increased and high blood sugar in persons without metabolic disturbances and in diabetic patients. Eliminatory disturbances of the kidneys, due to failure of the glomerular filtration are largely responsible for the partial or total sugar blockage. In most of these renal disturbances the increase in the blood sugar content is accompanied by an increase in the rest nitrogen. The retention uremia can be treated by repeated venesections and by continued intravenous drop infusions with isotonic solutions of sodium chloride, and the disorders in the sugar metabolism can be influenced by administration of insulin and dextrose. The author thinks that the combination of hyperglycemia and of an increase in the rest nitrogen may cause postoperative fatalities particularly in urologic surgery. To avoid such fatalities he advises the determination of the blood sugar content and of the rest nitrogen before and after surgical interventions.

Isolated Actinomycosis of Kidney—Schneider points out that some textbooks of urology speak of primary actinomycosis of the kidney and mean an isolated actinomycosis of one kidney when all other organs are free from the disorder and a port of entry of Actinomyces cannot be found. Strictly speaking primary actinomycosis of the kidney is impossible for only a

secondary involvement from a primary focus by way of the blood stream is possible. For this reason the author thinks that the designation primary actinomycosis of the kidney should be avoided and that the term isolated actinomycosis of the kidney should be used. He reports a case. The necropsy revealed that all other organs were free from actinomycosis and that a port of entry could not be found. On the basis of the anatomic picture it must be assumed that the fungus reached the kidney by way of the blood stream. The author considers it important to know that Actinomyces may develop in the renal tissues, unnoticed for a long time and without perforation into the renal pelvis. But even if such perforation does take place, it appears that the renal pelvis, the ureter and the bladder may remain free from actinomycosis. It is apparently possible for the kidney to eliminate the fungus and yet remain free from organic impairment. Actinomycosis seems to favor the development of calculi in the renal calices. A trauma or, as in the related case, a surgical intervention may lead to a sudden exacerbation of a formerly hidden actinomycosis of the kidney.

Zentralblatt für Chirurgie, Leipzig

61 305 368 (Feb. 10) 1934

- *Serum Treatment of Peritonitis. M. Gundel and F. Sussbrich — p. 306
- Principles in Serum Treatment for Prevention of Peritonitis. E. Schneider — p. 325
- Use of Serums in Surgical Disorders. F. Rost — p. 329
- Diagnosis and Treatment of Acute Diseases of Pancreas. L. Petersen — p. 333
- Resection of Deep Seated Duodenal Ulcer. A. Cimatti — p. 334
- Pyloroplastic Procedures for Relief of Pylorospastic States in Adults. A. J. Palmén — p. 336
- Practical Needle Holder. P. Sunder Plassmann — p. 338

Serum Treatment of Peritonitis—According to Gundel and Sussbrich bacteriologic studies of cases of acute appendicitis in the Heidelberg clinic demonstrated the importance of the enterococci and the closely related nonhemolytic strains of streptococci. These organisms recede into the background with the development of an abscess or of postappendical peritonitis. Here the important part is played by *Bacillus coli* and gas gangrene bacilli. The pathologic effect of the gas bacilli is uncertain and probably not of great importance. The other bacteria found in the pus are secondary invaders although they may aggravate the morbid process. Their clinical experience controlled by bacteriologic studies indicates that a peritonitis serum to be of value must have for its object the development of antibodies against at least three organisms: *B. coli*, gas gangrene bacilli and enterococci. The bacterial flora in peritonitis due to other perforative causes, such as perforation of a gastric ulcer or of an empyema of the gallbladder, is essentially the same with perhaps quantitative differences. *B. coli* is likely to be present in any perforative peritonitis. The authors treated 170 cases of peritonitis, with a mortality of 10.5 per cent. The technic of administration is as follows. On the termination of the operation, 20 cc of the serum may be introduced into the peritoneal cavity through the rubber tube drain, or it may be administered intravenously, from 20 to 40 cc in 1,000 cc of a 5 per cent solution of dextrose. For prophylactic treatment, from 20 to 40 cc is introduced intravenously in 500 or 1,000 cc of a 5 per cent solution of dextrose. In abscess or peritonitis this dose is repeated on subsequent days. In the Heidelberg clinic, peritonitis serum is used prophylactically in all operations on the gastro-intestinal tract, particularly resections.

Zentralblatt für Gynäkologie, Leipzig

58 369 432 (Feb. 17) 1934

- Rav. Therapy of Carcinoma of Neck of Uterus. H. Martius and E. Witte — p. 370
- *Disturbances Resembling Eclampsia. R. Fikentscher — p. 378
- *Experimental Contribution to Reid Hunt (Acetonitrile) Reaction with Especial Consideration of Serums from Pregnant Women. Eclamptic and Carcinoma Patients and Extracts from Urine of Pregnant Women. S. Sommer — p. 385
- Complication in Anesthesia with Intravenously Administered Sodium Salt of Barbituric Acid Derivative. G. Redmann — p. 389
- New Clamp for Ligation and Division of Umbilical Cord. M. C. Boon von Ochssee — p. 391

Disturbances Resembling Eclampsia—Fikentscher points out that eclampsia involves primarily the kidneys, liver and brain and that owing to the more severe involvement of the

one or the other of these organs, a great variety of clinical pictures is possible, in which the differential diagnosis may be difficult. The renal symptoms predominate in most cases of eclampsia, and a differentiation from renal diseases, particularly from those that are accompanied by uremia and convulsions, may raise difficulties. In eclampsia with predominating hepatic symptoms, a differentiation from acute yellow atrophy of the liver may be difficult. However, the greatest differential diagnostic difficulties are encountered if the cerebral symptoms predominate, for organic or functional disorders of the brain leading to convulsions may be hard to distinguish from eclamptic convulsions. Epilepsy is the most frequent of these cerebral disturbances, but the author shows that the rarer cerebral disorders may occur during pregnancy and may be confused with eclampsia. The two cases reported, (1) cerebral tumor during pregnancy and (2) metencephalic attacks during pregnancy and delivery, belong to the rare cerebral complications of the process of gestation. The clinical aspects of both cases were such that a confusion with eclampsia or its preliminary symptoms was likely and on the basis of these observations the author emphasizes that obstetricians should not overlook the fact that during gestation there may develop eclampsia-like conditions the causes of which do not lie in pregnancy. The reported cases demonstrate the close relations between nervous functions and gestation processes, and how much the two influence each other. The history of the patient with the cerebral tumor reveals that lingering disease processes may suddenly become manifest during pregnancy. It is possible also that under the influence of pregnancy, a cerebral process may develop symptoms it does not have outside of pregnancy. The author thinks that the peculiar attacks in the case of metencephalitis can be explained in this manner.

Acetonitrile Test in Pregnancy—Sommer found that the acetonitrile test, which indicates the presence of thyroidal substances, is strongly positive in the serum of women during the last months of pregnancy. The serum of women with eclampsia likewise was positive, but not quite as strongly as that of healthy pregnant women. The serum of women with genital carcinoma and of healthy nonpregnant women conferred no protection against acetonitrile poisoning, that is, the test was negative. Various preparations of the anterior hypophysis extracted from the urine of pregnant women, protected the test animals against acetonitrile, however, these tests were not as strongly positive as those obtained with the serum from women who are in the last stage of pregnancy. The author concludes that the acetonitrile test in the serum of pregnant women is highly positive because the urine contains not only the thyroidal hormone but also the thyrotropic hormone of the anterior hypophysis.

Sovetskaya Khirurgiya, Moscow

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- Indications for Blood Transfusion. S. I. Spasokukotskiy — p. 35
- *Anatomic Types of Veins and Experimental Thrombophlebitis. V. N. Shevkunenko — p. 50
- *Role of Infection in Postoperative Thrombosis and Embolism. F. S. Korganova-Müller — p. 54
- *Removal of Parathyroid Glands in Fibrous Osteodystrophy. N. A. Terebinskiy — p. 81
- Three Hundred and Fifty Brain and Spinal Cord Lesions in the Last Ten Years. A. L. Polenov — p. 110
- Operations on Brain Ventricles and Choroid Plexus. V. N. Shamov — p. 135

Experimental Thrombophlebitis—Shevkunenko states that arrest of the blood flow in a vein fails of itself to cause thrombosis. Blood in a vessel between two ligatures does not coagulate. Alterations in the blood itself play a more important part in the thrombus formation than alterations in the vessel wall or slowing of the current. The latter in many instances is a secondary phenomenon. Thrombosis is not caused by a lesion of the vessel wall. It has its origin in the alterations of the blood, its localization being determined by the lesion in the vessel wall and by slowing of the blood current. Thrombosis frequently is a local manifestation of a general disease condition. Multiple thrombi are not necessarily the result of an embolic distribution from a main focus. They may represent multiple manifestations in various parts of the body of a general disease condition. The author produced experimental phlebitis

and thrombosis with the use of ferrous chlorate or a culture of hemolytic streptococcus. The inflammatory process extended from the adventitia to the media and intima, when a thrombus formed. He found it difficult to reverse the order of extension. The thrombotic process extends along the course of the vein as a periphlebitis along the perivascular lymphatics and along the vasa vasorum. Ligation of the vein close to the thrombus fails to arrest its spread. Ligation of the vein in advance of the production of the experimental thrombus likewise failed to prevent its spread beyond the ligature, even when, in addition to the ligation, the vein was cut across. Thrombosis extended along the main trunk in the direction of the venous current. The effect of added trauma and infection was to enlarge materially the field of thrombosis so as to involve the collateral branches. Better results were obtained when the vein was ligated some distance from the thrombus. Excision of the inflamed vein gave still better results. Bleeding into the bed of the vein acted as a contributing factor in thrombus formation. Loss of blood had the same effect. Because thrombosis results not only from local but also from general conditions, and particularly because of alterations in the blood, the author considers it advisable to limit, so far as possible, all therapeutic intravenous injections.

Infection in Postoperative Thrombosis—Korganova-Müller studied the role of infection in the origin of postoperative thrombosis and embolism in the necropsy material of the pathologic institute of the Babukhin Clinical Hospital in Moscow. Among 4,621 necropsies performed during six years, there were found 72 instances of thrombosis and 41 of embolism (7 fatal). The annual variation in incidence was well within the limits of error and chance. Embolism was the cause of death in 0.15 per cent of all necropsies and of 0.55 per cent of postoperative cases. In 86.3 per cent of cases of thrombosis and embolism necropsy revealed the presence of a general or a local infection. Infection was present in 93.6 per cent of the surgical material. Operations on the gastro-intestinal tract and the female genitalia furnished the largest number of thrombosis and of embolism. The period of predilection was between 40 and 70 years. In surgical material, however, thrombosis and embolism occurred in younger patients as well between the ages of 20 and 50, while in the medical material the ages of the patients were from 45 to 80. Diseases of the cardiovascular system and of the parenchymatous organs and the malignant neoplasms occupied the first place among the accompanying disorders, while in the postoperative material the most frequent associated diseases were infection and malignant neoplasms. The author concludes that of the numerous factors infection plays the leading part in the causation of postoperative thrombosis and embolism. Its effect is to be seen in a direct bacterial damage to the vessel wall and in the physicochemical changes of the blood as well as in the effect of toxins and ferments on the organs and tissues and on the organism as a whole.

Removal of Parathyroid Glands in Fibrous Osteodystrophy—Terebinskiy states that the question of localized fibrous osteitis and of the generalized form representing two stages of the same disease has not been definitely answered. It has been pointed out that an enlargement of one or more parathyroid glands is always present in generalized osteodystrophy, whereas it was never noted in the localized form. To the twenty-eight cases collected by Hunter in 1931 the author was able to add eleven more by the end of 1932, in which the parathyroid glands were investigated because of generalized fibrous osteitis. Analysis of the thirty-nine cases showed that enlargement of one or more parathyroid glands was present in twenty-nine. The enlargement was due mainly to adenomatous hyperplasia and in only one case to malignant adenoma. Removal of hyperplastic parathyroid tissue resulted in more or less improvement in twenty-two. In these cases the abnormally high blood calcium returned to normal, the inorganic phosphorus in the plasma rose from an abnormally low level to normal and there was an improvement in general health, gain in weight, disappearance of bone pains, more rapid healing of fractures and ability to walk. In eight cases the parathyroid glands were found to be unaltered. Apparently generalized osteodystrophy may exist in the absence of parathyroid hyperplasia. The experience in these cases showed that removal of normal parathyroids sometimes aggravates the course

of the disease. In the author's case a single unaltered parathyroid gland was found in the neighborhood of the left lower pole. He did not remove it. Two nodes were removed from a colloid goiter. These proved to be thyrogenous tissue. Five months later there was a marked improvement with lowering of blood calcium, arrest of osteoporosis, absence of new foci and improvement in the roentgenologic appearance of the involved bones. The author is at a loss to explain this improvement, except on a supposition that the removal of adenomas from the thyroid had a beneficial effect on the thyroparathyroid function.

Vrachebnoe Delo, Kharkov

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- Meningococcal Infection Symptoms L Ya Nemlikher and A Ya Goldenberg —p 695
Complications in Cerebrospinal Meningitis B S Kronson —p 707
Prognosis in Cerebrospinal Meningitis of Children S M Benderskaya —p 713
*Etiology and Pathogenesis of Cerebrospinal Meningitis M M Tsekhnovitsner and N A Popova —p 721
*Microscopic Anatomy of Cerebrospinal Meningitis N Popova and E Ovcharenko —p 727
*Psychotherapy in a Dispensary K I Platonov —p 733

Etiology and Pathogenesis of Cerebrospinal Meningitis—According to Tsekhnovitsner and Popova, the meningococcus of Weichselbaum, the causative agent of cerebrospinal meningitis, while displaying a special predilection for pia membranes, is capable of provoking lesions in various other tissues. For this reason attention must be directed to the general meningococcal infection rather than to meningitis alone. It is important not to limit oneself to the bacteriologic diagnosis of the Weichselbaum meningococcus but to search for the associated organisms as agents of a mixed infection. The upper posterior nasopharynx is the portal of infection for the meningococcus. A mild, evanescent nasopharyngitis is produced by the meningococcus or associated bacteria. This nasopharyngitis gives rise to a hematogenous metastatic meningococcal infection of various organs and in particular of the cerebrospinal fluid, the pia mater of the brain and the brain substance itself, producing a purulent meningococcal infection. Invasion of the central nervous system takes place primarily by way of the capillaries of the choroid plexus and the pia mater. Purulent meningococcal encephalitis is the result of a secondary invasion from the cerebrospinal fluid of the ventricles. The direct passage of meningococci from the blood capillaries into the brain substance occurs only exceptionally. The modern literature presents no support for the theory of meningococcal infection of the central nervous system by way of the olfactory nerves. Effective serotherapy implies the use of an active type serum, a rapid bacteriologic diagnosis of the type of meningococcus and localization of the infecting organism, the earliest intraspinal administration in the case of meningitis and intramuscular administration in other forms of meningococcal infection, sufficient dosage and repeated injections of type serums. In the study of local epidemics it is necessary to study carefully the local types of meningococcus in order to develop specific antimeningococcus serums.

Microscopic Anatomy of Cerebrospinal Meningitis—Popova and Ovcharenko state that besides purulent meningitis the meningococcus not infrequently produces purulent encephalitis. Purulent foci may develop in various parts of the brain but are found most frequently below the ependyma of the ventricles. This localization of purulent foci supports the view that the meningococci invade the brain tissue by way of the cerebrospinal fluid through the ependymal layer of the ventricles. Besides the foci of suppuration there develop in the brain as the result of toxemia diffuse degenerative alterations of the brain cells. The degenerative changes of the brain cells are most marked in the region of the tuber cinereum and may in some cases be the immediate cause of death.

Psychotherapy in a Dispensary—In Platonov's opinion the dispensary unit is best equipped and adapted for the practice of psychotherapy as applied to broad masses of workers. The facilities and composition of a dispensary offer ideal conditions for psychotherapeutic work, closely bound up as it is with the study of personality as a whole from the biologic as well as from the sociological point of view. The modern concept of personality as a social biologic unit, the physiologic orientation

of psychotherapy, the discovery of the dynamics of the laws governing the higher nervous activity, the enlargement of the scope of psychoneurology all justify the introduction of psychotherapy as a part of the therapeutic and prophylactic sector of a dispensary unit. The study of the dynamics of the brain cortex facilitates the understanding of the realistic causes of development of mechanisms of pathologic reactions and simplifies analytic psychotherapy. It obviates the complicated muddled and utterly unreal psychoanalysis of Freud as well as of Adler constructed on subjectivism. It renders causal psychotherapy more accessible to an average psychoneurologist and at the same time more productive. Psychotherapy based on physiologic studies of the cerebral hemispheres must be entrusted to the psychoneurologist. It must be his task to popularize the psychotherapeutic ideas and the closely associated psychohygienic ideas. It should be his problem as well to direct the personnel of the dispensary along these lines.

Ugeskrift for Læger, Copenhagen

96 149 178 (Feb. 9) 1934

- *Infectious Mononucleosis and Agranulocytosis. A. Bie—p. 149
- *Five Nosocomial Cases of Agranulocytosis in Patients Treated with Amidopyrine. Contribution to Knowledge of Etiology of Agranulocytosis (Preliminary Report). C. Holten, H. F. Nielsen and K. Transbøl—p. 155
- *Infectious Mononucleosis in Sisters Examined by Vital Staining and for Heterophile Antibodies. Two Cases. M. Olesen—p. 158
- *Agranulocytosis Treated with Liver Parenterally and Pentnucleotide. Two Cases. P. Plum—p. 160
- Aplastic Anemia (Frank). O. Knudsen—p. 164
- Subacute Aleukemic Myeloblast Leukosis. Case. N. I. Nissen—p. 165

Infectious Mononucleosis and Agranulocytosis.—The decisive diagnostic sign Bie says is the relation of the red blood corpuscles. No anemia of consequence is seen in infectious mononucleosis, while acute leukemia always and fairly rapidly produces a considerable and progressive anemia. Differentiation between the ulcerous anginas which are symptoms of infectious mononucleosis and those of other etiology is hardly possible at present. The most interesting contribution to the etiology of infectious mononucleosis is that of Nufeldt who from three patients having this ailment cultivated three identical bacterial strains which on injection in rabbits produced a disease resembling human infectious mononucleosis. Discussing agranulocytosis, the author emphasizes the importance of examining the leukocytes in every case of infectious disorder in which the diagnosis is not assured by other methods, especially with anginas of somewhat peculiar appearance. Agranulocytosis may occur as a primary idiopathic disturbance or as a secondary pathologic condition caused by infections or intoxications. Of infectious diseases, septicemia most often causes agranulocytosis. Toxic substances that produce it are benzene, arsenic combinations, especially arsphenamine, and bismuth combinations, agranulocytosis caused by roentgen rays, radium and thorium are also classed as due to intoxication. If the number of leukocytes is below from 500 to 800, or if the monocytes are entirely absent, the prognosis is poor, the greater the number of monocytes the better, and a considerable increase in monocytes, even to above normal, during the course of the disease is a favorable sign.

Agranulocytosis.—The five fatal cases observed by Holten and his associates in the last year and a half, all in women set in during hospitalization for other disorders. During the same time no patient was admitted with agranulocytosis. The only point of similarity in the history of the patients was found to have been treatment for a longer time with amidopyrine. From their cases and those of Videbeck and Madison and Squier the authors conclude that in all probability amidopyrine in therapeutic doses is, under circumstances not yet explained, capable of producing agranulocytosis. They have begun an experimental study to determine whether it is a matter of hypersensitivity to amidopyrine, primary dysfunction of the bone marrow with secondary effect of this drug or something wholly different. Conservatism in the use of amidopyrine and its numerous combinations at least over a longer period seems to some extent to be called for.

Infectious Mononucleosis in Sisters.—One of these two cases in sisters both living at home appeared one month before

the other and was hospitalized after two weeks. An indication, Olesen says, is thus afforded as to the period of incubation, which may apparently have been a month and was at least two weeks. A third case is also reported. The patients all gave positive reaction to heterophile antibodies, and in all the increase in mononuclear cells was due exclusively to a lymphocytosis.

Agranulocytosis Treated with Liver Extract.—In the first of Plum's cases of typical agranulocytosis, five days' treatment with, all told, 90 cc of liver extract intravenously and 60 cc of pentnucleotide was followed by a lytic but rapid fall of temperature, and pronounced increase of granulocytes, beginning on the third day of treatment, together with marked clinical improvement. Aggravation of the condition soon set in with fatal outcome, in spite of a leukocyte and granulocyte count above normal. The author thinks that he should perhaps, like Foran have continued the liver treatment after the pronounced increase of leukocytes. In the second instance energetic treatment with liver extract and pentnucleotide was without benefit.

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- Presence of Antianemic Factor in Preparations of Dried Stomach Substance from Cardiac Fundic and Pyloric Portion Respectively (Preliminary Report). E. Meulengracht—p. 179
- *Pepsin and Rennin Activity in Preparations of Dried Stomach Substance from Cardiac Fundic and Pyloric Portion Respectively (Preliminary Report). E. Meulengracht and E. Schjødt—p. 187
- Topographic Apportionment of Cardiac Fundic and Pyloric Glands in Swine Stomach. Preliminary Report. E. Meulengracht and A. S. Ohlsen—p. 190
- Alphadinitrophenol and Orthodinitroresol as Agents for Reducing K. Secher—p. 192
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- Hemorrhagic Diathesis as Result of Treatment with Sanoerysin. Case. A. Bie—p. 202

Antianemic Factor in Dried Stomach Substance.—Meulengracht states that excision of the material for these experimental preparations of swine stomach was made with due regard to the anatomic apportionment of the different glands in the stomach. Preparations from the pyloric glandular portion were highly active and those from the fundic glands inactive and the activity or inactivity of those from the cardiac glands is still an open question. Castle's "intrinsic factor" in the normal gastric juice thus seems to be connected with the pyloric glands (cardiac glands?). Human pernicious anemia is apparently due to atrophy and inactivity especially of the pyloric glands (cardiac glands?), i. e., is dependent on loss of a special function localized there.

Pepsin and Rennin Activity in Dried Stomach Substance.—Meulengracht and Schjødt found considerable pepsin and rennin activity in the preparations from the fundus and little in those from the cardiac and pyloric portion of the stomach of swine and conclude that pepsin and rennin are probably secreted by the fundus glands only. They established physiologic and anatomic dissociation between pepsin and the antianemic factor in the stomach. As the two substances are, however, both destroyed by about the same processes and same degree of heat, determination of the pepsin activity of a commercial preparation of whole stomach can with reservation be used as an indicator of its antianemic efficiency.

Medicolegal Examination of Stains in Determination of Type.—Therkelsen's experimental studies on the establishment of type A B in blood stains show that the diagnosis of type B in blood stains must be made with reservation even if the absorption for the B receptor is strong, as an unestablished A receptor may be present at the same time. Medicolegally, he says, establishment of a B receptor in blood stains calls not only for the statement that the stain is presumably from a person of B type but for the added statement that it may belong to a person of type A B. He describes a method for the establishment of the M receptor in blood stains, based on the attainment by gradual addition of anti-M serum to the stain substance of an agglutinin level raised just far enough beyond unspecific binding so that specific binding will clearly appear. The direct medicolegal significance of establishment of the M receptor is stressed, also its indirect value as an aid in the diagnosis of type O.

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ABDOMINAL PAIN

II THE SENSITIVE REGIONS IN THE ABDOMEN AND WAYS IN WHICH THEY MAY BE STIMU- LATED TO PRODUCE PAIN

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It is sad to have to admit today that, with all the facilities of modern medical diagnosis at his disposal, the best of clinicians is still unable to explain many an abdominal pain. He can somewhat justify his ignorance so long as 2 inches of skin and fat and muscle lie between him and the apparent seat of the trouble, but what is he to say when the surgeon looks up after a careful exploration and announces that he has been unable to find any sign of disease? Should the physician then wash his hands of the problem by questioning the reality of the pain which he cannot understand? Should he comfort himself by calling it "nervous," or should he not bestir himself to search for new microscopic or perhaps purely chemical causes for it? Should he not more resolutely face the fact that severe pain can arise in tissues that do not show any gross organic disease?

It was with the hope of learning something about the mechanisms of obscure types of abdominal pain that a few years ago I began a search through the writings of anatomists, physiologists, neurologists, neural surgeons, students of local anesthesia, experimenters, and careful observers everywhere for suggestions regarding the ways in which nerve endings might be stimulated and painful messages might be carried to the brain. The present paper is one of a series which I hope to write as I review what little I have been able to glean in the library, in the laboratory and in the consulting room.

SENSORY PATHWAYS LEADING AWAY FROM THE ABDOMEN

In the first paper of this series (1931) I¹ showed that nearly all the sensory nerves from the organs in the upper part of the abdomen and from the small bowel and the visceral peritoneum travel to the posterior root ganglions of the dorsal spinal cord by way of the major splanchnic nerves. A few afferent fibers go out by way of the phrenic nerves² and a few more may perhaps

accompany the vagus nerves,³ the aortic plexuses⁴ and the lateral sympathetic chains.⁵

Sensation from the lower abdominal organs reaches the spinal cord by way of many paths, some of which are still poorly mapped. One difficulty in the way of studying them is that they vary in different individuals. There are many connections between the lateral ganglionated chains and the central plexuses, and also some connections between the sensory nerves in the pelvis and those in the upper part of the abdomen. One of the most important nerves in the lower part of the abdomen is the presacral nerve, which carries most of the afferent fibers coming from the pelvic organs.⁶ Bradford Cannon has shown with his ingenious technique that in the cat the abdominal vagus and the distal parts of each lumbar sympathetic chain are without sensation.⁷ In man, stimulation of the lumbar sympathetic chain causes pain in the leg and ankle.⁸

An important point brought out by Hoffmann is that the splanchnic nerves are not necessarily involved in the production of the tense abdomen of peritonitis. In this disease, the rigidity of the muscles appears to be due to impulses reaching the spinal cord by way of the lower intercostal nerves.

NATURE OF SENSORY NERVES IN THE ABDOMEN

For some time the generally accepted view has been that the sensory nerves supplying the abdominal organs are no different from those elsewhere in the body. They run to the posterior root ganglions, and in spite of the fact that they are found in the same sheaths with the sympathetic nerves they do not belong to the autonomic or involuntary system. Recently, evidence has been accumulating to strengthen the view that involuntary nerves may also have something to do with the production of pain. Thus, Bruning and Gohrbandt showed

3. Alvarez¹ Kappas Max. Beiträge zur Frage der Sensibilität der Bauchhöhle. Mitt. a. d. Grenzgeb. d. Med. u. Chir. 26: 493-530 (1913). Die Sensibilität der Bauchhöhle. Klin. Wchnschr. 4: 2041-2047 (Oct.) 1925. Untersuchungen über die Schmerzempfindlichkeit des rechten Nervus vagus. Med. Klin. 21: 536-539 (April 10) 1925. Rasdolsky J. Reflexe und sensible Phänomene von Seiten des Nervus vagus bei chirurgischen Erkrankungen der inneren Organe. Beitr. z. Klin. Chir. 132: 200-214 (1924).

4. Foerster Otfried. Die Leitungsbahnen des Schmerzgefühls und die chirurgische Behandlung der Schmerzzustände. Berlin: Urban & Schwarzenberg, 1927.

5. Foerster⁴ Head Henry. Certain Aspects of Pain. Brit. M. J. 1: 15 (Jan. 7) 1922. Head Henry and Riddoch George. The Automatic Bladder: Excessive Sweating and Some Other Reflex Conditions in Gross Injuries of the Spinal Cord. Brain 40: 188-263 (Nov.) 1917. Kanella V. J. Some Problems of the Normal and Pathological Physiology of the Stomach. Lancet 1: 1130-1136 (June 1) 1929. Learmonth J. R. Neurosurgery in the Treatment of Disease of the Urinary Bladder. II. Treatment of Vesical Pain. J. Urol. 26: 13-24 (July) 1931.

6. Cannon B. A. Method of Stimulating Autonomic Nerves in the Unanesthetized Cat with Observations on the Motor and Sensory Effects. Am. J. Physiol. 105: 366-372 (Aug.) 1933.
7a. Foerster Otfried. Discussion. Deutsche Zeitschrift f. Nervenh. 106: 311-313 (Sept.) 1928.

From the Division of Medicine, the Mayo Clinic.
1. Alvarez W. C. Abdominal Pain: Paths Over Which it Travels and Ways in Which These May Be Blocked. Am. J. Surg. 14: 385-394 (Nov.) 1931.
2. Morley John. Abdominal Pain. Edinburgh: E. & S. Livingstone, 1931.

that nicotine injected into the celiac ganglions will abolish abdominal sensation,⁸ and similar observations were made by Davis, Pollock and Stone.⁹ If one accepts the usual interpretation of the action of nicotine, one must assume that any pain blocked in this way was being carried by a pair of sympathetic neurons connected by a synapse. The experiments were so clear cut and so well controlled that, although I have little faith in deductions based on the effects of poisons, I believe the questions raised must be faced squarely. Incidentally, some anatomic basis for the conception of sensory nerves in the involuntary system has been found by Lebedenko and Brjussowa.¹⁰

In a recent thought-producing article, Shaw¹¹ emphasized the point that during the course of an operation under local anesthesia the pinching of a sympathetic ganglion causes severe pain, but only after a definite interval of time in which irritable chemical substances are probably formed. As Cannon,¹² Gerard¹³ and others have pointed out, there is now much evidence to show that impulses reaching tissues by way of nerves produce chemical substances which spread out and affect not only muscles but also nerves. It is possible that some of these substances can produce pain.

It has been observed also that after sympathectomy the region affected will sometimes be markedly hyperesthetic for several weeks, and Shaw and Pette¹⁴ have suggested that the cause of this is a removal of inhibition and a lowering of the threshold for pain. Craig, however, is inclined to look on this sensitiveness as due more to neuritis following the inevitable slight trauma done to somatic nerves during the operation.

In favor of the view that involuntary nerves carry painful sensations is the fact that some intractable types of pain can be relieved, at least for a time, by sympathectomy. Unfortunately, only the future can tell how lasting such cures are going to be, and until the evidence is in, opinion as to the sensitiveness or insensitiveness of true sympathetic nerves is likely to be divided.

It is possible that injury to or disease of the involuntary nerves can so alter the circulation or the metabolic processes in a region that pain results. Another possibility is that there may be afferent sympathetic or connector fibers which, if they do not carry actual sensations of pain, at least carry impulses which are painful when transmitted to other neurons. As Thies¹⁵ and others have pointed out, a diseased gallbladder, a peptic ulcer, or a kidney stone can produce many distressing symptoms other than pain.

THE SENSITIVE AND INSENSITIVE REGIONS IN THE ABDOMEN

In any analysis of the problem of abdominal pain the student must begin with a clear understanding of the

following facts. First, that the viscera and the visceral peritoneum contain so few sensory nerves that they are insensitive to most stimuli such as those produced by cutting and pinching and burning. Second, that what few nerves there are in the viscera and mesenteries are closely associated with the arteries. Third, that the parietal peritoneum, which is well supplied with afferent fibers, mainly from the intercostal nerves, is everywhere highly sensitive.

No good work could be done until physiologists learned to devise their experiments in such a way that they could be sure of stimulating an organ without, at the same time, pulling on its mesentery or injuring highly sensitive arteries or folds of parietal peritoneum.

THE ORIGINAL SEGMENTAL DISTRIBUTION OF SENSORY NERVES IN THE ABDOMEN

Before attempting any study of abdominal pain, and particularly of its mode of reference to the surface of the body, it is essential to review the original segmental distribution in the embryo of the sensory nerves to the stomach and intestine, and to the organs that arise as buds from the upper part of the primitive gut. Because of the well known shift caudad of the organs in relation to the spinal cord one finds that at birth the segments concerned with the nerve supply of the digestive tract range from the sixth thoracic, corresponding to the level of the stomach, to the twelfth thoracic, corresponding to the level of the ileocecal sphincter.¹⁶ It is this old arrangement that accounts for the fact that pain arising in the small intestine is felt around the navel, and that pain arising in the colon is usually felt in the lower half of the abdomen. To be sure, the work of Jones and Pierce¹⁷ indicates that pain due to distention of the cecum or of the hepatic and splenic flexures of the colon is likely to be felt at points in the abdominal wall almost overlying the segment irritated, but this may be due to pulls on folds of parietal peritoneum.

It can easily be seen now why so often the first colicky pain in an attack of appendicitis is felt around the navel, whereas the second, steady pain, due presumably to involvement of parietal peritoneum is felt in the right lower quadrant of the abdomen. The shift is due to the fact that a more distally situated set of nerves has become involved. In cases of ulcer, and particularly of jejunal ulcer, similar shifts of pain due to slow perforation or to extension of infection can often be seen during the course of the disease. Rivers¹⁸ is now making a particular study of these shifts and of their great diagnostic value.

The anatomist can again be helpful to the clinician when it comes to explaining why pains arising in embryologically different parts of the diaphragm are referred to different parts of the body¹⁹ or why pain arising in the kidney can be felt in the testis but not in the scrotum.

SENSORY ENDINGS FEW AND FAR BETWEEN

The great insensitiveness of all the abdominal viscera seems to be due to the fact that they are poorly supplied with sensory nerve endings. Because these

8 (a) Bruning F, and Gohrbandt E. Ein experimenteller Beitrag zur Pathogenese der Schmerzen bei der Darmkolik. Berl klin Wchnschr 58 1431 1433 (Dec) 1921. (b) Ein Beitrag zur Pathogenese der Schmerzen bei der Darmkolik und zur Sensibilität der Darmwand. Ztschr f d ges exper Med 29 367 387 1922.
9 Davis Loyal, Pollock L J and Stone T T. Visceral Pain Surg, Gynec & Obst 55 418 427 (Oct) 1932.
10 Lebedenko W and Brjussowa S. Beitrage zur Frage der Bahnen der Schmerzimpulse. III Die Schmerzempfindlichkeit der Bauch holerorgane. Ztschr f d ges exper Med 71 198 211 1930.
11 Shaw R C. Sympathetic System and Pain Phenomena. Arch Surg 27 1072 1080 (Dec) 1933.
12 Cannon W B. Chemical Mediators of Autonomic Nerve Impulses. Science 78 43 48 (July 21) 1933.
13 Gerard R W. Nerve Conduction in Relation to Nerve Structure. Quart Rev Biol 6 59 83 (March) 1931.
14 Pette H. Das Problem der wechselseitigen Beziehungen zwischen Sympathicus und Sensibilität. Deutsche Ztschr f Nervenhe 100 143 164 1927.
15 Thies A. Ueber die Differentialdiagnose abdominalen Erkrankungen auf Grund von Symptomen des vegetativen Nervensystems insbesondere mit Rücksicht auf die Erkrankungen der Gallenwege. Mitt a d Grenzgeb d Med u Chr 27 389 417 1914.

16 Lebedenko and Brjussowa. Kulenkampf D. Zur allgemeinen Diagnostik der Bauchkrankungen die differentielle Diagnose mesenteraler und peritonealer Symptome. Deutsche med Wchnschr 46 377 381 (April 8) 1920.
17 Jones C M and Pierce F D. Mechanism and Reference of Pain from Lower Intestinal Tract. Tr A Am Physicians 46 311 312 1931.
18 Rivers A B. Pain of Peptic Ulcer. Northwest Med 33 6-10 (Jan) 1934.
19 Capps J A and Coleman G H. Experimental Observations on the Localization of the Pain Sense in the Parietal and Diaphragmatic Peritoneum. Arch Int Med 30 778 789 (Dec) 1922.

endings are so far apart it is probable that a knife or hemostat, or even a glowing cautery, reaches so few that the stimulus is subliminal. Conditions are somewhat as they are in some parts of the skin where a morphine addict can find small areas in which the insertion of the needle is painless.

Obviously, then, if a stimulus applied to an internal organ is to produce pain, it must be spread over a considerable area, a long segment of bowel must contract powerfully, or a wide area of visceral peritoneum must be irritated. Only in this way can one explain some of the curious observations that have been made. Thus, Balfour has told me of resecting a stomach under infiltration anesthesia of the abdominal wall. The patient lay uncomplaining while the stomach was cut and burned and sewed, but he rose up and protested vigorously when the peritoneal cavity was washed out with warm physiologic solution of sodium chloride.¹

Some physiologists have suggested that stimuli such as pinching, sticking, cutting or burning are not adequate for or suited to the production of pain, perhaps the nerve endings are so constituted that they do not react to a single stimulus but only to oft repeated ones. Some such explanation seems to be needed at times to explain the curious fact that organs which can be so insensitive to some types of stimulation can be the seat of such severe pain.

As one would expect, the Vater-pacnian corpuscles, which are supposed to represent the commonest type of sensory nerve ending in the abdomen, are fewest and farthest apart in the most insensitive regions of the abdomen, and they are most numerous in the regions which the surgeon has learned to handle with care. They are found on the walls of the arteries²⁰ and this helps to explain the well known sensitiveness of the lesser omentum, the root of the mesentery, the foramen of Winslow and the cleft of the liver. Larger arteries are said to be more sensitive than small ones, and, as one would expect from this, the larger ones are supplied with the greater number of nerve endings. Actually it has not been easy to find sensory endings in vessels smaller than 60 microns in diameter.²¹ As every clinician knows, the abdominal aorta is highly sensitive in some persons, and some types of pain seem to arise in it. In operations on the gallbladder, done under local anesthesia, it is the tying of the cystic artery that usually hurts most. Veins are less sensitive than arteries, and they carry fewer nerve endings.

The work of Sheehan showed that the Vater-pacnian corpuscles lie in peculiar groups on the head of the pancreas and in the capsule of the mesenteric lymph nodes. In the cat there are three times as many in the mesentery of the small intestine as in the mesocolon. More are to be found near the base of the mesentery than near the bowel, and there are many more in the region of the duodenum and jejunum than around the ileum.

The Vater-pacnian corpuscles are commonly supposed to respond to pressure, but the researches of Ramström²² made this appear doubtful. He made small

incisions in the abdominal wall and, inserting the finger, palpated the parietal peritoneum. In many cases even heavy pressure could not be felt, but sometimes it caused a colicky pain. Rubbing always caused distress.

It is probable that not all sensory nerve fibers end in corpuscles, and several variants have been described.

DIFFERENCES IN DIFFERENT PERSONS

One great difficulty in studying abdominal pain arises in the fact that different individuals vary markedly in their sensitiveness, and even one individual will vary in his response from time to time and under different conditions. The same difficulty is found in individual animals and in different species. Thus, Kast and Meltzer found it more difficult to study pain in cats and rabbits than in the dog. Furthermore, as Farr²³ has pointed out, observers differ in their conclusions because some are rough and others are gentle in their handling of the abdominal organs. One surgeon will slowly close a clamp on the mesentery of the appendix and conclude that this tissue is insensitive, while another will close the clamp quickly and thereby cause severe pain.

According to Farr,²⁴ Lennander,²⁵ Hesse,²⁶ Morley²⁷ and others, the insensitiveness of the abdominal organs is not necessarily altered by inflammation or congestion, but Kast and Meltzer²⁸ and others found that an inflamed segment is more sensitive than a normal one. Obviously, this comparison must often be difficult to make.

THE SENSITIVENESS OF THE PERITONEUM AND THE MESENTERY

As I said before, one of the first things that the student of abdominal pain must do is to get clearly in mind the difference in sensitiveness between parietal and visceral peritoneum. This is brought out clearly during a herniotomy under local anesthesia, when the insensitiveness of the intestine will be in marked contrast with the decided sensitiveness of the neck of the sac.

When operating under local anesthesia, the surgeon must always handle the parietal peritoneum with care. It must not be pinched or pulled on, and sponges must not be pulled out past it. On the other hand, a sponge may be removed painlessly from between two loops of bowel. As one would expect, the breaking of adhesions between bowel and abdominal wall is likely to cause pain, while adhesions between loops of bowel are insensitive.²⁸ It is not surprising, then, that traction on all those ligaments which are formed from or invested with parietal peritoneum is painful.

The excruciating pain under the right leaf of the diaphragm which comes when a liter or two of air or other gas is injected into the abdominal cavity is probably produced by the resulting separation of liver and diaphragm and the tension this puts on coronary and falciform ligaments.

²³ Farr R E. *Practical Local Anesthesia and Its Surgical Technique*. Philadelphia: Lea & Febiger, 1923.

²⁴ Farr R E. *Abdominal Surgery Under Local Anesthesia*. J A M A 73:391-396 (Aug 9) 1919; footnote 23.

²⁵ (a) Lennander K G. Beobachtungen über die Sensibilität in der Bauchhöhle. Mitt a d Grenzgeb d Med u Chir 10:38-104 1902. (b) Leishschmerzen ein Versuch einige von ihnen zu erklären. *ibid* 16:24-46 1906.

²⁶ Hesse Friedrich. Anwendung der Lokalanästhesie bei Eingriffen wegen Appendicitis nebst Bemerkungen zur Erklärung appendicitischen Schmerzens. Deutsche Zt chr f Chir 100:42-73 1911.

²⁷ Kast I and Meltzer S J. Die Sensibilität der Bauchorgane. Mitt a d Grenzgeb d Med u Chir 19:586-616 1909.

²⁸ Mackenzie James. The Meaning and Mechanism of Visceral Pain. I. Sympathetic Reflexes. Brit M J 1:1449-1454 (June 23) 1911. The Mechanism by Which Visceral Pain Is Produced. Brit M J 1:1523-1528 (June 30) 1906.

²⁰ Breslauer Franz. Die Sensibilität der Bauchhöhle. Beitr z Klin Chir 121:301-320 1921. Buch Max. Die Sensibilitätsverhältnisse des Sympathicus und Vagus mit besonderer Berücksichtigung ihrer Schmerzempfindlichkeit im Bereiche der Bauchhöhle. Arch f Anat u Physiol 6:19, 221 1901.

²¹ Sheehan Donald. The Afferent Nerve Supply of the Mesentery and Its Significance in the Causation of Abdominal Pain. J Anat 67:213-249 (Jan) 1933.

²² Ramström M. Ueber die Funktion der Vater-Pacnischen Korperchen. Mitt a d Grenzgeb d Med u Chir 18:314-324 1908.

Lennander²⁹ suggested that pain might be produced by the pressure of a gas-filled loop of bowel against parietal peritoneum, and particularly by the often distended splenic flexure pressing up against the diaphragm. The objection to this theory is that a markedly dilated splenic flexure is often seen by the roentgenologist in persons who are perfectly comfortable.

The perforation of a gallbladder against the visceral peritoneum surrounding a loop of bowel need not be productive of pain, but perforation of a jejunal ulcer against the root of the mesenteric fan or against parietal peritoneum is usually painful.

Most of the pain produced by gaseous distention of the bowel is supposed to be due to tension on mesenteric attachments and arteries, and all surgeons who operate under local anesthesia agree that mesenteries must not be pulled on if pain, nausea and vomiting are to be avoided. Since the nausea is produced even in patients under spinal anesthesia, the pathways are probably in the vagus nerves. A puzzling fact is that marked distention of the intestine which one would think would produce a pull on the mesentery is often painless.

The Omentum—The greater omentum seems ordinarily to be insensitive except in the neighborhood of the larger arteries. Occasionally it is sensitive, and pain can be felt when portions are tied off (Neumann,³⁰ p 486).

Peritonitis—As one would expect, the pain produced by the escape of acid gastric content into the peritoneal cavity is terrific, and so is the pain produced in animals by the injection of 1 cc of turpentine.³¹ In man the intraperitoneal injection of a little vaccine made from colon bacilli or streptococci will produce the clinical picture of an acute generalized peritonitis.

One would expect to find peritonitis always very painful, but this is not the case. As C. F. Dixon has pointed out to me, there is a type of fulminating generalized peritonitis in which the symptoms are those of shock, combined with almost unbearable pain. In other cases an appendiceal abscess, walled off by loops of bowel, will suddenly leak and throw the patient into spasms of pain. Strange to say, simple drainage of such an abdomen will often put a stop to the pain although the inflammatory exudate is still spread widely over stomach, bowel and liver. In other cases generalized peritonitis will be painless, or peritonitis that began with pain will later become painless. Similar observations have been made in animals,³² and it seems probable that nerve endings are so exhausted or so severely injured that they can no longer respond. In some cases cessation of pain may come with the cessation of all movement in the intestine. It may be like the cessation of pain that comes when an inflamed joint is immobilized. It is worth noting that Hoffmann, in his experiments, was able to produce a rigid contraction of the abdominal muscles only when he stimulated parietal peritoneum.

INSENSITIVENESS OF MOST OF THE ABDOMINAL ORGANS

The Stomach and Duodenum—The stomach is so insensitive to cutting that it can easily be resected under

local anesthesia. The gastric mucosa is normally insensitive to 0.5 per cent hydrochloric acid,³² it is insensitive to strong faradic stimuli, and it is only slightly sensitive to irritants such as strong alcohol, pepper and mustard. Neumann (footnote 30, p 495) told of a man who swallowed 3 Gm of finely ground white pepper and noticed only a feeling of warmth and later some burning. According to Muller³³ the severe gastritis that is produced by the swallowing of escharotic poisons is not painful, and it is known that the gastritis that precedes or is commonly associated with cancer of the stomach is usually unaccompanied by symptoms.

As every brewery employee and every patient with severe diabetes insipidus knows, the stomach will tolerate a great deal of distention without the production of pain. Kinsella,³⁴ Apperly and other investigators have drunk water in large amounts as fast as they could get it down, but only with difficulty could they produce gastric discomfort. Even acute dilatation of the stomach is commonly painless. Occasionally distention of the stomach by a large meal seems to produce pain, but this may be due to pulls on bands running from the stomach to the diaphragm, spleen and parietal peritoneum. Patients with marked enlargement of the spleen can also be made very uncomfortable by a full meal.

A discussion of the modes of production of pain in cases of gastric and duodenal ulcer would take up so much space that I must reserve the topic for another paper. All I will say here is that in spite of much research there is as yet little agreement among workers. It is easy to say that the pain is due to the etching effect of the acid or to exaggerated peristalsis, but serious objections can be made to both of these theories. Thus, no one can as yet explain why a man without any defect in the gastric and duodenal mucosa demonstrable at operation or necropsy can have typical ulcer pain relieved by alkalis, while another man with a big florid ulcer can be free from symptoms. All I feel sure of is that, whatever the mechanism of ulcer pain may be, it can be turned on or off within an hour, perhaps by some sudden change in the irritability of the gastric nerves.

The Small Bowel—The mucous lining of the small bowel is largely insensitive, as any one can see from the fact that the ulcerations of typhoid, tuberculosis and carcinomatosis are rarely painful until to the defect in the mucosa there is added either obstruction of the lumen of the bowel or else perforation of the wall. As Lennander²⁹ and Muller³³ have shown in patients with an intestinal fistula, faradic stimulation of the mucous membrane does not produce pain.

The tormina or severe griping pains seen with dysentery and cholera are due probably to contractions of the bowel. Mackenzie, while operating under local anesthesia, noticed that the patient felt pain when a loop of small bowel contracted, but others have remarked on the fact that powerful contractions can be painless. Maylard³⁵ has recorded the case of a physician with a mulberry stone in the substance of the kidney who

29 Lennander, 2. Weitere Beobachtungen über Sensibilität in Organ und Gewebe und über lokale Anästhesie. Deutsche Ztschr. f. Chir. 73: 297-350 (June) 1904.

30 Neumann, Alfred. Ueber die Sensibilität der inneren Organe. Zentralbl. f. d. Grenzgeb. d. Med. u. Chir. 13: 401-415, 449-460, 481-501 (July 30), 529-538, 573-593 (Aug. 13), 617-628, 656-676 (Sept. 8), 696-708 (Oct. 5) 1910.

31 Hoffmann, Adolph. Ursachen Zustandekommen und klinischer Wert der Bauchdeckenspannung. Beitr. z. klin. Chir. 69: 701-725, 1910.

32 Alvarez, W. C. The Mechanics of the Digestive Tract. ed. 2. New York: P. B. Hoeber, 1928.

33 Muller, L. R. Die Lebensnerven ihre Aufbau ihre Leistungen ihre Erkrankungen. Berlin: Julius Springer, 1924.

34 Kinsella, V. J. The Mechanism of Pain Production in Abdominal Visceral Disease with Special Reference to the Pains of Peptic Ulcer. M. J. Australia 1: 64-84 (Jan. 21) 1928.

35 (a) Muller, L. R. Ueber die Empfindungen in unseren inneren Organen. Mitt. a. d. Grenzgeb. d. Med. u. Chir. 18: 600-641, 1904.

(b) Das Vegetative Nervensystem. Berlin: Julius Springer, 1920. foot. not 33.

36 Maylard, A. E. Abdominal Pain. Its Causes and Clinical Significance. Philadelphia: P. Blakiston's Son & Co., 1905.

suffered with attacks of intestinal colic which apparently was reflex in origin. There was agonizing pain, which seemed to be due to contractions, traveling down the bowel and ending in tenesmus and the passage of flatus. Cycles of such pain followed one after another. Hugh Cabot tells me he has seen many instances of this type of "reflex."

Snell has reminded me also of the intestinal distress seen commonly in patients who are being fed through a fistula into the jejunum or who are learning to eat slowly after having submitted to subtotal gastrectomy. In them the pain due to distention or abnormal contraction, or perhaps to widespread stimulation of the mucosa, is accompanied by nausea, sweating and sometimes symptoms of mild shock.

My impression from personal experience is that although the small bowel is normally insensitive, there are times, as after the eating of irritant food, when the victim will become conscious of peristalsis and will say that he can feel the food passing over sore places in the bowel.

Ways of Causing Pain in a Hollow Organ—There seem to be three main ways of producing pain in a hollow organ: one is by stretching the muscular wall, another is by causing it to contract powerfully, and another is by pulling on its mesenteric attachments. The work of a number of investigators indicates that neither distention nor contraction of the bowel will produce pain unless the mesenteric fan is pulled on,³⁷ but other observers, while admitting that a pull on the mesentery is a common cause for pain, have shown that it is not the only one, and that distention of the muscular wall alone will cause distress.³⁸ As these men pointed out, the mesentery will tolerate, without causing pain, degrees of stretching that are not seen with ordinary distention or contraction of the bowel. Unfortunately, it is still hard to explain why, at times, marked bloating is painless when at other times the presence of a little gas in the bowel causes great distress.

According to Ryle,³⁹ the severity of mechanically induced pain is in inverse proportion to the normal distensibility of the viscus. This, perhaps, can account for the fact that the most severe pains are produced when fairly thick-walled tubes with a small lumen such as the ureter, appendix, bile ducts or uterus are affected.

Powerful Peristalsis Not Always Painful—Most physicians will probably think of intestinal pain as being due to cramplike contractions of the muscle in the wall of the bowel or to exaggerated peristalsis, and yet, when they stop to consider, they must remember that the lively peristalsis that is produced by purgation, or the powerful waves that can be seen traveling over the stomach in cases of congenital pyloric stenosis or of cancer of the pylorus, or over the colon in cases of Hirschsprung's disease or of cancer of the sigmoid flexure, are usually so painless that the patient is not even conscious of them.

Obviously there must be some extra factor present to produce pain, and this I suspect is an incoordination of peristalsis which leads to the conflict of waves and the putting of pressure on accumulations of food or gas in between. A wavelike contraction, no matter what its amplitude, is probably painless just so long as the

walls of the viscus do not meet to produce water-tight or air-tight rings. Such tight rings approaching one another will put pressure on the contents of the tube and on the nerve endings in the wall. I once happened to swallow just as a wave of regurgitation started up my esophagus and when the two contractions met I felt a most unpleasant tearing feeling back of the sternum. Some of my friends have had similar experiences.

One type of pain is produced apparently by the failure of sphincters to relax at the proper time. Some pains in the upper part of the abdomen are supposed to be due to pylorospasm, and I believe that some of the pains that come at 11 a. m. and 4 p. m. are due to efforts made by the terminal loop of ileum to force its content past a contracted ileocecal sphincter. In such cases the taking of more food turns the tide in favor of the ileum, and this brings relief. Occasionally, one will find severe pain in the upper part of the abdomen associated with cardiospasm,⁴⁰ but what the mechanism is no one knows.

According to some investigators, the powerful contractions that can be produced in the bowel with the help of the faradic current or by the injection of barium chloride are not painful unless a sufficiently long segment of intestine is involved, or unless blood vessels are constricted or the mesentery is stretched.⁴¹

It is perhaps just as hard to explain why some powerful intestinal contractions produce pain and others do not as it is to explain why a cramp in the leg is painful when the more powerful contraction of the same group of muscles during a tug of war does not cause discomfort. In fact, the best way in which to relieve a cramp in the leg is to contract the muscles voluntarily, and some research workers have even suspected that contraction of the muscle of the gastric or intestinal wall will at times counterbalance the pull on nerve endings produced by distention and will thus relieve pain. Lewis⁴² and his associates collected much evidence indicating that constant pain can be produced by rhythmic muscular contractions whenever an insufficient blood supply leads to the formation of toxic and nerve-irritating substances.

Distention of an organ need not be painful so long as it is brought about slowly. This is probably the explanation for the absence of distress in many cases of Hirschsprung's disease and hydronephrosis.

The Appendix—The appendix is insensitive to cutting, crushing and cauterizing, but some patients operated on under local anesthesia can feel the tightening of the purse-string suture, and they usually can feel the tying of the ligature on the meso-appendix,⁴³ especially if the least pull is made on it. Traction on the mesentery of the terminal segment of ileum will sometimes produce the epigastric or umbilical pain that patients complain of at the beginning of an attack of appendicitis, and manipulation of the mesentery of the appendix usually produces nausea and retching. According to Harris,⁴⁴ pericecal membranes are usually insensitive, but any traction exerted on them resulting in a stretching of the parietal peritoneum will cause pain.

It is still far from clear why a diseased appendix causes pain. The fact that the first distress is felt in

40 Vinson P. P. Epigastric Pain a Symptom of Esophageal Obstruction. *Ann. Surg.* 82: 212-214 (Aug.) 1925.

41 Frohlich and Meyer.

42 Lewis Thomas, Pickering G. W. and Rothschild Paul. Observations upon Intestinal Pain in Intermittent Claudication. *Heart* 15: 329-343 (July 27) 1931.

43 Farr I. Muller and Neumann. p. 459.

44 Harris M. L. in discussion on Summer J. E. Surgical Aspects of Intestinal Stasis From an Anatomic Point of View. *J. A. M. A.* 61: 641 (Aug. 30) 1913.

37 Breslau. 38 Frohlich and Meyer. 39 Meyer A. W. Experimentelle Untersuchungen über die Sensibilität von Magen und Darm. *Deutsche Ztschr. f. Chir.* 151: 153-163 (Oct.) 1919.

38 Brunning and Gohrbandt. 39 Farr I. 39 Ryle J. A. Visceral Pain and Referred Pain. *Lancet* 1: 895-900 (May 1) 1926. A Clinical Study of Pain. *Brit. M. J.* 1: 537-540 (March 31) 1928.

the region of the navel suggests that the disease begins within the organ and affects the nerves that go out by way of the mesentery and the splanchnic nerves. Later, when the pain is in the right lower quadrant, the supposition is that the parietal peritoneum and a new set of nerves are involved. According to Hurst,⁴ the diseased appendix when palpated through the rectum is very tender.

So far as I know, no one has puzzled sufficiently over the fact that often, in appendicitis, when things are still going badly within the abdomen, the pain lets up. The usual explanation is that the appendix has "burst", but I wonder if this is a good word to use. So far as I can learn, the appendix perforates because part of it has become necrotic and not because it has been blown up like a toy balloon. If the apparent improvement were due to a release of pressure within the appendix, one should expect it to be the pain around the navel that stops, and after this one should expect a new, peritoneal, pain to appear around McBurney's point. Actually, my impression is that the pain that lets up and gives the patient a false sense of security is usually the one in the right lower quadrant. Perhaps in such cases something happens to bring insensitiveness to the peritoneal nerves. As Amberg⁴⁶ has suggested, it may be that the edema produced by infection can at times serve as an anesthetic much as does the edema produced by the surgeon when he injects saline solution into the skin.

In view of the marked insensitiveness of the appendix to cutting and crushing, it is hard to guess what change in it can account for the pain that is felt in the center of the abdomen. One can think of distention of the lumen or contraction of the muscle, or perhaps the formation of substances that irritate nerve endings. Because the meso-appendix is so sensitive to tension, Hesse²⁰ expressed the belief that the pain is due to stretching of this membrane brought about by the swelling or bending of the appendix. There must also be abnormal contractions in the adjacent ileum or cecum, contractions which often give rise to the vomiting of large amounts of intestinal fluid. Pain may be felt in regions distant from the appendix when there is extension of the inflammation along lymphatic channels.⁴⁷ Finally, as Mackenzie pointed out, symptoms such as rigidity of the psoas muscles and irritation of the ureter, bladder and uterus may be produced reflexly. He was once much impressed by the fact that, in a case in which symptoms of irritation in the pelvis were marked, operation showed that the appendix was nowhere near the bladder, uterus or psoas muscle.

If the present-day understanding of a dual sensory nerve supply to some parts of the intestine is correct, a physician, when faced by the common problem of chronic pain and soreness limited to the right lower quadrant of the abdomen, should actually refuse to think of appendicitis and should look more for disease in the peritoneal attachments of the cecum. If only because in one of my cases the pain and soreness in the right flank remained not only after appendectomy but also after excision of the right half of the colon, I always think of disease somewhere along the nerve tracts that supply the peritoneum in the region of the cecum. Theoretically, if smoldering disease in the appen-

dix can produce pain anywhere, it should be felt where it commonly is felt, around the navel or in the epigastrium. Another reason for the radiation of appendiceal pain to the epigastrium may be that the functions of the stomach, duodenum or small bowel are disturbed secondarily to disease in the right iliac region.

The Colon—In view of the complete insensitiveness of the colon when it is brought up into a wound, as in the formation of an artificial anus, it is remarkable how much discomfort and pain this part of the intestinal tube can cause many nervous women, and how much tenderness is complained of when it is rolled under the fingers. In two patients with a fistula into the cecum, Lennander⁴⁸ found the mucous membrane to be insensitive. Rutherford,⁴⁹ who studied another patient with a cecal fistula, found that any attempt to pass a sound or a finger through the ileocecal sphincter caused unbearable pain, due probably to distention of the muscle.

As every proctologist knows, the mucous membrane of the rectum and sigmoid flexure is insensitive to cutting, crushing or burning. Patients protest only when one pulls on the attachments of the bowel, and then they feel the pain or distress in the left lower quadrant of the abdomen.

The pain of diverticulitis may be due partly to spasm of the colonic wall, partly to obstruction of the lumen, and partly to the irritant effects of inflammatory products on nerves in the parietal peritoneum.

Kinsella³⁴ and others who have watched the colon during the giving of a barium enema have seen powerful contractions which were associated with pain. It is most important from a diagnostic point of view to note that all those who have observed such pains agree that they are felt only in the lower part of the abdomen, below the navel.

In the case of mucous colitis, it may well be that toxic or irritant substances are excreted from the blood into the mucosa. Sometimes the pain will stop following the exclusion of a few hurtful substances from the diet.

The Gallbladder and Bile Ducts—The method of production of gallstone colic and other types of pain in the biliary tract is so poorly understood and there is so much to be said about the subject that I cannot go into it fully at this time. All I shall say is that experiments have shown, both in animals and in man, that the gallbladder is insensitive to crushing or cutting. Sudden distention of the organ will produce some of the feelings of bloating and indigestion that are so annoying to patients with cholecystitis, but usually not the pain.⁵⁰ The common duct is much more sensitive, and distention here will produce pain, nausea, vomiting and that difficulty in breathing which is so characteristic of biliary colic. The puzzling feature is that the pain produced in experiments on human volunteers was usually epigastric and did not radiate typically to the back.⁵⁰

There are several reasons, then, for believing that the pain in the back must be due to some irritation, perhaps inflammatory in origin, of nerves that go out by way of the posterior parietal peritoneum. It is possible also that during simple distention of the uninfamed

48. Rutherford A. H. The Ileocecal Valve. New York: Paul B. Hoeber, 1914.

49. For exceptions see Mitchell J. F. Sensitivity of the Peritoneum and Abdominal Viscera. J. A. M. A. 57: 709-712 (Aug. 26) 1911 and Ivy A. C., Voegtlin W. L. and Greengard Harry. The Physiology of the Common Bile Duct. A Singular Observation. J. A. M. A. 100: 1319-1320 (April 29) 1933.

50. Ogilvie W. H. Some Notes on the Surgical Aspects of Gallstone Disease. Guy's Hosp. Rep. 75: 78-97 (Jan.) 1925. Zollinger Robert. Observations Following Distention of the Gallbladder and Common Duct in Man. Proc. Soc. Exper. Biol. & Med. 30: 1260-1261 (June) 1931.

45. Hurst A. F. The Goulstonian Lectures on the Sensibility of the Alimentary Canal. London: Hodder & Stoughton Ltd., 1911.

46. Amberg Samuel. Personal communication to the author.

47. Braithwaite L. R. The Flow of Lymph from the Ileocecal Angle and Its Possible Bearing on the Cause of Duodenal and Gastric Ulcer. Brit. J. Surg. 11: 7-26 (July) 1923. Vorschütz Elberfeld. Discussion Verhandl. d. deutsch. Gesellsch. f. Chir. 45: 187-188, 1921.

biliary tract the experimenter does not stimulate those particular fibers in the splanchnic bundle which, on arriving in the dorsal region of the spinal cord, send out impulses to sensitize the region under the right scapula.

Because biliary colic can be seen commonly in the absence of gallstones, in the absence of a gallbladder, and even in cases in which most of the common duct has been destroyed by scarring I have wondered if at times it could be due to powerful muscular contractions in the pars pylorica of the stomach or in the first portion of the duodenum. This does not seem probable, because irritation of these regions by ulcers produces such a different type of pain with a different point of reference and a different type of radiation. One suggestive observation is that of Bloomfield and Pollard,⁵¹ who blew up a balloon in the third portion of the duodenum of volunteers and found that this sometimes produced pain with a distribution like that of biliary colic. Obviously, further observation and experiment are needed in this field.

Liver, Spleen, Pancreas and Kidney—All observers agree that the parenchyma of these organs is markedly insensitive. As a result, abscesses and infarcts are usually painless unless the organ is rapidly distended, or unless inflammation or irritation reaches nerves in the parietal peritoneum or along the arteries. Thus in the case of the liver, passive congestion that arises suddenly, as in an attack of paroxysmal tachycardia, or the rapid growth of a gumma or an echinococcus cyst will cause pain, while the slow growth of huge carcinomatous metastatic growths may take place silently.⁵²

There are reasons for believing that, in some of the cases in which extensive injury has been done to the liver by poisons such as arsphenamine or cinchophen, pain arises because of a widespread chemical stimulation of nerves. The objection to this theory is that in many cases severe hepatitis does not give the patient even local discomfort. While fully cognizant of the difficulties of my position, I still cling to the view that a liver that looks normal at operation can be the seat of severe pain, just as so commonly it is the seat of marked tenderness to palpation.

In the spleen, infarcts seldom cause pain unless they involve the diaphragmatic surface and produce adhesions to the parietal peritoneum. Barcroft, who has done much work on dogs with the spleen exteriorized and left uncovered outside the abdomen, told me that he has never seen any signs of pain resulting from manipulation of the organ.

The pancreas is usually an uncomplaining organ but it responds painfully to acute injuries and particularly to that acute form of inflammation which is accompanied by fat necrosis in the adjacent tissues. Carcinoma of the pancreas usually produces pain at some stage of the disease but I suspect that this comes usually when the growth invades other structures or blocks a duct.

In the kidney, pain is due usually to diseases that produce sudden swelling, such as acute glomerulonephritis, infarct formation or rapidly forming hydronephrosis. Strange to say, even the marked back pressure in the kidney pelvis that is produced when the ureter is inadvertently tied is often painless and in my experience Dietl's syndrome is rarely encountered.

Ureter—The ureter is tolerant of slow distention and it is often remarkably tolerant to the presence of a stone. At operation, pain is most likely to be produced when the peritoneal covering of the ureter is pulled on or traumatized.

Urinary Bladder—The urinary bladder is only slightly sensitive to ordinary laboratory stimuli,⁵³ but, as every one knows, distention, with the resultant muscular contractions, can cause pain. Muller⁵⁴ expressed the belief that the pain of tuberculous cystitis is due to muscular contractions. In operating under local anesthesia, much of the pain comes when the attachments of the bladder are pulled on.

The Uterus, Ovary and Tubes—The uterus is not very sensitive to cutting, and several writers (Neumann,⁵⁰ pp 411 and 708) have commented on the fact that in the past, when cesarean section had to be done without anesthesia, the incision through the uterus was not very painful. In operations under local anesthesia, much can be done to the uterus so long as its ligaments are not pulled on. The part of a curettement that is really painful is the dilation of the cervical canal. Severe menstrual pain seems to be due often to the efforts of nature to expel blood clots through this narrow channel. The powerful uterine contractions that occur during the later months of pregnancy are not distressing but, as every mother knows, the contractions of labor can be agonizing.

At operations under local anesthesia the ovary may be somewhat insensitive but the pedicle is often sensitive. During pelvic examinations the ovary itself is commonly sensitive to pressure.

ABDOMINAL LYMPH NODES

Although in many cases the abdominal lymph nodes become inflamed or enlarged without producing symptoms, in others such inflammation appears to produce soreness and pain.⁵⁴

CELIAC GANGLIONS

According to some writers the celiac ganglions are very sensitive, and according to others they are not (Neumann,⁵⁰ p 669). Their involvement in inflammatory masses due to the perforation of gastric or duodenal ulcers or their infiltration with carcinoma cells probably accounts at times for severe pain that bores straight through to the back.

It seems probable that there must be many cases of abdominal pain in which the trouble originates in disease of ganglions or nerves or nerve endings, but so far only an occasional one can be diagnosed. Most of the ganglioneuromas appear to be painless.

ABDOMINAL BLOOD VESSELS

Any one who has ever had to thaw out frozen fingers knows what excruciating pain can arise in tissues which for a time have been deprived of blood, and there are reasons for believing that not infrequently vascular disease or vascular spasm is a cause of abdominal distress and pain. The subject is too large to be treated adequately in the confines of this paper.

SOME USUAL CAUSES

I shall have to wait for another time to discuss the possible mechanisms that produce the severe pains seen

⁵¹ Bloomfield A. L. and Pollard W. S. Experimental Referred Pain from the Gastro-Intestinal Tract. II. Stomach, Duodenum and Colon. Clin. Investigation 10: 453-473 (Aug.) 1931.

⁵² Wackenzie J. Schmidt Rudolph. Pain Its Causation and Diagnostic Significance in Internal Diseases. ed. 2 Philadelphia J. B. Lippincott Company 1911.

⁵³ Muller W. Altmann Wilhelm. Leber die Blasenensibilität. Deut. ch. Zt. f. Nervenh. 74: 28284 (June) 1922.

⁵⁴ Alvarez W. C. Me enteric lymphadenitis in Adult. A Cause of Pseudo-Appendicitis, Indigestion, Diarrhea and Arthritis. N. Clin. North America 14: 605-617 (Nov.) 1930.

with some diseases of the abdominal nerves, with disease of the abdominal arteries, with giant urticaria and purpura and disease in the spinal cord and brain, disease in the thorax, diabetic ketosis, Addison's disease, acute generalized infections, malaria and lead poisoning

SUMMARY

The main sensory pathways out of the upper part of the abdomen lie along the major splanchnic nerves. Most of the sensory nerves in the abdomen probably do not belong to the autonomic system and are no different from those in the rest of the body. Evidence is accumulating to show that certain types of severe and intractable pain are due to some abnormality in the sympathetic nerves.

The abdominal viscera are insensitive to such stimuli as cutting, crushing and burning. The few sensory nerve endings present are associated mainly with arteries. The parietal peritoneum is everywhere well supplied with nerves. If a stimulus to an abdominal organ is to be sensed as pain, it must be applied over an area wide enough to affect many of the scattered nerve endings.

Much of the pain produced by distention of the bowel appears to be due to tension on the root of the mesentery.

The stomach is normally so insensitive to acids and other irritants that it is difficult to explain the pain of ulcer. As yet no one of the explanations proposed is adequate or satisfying. The salient fact is that at times the nerves appear to become so sensitized that pain can be felt even in the absence of strong acid or of a defect in the mucous membrane of the stomach and duodenum.

Pain is produced in a hollow organ when powerful contractions struggle to force material past an obstruction, it is produced also by rapid distention or by tension on the mesentery.

The distribution of sensory nerves in the abdomen follows somewhat the original segmental arrangement existing in the embryo. For this reason pain that arises in the stomach, duodenum and gallbladder is usually felt above the navel, and pain arising in the colon is usually felt below the navel. This point is helpful in diagnosis.

Pain arising in the appendix itself is usually felt around the navel, while pain arising in the peritoneal covering of the organ or in the cecum is felt in the right lower quadrant of the abdomen. Long continued pain and soreness around the cecum should suggest the presence not of appendicitis but of chronic perityphlitis or typhlitis, or of disease somewhere along the parietal (not mesenteric) sensory nerve tracts supplying the cecal region.

The mechanism of biliary colic is not clear. Such colic is seen in the absence of gallstones, in the absence of a gallbladder and, rarely, even in the absence of most of the common bile duct. Experimental distention of the gallbladder usually does not produce pain, but distention of the ducts does produce pain. What is puzzling is that, in most of the experiments that have been done this pain has not radiated typically to the right scapula.

The solid organs of the abdomen are so insensitive that the only thing that seems to cause pain in them is either rapid distention of the capsule or the extension of inflammation from them to adjacent parietal peritoneum.

It is suggested that some forms of abdominal pain are due to the accumulation of irritant metabolites or toxins in the tissues. Pain may also be caused by any disease or spasm in arteries which leads to injury of the tissues through the development of ischemia.

THE DIFFERENTIAL DIAGNOSIS OF ACUTE POLIOMYELITIS

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There are few infectious diseases so frequently incorrectly diagnosed as acute poliomyelitis. In a survey of this disease over a period of four years at the Herman Kiefer Hospital in Detroit, Gordon¹ found that in only half of the 446 patients admitted with a diagnosis of poliomyelitis was the diagnosis confirmed by clinical study and laboratory investigation. Such a finding means that there is need for improvement in diagnostic technique. By studying the mistakes and suggesting when possible, how these mistakes can be avoided, the profession should be able to increase its diagnostic accuracy. With this purpose we record our observations during the epidemic of poliomyelitis in New York in 1931. There were 1,123 patients admitted to the Willard Parker Hospital with a diagnosis of poliomyelitis. After careful examination and observation, poliomyelitis was excluded in 113. These 113 patients form the material for our presentation. This of necessity limits the number of conditions discussed and no attempt will be made to present a complete differential diagnosis of poliomyelitis.

The clinical course of poliomyelitis has been fairly definitely divided into three stages, as shown in the accompanying chart. The first is the period of general invasion, which may last one or two days. During this stage the diagnosis of poliomyelitis is extremely difficult, if not impossible. The patient may complain of headache and malaise and may have some gastrointestinal disturbance and slight fever. Physical examination of the patient often reveals nothing abnormal, or the symptoms and signs may be those frequently found in children with a mild gastro-intestinal upset or a common cold. This stage is frequently either not present or entirely overlooked.

Kramer² has shown that some individuals have developed an immunity as a result of exposure to the disease, even though they showed no symptoms of infection or possibly only the indefinite manifestations of the first stage. He examined the blood of twelve persons who had been in intimate contact with a patient with poliomyelitis. A test for a specific neutralizing substance made a few days following the contact showed all twelve to be nonimmune. Six of the twelve were available for retesting five months later and at that time were found to have become immune. During the five months they had not suffered from any illnesses that could be suspected as being abortive poliomyelitis. That such

From the Willard Parker Hospital and the Department of Pediatrics, Cornell University Medical College.
1. Gordon, J. E. Diagnosis of Early Poliomyelitis. *J. A. M. A.* 99: 1043 (Sept. 24) 1932.
2. Kramer, S. D. Immunity to Poliomyelitis in the General Population. *J. A. M. A.* 99: 1048 (Sept. 24) 1932.

cases, whether or not they show clinical symptoms of the first stage of the disease, may be a source of infection was shown by Wickman³ in his classic observations more than twenty-five years ago

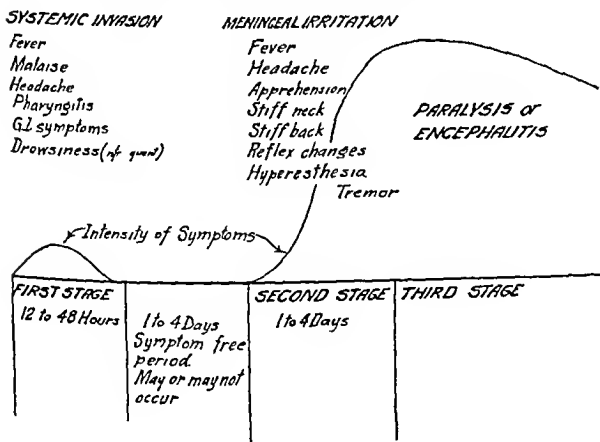
In some cases the infectious process continues and localizes in the central nervous system to produce the second or preparalytic stage. There may be an asymptomatic interval of several days between the first and second stages, or the disease may continue without interruption. During the second stage the symptoms are primarily those of meningeal irritation. The patient may be apprehensive, complain of headache and malaise and have fever. Examination may reveal ataxic tremor, stiffness of the spine, resistance to anterior flexion of the head, diminished or absent superficial reflexes, hyperactive, hypo-active or unequal deep reflexes, and sensory disturbances. During this stage, in contrast to the initial period of systemic invasion, the patient exhibits something more tangible on which to base a diagnosis. However, it is important to exclude other diseases in which the central nervous system is primarily or secondarily involved.

The third stage is due to more serious damage in the central nervous system and is evidenced by paralysis or by symptoms of encephalitis. This phase may occur shortly after the first symptoms of meningeal irritation or after an interval of several days.

FIRST STAGE

The first stage of the disease simulates what is generally considered a cold or minor gastro-intestinal upset. Since Wickman first emphasized the importance of what he termed abortive poliomyelitis, various observers⁴ have stated that, during an epidemic, abortive poliomyelitis (those cases not progressing further than the first stage) constitutes as high as from 50 to 80 per cent of the total cases.

From the history or physical signs twenty-eight of our 113 cases could be considered as supposedly falling



Clinical course of poliomyelitis

into the first stage of the disease. There were twenty-eight patients with ten separate conditions in this group, as shown in the accompanying table. Half of the patients had either pharyngitis or gastro-enteritis. There were also two patients with serum reactions, two with evidence of trauma, and one with typhoid. It cannot be

reiterated too often that a careful history and physical examination is important. A history of trauma or recent injection of serum, the finding of an acute follicular tonsillitis or severe pharyngitis explains the con-

TABLE 1—One Hundred and Thirteen Cases Referred to the Willard Parker Hospital with the Diagnosis of Poliomyelitis Listed According to the Stages of Poliomyelitis Which They Simulated

Condition	Cases	Stage of Poliomyelitis Simulated		
		I	II	III
Pharyngitis	16	8	7	1
Gastro-enteritis	14	6	6	2
Pneumonia	9	2	4	3
No diagnosis	7	2	5	
Tonsillitis	7	3	4	
Tuberculous meningitis	5		4	1
Injury	6	1	2	3
Hysteria	4		2	2
Cerebral hemorrhage or arteriosclerosis	4		1	3
Cerebrospinal meningitis	4		2	2
Folliculitis or arthritis	3			3
Rheumatic fever	3		3	
Otitis media	2	2		
Serum reaction	2	2		
Torticollis	2		2	
Neuritis	2			2
Osteomyelitis	2	1	1	
Grip	2	1	1	
Synovitis	2			2
Myositis	1		1	
Adenitis	1		1	
Coagelial syphilis	1			1
Abscess	1		1	
Typhoid	1	1		
Tetanus	1			1
Vaccination	1		1	
Bell's palsy	1			1
Epilepsy	1			1
Encephalitis	1			1
Cellulitis	1			1
Focal myelitis	1			1
Subperiosteal abscess	1			1
Purpura with arthritis	1		1	
Transient contractures of unknown origin	1		1	
Acute appendicitis	1		1	
Epidural abscess	1			1
Total	113	28	50	35

dition found in many of the patients. We have observed that in early poliomyelitis the pharyngitis is mild and does not look beefy red or produce an exudate on the tonsils. The gastro-intestinal symptoms that may occur in poliomyelitis are of short duration and are not severe. Examination of the spinal fluid in the first stage of poliomyelitis gives no helpful information. Extreme drowsiness and high fever during the period of systemic invasion have been reported in some epidemics,¹ but we have not encountered such cases.

Gordon¹ has aptly said:

Too often the well appreciated advantages of early diagnosis tend toward overemphasis of poliomyelitis particularly during the period of seasonal prevalence and, if the disease is epidemic with the result that other conditions, of themselves as urgent as poliomyelitis, suffer delay in management because of confusion with that disease. No less stress must be placed on determining poliomyelitis before paralysis, but need does exist for more critical judgment in eliminating allied conditions. The general opinion among physicians that the clinical diagnosis of poliomyelitis has not reached the exactness of other communicable diseases finds ready substantiation.

Some of our children had mild pharyngitis or gastro-enteritis that might have been poliomyelitis. None of these patients gave a history of recent contact with any one with an acute illness. This, of course, does not exclude the possibility of some unrecognized contact. As an additional precaution we kept the children under observation one week after their symptoms subsided to make certain that we were not dealing with a so-called dromedary type of invasion. Because of the two

³ Wickman, Ivan. Acute Poliomyelitis. translated by W. J. A. M. Voloney. Nervous and Mental Disease Monograph Series 16. New York, 1913.

⁴ Draper, George. Acute Poliomyelitis. Philadelphia: P. Blakiston Co., 1917.

definite masses or humps of symptoms in some cases, the analogy to the arrangement of the dromedary's back was used by Draper¹ to express this type figuratively²

SECOND STAGE

The signs of meningeal irritation which occur during the second or preparalytic stage of poliomyelitis also occur in other diseases. Fifty patients were referred to the hospital supposedly with preparalytic poliomyelitis. Minor illnesses made up almost half of this group. Two cases of tuberculous meningitis were erroneously diagnosed as poliomyelitis in the admitting room. Spinal fluid examination before admission revealed a fluid under slightly increased pressure containing 30 cells, which were mostly mononuclears, slightly increased globulin and a normal amount of sugar. Convalescent poliomyelitis serum had been given intravenously. Tubercle bacilli were later found in the spinal fluid obtained in the hospital, but the sugar content remained normal. This indicates the difficulty in differentiating early tuberculous meningitis from preparalytic poliomyelitis when the sugar content of the spinal fluid remains high. At the time of admission the duration of the meningeal irritation was against the diagnosis of poliomyelitis, but the family physician with the facilities at his disposal was not in a position to make a more accurate diagnosis.

Two cases of pneumonia were incorrectly diagnosed as poliomyelitis on admission. Both were in young children who had meningeal irritation without definite signs in the lungs. The pulmonary signs became evident on subsequent examinations. The spinal fluid in each case was normal, but the blood count showed a greater leukocytosis and a larger percentage of polymorphonuclear cells than were usually found in poliomyelitis. A normal spinal fluid in the presence of meningeal irritation rarely occurs in poliomyelitis. The lesion in one case was a lobar pneumonia of the right upper lobe and in the other a right apical bronchial pneumonia. Two other cases of pneumonia showed definite signs in the lungs at the time of admission.

There were six children with gastro-intestinal symptoms admitted with a diagnosis of preparalytic poliomyelitis. The spinal fluids of all six patients were normal. The gastro-intestinal symptoms occurring at the onset of poliomyelitis are relatively mild, whereas repeated vomiting, frequent bloody, mucoid stools, dehydration or abdominal pain are rare in this disease. When repeated vomiting does occur in poliomyelitis, there is usually a rapid onset of paralysis with bulbar symptoms predominating. It should be noted that slight resistance of the neck to flexion of the head, hyperactive or sluggish deep reflexes may occur in acute gastro-enteritis. In doubtful cases the duration and severity of the symptoms will often help in excluding a diagnosis of poliomyelitis.

The following are illustrative cases of other conditions that were encountered.

One child was admitted with a history of vomiting, headache, drowsiness and epistaxis. The temperature was 104 F and the pharynx was red. Examination at the time of admission revealed slight stiffness of the neck, a nasal twang to the voice and irregularity in the patellar reflexes. The spinal fluid was normal. After further observation a diagnosis of grip was made.

This case again points out that a child with a high temperature may have slight nuchal resistance and, when differences in reflexes are slight, they should be carefully reexamined. The nasal twang to the voice was apparently due to the child's drowsiness.

A boy, aged 12 years, was admitted with a history of pain in the shoulders and neck. There was no fever. The patellar reflexes were hyperactive. Examination revealed that the muscles in the back of the neck were tender. There was pain on extreme flexion of the head. The spinal fluid was normal. The myositis gradually subsided and the patient was discharged after six days.

There were five patients in whom it was difficult to exclude poliomyelitis with certainty.

One child, aged 8 years, was admitted with a history of fever, headache, malaise, pain in the neck and legs for one day and constipation for two days. The temperature was 103.8 F. Neurologic examination in the hospital was negative. Following catharsis the temperature remained normal after the second day in the hospital. The spinal fluid was normal.

Another child, aged 6 years, was admitted with a history of fever, headache and pain in the back of the neck. The child was acutely ill, with a temperature of 103 F, the tonsils were enlarged and reddened, the patellar reflexes were hyperactive and there was slight nuchal resistance. The following day the temperature was normal and all symptoms were gone.

Another child, aged 4 years, whose brother had been under observation for poliomyelitis at the hospital for four days three weeks before, was admitted with a history of fever, vomiting and pain in the back and neck. The child was acutely ill, with a temperature of 104 F, and there was slight resistance on extreme flexion of the head. The following day the temperature was normal. The spinal fluid was normal.

Two other children presented similar pictures. These children were all acutely ill for a day or two, there were no, or only slightly abnormal, neurologic signs, and other symptoms were those of pharyngitis or tonsillitis. They were kept under observation to exclude the possibility that we were dealing with the dromedary type of invasion. The children were well when discharged with a diagnosis of "not poliomyelitis." It seems that some of the children were more ill than those usually exhibiting the early symptoms of poliomyelitis as we have seen them. Severe symptoms at the onset of poliomyelitis are associated with a virulent infection and are usually followed by definite symptoms of invasion of the central nervous system. We felt that, even if our patients had had either abortive or preparalytic poliomyelitis, there was little chance of their spreading the disease after their discharge. Since then Paul, Salinger and Trask³ have examined the nasopharyngeal washings of children who had minor illnesses (similar to abortive poliomyelitis) in a small community in which poliomyelitis had occurred. The washings from twelve children were examined at different stages of their illness. Virus was demonstrated in two cases in which the washings were taken within forty-eight hours after the onset of the illness. This suggests that the period of contagion is of short duration.

THIRD STAGE

Twenty conditions occurred in the third group of patients admitted with a history or symptoms suggesting the third or paralytic stage of poliomyelitis. Two children with gastro-enteritis and one with pharyngitis each had a history of weakness of the legs. Three

¹ Stimson has recently pointed out that this term is descriptively inaccurate. A dromedary (Arabian camel) has but one hump; it is the Bactrian camel that has two. (Stimson P. M. Common Contagious Diseases. Philadelphia: Lea & Febiger, 1931.)

² Paul, J. R., Salinger, Robert and Trask, J. D. Abortive Poliomyelitis. J. A. M. A. 98: 2262 (June 25) 1932.

patients with obvious injuries were brought to the hospital because they could not move one of the extremities. Two children refused to move their legs because they had osteomyelitis. Swelling and constant marked localized tenderness do not occur in poliomyelitis. One adult had taken huge doses of some hypnotic and a multiple neuritis had developed. A child aged 4 years, refused to move his arm because he had cellulitis of the chest wall with axillary adenitis. Three patients with pneumonia were admitted in respiratory distress and two of these had a history of weakness of the legs and stiffness of the neck. At the time of admission there were definite signs of pneumonia with difficulty in the expiratory phase of respiration. In the respiratory paralysis of poliomyelitis the respiratory difficulty is in inspiration. Cough is an infrequent symptom in poliomyelitis. Several elderly patients with cerebral accidents were admitted to the hospital and in each instance the diagnosis was obvious.

The following are brief outlines of some of the more instructive cases.

A boy, aged 8 years, was admitted with a history of convulsions, cyanosis, generalized rigidity and fever. He had ptosis of the right upper lid. The patient presented the characteristic symptoms of tetanus and recovered after appropriate treatment.

We did not observe convulsions and generalized muscular rigidity in any of our cases in 1931. However, in 1933 convulsions and muscular spasticity occurred in a child, aged 17 months, who had a bulbo-cerebral lesion. Patients with respiratory failure sometimes have convulsive seizures (probably asphyxial) a short time before death.

A child, aged 12 years, was admitted with a history of anorexia, diarrhea, backache, irritability and paralysis of the left lower extremity. Careful examination revealed involvement of the left hip joint. Roentgenograms and tuberculin tests were negative. The child was transferred to an orthopedic hospital with a diagnosis of early epiphysitis or synovitis.

Another child, aged 15 months, was admitted with a history of irritability, vomiting, fever, weakness of the legs and pain in the right arm. There was swelling and bluish discoloration of the skin around the right elbow joint. The lower extremities were normal. The child was transferred to Bellevue Hospital, where pus was aspirated from the joint.

Poliomyelitis should have been readily excluded in each case. Limitation of passive motion, if it occurs at all, is minimal in poliomyelitis, and swelling does not occur.

A well developed girl, aged 16 years, was admitted with a history of convulsions and coma. The diagnosis at the time of admission was not clear and she was admitted for observation. The following day there was a complete right flaccid hemiplegia due apparently to a localized cerebral lesion. The patient lingered in semicomatose for two days and then died. A large cerebral hemorrhage was found at autopsy.

When a case of meningococcic meningitis is considered to be poliomyelitis it is a serious error in diagnosis. The longer the delay in administering specific serum to a patient with meningococcic meningitis the less favorable the prognosis. This is particularly true in infants who, unfortunately, present the most difficulties in diagnosis. The following cases are illustrative.

An infant, aged 15 months, was sent to us from another hospital with a history of fever of several days duration and of inability to stand on the right leg. The cell count in the spinal fluid was reported as 50. On admission the infant had

a temperature of 104 F, stiff back and slight fulness of the fontanel. The spinal fluid was under increased pressure, there was no sugar, a slight increase in globulin and 660 cells, most of which were polymorphonuclears. Gram-negative cocci were found on direct smear. The child recovered following appropriate treatment.

There should have been less doubt about the diagnosis in another child, aged 4½ years, even though there was a right facial paresis and absent patellar and achilles reflexes. The child was toxic, the temperature was 104 F, and bilateral Brudzinski and Babinski reflexes, stiff neck, and a petechial rash were present. The spinal fluid was under increased pressure and cloudy, with a marked increase in globulin and no sugar. Meningococci grew on culture. The child recovered.

Isolated paresis and absent deep reflexes may occur in cerebrospinal meningitis. The presence of a petechial rash and signs of meningitis in an acutely ill, toxic child should leave little doubt as to the proper diagnosis, even before the spinal fluid is examined.

A girl, aged 18 years, had fainted a week before and then was unable to move her arms and legs. Three days later she was able to move her left arm and leg. At the time of admission the temperature was normal and there were no signs of meningeal irritation. She could not stand because of severe pain in the muscles of the right leg. There was marked dermatographia. The grip of the left hand was weak. Movements of the right foot were sluggish. All deep reflexes were diminished. There was hyperesthesia over the entire right leg and an area of hypesthesia on the sole of the right foot. The spinal fluid was normal. A neurologic consultant stated that she had an emotional disturbance (stepfather difficulty and new position for three days). The diagnosis was hysteria.

An infant, aged 8 months, was admitted after an illness of two days, which started with fever, vomiting and paralysis of the left leg. At the time of admission the temperature was 100 F and the respiration rate 30. The infant did not move the left leg but all deep reflexes were active. The spinal fluid was normal. The blood count showed 16,000 leukocytes with 73 per cent polymorphonuclears. The following day the temperature rose to 103 F. A roentgenogram of the hip was negative. The spinal fluid twenty-four hours after admission showed 50 cells, mostly polymorphonuclears, increased globulin and decreased sugar. Blood culture was negative. The temperature continued to rise. Signs of meningeal irritation developed and the child died thirty-six hours after admission. Autopsy revealed a purulent arthritis of the hip and early meningitis.

A white girl, aged 18 years, was admitted with a history of pain in the lumbar region of the back and weakness and numbness of the left leg of two days duration. At the time of admission the temperature was 100 F. There was decreased muscle power in the entire left lower extremity and diminished sensation to touch. The knee jerk was hyperactive and the abdominal reflexes were diminished on the left side. A roentgenogram of the spine was negative. A blood count revealed 5,100,000 red cells, hemoglobin 75 per cent, white cells 10,350 with 76 per cent polymorphonuclears. Chemical examination of the spinal fluid gave negative results and there were 8 mononuclears per cubic millimeter. Dr. Burchell in neurologic consultation made a diagnosis of focal myelitis on the left side of the cord at the second lumbar segment. She gradually improved and was discharged after nine days.

A white youth, aged 20, had a boil on the cheek a week before admission. Three days later he had a fever and complained of pain in the lumbar region of the back. He was treated for lumbago. The day before admission paralysis of the legs developed. At the time of admission he was acutely ill, the neck and back were stiff and deep reflexes of the lower extremities as well as the abdominal and cremasteric reflexes were absent. Accurate sensory determinations could not be made but there was apparently no response to pain or touch in the lower extremities. The bladder was distended. The temperature was 103.2 F. Ten cubic centimeters of yellow

tinged fluid under slightly increased pressure was obtained by lumbar puncture. The sugar content was normal, the albumin and globulin were greatly increased and the cell count was 4 mononuclears. Culture of the fluid showed no growth. A blood count revealed red blood cells, 3,620,000, hemoglobin 75 per cent, white blood cells 21,800 with 84 per cent polymorphonuclears. He soon became stuporous. On the second day in the hospital his breathing became rapid and there were signs of pulmonary infiltration. A roentgenogram showed the vertebrae to be normal. Blood taken on the fourth day in the hospital yielded staphylococci on culture. The temperature remained between 104 F and 106 F. There was retention of urine and feces. The patient became worse and died five days after admission. The autopsy revealed multiple abscesses of the lungs and epidural abscesses about the cord.

COMMENT

As in other diseases the greatest difficulty in making a diagnosis in poliomyelitis is to make it early in its course. During the first stage the period of systemic invasion, the greatest problem is presented by mild infections of the upper respiratory tract and gastrointestinal upsets. These are encountered more frequently in private practice than in hospital practice, especially during an epidemic, when parents are apprehensive about any abnormal symptoms that their children may manifest. Infections of the upper respiratory tract and intestinal upsets occur at times when poliomyelitis is not prevalent, and it is well to remember that even during an epidemic not all minor illnesses are necessarily poliomyelitis.

Careful observers studying this problem have given conflicting opinions. Paul, Salinger and Trask⁹ give circumstantial evidence with some experimental support to the relation of characteristic minor illnesses to poliomyelitis. They consider characteristic minor illnesses those in which there is an acute febrile episode with sore throat, headache and vomiting, which lasts from twenty-four to thirty-six hours, as a rule leaving the patient feeling below par for several days. Three separate counties in which poliomyelitis occurred were closely observed for the occurrence of minor illnesses. In all three the ratio of cases of poliomyelitis to minor illnesses was approximately the same, namely 1:6. Among 450 children from families in which a case of poliomyelitis occurred the incidence of minor illnesses was about 24 per cent, whereas among 266 children from families free of poliomyelitis the incidence of minor illnesses was only about 7 per cent. Washings from the nasopharynx of twelve children with characteristic minor illnesses were tested for the presence of virus by intracerebral inoculation of monkeys. The presence of virus was demonstrated in two children from whom the washings were taken within forty-eight hours of the onset of their illness.

On the other hand, Kramer reports the following:

A recent survey in a small town in which five cases of poliomyelitis occurred revealed thirty-three cases of mild illness in children with such symptoms as headache, fever and vomiting without apparent cause. In proximity to frank cases these illnesses could have been abortive poliomyelitis. Tests for a neutralizing substance were made on these children several months after the illness and it was found that the number who were immune was no greater than in a group of children of the same age in the same town who had had no illness. A like number of children of the same ages from an adjacent town which had been free from poliomyelitis showed the same proportion of immunity. These results indicate that the children who were ill did not suffer from poliomyelitis or in any event that the infection did not confer immunity to the disease.

Studies of the immune reaction of two other groups of contacts showed that immunity results only when there has been intimate contact with the patient. Moreover, immunity may follow exposure to the virus without evidence of any disease.

Such conflicting opinions leave the clinician in a quandary. The only suggestions that we can give from our experience with the first stage of the disease are of a negative nature. We have not observed poliomyelitis begin with severe persistent diarrhea, purulent otitis media, follicular tonsillitis or diffuse tonsillitis with membrane formation, such as is seen in streptococcal infections.

When poliomyelitis progresses beyond the first stage, the infectious process localizes in the central nervous system and causes signs of meningeal irritation. There are many conditions in childhood unrelated to disease of the nervous system which may be associated with symptoms of meningeal irritation. A careful history and physical examination is of great importance. A stiff neck associated with an inflamed middle ear, pneumonia, severe pharyngitis, tonsillitis or persistent diarrhea is probably not due to poliomyelitis. Retropharyngeal abscess or myositis of the neck muscles may cause nuchal resistance. The diagnosis of the various types of meningitis can at times be made only by lumbar puncture. In patients with meningococcal meningitis it is of especial importance to make the correct diagnosis early. The spinal fluid during the second stage of poliomyelitis usually shows some abnormalities but it may be normal. Among several thousand lumbar punctures over a period of years we have occasionally encountered turbid fluid in poliomyelitis. One patient had 1,500 cells, but the majority have less than 300 cells. The polymorphonuclear percentage is occasionally high. The sugar content is usually normal, rarely low and never absent. In our laboratories no organisms have been found in cultures from the spinal fluid of patients with poliomyelitis. Spinal fluids from some cases of tuberculous meningitis and of syphilis of the central nervous system simulate those from poliomyelitis. Colloidal gold tests, serologic and bacteriologic examinations, and the Mantoux skin test will help clarify the situation. Other stigmas of congenital syphilis may be present. An additional helpful point is that the onset in tuberculosis or syphilis of the central nervous system is less acute than in poliomyelitis.

Further advance of the infectious process in poliomyelitis produces signs of paralysis or encephalitis. Paralysis may be simulated by abnormal conditions in the muscles, bones or joints. This occurred in eleven of our patients. Age is an important factor in making the diagnosis of poliomyelitis in the paralytic stage. Cerebral hemorrhage and arteriosclerosis are not uncommon in persons over 50 years of age, whereas poliomyelitis is rare in that period of life. One unusual case cited in the text was that of a cerebral hemorrhage in a girl, aged 16 years. In infants, scurvy and syphilitic pseudoparalysis may simulate poliomyelitis. In scurvy, muscle tenderness is greater, and the thigh, which is the part most frequently involved, is held in flexion. Hemorrhage into the gums or muscles and lowered resistance of the capillaries of the skin⁷ aid in the diagnosis. In syphilitic pseudoparalysis there may be swelling over the affected epiphysis and crepitus may be elicited. There is usually marked tenderness on

⁷ Dalldorf, Gilbert. A Sensitive Test for Subclinical Scurvy in Man. *Am. J. Dis. Child.* 46: 794 (Oct.) 1933.

passive motion. Examination for other stigmata of syphilis, as well as a history and a Wassermann reaction, is of obvious importance.

The cell count of the spinal fluid in poliomyelitis is usually increased if the paralysis is seen early. On a few occasions we have encountered a cell count within normal limits. When lumbar puncture is done after the paralysis has been present for some time, the spinal fluid is frequently normal. Usually the changes in the spinal fluid during the first days of paralysis are similar to those which occur during the period of meningeal irritation (second stage), already described.

Several patients with pneumonia were sent to the hospital with the diagnosis of respiratory failure due to poliomyelitis. The respiratory difficulty in pneumonia is expiratory, in poliomyelitis it is inspiratory. There is almost always paralysis of other muscles in addition to the respiratory muscles in patients with poliomyelitis. Cough does not occur in poliomyelitis except possibly from irritation of retropharyngeal saliva in those patients who cannot swallow. Physical signs are present when a patient has marked respiratory difficulty due to pneumonia. Only occasionally does pneumonia complicate the respiratory paralysis early in its course. Among forty-five patients treated in the respirators at the Willard Parker Hospital in 1931, one had signs of pneumonia two days after the respiratory difficulty began.⁸

SUMMARY

There were 1,123 patients admitted to the Willard Parker Hospital in 1931 with the diagnosis of poliomyelitis. Among these there were 113 who did not have poliomyelitis but in whom thirty-six other conditions were diagnosed after clinical study and laboratory investigation in the hospital. There were twenty-eight patients with ten different conditions who supposedly had poliomyelitis in the first stage, fifty patients with twenty different conditions simulating poliomyelitis in the second stage, and thirty-five patients with twenty-one different conditions simulating poliomyelitis in the third stage.

The majority of these patients should have had a correct diagnosis made by their personal physician, even though the diagnostic difficulties are greater in the home than in the hospital. The family physician sees many patients in the first stage of the disease, at a time when he is unable, with certainty to establish the diagnosis of poliomyelitis. However, in many instances it is possible to find some other condition to account for the patient's symptoms. There is a tendency, especially during epidemic periods, to make the diagnosis of poliomyelitis without obtaining a history and making a careful physical examination. As the disease progresses into the second or third stage there are more tangible symptoms on which to make a positive diagnosis of poliomyelitis. Parallel with the increase in the number of symptoms there is an increase in the number of conditions mistaken for poliomyelitis.

Nothing is more important than a careful history and physical examination. If, in addition, poliomyelitis is considered as occurring in three stages, the differential diagnosis will be simpler and the percentage of incorrect diagnoses will decrease. To this end, the experience and information from our series of hospitalized patients is presented.

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TREATMENT OF ACUTE PULMONARY ABSCESS

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This discussion will have to do with single (including multilocular) abscesses and does not include those due to tuberculosis, bronchiectasis and new growths. The subject has been frequently discussed in medical literature, but in my opinion the difference in treatment to be directed to the acute in contradistinction to the chronic process has not been sufficiently stressed. The importance of postural drainage in the treatment of the acute condition has received little more than casual mention.

Although the treatment of acute lung abscess is relatively simple, it is apparently unfamiliar to the very class of physicians who should be able to apply it early and to carry it to a successful conclusion in more than 50 per cent of the cases, i. e., the general practitioner. Many patients with chronic pulmonary abscess who are seen have never received any treatment during the acute stage other than rest in bed "cough medicine" and perhaps forced feeding of milk and eggs, following the procedure in vogue for pulmonary tuberculosis years ago.

GENERAL CONSIDERATIONS

In this paper, in order to emphasize the purely "medical" treatment bronchoscopy will be considered as surgical treatment, also, artificial pneumothorax, will be classed as surgical along with phrenicectomy, incision and drainage, thoracoplasty and lobectomy.

The treatment of all acute cases of pulmonary abscess is medical until it becomes evident that such treatment will not succeed. The period to be covered by the medical treatment varies from six to twelve weeks in the opinion of different writers, but in general it may be said that the time element alone is not the important factor. The location of the abscess and especially the development of a heavy, more or less rigid, cavity wall, which will not permit of the closure of the cavity through the natural elasticity of the pulmonary parenchyma, are better guides as to when surgical intervention may be indicated. On the other hand, continuous, perhaps rapid, extension of the area of suppurative pneumonia surrounding the abscess cavity, with concomitant enlargement of the cavity and possibly the appearance of other cavities in the contiguous pneumonia area, indicates the failure of medical treatment alone.

The general condition of the patient and his willingness to cooperate must also be given consideration in selecting the time for surgical intervention.

If continuous improvement takes place, as evidenced by gradual lowering of the temperature to normal, decrease in the amount and offensiveness of the sputum, decrease in the white blood count, improvement in the appetite and the general condition, less cough, with a cleaning up of the involved area as shown by roentgenograms and physical examination, the probabilities of healing by medical treatment alone are good. However, even if the improvement is not steady, medical treatment should be continued for a reasonable period if there is not a definitely downward trend. The site of the abscess cavity must also receive consideration.

⁸ Brahm, M B and Janarsky, Maurice. Treatment of Respiratory Failure in Acute Epidemic Poliomyelitis. *Am J Dis Child* 46: 703 (Oct) 1933.

From the Medical Service, Walter Reed General Hospital.
¹ Marietta, S U. Abscess of the Lung. *Am Rev Tuberc* 14: 10 (1924).

because, as Fischel² has noted, collapsibility increases with the distance from the pleura. A cavity that is some distance from the pleura can be collapsed, provided the walls are not already fibrosed and thickened too much, because it is surrounded on all sides by elastic pulmonary parenchyma. When the cavity is so near to the overlying pleura that the visceral and parietal layers have become adherent, elimination of the cavity by contraction becomes difficult and perhaps impossible.

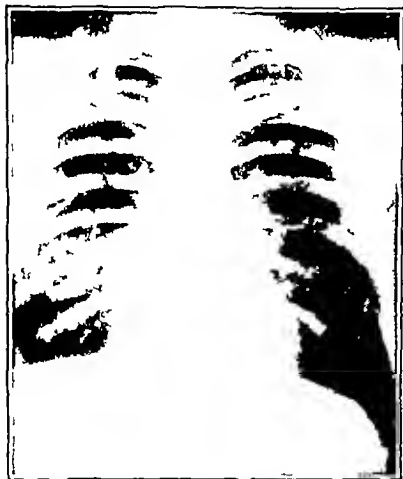


Fig 1—Single chronic abscess, right lower lobe. Thick fibrous rigid cavity wall and absence of contiguous pneumonitis. There was little or no cough and scanty expectoration. The temperature and white blood count were normal and there were few physical manifestations.

Such cases may be decided, while still in the acute stage, to be proper ones for incision and drainage (figs 2, 3 and 4).

In general avoidance of surgery if possible is indicated. With such surgical procedures as incision and drainage, or thoracoplasty, there is always a certain amount of deformity and with the former a variable amount of scar tissue, which may encourage the later development of bronchiectasis, also.

Cherry³ considers as further drawbacks the possibility of hemorrhage and failure to eradicate the abscess, as well as ankyloid changes in the important organs, which may occur with a protracted recovery. Unfortunately, a number of surgeons hold with Connors⁴ the view that few abscesses are cured by medical means, even with the assistance of the bronchoscope. This attitude on the part of surgical consultants is productive of unnecessary surgical procedures with results inferior in many cases to those which should be obtained by proper medical treatment. It is doubtful even whether the course of the disease is shortened greatly by surgical procedure, as a considerable period of convalescence is necessary following either medical or surgical treatment to prevent recurrence of the abscess.

ETIOLOGIC FACTORS

The etiologic factors in pulmonary abscess have directly to do at times with the form of treatment to be undertaken. Smith⁵ states that 90 per cent of the cases of pulmonary abscess in adults are caused by the fusospirochetal organisms (fusiform bacilli, spirochetes, vibrios and cocci) which are commonly found in pyorrhea and Vincent's angina. He says that laboratory studies support clinical observation to the effect that the diseased mouth is a source of infection. Early treatment with arsenical preparations will, he finds, control this type of lesion, often in the initial stage of pneumonitis. That aspiration from a foul mouth may be a prolific cause of lung abscess seems plausible, but I

do not believe that this type of organism is generally found in so high a proportion of cases. I always have the sputum of patients examined for spirochetes but have found only a small proportion positive. The sputum, however, was collected in a sterile petri dish and was that produced from the lung after coughing, the mouth having been thoroughly washed out previously.

Harrington,⁶ Clerf⁷ and Frank⁸ mention as important etiologic factors streptococcal bronchopneumonia (rarely pneumococcal pneumonia), aspiration of a foreign body or of septic material from operative procedures on the upper respiratory tract, and septic emboli following any operative procedure. Frank's discussion of the question as to whether postoperative lung abscess results from embolism due to the dislodgment of an infected thrombus from vessels in the operative area rather than from aspiration of infected material indicates that writers in general favor aspiration instead of embolism, four to one.

SYMPTOMS

The symptoms of pulmonary abscess are not diagnostic early. The generally acute onset, the largely unproductive cough, perhaps dyspnea, elevation of temperature, pain in the chest if there is pleural involvement, sweating, chills or chilly sensations and polymorphonuclear leukocytosis might be due to any one of several pathologic processes, such as lobar or lobular pneumonia, or pneumonitis around an old bronchiectatic area. The onset may be more gradual with general malaise, moderate fever, unproductive cough and a gradually increasing leukocyte count. The physical signs at this stage are not diagnostic and roentgenograms, though they show the location of the pathologic changes, contain nothing distinctive or characteristic of abscess. The characteristic sign of a fully developed abscess is the sudden expectoration of a large amount of more or less offensive pus. Later the sputum is offensive, largely in proportion to the amount of gangrene, which in turn depends on the type of infection present. The separation of the sputum in three layers, mentioned in many textbooks as distinctive of bronchiectasis, is of little or no value. The amount of expectoration, except at the time of rupture of the abscess into a bronchus, is not a positive indication of the size of the abscess or of the degree of drainage. Fever is present in the acute abscess but often absent in the old chronic case.



Fig 2—Single acute abscess of the left upper lobe, large and very superficial with visceral and parietal pleural layers adherent causing fixation of large area of cavity wall.

2 Fischel, Karl. The Surgical Treatment of Tuberculous Cavities. *Am Rev Tuberc* 28: 411-428 (Oct.) 1933.

3 Cherry, H. H. The Rest Treatment of Nontuberculous Pulmonary Abscess. *Am Rev Tuberc* 25: 634-639 (May) 1932.

4 Connors, J. F. The Treatment of Lung Abscess and Empyema by Packing. *Ann Surg* 94: 38-54 (July) 1931.

5 Smith, D. T. Diagnosis and Medical Treatment of Incipient Pulmonary Abscess. *South M & S J* 94: 149-151 (March) 1932.

6 Harrington, S. W. The Surgical Treatment of Bronchiectasis and Lung Abscess. *Am Rev Tuberc* 24: 612-625 (Dec.) 1931.

7 Clerf, L. H. The Bronchoscopic Treatment of Bronchiectasis and Lung Abscess. *Am Rev Tuberc* 24: 605-611 (Dec.) 1931.

8 Frank, L. W. Pulmonary Abscess. *Ann Surg* 95: 675-682 (May) 1932.

with good drainage however, the height and persistence of the temperature is in direct relation to the freedom of the drainage. Chills and sweats are more common when gangrene is present.

DIAGNOSIS

The diagnosis is one of elimination. A history of any of the etiologic factors mentioned is of great importance. Physical examinations and roentgenograms are of great



Fig 3—Same case as in figure 2 eleven days later. Cavity enlarging rapidly in spite of good drainage by posture.

The injection of iodized poppy-seed oil for the localization of the abscess cavity may at times be necessary, but I have found it so only exceptionally. The use of the bronchoscope as a means of diagnosis is a matter of opinion. Such formerly recommended procedures as exploratory chest punctures need be mentioned only to be condemned.

The differential diagnosis must take into consideration bronchiectasis, gangrene, encysted empyema, pulmonary tuberculosis and pneumonia.

PROGNOSIS

The prognosis of pulmonary abscess depends on its etiology, its location, the length of time the patient can afford to give to treatment, the period during which he can give proper care to himself after treatment is completed, and the general condition of the patient and the occurrence and type of complications. At times postural drainage or bronchoscopy or both have to be discontinued because of hemoptysis.

Harrington⁶ believes that more than 50 per cent of cases respond to conservative measures. Clerf⁷ reports fifty-eight cases, twenty-four of which were treated by bronchoscopy, of the twenty-four patients 79 per cent were discharged as well. Miller⁸ quotes Lord as estimating the mortality of medically treated abscesses as 75 per cent, but he himself agrees with Glowacki that 50 per cent of the patients will recover under rest, posture and bronchoscopy. Tewksbury reported a 60 per cent mortality and Greer 30 per cent in cases in which only medical treatment was given. Whitmore has considered from 10 to 30 per cent of cases curable by expectant treatment if it is instituted early. It has been stated that the percentage of recovery under medical treatment is greater in upper lobe cases. None of the

writers mentioned have made any mention as to whether their cases were of the acute or the chronic variety.

The mortality rate given by different authors, therefore, varies widely for medically treated cases. This would indicate that the method of carrying out the treatment must be at somewhat equal variance, although the number of cases reported, as well as their individual differences, would account for some of the discrepancy. However, as the best treatment consistently applied should approximate the best results, the treatment in some instances would seem to have been substandard.

ACUTE VERSUS CHRONIC ABSCESS

Before treatment is considered in detail it is advisable to specify what is meant by acute and by chronic lung abscess. Acute abscess may be defined as an area of destructive pneumonitis or necrosis without definite walling off or fibrosed limitation and surrounded by a more or less extensive acute pneumonitis, these being the sequelae of any of the etiologic factors mentioned previously, the process not being due to tuberculosis, new growth and, for the purpose of this discussion, bronchiectasis.

There has always been a clinical differentiation between those areas of pneumonitis which may or may not be the precursors of a lung abscess and the actually developed abscesses in which there is breaking down of lung tissue within an area of preexisting pneumonitis. This may not be of any special significance, however, it is evident that the results in the treatment of a pneumonitis, which goes on to resolution without breaking down, and actual formation of an abscess will yield a considerably higher percentage of cures or recoveries than the latter. When an abscess wall develops and the surrounding pathologic process assumes a stationary and dense appearance on the roentgenogram, indicating the presence of considerable fibrosis, and the patient's symptoms subside, the chronic stage has been reached (fig 1).³

TREATMENT OF ABSCESS

In chronic abscess medical treatment is of use for only a relatively short period to improve the general condition of the patient before proceeding

to the selected surgical procedure. In other words the elimination of a chronic lung abscess by medical treatment alone is not to be expected as the inelastic fibrous wall present in this condition will not permit closure of the cavity, although it may be kept empty by postural drainage and the general condition of the patient may be improved thereby. Medical treatment for a period before surgery will often clear up an area of suppurative pneumonitis contiguous to the cavity, thereby tending to lower postoperative mortality. Medical



Fig 4—Appearance eighteen days after figure 3. Injection and drainage with packing with excellent result.

⁶ Miller, John. A Review of One Hundred Cases of Abscess of the Lung. *Ann. Otol. Rhin. & Laryng.* 40: 1195-1211 (Dec) 1931.

treatment postoperatively, especially following such procedures as artificial pneumothorax, phrenicectomy or thoracoplasty will often expedite and render more probable a satisfactory result.

The medical treatment of an acute abscess has been mentioned in more or less detail by various writers.¹⁰ At the first suspicion of an abscess the patient should be placed at rest in bed and should remain there until the temperature has been normal for one month. During the early stage, i. e. prior to the rupture of the abscess into a bronchus, treatment should be that of an acute respiratory infection and be expectant through the more or less long drawn out period which the patient will pass through subsequent to rupture of the abscess. Free fluid intake should be insisted on, he should be given a high calory and high vitamin diet, and proper elimination should be provided. He should not be allowed to lose an undue amount of rest at night because of a harassing cough. There is very little expectoration prior to rupture and sedatives should be used cautiously as it is not desirable to destroy the cough reflex.

In all but a small number of cases the abscess will rupture into a bronchus in from a few days to two weeks, and drainage is established. In a case in which rupture does not take place and destruction of lung tissue is progressive, some surgical procedure will be indicated. As soon as the abscess ruptures there will be a considerable amount of foul pus coughed up. As soon as possible a smear and culture should be made of the sputum to determine the types of the prevalent organisms, and especially the presence of spirochetes, and postural drainage should be started at once. If spirochetes are present, two or three small doses (0.3 Gm.) of arsphenamine should be given.

By postural drainage is meant the mechanical emptying of the abscess area as far as possible by placing the patient in such positions as will best bring this about. In lung abscess as in any localized suppurative process the primary desideratum is drainage, and the progress toward improvement, recovery or cure will depend on the degree of drainage. The frequency with which the postural drainage is done and the length of time spent on each drainage will depend on such factors as the size of the bronchus draining the abscess area, the viscosity of the sputum, the tendency toward hemorrhage and the general condition of the patient. The drainage itself is performed by first placing the patient for five or ten minutes on the healthy side, this is to permit the purulent material to drain down into the larger bronchi so that the next step, the inversion of the patient will be more productive of further drainage. If the abscess is in an upper lobe, it is well to have the patient sit erect for five or ten minutes before taking the position of lying on the healthy side. The inversion of the patient is best performed by having the patient lie across the bed, face down, with the groins at the edge of the bed so that as the body is bent at the hips the head is at or near the floor, with the body vertical. The weight may be partially supported by the hands at the sides of the head, and further assistance

is given by having an attendant hold the thighs as they lie across the bed. A pus basin is placed on the floor by the head for the collection of the sputum. The inverted position should be held for at least three to five minutes, and if the drainage is slow or is better promoted by a longer period it should last for ten minutes. Most patients do not find this too difficult after they become somewhat accustomed to it. Ordinarily this procedure of drainage, including the lying on the healthy side and the inversion, should be done four times in the twenty-four hours, one half hour before each meal and at bedtime. However, if the abscess area is not clearing up satisfactorily, the drainage can be done more frequently. When progress is slow it is perhaps better to drain more frequently and for shorter periods, say at two and one half hour intervals six times a day. It is to be borne in mind that the patient and not the disease is the first consideration as to the frequency and duration of postural drainage. Further, it is not to be expected that the purulent sputum will all drain out of the patient during the period in which he is inverted as if he were a bottle. The purulent material, however, will be carried down into the bronchi by the drainage, so that the cough reflex later will bring about its removal, and it is in the period following the drainage that the patient raises most of the sputum, hence the necessity for not giving sedatives to the extent of destroying the cough reflex in the treatment of lung abscess.

The Jacksons¹⁰ emphasize the importance of the 'tussive squeeze' in natural peroral drainage and emphasize the deleterious action of codeine on a patient trying to cough up pus. They state that the cough reflex is the "watch dog of the lungs" and that the indiscriminate giving of sedatives to lessen the cough reflex is logically unsound and clinically pernicious, opium derivatives being especially bad in that they not only check the cough but thicken the pus by checking the normal secretions that should thin it, this is of great importance, because the tendency too often is to give opiates of some variety to "keep down the cough."

Failure in the postural method of treatment generally occurs as the result of the patient not being placed in the position best calculated to assist drainage and not using it frequently enough or for long enough periods. This drainage is not a matter that can be left to the patient, it must be supervised and the patient encouraged in its use.

Several appliances, especially various tables of the swivel type, have been advocated for use in bringing about this drainage. None of them, in my opinion, have any advantage over the use of the patient's bed except the financial advantage derived by the manufacturer. Most of them do not permit placing the patient in the completely inverted position, which is desirable as the terminal part of the procedure. Furthermore, they require the patient to be moved to them, sometimes for a considerable distance, and make an annoying and time-consuming matter out of what should be a perfectly simple procedure.

When the sputum is viscid and difficulty is experienced in getting drainage, the judicious administration of expectorant cough mixtures such as potassium iodide or ammonium chloride will be of assistance. Bronchocopy is particularly indicated if drainage is still obstructed by thick inspissated secretion, granulation tissue inflammatory exudate or massive necrotic tissue blocking the draining bronchus. Clerf¹¹ feels that

10. Marietta¹, Smith², Harrington³, Clerf⁴, Yates J. L., Pulmonary Abscess. Arch. Surg. 25: 257-272 (Aug.) 1932. Pinchin A. J. S. and Morlock H. V. The Treatment of Pulmonary Suppuration. Practitioner 127: 335-348 (Sept.) 1931. Young R. A. The Diagnosis and Treatment of Abscess of the Lung. Clin. J. 61: 409-412 (Aug. 31) 1932. Bailey R. B. Nontuberculous Lung Infection. West Virginia M. J. 12: 552-559 (Dec.) 1931. Jump H. D. and Baumann Frieda. Treatment of Lung Abscess. M. Clin. North America 15: 297-308 (Sept.) 1931. Jackson Chevalier and Jackson C. L. Peroral Pulmonary Drainage. Natural and Therapeutic with Especial Reference to the Tussive Squeeze. Am. J. M. Sc. 186: 849-854 (Dec.) 1933.

bronchoscopy shortens the course of the disease in those patients who would have gotten well without it

* For short periods when the sputum is foul and offensive to the patient I have used small doses of creosote with benefit. Frequent cleansing of the mouth with pungent mouth washes also is comforting to the patient.

Postural drainage must be persisted in, even if at times there seems to be little in the way of results at the time of drainage, and, even after the abscess area

has largely cleared up as shown by physical and roentgen examinations, drainage should be continued in order to prevent the accumulation of secretions and a recurrence of the abscess. I keep patients in bed for one month after the temperature is normal and take another month in getting them up, with another month of convalescence, during all of which postural drainage is continued, although not as strenuously as during the acute stage.



Fig 5—Single acute abscess right upper lobe. (In this woman the breasts hanging low give a false impression of a pneumonitis at each base.) At the time this plate was taken she had been under treatment for two months but had not had postural drainage.

It has seemed to me that the *sine qua non* in treatment is drainage. Emetine (Pinchin and Morlock¹⁰) has been recommended but I have used it only in one case in which the abscess was the result of extension from an amebic abscess of the liver. The statement has been made (Young¹⁰) that the percentage of recovery is greater in cases of upper lobe abscess. This is possibly true, but postural drainage is still required, as evidenced by a case shown in figures 5 and 6. The treatment of the foreign body abscess is, of course, bronchoscopic, with removal of the foreign body, following which postural drainage will generally clear up the abscess without difficulty. Although I have classified artificial pneumothorax here as a surgical procedure in order to define more sharply the results that may be obtained by medical treatment alone, I have always carried out artificial pneumothorax in the medical service. Artificial pneumothorax is indicated only in centrally located abscesses when there are no pleural adhesions and the abscesses are favorably situated for drainage through a bronchus. Only a small percentage of cases are suitable for this procedure which is contraindicated in the peripheral abscess because of adhesions which prevent collapse or, by pulling on the abscess wall, cause tearing with rupture of the abscess into the pleural cavity and resulting empyema, a most serious and frequently fatal complication. Jump and Baumann¹⁰ feel that artificial pneumothorax is actually contraindicated, as drainage and not rest and collapse of the lung is desired.

Fischel² feels that pneumothorax generally results in useless collapse because the compression affects the healthy portions of the lung, the cavities remaining patent. This would hardly apply as an objection in the

case of acute abscess in which there is no resistant cavity wall.

Removal of marked foci of infection about the mouth, such as pus pockets about the teeth or draining alveolar abscesses, as well as the cleaning of insanitary teeth, is a part of the treatment as well as a prophylaxis of lung abscess and should be attended to as soon as the patient is seen, unless his physical condition is such as definitely to contraindicate it.

Vaccines, stock or autogenous, are of no benefit in the treatment of acute cases and probably have little promise in chronic cases.

REPORT OF FIFTY CASES

The opinions expressed on the treatment of acute pulmonary abscess are emphasized by the experience gained in a series of fifty consecutive cases seen by me in the past ten years. During this period the acute cases have approximated 50 per cent of the abscess cases seen, perhaps a little less but no complete records were kept of the chronic cases. Only completed cases are considered, those remaining in the hospital not being included.

The ages of the patients varied from 19 to 61 years.

The location of the abscesses was as follows: right upper lobe, thirteen (26 per cent), right lower lobe, fifteen (30 per cent), right middle lobe, two (4 per cent), left upper lobe, six (12 per cent), left lower lobe, fourteen (28 per cent). Forty-six of the cases, or 92 per cent, were single abscesses and four, or 8 per cent, were multilocular.

The etiologic factors were: pneumonia (based on the history with the type undetermined) seventeen (34 per cent) (only two of these cases occurred following pneumonia in my own wards), following extraction of teeth (local anesthetic), two (4 per cent), following tonsillectomy (local anesthetic), one (2 per cent), extension of amebic liver abscess, one, following operation on the mandible, one, following grip, one, chest trauma and aspiration of fluid (automobile accident in which the car turned over and the patient was held under water for a few moments) one, peritonsillar abscess with rupture and aspiration of purulent material one, foreign body (dental bridge—two tooth) one, undetermined (but many with foul dental conditions) twenty-four (48 per cent).

The types of organism found were as follows: streptococci seven (14 per cent), pneumococci six (12 per cent), mixed streptococci and staphylococci twenty (40 per cent), undetermined seventeen (34 per cent).

Surgical treatment was required in the following cases: bronchoscopy (one in aspirated dental bridge) three (6 per cent), artificial pneumothorax, six (12



Fig 6—Same case as in figure 5. Appeared fifteen days after the beginning of postural drainage. This illustrates the necessity for postural drainage even in upper lobe abscesses and shows its efficacy.

per cent), phrenicectomy (one case crushing only), two (4 per cent), incision and drainage, six (12 per cent), thoracoplasty, two (4 per cent)

The complications noted were purulent pericarditis, one (2 per cent), spontaneous pneumothorax (following artificial pneumothorax), one, empyema with bronchopulmonary fistula, one, closed empyema, two (4 per cent), brain abscess, one, aspiration bronchopneumonia, one

The sequelae were bronchiectasis, four (8 per cent). The results of treatment were cured, twenty-eight (56 per cent), improved, eleven (22 per cent), died, ten (20 per cent), unimproved, one (2 per cent)

In this connection, attention is invited to a preceding paragraph giving the various results of treatment by other writers

Detailed results of treatment other than medical are given in table 1. Some of these patients had more than one surgical procedure. Table 1 embraces five fatal cases.

By "cured" is meant those patients with no remaining clinical or gross roentgen evidence of pulmonary pathologic changes. By "improved" is meant those patients leaving the hospital against advice before their conditions were entirely cleared up clinically or roentgenographically (a small proportion) and those who, remaining in the hospital to complete the period of treatment, had recovered clinically but whose roentgenograms showed some residual pathologic condition in the nature of fibrosis or bronchiectasis. Generally, these cases may be considered as having obtained a satisfactory result with much less scarring and loss of function of the pulmonary tissue than would result from incision and drainage.

The number of cases completed by medical treatment alone was thirty-four, or 68 per cent of the total number. Of these patients, twenty, or 40 per cent, were cured and nine, or 18 per cent, were improved. Five, or 10 per cent, died, two of them having refused surgery. Of the multilocular cases, one was cured and three were improved. Of these three patients, two left the hospital against medical advice, markedly improved and might well have gone on to a cure.

The causes of death in the ten cases are given in table 2. It would seem that the third fatal case, which occurred three days after admission, should hardly be charged against the hospital mortality.

TABLE 1—Results of Treatment Other Than Medical

	Cured	Improved	Unimproved	Died
Incision and drainage	3	0	0	3
Artificial pneumothorax	0	2	1	3
Bronchoscopy	2	0	0	1
Thoracoplasty	1	0	0	1
Phrenicectomy	2	0	0	0

Eight cases required adjunct measures to medical treatment to bring about cure and two cases to bring about improvement.

This gives a 20 per cent mortality or, deducting the case in which death occurred three days after admission, 18 per cent mortality. Of these, five patients died following surgical procedures (possibly initiated too late) which were necessary because of failure of medical treatment.

COMMENT

The treatment given in the cases cited was evidently not always the best advised. However, it is apparent that medical treatment, with no recourse to adjunct

treatment, furnishes a method that can be satisfactorily used by the general practitioner at little expense to the patient and in his home. If surgical procedures are indicated later, the patient should not be too ill to be moved to a hospital if decision is made at the proper time.

The results of treatment in this series should have been better, but considering the more or less changing personnel, not always alive to the importance of detail

TABLE 2—Causes of Death in Ten Cases

Condition	No. of Cases
Empyema following medical treatment, followed by incision and drainage of empyema and of the pulmonary abscess	1
Spontaneous pneumothorax following artificial pneumothorax followed by pyopneumothorax, incision and drainage	1
Suppurative pericarditis and nephritis following medical treatment (died 3 days after admission to hospital)	1
Suppurative pneumonia with extension and secondary multiple cavitation following general medical treatment	2
Multiple metastatic brain abscess following medical treatment	1
Medical treatment followed by an ill advised artificial pneumothorax, empyema, aspiration, closed drainage, open drainage, thoracoplasty, pneumotomy and septicemia	1
Artificial pneumothorax also ill advised with blocking of drainage and extension of the suppurative pneumonia	1
Artificial pneumothorax which was unsuccessful on account of adhesions, bronchoscopy, septic bronchopneumonia with refusal of surgery when advisable	1
Following failure of medical treatment, surgery refused with empyema, bronchopulmonary fistula and septicemia	1

in treatment, and an occasional uncooperative patient they seem fairly satisfactory.

There should have been more caution employed in the use of artificial pneumothorax and more use made of bronchoscopic drainage. Some of the cases that were sent on to operation might have cleared up without it with a greater use of the bronchoscope. It is perhaps best not to speak of "cure" in abscess cases, especially when the case is not followed long enough to determine whether a recurrence may take place, but it seems necessary to use some term more forceful than "improved" to describe certain cases.

Pneumonia is cited by some writers as an infrequent precursor of abscess, but my experience, following careful questioning of patients coming into the hospital with a developed abscess, would indicate that probably a pneumonic process of some nature had been present in approximately one third of the cases.

CONCLUSIONS

1. More than 50 per cent of acute pulmonary abscess cases can be brought to a satisfactory conclusion by medical treatment alone.
2. The essential feature of medical treatment is "postural drainage."
3. The treatment is so simple that it can be carried out at the patient's home by the general practitioner so long as adjunct measures are not required.
4. Bronchoscopic drainage is an important adjunct to the medical treatment of acute lung abscess.
5. The recognition of the limitations of medical treatment and the decision as to when surgery is advisable are important and responsible requirements.
6. An appreciation of the difference between acute and chronic lung abscess is necessary in order to outline and carry out treatment properly.

PSEUDOXANTHOMA ELASTICUM

ASSOCIATED WITH ANGIOID STREAKS OF THE RETINA
AND DIABETES MELLITUS IN SISTERS

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Pseudoxanthoma elasticum is about as rare a condition as angioid streaks of the retina, and when the two were reported as occurring in the same patients, renewed interest was awakened among dermatologists and ophthalmologists

Pseudoxanthoma elasticum must be differentiated from the various forms of xanthoma. The latter, while present elsewhere, invading the natural creases of the skin of the neck as does pseudoxanthoma elasticum, occurs on the face, upper eyelids, palms, soles and elbows, assuming a tuberculous and striated form. Pseudoxanthoma elasticum does not invade these sites.

Microscopically, there is an absence of fatty degeneration and xanthoma cells in pseudoxanthoma elasticum. While xanthomatous tumors have been reported by McGavack and Shephardson¹ as occurring in the presence of normal and even of low blood cholesterol values, hypercholesterolemia is present in an overwhelming majority of cases. The blood cholesterol has not been reported as being frequently elevated in pseudoxanthoma elasticum. Disseminated xanthomatosis, exclusive of xanthoma palpebrarum, is a rare disease. It occurs as a complication, usually with diabetes mellitus, but may occur independently.¹ Xanthoma diabeticorum is also rare. According to the reports of Major² and of McGavack and Shephardson,¹ up to 1933 the total number of known cases of diabetic xanthomas was ninety-seven. Diabetes mellitus, while it occurred in the two cases described here, has not been reported as occurring with pseudoxanthoma elasticum sufficiently often to be of any significance.

One point of similarity is that diabetes mellitus and the various forms of xanthomas are known to have a definite hereditary history and, from the reports of pseudoxanthoma elasticum, there seems to be a tendency of it to occur in other members of the same family.

To Darier³ is given the credit of first describing in 1896 pseudoxanthoma elasticum as a separate clinical entity.

Rigal⁴ in 1881 and Balzer⁵ in 1884 described this rare skin disorder but considered it a variant of xanthoma in which there was a degeneration of the elastic tissues. The circumscribed patches of small yellowish tumors and cream colored linear markings bore a strong resemblance to xanthoma. Accompanying this was the marked relaxation of the skin, hence the name pseudoxanthoma elasticum, which dermatologists consider

today to be a misnomer. Darier⁶ employed the term "elastorrhæxis of the skin," which is now believed to be much more descriptive of the disease.

One of the most outstanding characteristics of pseudoxanthoma elasticum is the loose, relaxed and wrinkled appearance of the skin of the neck and axillae. In addition are observed multiple cream colored, subepidermal nodules varying in size from a pinhead to a large pea. Many of these are discrete, but the smaller ones appear to have coalesced, producing whitish and yellowish striae of varying widths and lengths. On the neck, these striae are much longer and wider and invade the natural creases of the skin. The eruptions have been observed in the mucous membranes of the mouth and nose in two instances, and also on the back and extremities occasionally. The face, scalp, palms and soles have never been reported as being involved.

Another type of lesion of pseudoxanthoma elasticum is the irregularly shaped blotch of varying size described as occurring on the skin of the chest, shoulders and arms. These plaque-like areas present a reticulated, yellowish, mottled appearance. On first inspection these blotches appear to be elevated, but when the skin is



Fig 1 (case 1)—Puckering of skin in the axillae in a case of pseudoxanthoma elasticum of thirty years duration

stretched it is found to be smooth, and the areas are really subepidermal. The skin in these areas shows some loss of elasticity, but to a much less extent than the skin of the axillae and neck. There is atrophy of the skin in all these areas.

As the disease progresses, in some cases whitish scar-like markings appear in the abdominal skin which have a striking similarity in appearance to lineae albicantes following pregnancy. From this it can be seen that the lesions are of many types and may appear in widely different areas.

Pathologically, the elastic fibers in the deep portions of the skin appear to undergo an extensive degeneration. The elastic tissues are curled and broken, and they stain darkly.

Macleod states that, microscopically, sections show that the nodule is due to the presence of a mass of swollen and fragmented elastic tissue fibers situated in the reticular part of the corium, which gives the staining reaction, either of healthy elastin or of its degenerated product, elacin. Giant cells though not always present have been observed in which the nuclei were not

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¹ McGavack T H and Shephardson H C Xanthoma Accompanied by Hypercholesterolemia Occurring in an Otherwise Normal Individual and in an Individual with Acromegaly and Diabetes. Ann Int Med 7 582 601 (Nov) 1933

² Major R H Xanthoma Diabeticorum Bull Johns Hopkins Hosp 35 27 32 (Jan) 1924 M Clin North America 7 1059 1064 (Jan) 1924

³ Darier Jean Pseudoxanthoma Elasticum Monatschr f prakt Dermat 23 609 1896

⁴ Rigal D Observation pour servir à l'histoire de la chéloïde diffuse xanthelasmaque Ann de dermat et syph 2 491 1881

⁵ Balzer Felix Recherches sur les caracteres anatomiques du xanthelasma Arch de physiol 4 65 1884

⁶ Darier Jean Pseudoma Flastique Tr Third Internat Cong Dermat London 1896 p 269

arranged in a ring or horseshoe fashion, as the giant cells of tuberculosis, but formed a cluster within a mass of faintly stained protoplasm. The sweat, sebaceous and hair glands are normal.

Until recently, this degeneration of elastic tissue was considered characteristic of pseudoxanthoma elasticum, but Kissmeyer and With⁷ and Weidman⁸ in their studies of senile skin, old scars and lineae albicantes observed similar elastic tissue degeneration. Weidman, after further study of senile skin, concluded⁹ that pseudoxanthoma elasticum was almost identical with some specimens of senile elastosis. Montgomery¹⁰ was of the opinion that, by using Unna's differential stains the typical case of pseudoxanthoma elasticum could be



Fig. 2 (case 2)—Front view of neck in case of pseudoxanthoma elasticum showing relaxation and folding of the skin with parallel striae.

readily distinguished from senile changes in the skin. Jones, Alden and Bishop,¹¹ in their report, stated that histologically the two conditions could not be differentiated. Because of this close relationship, these observers were of the opinion that pseudoxanthoma elasticum was an evidence of presenility. From these observations it seems apparent that elastic tissue degeneration is not confined entirely to pseudoxanthoma elasticum.

Angioid streaks of the retina were first described by Pflege¹² in 1892. The same year, Knapp¹³ introduced the term "angioid" in describing streaks of the retina which he observed. Doyme¹⁴ in 1889, however, had reported his observations in a case quite similar to this condition, and for this reason his name will always be associated with the early discovery of angioid streaks. On ophthalmoscopic examination, a reddish brown band is noted around the border of the optic disks, from which radiate vessel-like streaks, some of which are curled or corkscrew shaped. These are found in the subretinal area. As the disease is a progressive one there is a constant change in the ocular picture, the color of the streaks varying from time to time from a pale red to red, brown and black. May¹⁵ describes the angioid streaks as "dark brown, pigmented striae, resembling obliterated blood vessels, and probably the sequelae of hemorrhages." Sooner or later there is a disturbance in vision. No complete pathologic examination has been made of the angioid streaks, and the etiology is unknown, although many conflicting theories have been offered.

Since the first report of pseudoxanthoma elasticum by Darier in 1896 and the description of angioid streaks of the retina by Pflege in 1892, very little additional information had been added to the knowledge of the nature of these rare diseases until 1929. In that year Gronblad¹⁶ and Strandberg¹⁷ were the first to report angioid streaks of the retina, occurring in three patients who also had pseudoxanthoma elasticum. Gronblad¹⁸ in 1932 reviewed all the reports of combined pseudoxanthoma elasticum and angioid streaks and was of the opinion that a new disease syndrome had been established in which the elastic tissues underwent degeneration. This degeneration, while it was usually confined to the skin and mucous membranes, was also found to affect the elastic tissues of the eyes and circulatory system. Lewis and Clayton¹⁹ in 1933, in an excellent review of this subject, reported, including their own case, seventeen cases in which both pseudoxanthoma elasticum and angioid streaks were demonstrated in the same patients. These investigators endorsed the opinion expressed by Gronblad and suggested that the term "elastosis atrophicans" be used to designate the syndrome of these combined diseases. They had no explanation of the etiology other than that of a hereditary predisposition. These observers reported improvement of the affected skin of the neck by treatment with roentgen rays but were unable to get a biopsy afterward. Jones, Alden and Bishop¹¹ in their report did not find the association of angioid streaks and pseudoxanthoma elasticum to be the invariable rule, as they found that either one or the other might occur independently. This was further confirmed by Gronblad,²⁰ Perkins²¹ and other observers. In our opinion, a sufficient number of cases have not been studied to justify fully the estab-

7 Kissmeyer A. and With C. Histological Studies of the Pathological Changes in the Elastic Tissue of the Skin. *Brit. J. Dermat.* 34: 175 (June) 1922.
8 Weidman F. D. Pathology of the Yellowing Dermatoses. *Arch. Dermat. & Syph.* 24: 954 (Dec.) 1931.
9 Weidman F. D. Pathology of the Yellowing Dermatoses. *Arch. Dermat. & Syph.* 24: 954 (Dec.) 1931.
10 Montgomery Hamilton in discussion on Jones, Alden and Bishop.¹¹ p. 438.
11 Jones J. W., Alden H. S. and Bishop E. L. Pseudoxanthoma Elasticum. *Arch. Dermat. & Syph.* 27: 424 (March) 1933.

12 Pflege O. Pigment Striae with Secondary Changes in the Retina After Hemorrhage. *Arch. Ophth.* 21: 282 1892.
13 Knapp Hermann. On the Formation of Dark Angioid Streaks as an Unusual Metamorphosis of Retinal Hemorrhage. *Arch. Ophth.* 27: 289 1892.
14 Doyme R. W. Choroidal and Retinal Changes the Result of Blows on the Eyes. *Tr. Ophth. Soc. U. Kingdom* 9: 128 1889.
15 May C. H. *Manual of the Diseases of the Eye*. ed. 9. New York: William Wood & Co. 1917.
16 Gronblad Ester. Angioid Streaks—Pseudoxanthoma Elasticum. *Acta ophth.* 7: 329 1929.
17 Strandberg J. Verhandl. d. dermat. Gesellsch. 13: 3 1929.
18 Gronblad Ester. Angioid Streaks—Pseudoxanthoma Elasticum. *Acta ophth. (suppl.)* 10: 1 1932.
19 Lewis G. M. and Clayton M. B. Pseudoxanthoma Elasticum and Angioid Streaks. *Arch. Dermat. & Syph.* 28: 546 556 (Oct.) 1933.
20 Gronblad Ester. Personal communication to Jones, Alden and Bishop.¹¹
21 Perkins O. P. Personal communication to the authors.

lishment of a new disease syndrome or to throw any light on the etiology. None of these cases have ever been noted to assume any malignant characteristics.

To the seventeen cases already reported of pseudoxanthoma elasticum associated with angioid streaks of the retina in the same patients, we add our two cases occurring in sisters, who also have diabetes mellitus.

REPORT OF CASES

CASE 1—History—Mrs A C, an Italian housewife, aged 41, seen at the diabetic clinic in 1930, first noted blurred vision in her left eye about three months before, which grew gradually worse. On examination at the New York Eye and Ear Infirmary she was found to have diabetes mellitus and was referred to our clinic. There was nothing of importance in the past history except the failure of vision in her left eye and the skin disorder of the neck and axillae, which had been present for twenty years. Although it had given her no symptoms, the involvement of the skin had gradually grown more extensive. During this time she had visited many hospitals and physicians without any beneficial results. She has seven healthy children and her father, mother and two brothers are all in good health. One sister (patient 2) has a similar skin condition and diabetes mellitus. She has been a very cooperative patient, and the diabetic condition is now properly controlled. The peculiar relaxed and wrinkled condition of the skin of the neck and axillae was noted, and a diagnosis of pseudoxanthoma elasticum was made in the department of dermatology.

A careful physical examination did not reveal any abnormalities except blindness in the left eye, the skin condition and a rather low blood pressure, 100 systolic and 80 diastolic. There was no evidence of any lesions of pseudoxanthoma elasticum in the nose or mouth. The scalp, face back, legs, palms and soles were free from disease. The throat was normal, and all the teeth were artificial. On examination, the heart, lungs, abdominal viscera and nervous system were found to be normal. Menstruation was normal, and the gynecologic examination was negative. Her present weight of 120 pounds (50.5 Kg) has been constant for the past three years.

Ophthalmologic Examination—This was made by Dr O P Perkins, who reported angioid streaks of both retinas. A brownish ring almost surrounded the right disk, from which extended brownish colored branches. In the left eye there was also noted evidence of an old retinitis, which more or less obscured the angioid streaks, but a few definite ones were visible. She could distinguish only darkness from light with the left eye, and the vision in the right was 20/20 uncorrected.

The cutaneous lesions in the two cases will be described together after the report of case 2.

Laboratory Report—A diet was given to the patient consisting of 140 Gm of carbohydrate, 60 Gm of protein and 70 Gm of fat. Following this the blood sugar did not rise above 150 mg per hundred cubic centimeters, and the urine rarely showed dextrose. The blood chemistry, which was normal, was creatinine, 12 mg per hundred cubic centimeters, urea nitrogen 17.3 mg, and blood sugar 168 mg. The Wassermann test was negative and the blood count was normal.

CASE 2—History—Mrs J M, an Italian housewife, aged 44, appeared at the diabetic clinic in 1933 at our invitation because we were told by her sister (patient 1) that she had a similar skin disorder of over ten years' duration. There was nothing in her past history of importance except the skin condition of the neck and armpits. She had had no symptoms but the lesions had grown more extensive. Many physicians had observed her, but no treatment had been recommended. She has three healthy children living and three dead. A routine blood chemistry examination and a urinary analysis were made and diabetes was discovered. The peculiar appearance of the skin of the neck and axillae was noted to be almost identical with case 1 and a diagnosis was made as before of pseudoxanthoma elasticum. No other physical abnormalities were found except an elevated blood pressure 160 systolic and 80 diastolic and a constant systolic murmur at the apex which was transmitted to the axilla. Her weight of 120 pounds (50.5 Kg) has been constant for the past few years.

Ophthalmologic Examination—This was made by Dr O P Perkins. The uncorrected vision of both eyes was 20/20, and external examination showed nothing of importance. A typical fundus picture was noted with angioid streaks of the retina. Both disks were partially surrounded by brown zones and extending outward from these were noted brownish and red striae of varying lengths, some of which branched and all appeared under the retinal vessels.

Laboratory Report—On admission in July 1933 the blood sugar was found to be 250 mg per hundred cubic centimeters, and the urine contained 1 per cent sugar. She was given a diet of 150 Gm of carbohydrate, 60 Gm of proteins and 75 Gm of fat. The blood sugar following this was found to be 180 mg per hundred cubic centimeters, and the urine became sugar free. The blood chemistry, which was normal, was as follows: blood cholesterol, 166.5 mg per hundred cubic centimeters, urea nitrogen, 19.40 mg, and creatinine, 15 mg. The blood count was normal and the Wassermann test was negative.



Fig 3 (case 2)—Side view of neck.

Cutaneous Examination—The peculiar folding, wrinkling and relaxed state of the skin of the front and sides of the necks of the two sisters were almost identical. The elasticity was lost to such an extent that the skin could be caught between the fingers and folded, thus producing the effect of being too large for the area which it covered. In both cases the axillary skin was likewise loose, baggy and velvety to the touch. The lesions in case 2 were confined to the neck and axillae. Multiple soft, yellow, subepidermal nodules were noted which varied in size from a pinhead to a pea and larger. These appeared to be elevations, but on palpation or stretching the skin was found smooth. The color of the nodules varied from a lemon yellow to cream, and on the neck many of those of pea size had coalesced to form larger ones, which were of a more pronounced yellowish hue and distinct in outline. Buff colored linear markings which apparently had been formed by the coalescence of the minute nodules had invaded the natural creases of the skin of the neck producing the effect of streaks or lines. In case 1 the cutaneous condition was not confined to the neck and axillae as in case 2, but areas of involvement were noted on the shoulders, arms, chest, cubital fossae and

abdomen The loss of elasticity, though present, was far less in these regions than in the neck and folds of the axillae

A reticulated network of cream colored streaks was noted on the posterior surface of the neck in case 2, where the skin was not smooth, and also a similar irregular area on the left shoulder in case 1, with an indefinite outline shading off into the natural color of the skin On stretching, these lesions became more distinct and appeared to be composed of multiple pinhead sized yellow tumors, arranged in a meshlike manner within the skin, producing a mottled appearance A yellow, plaque-like blotch was present on the chest above the left nipple and also one was observed on the right arm in case 1 Scratched over the cubital fossae and abdomen were found faint yellow scarlike lines and whitish striae, the latter over the abdomen, resembling linear albicantes The individual tumors or nodules forming these lines, while much smaller, were similar to the eruptions noted in the neck and axillae There was no evidence of a lilac hue of the skin described by Darier In both patients there was a noticeable overgrowth of hair on the face

HISTOLOGY OF THE CUTANEOUS LESIONS

Specimens of skin were removed from the posterior axillary fold in both cases and studied by Dr Lawrence Saphran who reported as follows

Microscopic examination in case 1 revealed an epidermis of normal appearance as to cell constitution but the rete pegs were very short There were no hair follicles or sebaceous glands but the coil glands were normal The fibrous tissue had the usual collagenous constitution without degeneration or edema Sections stained for elastic tissue by Weigert and by Verhoeff's stain revealed a small amount of delicate fibrils immediately under the epidermis There was a rather sharp line of demarcation between the superficial dermis and the deeper two thirds The latter part had in it small segregated clusters of elastic substance in the form of coarse fibrils and knots The continuity between the deep and superficial elastic tissue appeared broken The blood vessels were of normal form No inflammatory infiltration or giant cells were present

The epidermis in case 2 was somewhat thinned out and presented very fine wrinkles There were no rete pegs The fibrous tissue was of the usual density and the collagen was



Fig 4 (case 1)—Section of skin from posterior axillary fold Verhoeff's elastic tissue stain used The elastic tissue in the deeper two thirds of the dermis is in broken contracted knots and heavy short coils The superficial dermis has small delicate fibrils and the epidermis appears in redundant folds Collagen is not degenerated Accessory glands of the skin appear normal Note the demarcation of the two portions of the dermis caused by the difference in the elastic constitution Reduced from a photomicrograph with a magnification of 100 diameters

free of degeneration and edema Coil glands were present and appeared normal Section stains for elastic tissue revealed long delicate fibrils only in the superficial portions of the corium The deep half contained separate broken and contracted bundles of elastic tissue mainly knotted together and without continuity The blood vessels were normal No inflammatory infiltration or giant cells were present

The pieces of skin from the two patients showed a definite degeneration and fragmentation of the elastic tissue, so that the superficial portion of the corium and epidermis had become separated from the deep portion of the skin There was no evidence of calcification, giant cells or involvement of the blood vessels The close resemblance between the pseudoxanthoma and senile elastosis described by some observers could not be demonstrated The collagen fibers did not show the alteration seen in senile skin, and the marked deterioration of the elastic tissue was not present in senile elastosis



Fig 5 (case 2)—Section of skin from posterior axillary fold Verhoeff's elastic tissue stain used The elastic tissue of the superficial portion of the dermis is in delicate slender fibrils A gradual thickening and fragmentation of the fibrils is seen in the deeper dermis and some zones have the typical dense separate coils of fibrils broken apart Reduced from a photomicrograph with a magnification of 100 diameters

CONCLUSIONS

Pseudoxanthoma elasticum and angioid streaks of the retina are both rare diseases Up to the beginning of 1934, only seventeen cases had been reported in which these conditions occurred in the same patients To this number we have added the reports of two cases in sisters with these diseases combined, and also diabetes mellitus

No evidence as to the etiology of pseudoxanthoma elasticum has been discovered Some writers express the belief that a hereditary predisposition is present, and others express the opinion that, because of the close resemblance to senile elastosis, pseudoxanthoma elasticum is an evidence of presenility No satisfactory pathologic examination has ever been made of angioid streaks of the retina, and the etiology is unknown The latest suggestion is that it is a part of a generalized process of elastic tissue degeneration, involving the skin, circulatory system and eyes The disease is progressive, and sooner or later vision is impaired There has been reported no satisfactory treatment An insufficient number of cases of diabetes mellitus in combination with pseudoxanthoma elasticum have been reported to be of significance, except that the familial tendency of diabetes mellitus is well known, and pseudoxanthoma elasticum has been reported in other members of the same family The occurrence of pseudoxanthoma elasticum and angioid streaks of the retina in the same patients is frequent and striking, but we are unable to agree that a new disease has been established No treatment of pseudoxanthoma elasticum has met with any success except in the case reported by Lewis and Claverton¹⁹ in which the skin of the neck was apparently improved by means of roentgen rays

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CALCIFICATION OF THE TIBIAL COLLATERAL LIGAMENT

A REPORT OF FORTY-TWO CASES

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Calcification or ossification in the tibial collateral ligament is a relatively frequent clinical entity the significance of which has heretofore been unrecognized or ignored Pellegrini-Stieda's lesion constitutes the major part of the material in this paper Kulowski¹ recently reported the first case in the English literature, although about 150 cases had been recorded previously in European publications Kohler described the condition in 1903, but Pellegrini in 1905 and Stieda in 1907 were the first to study and report its clinical significance Petrignani² reviewed the literature in 1931 and added several of his own cases

I am reporting observations made in a series of forty-two roentgenologically proved cases of either calcification or ossification of the tibial collateral ligament I will suggest a classification of various types of this lesion and present a theory of its etiology and pathologic manifestations

Most of my material was collected from the files of the department of orthopedic surgery, Cook County Hospital, Chicago, and represents cases admitted over an eighteen months period to the services of Drs Philip Lewin, E J Berkheiser, M H Hobart, P H Kreuscher and D H Levinthal Dr C H Warfield, chief of the department of roentgenology, assisted with the roentgenographic interpretations Three cases were added to my series through the courtesy of Dr Arthur

involved Four groups are considered, the first of which corresponds to Pellegrini-Stieda's lesion in its classic and varied forms, the subsequent three groups are here described for the first time

1 *Proximal Area of Calcification*—This group represents twenty-eight cases of Pellegrini-Stieda's lesion, the largest series in the English literature The roentgenograms reveal a semilunar shadow overlying, but usually distinctly separate from, the medial femoro-

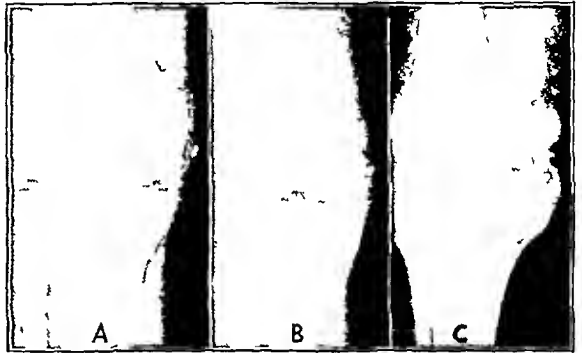


Fig 2—Group 2 A condition in a male B in a female C destruction of the knee joint and bones from infection following a gunshot wound with secondary ligamentous calcification group 4

condylar angle Depending on the degree of ligamentous involvement, the shadow may be crescentic, triangular or fusiform It may be limited to the condylar region or extend distally toward the joint (fig 1) Andreesen³ recently reported thirty cases, which he classified into three groups The first was characterized by a calcified strip, continuous or interrupted, along the inner condyle of the femur, these lesions occurred in persons between the ages of 29 and 41 years The second group showed a more extensive, shell-like, irregular shadow In the third series rather large areas of ossification, in direct contact with the inner condyle were present The age group ranged from 38 to 52, usually there was greater trauma and an associated hypertrophic arthritis I recognize these types and consider them subdivisions of my group 1

2 *Central Area of Calcification*—The eight cases in this group are characterized by a calcified, pea-sized nodule in the mid-portion of the ligament, usually just proximal to the joint space or occasionally opposite it (fig 2 A, B)

3 *Combined Areas of Calcification*—This series of four cases combines the characteristic features of groups 1 and 2

4 *Irregular Areas of Calcification*—In this type there is secondary involvement of the tibial collateral ligament by extension of disease from inflammatory processes in the adjacent structures (bursae, tendons, ligaments, synovia and bone) Two examples of this type are included in my series The first is a case of osteomyelitis of the bones of the knee following a gunshot wound, the second is a case of postoperative suppurative arthritis (fig 2 C)

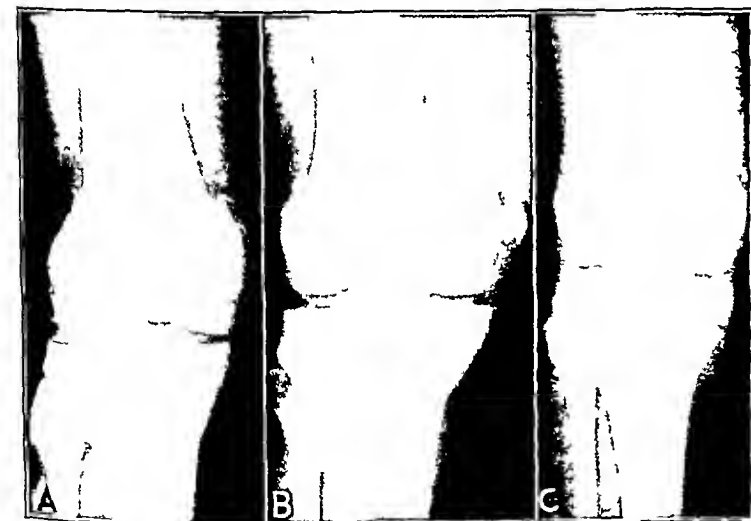


Fig 1—Cases of group 1 (Pellegrini Stieda type) A moderate involvement of the tibial collateral ligament in a woman aged 50 B marked calcification in a man corresponding to the second type of Andreesen C slight process in a girl aged 12

Steindler, from the files of the department of orthopedic surgery, State University of Iowa College of Medicine

CLASSIFICATION

I have classified the various types of calcification or ossification according to the portion of the ligament

¹ Kulowski Jacob Pellegrini Stieda's Disease J A M A 100 1014 (April 1) 1933
² Petrignani R La maladie de Pellegrini Stieda Rev d'orthop 15 105 (March) 1931

³ Andreesen Remmer Ueber den Stiedaschen Begleit chatten am inneren Oberchenfellnorren Arch f l n Chir 174 162 1933

ETIOLOGY

Incidence—About 3 per cent of the orthopedic cases appearing at our clinics because of symptoms referable to the knee showed evidence of tibial collateral ligament calcification or ossification

Race—No significant predilection was noted in the very heterogeneous group of my series



Fig 3—Peripheral portion of bony body in tibial collateral ligament as seen under low power. *A* surrounding soft tissues with zone of fibrous osteoid bone *a* and calcified fibrous bone *b* fibrous and hyaline cartilage *c*, in enchondral ossification with primary spongy bone *d* *B* lamellar spongy bone with lacunar resorption *e* and loose fibrous bone marrow, *f*

Sex—It is usually reported that women are rarely affected. As in other conditions in which exposure to trauma plays a role, the male sex naturally shows a higher incidence. However, in the complete series (as well as in group 1) the men predominated over the women in the ratio of five to two. The fact that nearly all the women were of the working class may account for the high incidence in females (figs 1 *A*, 2 *B*)

Age—Most observers report that Pellegrini-Stiedt's lesion is a disorder of adults between the ages of 25 and 40, and that it never occurs in children. My series includes a 12 year old girl with definite roentgenologic changes (fig 1 *C*). In group 1 the ages ranged from 12 to 54 years, with an average of 40.1 years, about 40 per cent occurred within the fifth decade. The age incidence in group 2 was much lower, with a mean of 28.5 years, the ages ranged from 15 to 68 years, 75 per cent being included in the second and third decades.

Trauma—Injury is almost invariably the inciting factor except in the cases in group 4. The accident may be gross, but I would emphasize that repeated minimal injuries (occupational, for example) may initiate the pathologic process.

PATHOLOGY

Pathogenesis—Calcification in ligaments and tendons has been known for many years and is mentioned in

most textbooks on orthopedics. Lewin⁴ feels that calcification or ossification of the tibial collateral ligament, which bridges across the bony prominence of the femoral condyle, protected by numerous bursae, is analogous to calcification of the supraspinatus tendon in the region of the subdeltoid bursa. Andreessen³ believes that the calcification occurs in the attachment of the adductor magnus tendon rather than in the tibial collateral ligament. Such an entity as he describes may occur, as I shall point out later, but probably it is formed secondarily by direct extension or continuity of tissue.

Three theories are held regarding the origin of the calcification: first, that it may follow a fracture with detachment of a spicule of bone at the time of trauma, second, that it is due to a fractureless callus as a result of periosteal tear and proliferation, third, that it arises from the surrounding connective tissues. It is likely that any one of these factors, alone or in combination, can cause bone formation.

Histopathology—Kulowski¹ treated his patient surgically. The resected specimen showed three types of bone growth: first, a predominant primitive infiltrative type on the basis of connective tissue, second, callus-like bone formation, third, enchondral bone formation, present to the least extent. One of the patients in my series (group 3) was operated on and specimens were

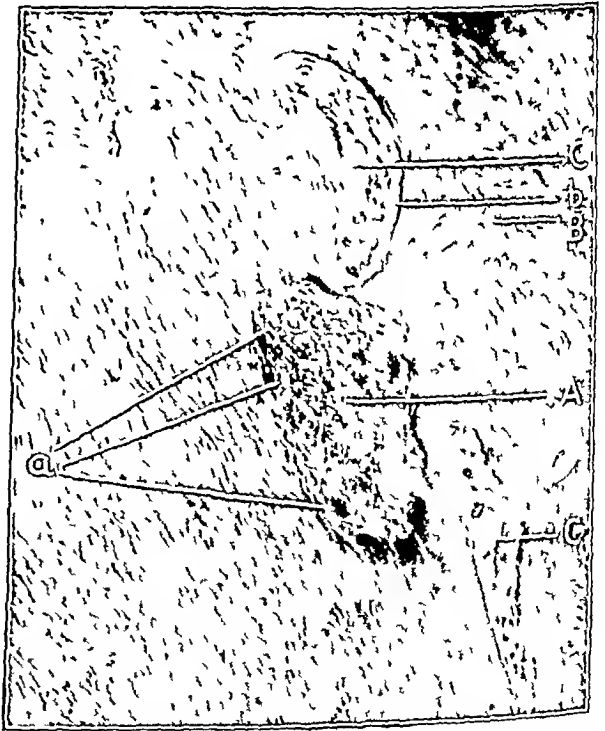


Fig 4—Extensive lacunar resorption of one marrow space in the smaller bony body (central area of group 3 case seen in figure 3 *A*) under high power. *A* young fibrous bone marrow with osteoclasts *a* in fibrous bone *B* *C* marrow spaces with older fibrous bone marrow and smooth endosteal surface with osteoid layer and osteoblasts *b*

obtained from the proximal and central areas of the ligament. Both specimens showed the presence of fibrous and enchondral bone, but no callus-like bone formation was noted, probably because of the relative maturity of the process. I am indebted to Dr. Ernst

⁴ Lewin, Philip. Personal communication to the author. Oct. 1, 1933.

Freund of Iowa City for the detailed description of the microscopic changes

Two sections were examined. The larger section (proximal area fig 3) represents essentially a bony body of rather dense spongy bone included in dense fibrous tissue. The latter is probably a part of the ligamentous structures of the inner side of the knee joint. The bony body itself is composed by fibrous and lamellar bone tissue. The distribution of the two kinds of bone tissue is usually such that the inner portion of the thick bony trabeculae is formed by fibrous bone while the peripheral layers show mature lamellar bone. The borderline between the inner and peripheral types is usually a lacunar cement line. The marrow spaces included in the spongy bone are filled with a loose fibrous marrow which gradually becomes transformed into fatty bone marrow. The endosteal surface of the bony trabeculae is uniformly smooth in all places. Only a few marrow spaces show lacunar outline with active osteoclastic bone resorption (fig 4).

The borderline between the bony body and the surrounding connective tissue shows a gradual blending of the two tissues into each other. This indicates that the peripheral layer of the bony body is almost entirely formed by fibrous bone, which toward the periphery is purely fibrous osteoid and the fibers of the surrounding connective tissue are anchored in fibrous bone as Sharpey's fibers.

In a few places the surrounding connective tissue becomes transformed into fibrous cartilage, in a few places into hyaline cartilage. This cartilage calcifies in a very irregular way and later on is invaded by small hyperemic marrow spaces. The calcified cartilage becomes resorbed and thin layers of lamellar bone are laid down on the lacunar outline of the cartilage. This is a very primitive form of enchondral ossification in which practically no proliferation of cartilage cells occurs. A rather dense and coarse spongy bone results whose trabeculae include small particles of calcified cartilage even at remote distances from the area of enchondral ossification.

In the smaller specimen (central area) the fibers at one margin of the ligament gradually become impregnated by an osteoid substance, thus forming a primitive fibrous bone which becomes calcified later. In the early stages of the process there is very little difference in structure between the fibrous tissue of the ligament and the fibrous bone. Later however, the cells included in the fibrous bone assume the appearance of osteocytes.

Comment. The picture in the first instance is that of a more mature and longer existing bone production in the par-articular tissues. The bone production is actually more or less at a standstill. Only at the periphery a very slow progression or expansion of the bony growth can be noted. This occurs by infiltration of the surrounding connective tissue with osteoid ground substance. Enchondral ossification is present but does not form by any means a striking feature. The second specimen represents essentially the same process in an early stage in which no lamellar bone is seen.

SYMPTOMS

The symptoms of calcification or ossification of the tibial collateral ligament are not pathognomonic of the lesion but are common to most injuries about the knee. A history of trauma however slight, must not be ignored. Pain is referred to the medial aspect of the knee joint. Complete extension while possible, is painful owing to tautness of the injured ligament. Consequently the knee is usually held in slight flexion for some time after the injury. Transitory swelling about the knee joint may be observed. Occasionally it is possible to palpate the calcified area.

Before the diagnosis can be made it is necessary to consider such accidents as fracture of a semilunar cartilage rupture of a cruciate ligament avulsion of the tibial spine and detachment of the tibial tubercle. In the event of persistent pain or of tenderness to palpation over the medial side of the knee one must

suspect injury to the tibial collateral ligament. The mechanism that produces an internal derangement of the knee may also cause a concomitant injury to the ligament. The presence of one, therefore does not necessarily exclude the existence of the other. Roentgenograms made ten days after the injury may be suggestive, a well defined shadow may be present after three weeks.

TREATMENT

No definite surgical procedure has been suggested thus far. Conservative measures are usually advocated: rest during the acute stage, physical therapy later. It is likely that many untreated cases heal spontaneously, without prolonged disability or symptomatic residuums. This is borne out in three cases in which discovery of calcification in the ligament was made incidentally. On repeated questioning, however, a remote injury could be recalled.

In the case treated surgically by Kulowski the growth recurred. In my case the excess new bone formation of the proximal portion of the ligament and the calcified central nodule were resected, followed by plastic repair of the ligament. After five months, the patient had a full range of symptomless motion. At that time the roentgenogram revealed interesting changes. The proximal area of calcification showed no tendency to regrowth, in fact, there seemed to be some resorption of the residual mass. However, a tangential calcified spur was seen arising from the mediosuperior margin of the condyle, corresponding to the insertion of the adductor magnus tendon. The distinction between this picture and that of calcification or ossification of the tibial collateral ligament tends to refute Andriessen's theory. The roentgenograms also revealed two new areas of calcification in the central part of the ligament.

It seems reasonable to believe that a plastic lengthening of the ligament which relaxes the tension without unduly influencing its lateral stability, will alleviate the pain in cases resistant to other forms of treatment.

COMMENT

The relative frequency with which calcification or ossification occurs in the tibial collateral ligament warrants its recognition as a clinical entity in the differential diagnosis of traumatic lesions about the knee joint. With attention focused on this lesion, many cases that previously went unrecognized or undiagnosed will be made available for study. Research should be directed particularly toward determining the pathologic process.

The task of developing a satisfactory plan of treatment devolves on the clinician.

SUMMARY

- 1 Forty-two cases of calcification or ossification of the tibial collateral ligament were observed and classified.
- 2 A group of twenty-eight cases of Pellegrini-Stieda's lesion is included in this series.
- 3 The lesion is relatively frequent and trauma plays an important role.
- 4 A further study of the pathologic changes reveals ossification as well as calcification of the ligament.
- 5 Plastic repair of the tibial collateral ligament is recommended as a form of treatment worthy of consideration.

ACQUIRED SENSITIZATION TO SODIUM ISOAMYLETHYLBARBITURATE (SODIUM AMYTAL)

AS EVIDENCED BY CUTANEOUS ERUPTIONS
REPORT OF FOUR CASES

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ST. LOUIS

In 1923 Shonle and Moment¹ announced the synthesis of various new barbituric acid derivatives. In one group, designated as the dialkyl group, the isoamylethylbarbituric acid (amytal) was found to have the greatest hypnotic powers.

The sodium salt of this acid was prepared in 1926² and thoroughly introduced to the medical profession, since which time it has seen an extensive usage in anesthetics, medicine, obstetrics and surgery. This salt differs from the sodium salt of diethyl barbituric acid (soluble barbital) in that in the former an isoamyl group replaces one of the diethyl groups of the latter. With the exception of this difference in chemical composition the two drugs are chemically identical. In the cases to be reported here it will be indicated how such

years later. During the year that followed, the use of the latter preparation was first reported³ and almost immediately reports began to appear⁴ on the toxic effects noted.

Year after year these reports have actually piled up regarding the various toxic effects noted, of which the skin reactions have been in no minority. This is true not only of phenylethylbarbituric acid but of all of



Fig 1—Eruption on face in case 1

a difference in radicals produces differences in reactions in man.

Fischer and von Mering³ introduced the first dialkyl barbituric acid (veronal) to medicine in 1903. The phenylethylbarbiturate (luminal) was introduced nine



Fig 2—Eruption on arm in case 1

the barbiturates used today with the exception of the sodium salt of isoamylethylbarbiturate (sodium amytal). A hasty perusal of the literature revealed no reports of toxicity evidenced by a skin rash due to this barbiturate, and Lundy⁶ in a thorough, exhaustive review of the barbiturates even makes no mention of toxic skin reactions resulting from the use of this preparation.

With this in mind I felt that the following cases warranted presentation.

REPORT OF CASES

CASE 1—A L, a man, aged 32, began taking sodium isoamylethylbarbiturate (sodium amytal) in 1929 for the induction of sleep. He was in good health but experienced difficulty in getting to sleep, owing to business and domestic worries. The capsules were taken at the rate of one 3 grain (02 Gm.) capsule each night and as often as seven nights a week. He experienced sound sleep, awoke with no residual effects, and experienced no toxic reactions afterward.

As causative conditions began to correct themselves the nightly dose became triweekly, biweekly, weekly and then at irregular intervals. Finally about the summer of 1931 the drug was discontinued entirely and no further use was made of it until the winter of 1932. At that time business worries again caused sleepless nights and he turned to the same capsules which had helped him to sleep before.

Nine hours after taking the first capsule he noticed a reaction in the form of a skin rash. He was seen on the morning following the taking of the first capsule and was found to have a blotchy eruption about the face and arms. The rash was macular, some of the macules being as large as a dime (18 mm.). The macules were sparsely distributed about the arms but were closer about the face. They were a bright rose did not itch and were more closely distributed on the right side of the parts mentioned. When pressure was applied they faded somewhat but not entirely. The mucous membrane

4 Hauptmann, Alfred. Luminal in Epilepsy. Munchen med. Wehnschr. 25:4 1907 1909 1912.
5 Farnell, F. J. Luminal. Its Toxic Effects with the Report of Two Cases. J. A. M. A. 61:192 193 (July 19) 1913. Blackert, E. Luminal a New Hypnotic. Ugeskr. f. Leger. 75:1149 1153 1913.
6 Lundy, J. S. and Osterberg, A. E. Review of the Literature on the Derivatives of Barbituric Acid. Proc. Staff Meet. Mayo Clin. 336 (Dec 18) 1929.

1 Shonle, H. A. and Moment, A. Some New Hypnotics of the Barbituric Acid Series. J. Am. Chem. Soc. 45:243 249 1923.

2 Page, I. H. and Coryllos, Pol. Isoamylethylbarbituric Acid (Amytal). Its Uses as an Intravenous Anesthetic. J. Pharmacol. & Exper. Therap. 27:189 200 (April) 1926.

3 Fischer, E. and von Mering, J. A New Group of Hypnotics, Therap. d. Gegenw. 44:97 101 1903. Veronal. ibid. 45:145 1904.

of the upper lip contained several patches and the lip was edematous. These lesions were somewhat indurated in contrast with the skin lesions. There was also edema about the lower eyelids. In this case there were no vertigo, eye disturbances, pruritus, cyanosis, acceleration of pulse rate, or disturbances of the nervous system, the respiratory tract or the urinary system. The urine was entirely normal. The rash lasted about three days and then gradually faded away over a period of seven days leaving a brownish pigmentation and a slight scaling at the site of each macule. The edema of the lip lasted about a week.

He was confident that the rash was due to the capsule that he had taken but was at a loss to explain why he had not experienced a similar reaction when the same capsules were taken about two years previously. He was thereby induced to resume the use of the capsules when indicated.

Thus he did. About six weeks later he took another capsule containing 3 grains of sodium isoamylethylbarbiturate on retiring. He slept well and awakened refreshed but exhibited the same skin eruptions to even a greater degree than the first display. The rash was identical with the first in appearance but more macules were present.

Sept 2, 1933 in a desperate attempt to get to sleep he disregarded all his former experiences and took a third capsule of the same dose. On awakening the next morning he looked at once for the eruption and was not disappointed. The rash this time was of about the same intensity and was distributed to the same locations as the former rashes, i. e., the face, neck, lips and upper arms. The rest of the body was free of any eruption. Other physical and chemical observations were made at this time and will be presented in a future report.

He was urged to use isoamylethylbarbiturate (amytal), not the sodium salt as before. With this he experienced an identical eruption but not as intense as with the sodium salt.

The idea that some impurity in the drug might be causing the eruption prompted a chemical analysis. No impurities were reported found.

With these observations made, my interest was aroused to see whether this acquired sensitivity extended to and included the other barbiturates as noted by other observers. He was tried on phenylethylbarbituric acid (luminal) and experienced no rash nor other toxic symptoms. At the present time he is taking the latter preparation nightly.

CASE 2—D L, a woman, aged 27, married and employed as a clerk, first began taking sodium isoamylethylbarbiturate in 1930 on the advice of her physician. The drug was taken at irregular intervals for the induction of sleep. An average of one 3 grain capsule twice a week was continued for about fourteen months. No ill effects were noted on the mornings following the taking of the capsules and no resultant evidences of sensitivity of any kind were observed. At no time did a rash appear during this period.

After using the medicine for the time stated she discontinued the capsules entirely for a period of about a year during which time she took no medicine whatever. She then returned to her physician because of nervousness and insomnia. He again prescribed the sodium isoamylethylbarbiturate in 3 grain doses.

The physician was called the morning following the taking of the first capsule to see 'a breaking out'. This rash was identical in distribution and appearance with that described in the first case.

A second capsule taken three weeks later produced a similar skin reaction the following day. By this time she was confident that the new pills were causing the rash. She was informed that the medicine would be changed and isoamylethylbarbiturate (amytal) was ordered. This likewise produced a rash within twelve hours after the ingestion of the capsule. The rash however was not as intense nor was it as thickly distributed as were the previous rashes resulting from the sodium salt. The edema of the lip was also much less.

She was then tried on phenylethylbarbiturate (luminal) but no skin reactions resulted. The latter preparation she is taking

at the present time with no evidences of toxicity or allergic reactions to date. As far as can be determined, she has never taken any barbiturates other than those mentioned.

CASE 3—A M, a man, aged 28, married and employed as a grocery clerk was ordered to take sodium amytal in 1931. He took about 120 capsules of 3 grains each during the period of one year. Never did he take more than one capsule during any twenty-four hour period. The physical condition requiring the drug subsided and he discontinued it entirely for a period of ten months, during which time he took no drugs other than tincture of digitalis in small doses.

One morning he presented himself for the inspection of a rash and "a swelling of the lip." On questioning he affirmed that he had taken no medicine other than digitalis and "one blue capsule" (sodium isoamylethylbarbiturate) the night previously. The rash was similar to that in the two previously cited cases but was more thickly distributed and the edema of the lip was more intense. It was suggested that the rash "might be due" to the capsule and it was suggested that he try another of the capsules in two or three weeks after the rash had disappeared. Thus he did with a resultant rash within twenty-four hours identical with his first eruption. Since then he has flatly refused to take any other capsules because his facial appearance and the rash interfered too seriously with his business. No other barbiturate has been used in this case and no rash has since appeared on the skin.

CASE 4—Mrs S E, aged 23 was first seen because of a missed menstrual period shortly after marriage. A diagnosis of pregnancy was made and the patient was so informed. Numerous nervous and mental manifestations promptly resulted from the realization of her condition. Worry over financial matters and fear of the delivery caused almost a complete breakdown of what was to begin with none too good a nervous system. Sodium isoamylethylbarbiturate was ordered to be taken in 3 grain doses at nights when necessary. About three or four such capsules were taken weekly with the desired good results. No toxic action or reactions were noted at any time during this period of about four months.

The child was delivered at term and for the delivery three capsules of 3 grains each of sodium isoamylethylbarbiturate were used. No other drugs were taken following this for a period of thirteen months. No eruption was seen during this entire period.

After thirteen months a second child was delivered and four of the 3 grain capsules of sodium isoamylethylbarbiturate were given to her during an eight hour period. No other drugs were used.

When she was seen the next day (eighteen hours after the first capsule) a rash had developed about the face and lips similar to that previously described except that the macules were smaller and less profuse. There were only a few lesions about the body, most of the eruptions being on the face and arms. There were a few lesions on each hand. This rash was also lighter in color and left very little pigmentation when it faded. No other drugs were used during the delivery and no eruption has since been seen. She has not taken any of the capsules of sodium amytal since so that no check has been made in this case. Like the others her rash also went through the scaling process.

The child's skin showed no eruption at any time.

SUMMARY

In four cases a sensitivity to sodium isoamylethylbarbiturate developed as evidenced by skin eruptions. These eruptions were distributed chiefly on the face, neck, arms, hands and mucous membranes of the lips and mouth.

None of the cases cited showed any sensitivity to the drug when it was first administered. The sensitivity developed during a period of from eight to fourteen months after the drug had been taken and then discontinued.

The primary use of the drug ranged from nine months to two years. The average 3 grain dose was

never exceeded in three cases. Twelve grains was used in one case during a period of eight hours.

This sensitivity differs from that previously noted⁷ in that it does not extend to other barbiturates.

5427 Southwest Avenue

Later in 1921 the patient had pleurisy with effusion on the left side, for which she received treatment in a sanatorium for two years. She was discharged symptom free at that time.

She was then well until January 1927. At that time a large gland appeared in the left groin and a few days later an abscess pointing in this region was aspirated. Aspiration was

Clinical Notes, Suggestions and New Instruments

AN ATYPICAL CASE OF TUBERCULOSIS OF THE SPINE

CHARLES K. PETTER, M.D., OAK TERRACE, MINN.
AND
J. P. MEDFELMAN, M.D., MINNEAPOLIS

This case is presented because of the unusual lesions observed in the spine. Tuberculosis of the spine usually presents a typical roentgenologic picture and its diagnosis is ordinarily not difficult.

REPORT OF CASE

History.—A white woman, aged 50, entered Glen Lake Sanatorium, Nov. 18, 1931, with the following complaints: (1) discharging left ear and enlarged cervical nodes, (2) loss of weight and weakness, (3) a mass in the left lumbar region, (4) fever and chills accompanied by occasional night sweats.



Fig 1—Lower dorsal and lumbar spine. A as observed roentgenographically. B diagrammatically, showing lesions in detail.

The cervical adenitis was first noted in July 1931, following a mastoid operation. However, it was later recalled that a few slightly enlarged glands were present before the operation. The left ear had been discharging since the mastoidectomy.

Loss of weight amounting to 25 pounds (11.3 Kg.) and weakness had been gradual over a period of two years.

The mass in the lumbar region to the left of the spine was first discovered about a year before admission. Since that time it had become progressively larger.

The patient stated that she had had occasional night sweats for the past six months and that chills and fever had occurred at varying intervals during the same length of time. During this time she also noted that her temperature sometimes rose to 102 F.

The patient had tuberculosis of the left knee in 1909 and of the left elbow in 1912. She was treated conservatively for both and recovered with only slight limitation of motion in the elbow.

In 1921 a laparotomy was performed at which the right ovary and a cyst from the left ovary were removed. An appendectomy was also done. Examination of the tissue removed revealed tuberculosis of the right ovary, appendix, and peritoneum.

From the Departments of Orthopedics and Roentgenology, Glen Lake Sanatorium, Oak Terrace, Minn.



Fig 2—Left sacro-iliac region showing lesion near joint.

repeated several times, with evacuation of large quantities of pus. The pus was apparently not examined in a laboratory and a single anteroposterior film made of the lumbar spine is reported as having been negative.

The remainder of the past history and the family history is unimportant for the purposes of this report. There had never been any complaint leading one to suspect primary malignant tumor.



Fig 3—Anteroposterior and lateral roentgenographic appearance of vertebral bodies at autopsy.

Physical Examination.—The patient was pale and poorly nourished.

There was a scar of a mastoid operation on the left and a thin watery discharge from the left ear.

There were numerous greatly enlarged cervical lymph glands on the left with reddening of the skin over two of these and

discharge from one. On the right side there were a few smaller palpable glands 2 or 3 cm above the clavicle. A few very small glands were palpable in the axillae.

There were no abnormalities in the chest.

The liver was palpable 3 cm below the costal margin. No abdominal masses were felt. From the umbilicus to the symphysis there was a healed midline incision.

A soft tissue mass 5 by 10 cm in size was visible immediately adjacent to the upper lumbar vertebrae on the left side. The mass was firm and finely nodular. There was no redness of the overlying skin and the mass was not tender.

No complaint of pain and no muscle spasm could be elicited on movement of the spine.

There was muscle atrophy involving the left arm, with limitation of extreme flexion and supination at the elbow, but no pain on motion of the elbow joint. There was marked atrophy of the muscles of the left thigh, with free motion of the left hip and knee.

Röntgen Examination.—Only the significant observations are given. There was thickening of the pleura over both lungs, but no evidence of parenchymal pulmonary disease.

New bone formation with rounded areas of bone destruction were present in the bodies of the eleventh and twelfth dorsal vertebrae and to a greater extent in the bodies of the first and third lumbar vertebrae. There was a similar process in the left ilium near the sacro iliac joint but not involving the joint. It was concluded that the observations represented malignant metastasis, as shown in the accompanying illustrations.

The right kidney was normal in size, shape and position. The shadow of the right psoas muscle was visualized and was normal. There was a large, poorly defined density in the left kidney region, and the shadow of the left psoas muscle was obliterated. These observations were interpreted as being due to a kidney tumor or a paranephritic abscess. Because of the appearance of the spine it was felt that the weight of evidence was in favor of the former, even though hypernephroma usually gives rise to metastases that are predominantly destructive in bone.

Laboratory Examination.—On admission, examination of the blood showed 4,100,000 red blood cells, 6,600 white blood cells, and a hemoglobin of 81. A differential count showed 65 polymorphonuclears, 25 lymphocytes, 9 large mononuclears and 1 eosinophil.

Only two specimens of sputum were ever obtained. Both were negative for tubercle bacilli on smears. Examination of the urine gave essentially negative results throughout. No red blood cells were found on repeated examinations.

A negative Wassermann reaction was present.

A guinea-pig inoculated with washings from the left ear was examined, January 28, and showed tuberculosis. Tuberculosis was also present in a guinea-pig inoculated with material aspirated from a cervical gland and killed, February 11. A second pig was inoculated with material aspirated from a cervical gland. This pig was killed, May 5 and tuberculous lesions were present. The organisms were typed and found to be of the human strain.

Course in the Sanatorium.—The patient was confined strictly to bed during her entire period of hospitalization. She received routine sanatorium care and was treated only symptomatically. She was too ill for pyelography to be attempted.

About January 1, a defect was palpated in the tip of the spinous process of the second lumbar vertebra. This was visualized on films, January 16. The tip of the spinous process was removed for microscopic diagnosis. The biopsy wound healed readily. Section of the tissue removed showed clusters of tubercles. They were composed of epithelioid cells radially arranged. Occasionally one showed a central giant cell. There was lymphocytic infiltration at the periphery of the tubercles and infrequently some of them were found in the center of the tubercles. The pathologic diagnosis was tuberculosis.

Following admission the patient's temperature varied within wide limits. The daily variation was often between 96 and 103 F. During her last sixty days the temperature varied from 97 to 101.

The patient's course was progressively downhill. She died June 9, 1932 after 204 days of hospitalization.

The anatomic diagnosis from the autopsy protocol was (1) tuberculous spondylitis, (2) tuberculous peritonitis, (3) tuberculous lymphadenitis, (4) left psoas abscess, (5) pleural adhesions, (6) pericardial adhesions.

COMMENT

In this proved case of tuberculosis the roentgen diagnosis of metastatic carcinoma of a mixed osteoclastic and osteoplastic type was made. The multiplicity of the lesions was in favor of metastasis. So also was the appearance of the lesions themselves, in which there was an increase in density of the vertebral bodies together with circular or rounded areas of destruction in the bodies and their appendages. The absence of collapse of the bodies in spite of the destruction near the articular margins suggested metastatic involvement. Likewise the complete absence of involvement of the vertebral disks pointed toward the presence of metastatic carcinoma.

Tuberculosis was considered in the diagnosis but was discarded because we felt that in tuberculosis (1) the lesions would not be so widespread, (2) new bone formation would play a less prominent part, (3) there should be some vertebral collapse, and (4) the intervertebral disks could hardly have escaped destruction through extension of the process from the adjacent vertebrae.

Actinomycosis was a roentgenologic possibility, but in actinomycosis one would expect larger abscesses, draining sinuses and a primary site of involvement.

Of special interest in this case is the fact that the organisms, at least in the involved glands, were identified as being of the human strain.

A SEASONAL DERMATITIS CAUSED BY SYNERGIC INFECTION

A. J. BRIER, M.D. AND J. C. HOFMANN, A.M. TOPEKA, KAN.

History.—A boy aged 15 years, in the early part of 1933 was referred to one of us (A. J. B.) for dermatitis, which was thought to be an allergic manifestation. The onset was described as being somewhat acute, having begun five or six years before with primary lesions, starting in the interdigital spaces as groups of blisters and rapidly becoming pustular. It was reported that this followed a day spent in playing along the bank of a creek known to be polluted with sewage. The lesions appeared in "crops," undergoing their metamorphosis while others were forming. Early in their existence the vesicles contained a clear, colorless, serous fluid before they became pustules. This sequence continued: new vesicles formed as the pustules healed. The patient's hands became unsightly, causing him much mental as well as physical discomfort, since his hands itched and were very sore during an exacerbation of the trouble.

The first appearance was in the spring and progressed until the advent of summer, when the lesions cleared up. The following autumn after frost they again made their appearance and went through the same cycle—progressive vesiculation, pustulation with soreness and healing. As soon as cold weather arrived the lesions disappeared leaving but faint traces for a time. The skin then became quite normal and continued so until the following spring, when the whole process was reinitiated.

This semiannual occurrence continued over a period of five or six years except during one winter which was mild in this locality, that year the lesions lasted from the onset in autumn until the coming of hot weather. The fall before he was seen by us was the first in which he failed to note the reappearance of the dermatitis, it being deferred until the following spring.

The patient had had the ordinary diseases of childhood with no serious illness. There was no history of food disturbances, headaches, hay fever, asthma or other common allergic symptoms. Also the family history was essentially negative. The patient was found to react to none of the food or inhalant groups. The Wassermann reaction was negative.

On examination, vesicles and pustules were found on the backs of each hand particularly on the medial and lateral borders, on the dorsum of the fingers and in the interdigital spaces. The vesicles had some tendency to clumping but no confluence was observed. Each was 2 or 3 mm in diameter.

and over the whole area there was considerable hyperemia of the skin. The pustules, about 5 mm in diameter, were quite discrete and contained a thick yellow pus. No other lesions were seen on the body, the most proximal being at the level of the wrist.

Diagnosis and Treatment—Since the patient had been treated by a number of general practitioners and dermatologists without success, and he manifestly showed no indications of allergy, it was suggested that the nature of the infecting agent should be determined if possible. The seropurulent material from the pustules was therefore examined microscopically, and since nothing could be determined by this means the material was plated for culture on infusion blood agar and Sabouraud's mediums. In the latter the inoculum produced no growth, but on blood agar colonies of *Staphylococcus aureus* and a highly hemolytic gram-negative streptococcus were found in about equal numbers as the sole flora.

Early treatment consisted of local applications, which gave no apparent relief. Subsequently an autogenous bacteriophage antigen was prepared from the staphylococcus. Very small increasing doses were given at daily intervals for four days, then every second day, and finally once each week. Improvement after the first small dose was quite noticeable and subsequent improvement was highly satisfactory with the rapid disappearance of the lesions. However, the vesicles continued to make their appearance but instead of continuing on to pustulation they merely dried up. Three weeks after he received the first dose of bacteriophage antigen, the blisters lasted only over night.

An autogenous vaccine was then prepared from the streptococcus, and minute doses of it were given twice a week, with the resulting complete disappearance of all indications of the infection.

COMMENT

In determining on the method of treatment for this synergic infection, we gave the autogenous bacteriophage antigen with the hope that the nonspecific protein action of the peptone and the lysed culture of staphylococcus would be sufficient to overthrow the immunologic balance maintained between the host and the streptococcus simultaneously with its specific activity in creating more potent antibodies against the staphylococcus. Unfortunately, however, such was not the case, for while great improvement followed the administration of the bacteriophage



Fig. 1—Hands near the beginning of bacteriophage treatment April 19, 1933

antigen, recovery did not occur until after injections of the bacterin prepared from the streptococcus involved.

The appearance of the lesions after they ceased to become pustules gave the impression that the streptococcus was the primary infecting agent in creating the blisters or vesicles. Such was demonstrated to be the case in subsequent culture of the serous fluid from them. They ceased to become pustules evidently because of the increased resistance to the staphylococcus. This would indicate that the staphylococcus was the secondary infecting organism.

SUMMARY

1 A case of dermatitis of long standing was caused by synergic infection with *Staphylococcus aureus* and a highly hemolytic gram-negative streptococcus.

2 Its origin is indefinite and obscure, though the patient reported playing by a highly polluted creek the day before first noticing the acute onset. This may be significant in conjunction with the gram-negative streptococcus.

3 The infection was only of a seasonal nature, making its appearance in the spring and autumn, and was bipartite, beginning with vesicles which became pustules.

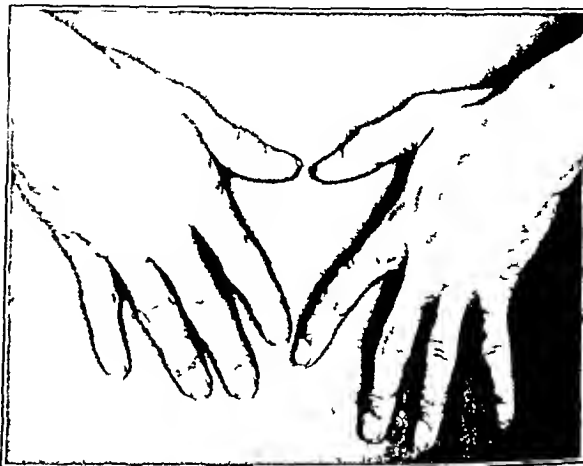


Fig. 2—Appearance April 27, eight days later

4 It was evidently noncommunicable and remained localized on the hands in spite of an apparent opportunity for spreading to other parts of the body.

5 Local applications of antiseptics and disinfectants proved valueless in treatment.

6 Injection with an autogenous staphylococcus bacteriophage antigen caused the pustulation to cease, and the final treatment with autogenous streptococcus vaccine caused a complete disappearance of the infection.

615 Central Building

MARKED CREATINEMIA REPORT OF TWO FATAL CASES

CHARLES S. HIGLEY, M.D. AND R. O. BOWMAN, PH.D.
CLEVELAND

Following the discovery of creatinine in normal blood and accurate methods of determination by Folin¹ in 1914, Myers and Lough² demonstrated the value of the blood creatinine in determining the prognosis in cases of renal insufficiency. They pointed out that rise in blood creatinine is a more important sign of renal impairment than either uric acid or urea, since creatinine is more readily eliminated by the kidney than the other products and is endogenous, while the others are exogenous. They stated that "a rise in blood creatinine above 5 mg per 100 cc is of grave prognostic significance and portends an early fatal termination unless the rise is due to some acute renal condition."

The differentiation between acute and chronic renal disease in evaluating the prognostic significance of blood creatinine is important. There have been several cases of marked creatinemia with recovery reported in cases of acute renal disease. Myers³ reported a case of nephrolithiasis with a creatinine of 233 mg and Selman and Linegar⁴ reported a case of severe asthma with accompanying medical shock in which the creat

From the Departments of Medicine and Biochemistry, Western Reserve University at City Hospital.

1 Folin, Otto, *J. Biol. Chem.* 17: 475, 1914.

2 Myers, V. C., and Lough, W. G., *The Creatinine of the Blood in Nephritis: Its Diagnostic Value*, *Arch. Int. Med.* 16: 536 (Oct.) 1915.

3 Myers, V. C., *Practical Chemical Analysis of Blood*, ed. 2, St. Louis, C. V. Mosby Company, 1924.

4 Selman, J. J., and Linegar, C. R., *J. Lab. & Clin. Med.* 18: 1032 (July) 1933.

mine rose to 15 mg. Recently at Cleveland City Hospital we have seen a case of corrosive mercuric chloride poisoning with recovery in which the creatinine rose 243 mg.

We have been interested in the height to which the blood creatinine may rise before death in cases of chronic renal disease. It is generally recognized that blood creatinine values approaching 30 mg or over are rare. Only two cases are mentioned in the literature in which the creatinine approached this figure. Myers and Fine⁵ mention a creatinine of 333 mg and Gettler and St George⁶ mention one of 42 mg. At City Hospital, by means of the Myers modification of the Folin method,³ a total of 1 652 blood creatinine determinations were performed in the past thirty-three months. The majority of

TABLE 1—Determinations in Case 1

Date	Urea		Carbon Dioxide	Blood Pressure	
	Nitrogen	Creatinine		Systolic	Diastolic
10/17/32	141	17.5		174	120
10/1/32	153	21.0	53.0		
10/14/32	153	35.0		118	112
10/15/32		22.5	16.4	110	110
10/19/32	153	23.0	24.0		
10/20/32		20.7			
10/21/32	145	22.0	20.0		
10/24/32	163	22.0	13.6		
10/26/32	156	22.1	18.3	210	140
10/27/32	154	23.0			
11/1/32	152	23.0			
11/5/32	153	22.2	29.6	150	120
11/7/32	145	21.3	20.0	212	106
11/8/32	140	22.3	44.7	185	132
11/15/32	177.4	29.3		210	150
11/16/32	Patient died				

TABLE 2—Determinations in Case 2

Date	Urea		Carbon Dioxide	Blood Pressure	
	Nitrogen	Creatinine		Systolic	Diastolic
2/14/33	35.2	6.9		184	102
2/15/33	39.0	10.4	32.4	118	100
2/16/33	14.0	4.6	20.3	146	76
2/18/33	40.1	4.5		154	84
2/21/33	62.2	10.3	40.0	190	105
4/3/33	127	29.0	33.0	170	90
4/4/33	120	25.6	43.7		
4/6/33	142	30.0	35.0	140	105
4/10/33	146	30.0	40.9	230	125
4/11/33	146	30.0	41.0	195	140
4/13/33	166	31.0	31.5	180	95
4/14/33	270	33.0	25.7		
4/17/33	Patient died				

these were in cases of known renal insufficiency. Only six of the determinations were above 30 mg and represented determinations in only two cases. There were thirty determinations with values between 20 and 30 mg, representing determinations in eleven cases. All of these cases terminated fatally with the exception of the case of mercuric chloride poisoning.

Two cases of marked creatinemia in patients with chronic renal disease are here reported, both having been thoroughly studied during their clinical course and post mortem.

REPORT OF CASES

CASE 1—R. R., a Negro aged 27 had arteriolar nephrosclerosis diagnosed clinically and confirmed at autopsy. Death was due to uremia and a terminal bronchopneumonia.

The patient was able to be up and about the ward until November 5, when his creatinine value was 22.2 mg (table 1). At that time he developed convulsions and was confined to bed. This case is of interest because of the lack of clinical signs proportionate to the blood chemistry observations and illustrates the prognostic value of the blood creatinine. In spite of the paucity of subjective symptoms the marked rise in creatinine prophesied an early fatality.

CASE 2—R. G., a white woman aged 46 had chronic glomerulonephritis, diagnosed clinically and confirmed at autopsy. Death was due to uremia and a terminal bronchopneumonia.

This case is of interest because of the high antemortem blood creatinine value and because it again demonstrates the prognostic significance of the blood creatinine. The patient felt well enough, February 21, with a creatinine of 10.3 mg (table 2) to insist on release from the hospital. She returned, April 3, and the course was progressively downhill.

CONCLUSIONS

Blood creatinine is an important aid in determining prognosis in cases of chronic renal insufficiency, regardless of the patient's general condition. This fact is demonstrated in the two cases reported.

13224 Shaker Square

A SIGMOID ASPIRATOR

WILLIAM Z. FRADKIN, M.D., BROOKLYN
Assistant Surgeon, Jewish Hospital of Brooklyn

To facilitate the method of obtaining rectal or sigmoidal contents in patients suffering with intestinal disorders, a sigmoid aspirator has been devised. The instrument is 8 inches

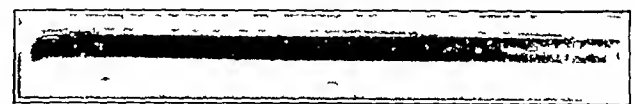


Fig. 1—Barrel of aspirator

long and three-fourths inch in diameter. It is composed of a barrel and an obturator. Both present four openings, each one-sixteenth inch diameter about one inch from the distal end. These openings correspond with each other when the obturator is inserted into the barrel. The obturator consists of a hollow tube, the distal end of which is enlarged in order to fit accurately into the distal end of the barrel. The proximal end of the obturator presents a lock mechanism and also a well



Fig. 2—Obturator of aspirator

ground tip, which is made to fit an ordinary Luer syringe. The openings in the barrel may be opened or closed by rotating the obturator at R. Figure 1 shows the barrel. Figure 2 shows the obturator with lock mechanism. Figure 3 shows the instrument with Luer syringe attached.

TECHNIC

The sterilized closed aspirator is well lubricated and inserted into the anus. The patient is told to breathe deeply while the instrument is passed gently into the rectum for four

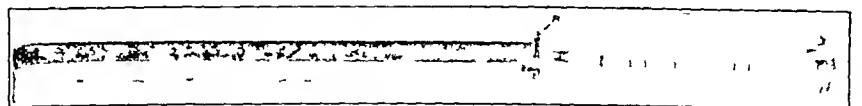


Fig. 3—Sigmoid aspirator with Luer syringe attached

or five inches. No force should be used when passing the instrument. The syringe is attached R, is turned to the open position and the plunger is gently withdrawn. If no fluid appears the instrument is rotated or about 10 cc of air or sterile fluid is injected into the bowel. This will cause a free flow of intestinal contents into the syringe.

ADVANTAGES

The sigmoid aspirator offers the following advantages:

1. The specimen is collected rapidly with simplicity and cleanliness.

From the Pathology Department, Jewish Hospital of Brooklyn.
The instrument is manufactured by George Tiemann & Co., New York.

⁵ Myers, V. C., and Fine, M. S. J. Biol. Chem. 20: 391, 191.
⁶ Gettler, A. O., and St. George, A. V. The Value of Modern Blood Chemistry to the Clinician. J. A. M. A. 71: 203, (Dec. 21) 1918.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH Secretary

SOLUTION LIVER EXTRACT CONCENTRATED-LILLY—A sterile aqueous solution containing the nitrogenous nonprotein fraction G of Cohn preserved with 0.5 per cent phenol. Each cubic centimeter contains the active material derived from 33.3 Gm of fresh liver.

Actions and Uses—Solution liver extract concentrated-Lilly is proposed for intramuscular injection in the treatment of pernicious anemia. Its potency is such that the injection of 3 cc per week will maintain the average pernicious anemia patient at normal red blood cell count level. A comparable result may usually be obtained by the ingestion of from 1,400 to 2,100 Gm of fresh liver weekly.

Dosage—For the average patient in relapse, 3 cc is given daily for three successive days, then 3 cc is given at weekly intervals until sufficient time has elapsed in which to observe the response. Thereafter, either the volume of the dose or the time interval between doses is adjusted according to the individual patient's needs.

Manufactured by Eli Lilly and Co., Indianapolis U. S. patent applied for No. U. S. trademark.

Amplex Solution Liver Extract Concentrated Lilly 10 cc Each cubic centimeter contains the active material derived from 33.3 Gm of fresh liver.

To prepare solution liver extract concentrated Lilly livers from edible animals are ground directly into water and the mixture adjusted to the iso-electric point (approximately pH 5 to 6). The mixture is then heated to coagulate protein (approximately 80°C) stirred for thirty minutes and filtered. The filtrate is reduced in vacuum to a small volume and enough alcohol added to produce a concentration of 70 per cent. The 70 per cent alcohol solution is then chilled and the resulting precipitate discarded. The filtrate is reduced in vacuum to a small volume, added to several volumes of alcohol and the precipitate separated therefrom. The precipitate is dissolved in water and filtered. The volume is adjusted so that each cubic centimeter represents material derived from 33.3 Gm of fresh liver. The solution is sterilized by boiling and then passed through Berkefeld filters. 0.5 per cent phenol is added as a preservative.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT

PAUL NICHOLAS LEECH Secretary

BARD PARKER FORMALDEHYDE GERMICIDE OMITTED FROM N N R

Bard Parker Formaldehyde Germicide (Parker White and Heyl, Inc., New York) is a mixture of formaldehyde alcohol, and other undeclared ingredients recommended for use in sterilizing steel surgical instruments and rubber catheters that would be injured by boiling water. It is not recommended by the firm for the sterilization of silk or gum woven catheters, cystoscopes, or other instruments having parts soluble in alcohol or affected by formaldehyde.

In 1929 the Council, after consideration of the product, included it in the list now designated 'List of Articles and Brands Accepted by the Council but Not Described in N N R'. When the period for which the product was accepted expired at the close of 1932 the Council adopted a report of the referee recommending reacceptance (1) provided the firm submitted acceptable evidence that the solution kills vegetative and spore forms of pathogenic bacteria in the crevices, joints and interiors of the types of instruments for which its use as a sterilizing agent was being recommended (2) provided the firm declared the complete composition of the preparation on the labels and in the advertising, and (3) provided the firm revised its advertising and labels according to the rules and the evidence found to be acceptable.

A statement of the Council's action was transmitted to Parker White and Heyl, Inc. since that time the firm has repeatedly expressed willingness to cooperate with the Council.

However although a year has passed, it has not made the product acceptable by meeting the objections raised by the Council. The firm has stated that it has approached university authorities to secure the services of a competent bacteriologist to carry out the tests required by the Council and asked (Oct 30, 1933) that "the entire matter be held in abeyance pending the completion of such tests." The questions relating to the substantiation of the germicidal claims could be settled within a few weeks by any competent bacteriologist who undertook to carry out the tests, provided he were given the necessary supplies, instruments and material, but no report of any such work has been submitted, although the firm has repeated its expression of desire to cooperate and its request for postponement of the Council's consideration of the product.

Parker, White and Heyl, Inc., has not indicated its willingness to comply fully with the Council's rule that the essential ingredients be declared on the labels and in advertising. The firm wishes to withhold information on a rust-inhibiting substance in this mixture which may be potassium nitrite, but has offered to give the Council confidential information on this subject. The Council, of course, cannot accept confidential information. In addition, the proportions of formaldehyde, butyl alcohol and ethyl alcohol in the mixture have not been openly declared, although the firm states that it is willing to do so.

In view of the fact that a year of negotiation has not accomplished compliance with fair and reasonable requirements which have been applied with leniency, and in view further of the fact that the firm's noncompliance would otherwise mean retention in New and Nonofficial Remedies of a semi-secret preparation with unsubstantiated claims the Council voted to omit Bard-Parker Formaldehyde Germicide from the List of Articles and Brands Accepted by the Council but Not Described in N N R.

Committee on Foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG Secretary

JELKE GOOD LUCK FRENCH DRESSING

Manufacturer—John F. Jelke Company, Chicago

Description—An emulsion of cottonseed oil distilled vinegar, sucrose, water, spices (paprika, mustard, onion), salt and tragacanth (U. S. P.).

Manufacture—Formula proportions of the ingredients are thoroughly mixed, homogenized and automatically filled into bottles.

Analysis (submitted by manufacturer) —

	per cent
Moisture	39.6
Total ash	4.0
Sodium chloride	3.8
Fat (ether extract)	35.5
Protein (N X 6.25)	0.6
Reducing sugars as invert sugar	2.1
Sucrose (copper reduction method)	16.0
Crude fiber	0.3
Carbohydrates other than crude fiber (by difference)	18.7
Titratable acidity as acetic acid	1.3
Lipoid phosphoric acid (P O)	none
Total phosphoric acid (P O)	trace
Added color	none

Calories—40 per gram 114 per ounce

HEINZ STRAINED TOMATOES

Manufacturer—H. J. Heinz Company, Pittsburgh

Description—Strained tomatoes retaining in high degree the natural vitamin and mineral content.

Manufacture—Specially grown and selected ripe tomatoes are trimmed, washed and scalded, the juice and more tender portions of the pulp are forced through a screen to remove

seeds and coarse fibrous material. The strained material is concentrated to half its original volume by boiling in absence of air and is subjected to a "vacuum" filled into lacquer lined cans, sealed under "vacuum" and processed.

Analysis (submitted by manufacturer) —	
Moisture	per cent
Total solids	88.0
Ash	12.0
Fat (ether extract)	1.1
Protein (N \times 6.25)	0.2
Reducing sugars as invert sugar	2.1
Sucrose (copper reduction method)	7.3
Crude fiber	0.0
Carbohydrates other than crude fiber (by difference)	0.4
Calcium (Ca)	8.2
Phosphorus (P)	0.01
Iron (Fe)	0.03
Copper (Cu)	0.0016
	0.00019

Calories — 0.4 per gram 11 per ounce

Claims of Manufacturer — An excellent source of vitamin C, and good in vitamins A and B. Specially intended for infants, children and convalescents and for special smooth diets. Only warming is required for serving.

I G A VEG-ALL FOR SOUPS, SALADS, VEGETABLE DISHES

Distributor — Independent Grocers Alliance Distributing Company, Chicago

Packer — The Larsen Company, Green Bay, Wis.

Description — Mixture of carrots, potatoes, celery, green beans, cabbage, peas, corn, lima beans, onions, sweet peppers, salt and water prepared by efficient methods for retention in high degree of the natural mineral and vitamin values of the respective vegetables. No added sugar or salt. The same as Larsen's Veg-All "A Magic Garden" for Soups, Salads, Vegetable Dishes (THE JOURNAL, Aug 12, 1933, page 525).

(a) MINNEOPA BRAND GOLDEN SYRUP

(85 PER CENT CORN SYRUP, 15 PER CENT
REFINERS SYRUP)

(b) MINNEOPA BRAND CRYSTAL WHITE SYRUP

(85 PER CENT CORN SYRUP, 15 PER CENT
GRANULATED SUGAR SYRUP)

Distributor — L. Patterson Mercantile Company, Mankato, Minn.

Packer — Penick and Ford Sales Company, Cedar Rapids, Iowa

Description — (a) The same as Penick Golden Syrup (Corn Syrup and Sugar Refiners' Syrup), THE JOURNAL, April 2, 1932, page 1159.

(b) The same as Penick Crystal White Syrup (Corn and Cane Sugar Syrups), THE JOURNAL, April 9, 1932, page 1268.

Claims of Manufacturer — Recommended for use as an easily digestible and readily assimilable carbohydrate supplement to milk in infant feeding and as a syrup for cooking, baking and the table.

OSCAR MAYER'S APPROVED BRAND LIVER SAUSAGE

OSCAR MAYER'S BRAUNSCHWEIGER STYLE LIVER SAUSAGE

Manufacturer — Oscar Mayer and Company, Inc., Chicago

Description — Cooked and smoked sausage containing United States government inspected and passed ground pork livers and muscle, ground pork skin, powdered skim milk, onions, salt, pepper, mace, and annatto color.

Manufacture — Pork skins are cooked for two hours at 88 C, drained, ground and chopped with formula proportions of fresh pork livers and lean pork muscle (United States Government Inspected and Passed), dried milk, onions and spices. The sausage meat is stuffed into hog casings of 30 inch lengths which are tied off and cooked in water containing annatto color at 75 C until the internal temperature of the sausage reaches 68 C, well above that (58 C) required to kill trichinae. After chilling, the sausage is smoked for four hours at 40 C branded

and individually wrapped or packed in solid fiber boxes. The manufacture is under government inspection.

Analysis (submitted by manufacturer) —

	per cent
Moisture	57.9
Ash	3.1
Fat (ether extract)	20.8
Protein (N \times 6.25)	14.9
Starch (acid hydrolysis method)	0.5
Reducing sugars as invert sugar	1.9
Sucrose (copper reduction method)	0.7
Carbohydrates (by difference)	3.3

Calories — 2.6 per gram 74 per ounce

Claims of Manufacturer — United States government inspected and passed.

CURDOLAC COMPANY BRAN, SOYA BEAN, INDIA GUM BREAKFAST PREPARATION

(ADDED SALT, BAKING SODA, SWEETENED WITH
SACCHARIN AND FLAVORED)

Manufacturer — Curdolac Food Company, Waukesha, Wis.

Description — Short strands of a preparation of starch free wheat bran, roasted soy bean, India gum, sodium chloride, sodium bicarbonate, sweetened with saccharin and flavored with cassia extract and vanilla.

Manufacture — Thrice ground Minnesota bran is treated with diastase to convert the starch to soluble carbohydrates, is washed with water, and dried. Cleaned soy beans are roasted to the desired flavor and ground. Definite proportions of washed bran, roasted soy bean flour, India gum, salt and sodium bicarbonate are mixed, water, saccharin and flavoring are added. The dough mass is run through a mill to form strands, which are spread on baking sheets, dried, and packed in cartons.

Analysis (submitted by manufacturer) —

	per cent
Moisture	2.0
Ash	8.0
Fat (ether extraction method)	5.3
Protein (N \times 6.25)	15.2
Crude fiber	17.9
* Available carbohydrates	3.6
* Nonavailable carbohydrates other than crude fiber (by difference)	48.0
Saccharin	0.0006

* Estimated from composition of ingredients and formula.

Calories — 1.1 per gram 31 per ounce

Claims of Manufacturer — "Special purpose food for diets low in carbohydrates. Provides bulk. Use under the directions of a physician."

LIGHT'S OVEN-PERFECT BISCUIT FLOUR READY MIXED

Manufacturer — The Light Grain and Milling Company, Liberal, Kan.

Description — Biscuit flour containing bleached hard winter wheat short patent flour, hydrogenated cottonseed oil, skim milk, sucrose, sodium chloride, sodium bicarbonate, sodium acid pyrophosphate, and calcium acid phosphate.

Manufacture — The ingredients are mixed in definite proportions in a batch mixer and automatically packed in wax paper lined cartons.

Analysis (submitted by manufacturer) —

	per cent
Moisture	8.5
Ash	4.6
Fat (ether extraction method)	12.0
Protein (N \times 5.7)	9.5
Reducing sugars as invert sugar	0.5
Sucrose (copper reduction method)	3.8
Crude fiber	0.4
Carbohydrates other than crude fiber (by difference)	65.0

Calories — 4.1 per gram 116 per ounce

LIGHT'S BEST OVEN PERFECT FLOUR, SELF-RISING (BLEACHED)

Manufacturer — The Light Grain and Milling Company, Liberal, Kan.

Description — Self-rising flour prepared from bleached hard winter wheat standard patent flour, sodium chloride, calcium acid phosphate and sodium bicarbonate.

Manufacture — The ingredients are mixed in definite proportions in a batch mixer and automatically packed in cotton bags. The flour is bleached with nitrogen trichloride (one seventh ounce per barrel).

MEDICAL LICENSURE STATISTICS FOR 1933

ANNUAL PRESENTATION OF LICENSURE STATISTICS BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION

The report herewith presented for the year 1933 deals with statistics regarding (a) medical licensing boards of the United States, including the District of Columbia and the territories and possessions of the United States, (b) basic science boards, and (c) the National Board of Medical Examiners. In the publication of these statistics, the endeavor has been to show the actual facts, a knowledge of which is always beneficial. The information should be of service to medical schools and licensing boards as well as to the public.

Official reports have been contributed by the officers of the medical licensing boards of all states, the District of Columbia, Alaska, the Canal Zone, Hawaii and Puerto Rico, three homeopathic boards (Connecticut, Delaware and Maryland), the eclectic board of Arkansas, the seven basic science boards in operation during 1933 (Arkansas, Connecticut, the District of Columbia, Minnesota, Nebraska, Washington and Wisconsin), and the National Board of Medical Examiners. Every effort has been made to insure accuracy. The officers of these boards deserve much praise for the completion of their reports, and acknowledgment is here made of their splendid cooperation. The officers of these boards also rendered the Association invaluable assistance in other respects by which we are continually able to improve the biographic records.

The tables showing medical licensing board results include figures regarding the number of candidates examined in 1933 for medical licensure, the number licensed and the number added to the profession.

LICENTIATES

Table 1 gives the actual number of licenses issued in the various states, territories and possessions during the year. There were 5,174 licensed on the basis of examination and 1,951 by endorsement of credentials. In several states (table 5) the internship is a requisite for licensure, but a physician is permitted to take the examination, his license being withheld. This is particularly true in Iowa and Michigan. Licenses are also withheld for lack of citizenship, fees or other minor technicalities. In consequence these are omitted in recording the number licensed. The figures, therefore, for those licensed after examination include many who were examined in 1932 and even a few in previous years. New York issued the largest number of licenses, 1,054, Pennsylvania issued 507, Illinois 460, California 417, Ohio 369 and New Jersey 309. All other states licensed fewer than 300. Only one physician was licensed after examination in Nevada, and New Mexico registered none by this method. Florida grants licenses only on the basis of examination. Massachusetts and Rhode Island have no reciprocity privileges but endorse diplomates of the National Board of Medical Examiners. A total of 7,125 licenses were awarded. This figure, however, does not represent 7,125 individuals since several have been licensed in more than one state during the year. Table 4 shows how many of those licensed were never before registered and, therefore, represent the number added to the medical profession.

TOTAL EXAMINED

Table 2 gives the results (passed and failed) for all candidates who took examinations in 1933. There were 5,658 examined, of whom 5,229 passed and 429 failed. These came from 67 approved medical schools in the United States and 9 in Canada, 59 medical schools of other countries, 14 medical schools now

TABLE 1—*Licentiates—1933*

	Licensed on Basis of		Total
	Examination	Reciprocity and Endorsement	
Alabama	11	28	39
Arizona	3	14	17
Arkansas	4*	16	20
California	294	12	306
Colorado	60	2	62
Connecticut	70	59	129
Delaware	18	10	28
District of Columbia	38	17	55
Florida	40	0	40
Georgia	87	20	107
Idaho	5	6	11
Illinois	34	66	100
Indiana	115	27	142
Iowa	106	42	148
Kansas	80	20	100
Kentucky	60	39	99
Louisiana	90	16	106
Maine	24	18	42
Maryland	165	21	186
Massachusetts	189	81	270
Michigan	202	48	250
Minnesota	126	11	137
Mississippi	22	18	40
Missouri	214	46	260
Montana	8	9	17
Nebraska	67	14	81
Nevada	1	1*	2
New Hampshire	10	15	25
New Jersey	103	106	209
New Mexico	0	24	24
New York	747	307	1,054
North Carolina	65	60	125
North Dakota	14	1	15
Ohio	277	92	369
Oklahoma	10	21	31
Oregon	21	22	43
Pennsylvania	46	51	97
Rhode Island	42	6	48
South Carolina	20	4	24
South Dakota	14	10	24
Tennessee	105	20	125
Texas	166	118	284
Utah	22	13	35
Vermont	27	4	31
Virginia	146	32	178
Washington	23	29	52
West Virginia	30	36	66
Wisconsin	115	69	184
Wyoming	2	10	12
U. S. Territories and Possessions*	29	9	38
Totals	5,174	1,951	7,125

* Alaska, Canal Zone, Hawaii, Puerto Rico and Philippine Islands (not complete)

extinct, 7 unapproved institutions and several osteopathic colleges. These statistics contain figures regarding only those osteopaths granted the privilege to practice medicine, surgery or both by the medical board. There were 5,040 graduates of approved medical schools in the United States examined, of whom 33 per cent failed, 122 Canadian graduates, 15.6 per cent of whom failed, 203 foreign graduates with 36.5 per cent failures, 16 who graduated from schools now extinct, with 50.0 per cent of failures, and 277 from unapproved and osteopathic schools, of whom 58.8 per cent failed. Of these 277, 82 were graduates of osteo-

(CONTINUED ON PAGE 1388)

^P = Passed ^F = Failed
Canal Zone Hawaii Puerto Rico and Philippine Island (not complete)

TABLE 2—CANDIDATES EXAMINED

Marginal Number

No.	SCHOOL	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
TEXAS																											
61	Baylor University College of Medicine																										
62	University of Texas School of Medicine				1	0																					
VERMONT																											
63	University of Vermont College of Medicine															1	0										
VIRGINIA																											
64	Medical College of Virginia																										
65	University of Virginia Department of Medicine	1	0						1	0	1	0	2	0	1	0											
WISCONSIN																											
66	Marquette University School of Medicine					1	0																				
67	University of Wisconsin Medical School						0			1	0																
CANADA																											
68	Dalhousie University Faculty of Medicine																										
69	Laval University Faculty of Medicine																										
70	McGill University Faculty of Medicine																										
71	Queen's University Faculty of Medicine		1	0																							
72	University of Alberta Faculty of Medicine																										
73	University of Manitoba Faculty of Medicine																										
74	University of Montreal Faculty of Medicine																										
75	University of Toronto Faculty of Medicine																										
76	University of Western Ontario Medical School																										
77	Foreign Medical Faculties				1	0																					
78	Failed Medical Schools				0	2																					
79	Unapproved Schools				1	0	0	1	5	0	2	4	0	1													
80	Totals	11	10	44	507	60	78	19	40	8	80	5	333	120	111	80	66	119	33	167	366	194	17				
81	Totals—Examined—Passed	11	9	44	294	60	63	18	39	80	88	5	369	114	110	80	66	119	33	163	369	194	17				
82	Totals—Examined—Failed	0	1	1	13	0	16	1	1	3	1	0	14	6	1	0	0	0	0	2	177	0	1				
83	Percentage Failed	0.0	10.0	2.2	4.2	0.0	19.2	5.3	2.5	6	1.1	0.0	4.2	5.0	0.0	0.0	0.0	0.0	0.0	1.2	48.4	0.0	6.5				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				

P = Passed 1 = Failed

(CONTINUED FROM PAGE 1385)

pathic schools, of whom 35 passed and 47, 57.3 per cent, failed, and 195 were graduates of unapproved schools, of whom 79 passed, and 116, 59.5 per cent failed. Graduates of osteopathic schools were examined in Colorado, Connecticut, Massachusetts, Texas and Wisconsin, while graduates of unapproved schools were examined in Arkansas (eclectic board), California, Delaware, Illinois, Massachusetts, Tennessee, Washington and Hawaii. Massachusetts licensed 53 and Illinois 38 of these practitioners.

The largest number of graduates of any one school represented was from Georgetown University School of Medicine, 166, which also had the highest number of failures, 22. These graduates were examined in 18 states. The University of Michigan Medical School had 152 graduates before 14 licensing boards, of whom 3 failed. The next highest number of graduates of any one school was Rush Medical College, which had 146 graduates examined in 26 states, of whom 2 failed. Graduates of Northwestern University Medical School and Rush Medical College were examined in 27 and 26 states, respectively. From these statistics one might infer that these schools educate more nonresidents than do other schools. Harvard University Medical School graduates were examined in 22 states and the University of Pennsylvania School of Medicine graduates in 23.

The one eclectic board in existence, in Arkansas, examined and licensed one candidate. The office of the state comptroller is at present conducting an investigation into the allegedly fraudulent issuance of licenses in Arkansas to eclectic doctors during past years. It is to be hoped that the desired results will be obtained.

Two of the five homeopathic boards in existence, Delaware and Maryland, examined ten candidates, all of whom passed.

In 1932, 5,663 were examined, of whom 5,235 passed and 7.6 per cent failed as compared with 5,658 examined in 1933, of whom 5,229 passed and 7.6 per cent failed. The figures, in general, compare equally with other years.

REGISTRATION BY RECIPROCITY AND
ENDORSEMENT

The number of physicians granted licenses to practice medicine and surgery without examination are given in table 3. There were 1,927 so registered who presented licenses from other states, Canada or foreign countries, the certificate of the National Board of Medical Examiners, one of the government services, or were registered on the basis of diplomas from foreign faculties of medicine.

In an increasing number of states the boards now accept a physician's credentials, if satisfactory, whether or not the state board issuing the original license returns the favor. The following 29 states and the District of Columbia generally will register, without examination, licentiates who present satisfactory evidence of good moral character and practice record, and, in addition thereto, credentials which correspond to those required by their respective states at the time such licenses were issued.

Alabama	Maine	North Carolina
Arizona	Maryland	Oklahoma
California	Michigan	Oregon
Colorado	Minnesota	Pennsylvania
Connecticut	Missouri	South Carolina
Delaware	Nebraska	South Dakota
District of Columbia	Nevada	Texas
Georgia	New Hampshire	Utah
Idaho	New Jersey	Vermont
Illinois	New Mexico	Wisconsin

California (when ten or more years has intervened), Connecticut, Illinois, Minnesota and South Dakota require a practical or oral examination of reciprocity candidates, before a license is granted by this means. Applicants in Idaho are required to pass either a

23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50								
Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U. S. Territories and Possessions*	Totals	Examined—Passed	Examined—Failed	Percentage Failed	No. Boards Examined by	Marginal Number		
P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	76	76	0	0	5	61	
F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	75	75	0	0	5	62		
								1 0		1 0				1 0					72 0	71 0								36	32	4	11	6	6		
								2 2						1 0	1 0						24 0							112	110	2	18	10	64		
						0 0		1 1	0 0	2 0				0 0	2 0				1 0			73 0	12 0			1 0	74	73	1	14	11	65			
								1						2 0								54 0	1 0					59	59	0	0	8	66		
								1 0		2 0	0 0	0 0	0 0	0 1			1 0								50 0		1 0	55	54	1	18	15	67		
																												2	2	0	0	1	68		
								2 0												1 0	2 0							10	4	6	60	1	69		
								17 3			1 0			1 0	2 0					1 0		2 0						51	47	4	78	16	70		
								1						1 0														13	11	2	154	1	71		
																												2	2	0	0	2	72		
								1 0		1 0													1 0					4	4	0	0	3	73		
																												9	2	7	778	6	74		
																												25	25	0	0	13	75		
								4 0		1 0	4 0				2 0													25	25	0	0	13	76		
								1 0						1 0														6	6	0	0	3	76		
	0 0					16 0	63 4				7 4	0 1		1 0	1 1	1 0		1 0	1 0					0 1	1 1		6 2	203	129	74 365	25 77	77			
														1 3					1 0	4 0				1 0			0 1	277	114	163 558	12 79	79			
24	214	8	66	2	10	162	0	593	60	16	202	66	39	465	41	35	14	141	166	9	27	147	41	32	120	2	40	5 608				80			
24	214	8	66	1	10	163	0	747	60	14	280	60	39	466	35	35	14	141	166	9	27	146	41	30	115	2	86	5 229				81			
00	00	00	00	00	00	56	00	163	00	125	24	00	00	26	73	00	00	00	00	00	00	07	00	62	42	00	100			7 6		83			
23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50								

P = Passed F = Failed

Canal Zone Hawaii Puerto Rico and Philippine Islands (not complete)

written or an oral examination in medical jurisprudence as pertaining to practice in that state

Florida, Massachusetts and Rhode Island do not have reciprocal or endorsement arrangements with any state

New York granted the greatest number of licenses by endorsement of credentials in 1933 (307). New Jersey was second with 156, California third with 123, and Texas fourth with 105. The largest group representing the same type of credentials were the 391 diplomates of the National Board of Medical Examiners, the next greatest number (119) came from New York, Tennessee was third with 106, and Illinois fourth with 100.

Eleven physicians were licensed on the basis of Canadian credentials (Arizona 1 and New York 10) and 9 were registered by endorsement of foreign licenses (Germany 4, Great Britain 1, Mexico 1, Syria 1, and the Union of Socialist Soviet Republics 2). Two physicians were registered by endorsement of licenses issued in Alaska, two by Hawaiian credentials and one on the basis of a license issued in Puerto Rico. Sixteen physicians were licensed in New York on presentation of medical diplomas from Austria 3, Hungary 6, Italy 2, Rumania 1, Scotland 1, Switzerland 2 and Union of Socialist Soviet Republics 1.

The Eclectic Board of Arkansas registered one candidate by endorsement. One candidate each also was licensed by the homeopathic boards of Arkansas, Connecticut, Delaware and Maryland. In addition, 23 osteopaths were granted licenses to practice without examination. Thirteen so registered in Texas were granted privileges as physicians and surgeons while one in the District of Columbia and nine in Wisconsin were licensed to practice osteopathy and surgery. One nongraduate was registered without examination in Tennessee by a special act of the legislature.

CANDIDATES ADDED TO THE PROFESSION

In table 4 are recorded the number of candidates added to the profession during 1933. The number represents candidates examined in 1933 and licensed, also those examined in previous years whose licenses were withheld and issued in 1933, those certified on the basis of the certificate of the National Board of Medical Examiners, government services, Canadian and foreign credentials, and special exemption. In the main they represent recent graduates. Altogether, 5,012 were added to the profession as contrasted with approximately 3,500, the number removed by death in 1933. These figures indicate that some 1,500 have been added to the already overcrowded medical profession. It is interesting to note that, of 7,125 licenses issued throughout the year, 5,012, 70.3 per cent, are actual additions to the medical profession. The ratio is about twice as great as it is in England, France or Germany. The changing attitude of society toward the practice of medicine seems to indicate that in the future a smaller number of doctors may be able to render adequate medical service. The proper adjustment of the ratio of physicians to population is a matter of vital public concern.

The largest number added to the profession was in New York, 826. Pennsylvania added 411 and Illinois 394, Nevada and Wyoming added none and New Mexico only 1, Idaho 2 and Arizona 3.

STATE REQUIREMENTS OF PRELIMINARY EDUCATION

Although, for sixteen years, two years of premedical college training has been required by every class A medical school, there are still nine states which have failed to adopt this standard. Statutory requirements are shown in table 6 with the dates at which they

TABLE 3—Physicians Licensed by Reciprocity and Endorsement—1933

[illegible]

became effective. In chart 1 the same information is presented graphically.

COMPARISON WITH OTHER YEARS

In table 7 are listed the numbers of candidates examined in the various states, territories and possessions in the past five years, showing those who passed and failed. In this period New York examined 4,012 candidates, Pennsylvania 2,153, Illinois 1,863, California 1,480, Ohio 1,317, Michigan 1,241, and Massachusetts 1,053. All others examined less than 1,000. The smallest number (5) were examined in New

TABLE 4—*Licentiatees Representing Additions to the Medical Profession in 1933*

	Examination	Endorsement ¹	Total
Alabama	10	0	13
Arizona	2	1	3
Arkansas	42		42
California	264	11	275
Colorado	57		77
Connecticut	70*	26	96
Delaware	14		14
District of Columbia	21		21
Florida	22		22
Georgia	81		81
Idaho	2		2
Illinois	374*	20	394
Indiana	109		109
Iowa	106*		106
Kansas	77		77
Kentucky	63	3	68
Louisiana	76		76
Maine	26		26
Maryland	169	0	164
Massachusetts	143	6	212
Michigan	202*		202
Minnesota	05	4	90
Mississippi	18		18
Missouri	202	3	205
Montana	2		2
Nebraska	63		65
Nevada			
New Hampshire	10	2	12
New Jersey	139	14	153
New Mexico		1	1
New York	706	170	876
North Carolina	61	2	63
North Dakota	6	1	7
Ohio	270	0	270
Oklahoma	8		8
Oregon	26	1	41
Pennsylvania	379	12	411
Rhode Island	21	4	25
South Carolina	32	1	33
South Dakota	6	1	7
Tennessee	150	2	152
Texas	162	1	163
Utah	22	1	23
Vermont	27	2	29
Virginia	145	2	147
Washington	31	4	35
West Virginia	18		18
Wisconsin	109	1	110
Wyoming			
Hawaii Puerto Rico	17	2	19
Totals	4 686	326	5 012

¹ National Board of Medical Examiners government services Canadian and foreign credentials diploma and special exemption.

* This figure represents the number licensed by examination. It was not possible at this time to indicate whether these candidates were previously registered elsewhere but the figure is believed to be a fair estimate.

Mexico. The percentage of candidates who failed in the examinations in the last five years is given in the last column. The proportion of failures in all the states has increased from 62 per cent in 1929 to 66 per cent in 1933. In the five year period, 35.3 per cent of the applicants failed in Massachusetts and 26.7 per cent in Nevada, followed by New York with 15.3 per cent, Connecticut 12.2 per cent, and North Dakota 10.6 per cent. On the other hand, Kansas, Montana, Nebraska, New Hampshire, New Mexico, Oklahoma, South Carolina, South Dakota and Utah reported no failures while Arkansas, Georgia, Iowa, Louisiana, Michigan, Minnesota, Missouri, Tennessee, Texas and Vermont had less than 1 per cent of failures. A total

of 28,115 candidates were examined in the five years from 1929 to 1933 inclusive, of whom 26,247 passed and 1,868 failed. These figures represent examinations given and not individuals. A candidate who fails more than once in a given year has not been counted twice, but should he fail in one of the succeeding years he is counted in that year also. Likewise, if a candidate fails and later passes, whether in the same or a later

TABLE 5—*Internship Required by Medical Licensing Boards*

Alaska	1917	Pennsylvania	1914
Delaware	1924	Rhode Island	1917
District of Columbia	1930	South Dakota	1925
Illinois	1923	Utah	1926
Iowa	1924	Vermont	1934
Michigan	1922	Washington	1919
New Jersey	1916	West Virginia	1932
North Dakota	1918	Wisconsin	1927
Oklahoma	1933	Wyoming	1931
Oregon	1933		

year, he is counted as passed and failed. With a total of 1,868 failures for the five year period, it seems likely that there were approximately 25,000 individuals examined. It is to be assumed that the majority of those who fail are later reexamined and licensed in some state. This figure, therefore, indicates a fair estimate of the number of physicians added to the profession each year. Table 4 gives exact totals on this point for the year 1933 and this study will be continued.

REGISTRATION 1904-1933

A study of totals and percentages (table 8) for each year beginning with 1904 is of interest. The number (5,658) examined in 1933 was 5 less than the number

TABLE 6—*Requirements of Preliminary Education*

Two Years of College	Affects Graduates of	Two Years of College	Affects Graduates of
Alabama	1919	New Hampshire	1919
Arizona	1922	New Jersey	1921
Arkansas	1922	New Mexico	1923
Colorado	1914	New York	1922
District of Columbia	1929	North Carolina	1922
Florida	1922	North Dakota	1912
Georgia	1922	Oklahoma	1921
Idaho	1938	Oregon	1924
Illinois	1923	Rhode Island	1922
Indiana	1915	South Carolina	1922
Iowa	1915	South Dakota	1915
Kansas	1922	Tennessee	1922
Kentucky	1922	Texas	1930
Louisiana	1922	Utah	1916
Maine	1910	Vermont	1922
Maryland	1922	Virginia	1922
Michigan	1922	Washington	1922
Minnesota	1912	West Virginia	1925
Montana	1922	Wisconsin	1919
Nevada	1922	Wyoming	1922

One Year of College	Affects Graduates of
California	1924
Connecticut	1919
Mississippi	1919
Pennsylvania	1918

High School Graduation or Its Equivalent

Delaware
Massachusetts
Missouri
Nebraska
Ohio

examined in 1932 but 381 less than in 1904. By all methods, 7,180 were registered, 75 more than in 1932. It will be seen that there has been no constant increase or decrease in the total number of candidates registered from 1904 to 1933, although since 1906 the number licensed without examination has been increasing and those examined has diminished owing to the universal

of practice The medical practice act requires that the applicant be a graduate of a reputable school whose entrance requirements and course of instruction are as high as those adopted by the better class of medical schools and whose course of instruction embraces not less than four terms of eight months each

In Wisconsin there is one licensing board A license issued to osteopathic candidates authorizes them to practice osteopathy and surgery

TABLE 7—Candidates Examined—1929-1933 Inclusive

	1929		1930		1931		1932		1933		Totals for 5 Years		
	Passed	Failed	Passed	Failed	Passed	Failed	Passed	Failed	Passed	Failed	Passed	Failed	Percentage Failed
Alabama	34	1	27	1	29	0	14	0	11	0	115	2	1.7
Arizona	11	1	19	0	20	1	14	2	9	1	73	5	6.4
Arkansas	82	0	25	0	29	0	43	0	44	1	238	1	0.4
California	300	70	212	30	324	14	270	11	294	13	1480	92	5.9
Colorado	10	0	55	0	48	2	9	3	60	0	272	5	1.8
Connecticut	65	3	110	10	60	4	65	12	63	10	316	44	12.2
Delaware	11	0	7	1	12	0	6	0	7	1	54	7	3.6
Dist. of Columbia	51	1	84	0	27	0	43	1	39	1	194	3	1.5
Florida	72	3	71	8	55	5	66	6	80	3	441	25	6.6
Georgia	78	0	72	0	77	0	100	0	85	1	415	1	0.2
Idaho	5	2	7	0	5	0	5	0	5	0	27	2	6.7
Illinois	381	22	385	28	365	24	360	28	369	14	1861	126	6.1
Indiana	116	0	116	0	124	0	110	1	114	6	580	7	1.2
Iowa	100	0	112	0	109	1	115	0	110	1	546	2	0.4
Kansas	61	0	75	0	74	0	70	0	80	0	386	0	0.0
Kentucky	65	1	76	3	64	1	68	0	66	0	339	5	1.5
Louisiana	91	0	79	1	102	1	111	3	110	0	525	5	0.9
Maine	24	2	22	1	30	0	30	0	35	0	141	3	2.1
Maryland	106	0	120	1	153	3	170	5	161	2	820	11	1.3
Massachusetts	211	84	227	78	213	104	208	112	189	177	1053	575	5.1
Michigan	266	1	302	0	260	0	219	0	104	0	1241	1	0.1
Minnesota	155	0	176	0	150	0	142	0	126	1	749	1	0.1
Mississippi	27	0	31	2	35	0	27	0	24	0	144	2	1.4
Missouri	116	1	149	0	157	0	155	0	214	0	922	1	0.1
Montana	9	0	13	0	7	0	5	0	5	0	45	0	0.0
Nebraska	67	0	65	0	57	0	67	0	68	0	322	0	0.0
Nevada	2	2	2	0	2	0	4	1	1	1	11	4	26.4
New Hampshire	2	0	1	0	0	0	9	0	10	0	28	0	0.0
New Jersey	70	2	82	3	91	5	113	7	153	9	509	26	4.9
New Mexico	1	0	0	0	0	0	4	0	0	0	5	0	0.0
New York	900	143	810	105	838	146	717	179	747	146	4012	722	1.3
North Carolina	97	8	85	5	74	0	96	1	65	0	407	14	3.3
North Dakota	17	5	16	2	16	1	21	0	14	2	84	10	10.6
Ohio	272	1	231	1	259	7	270	10	285	7	1317	20	1.5
Oklahoma	54	0	52	0	51	0	60	0	66	0	283	0	0.0
Oregon	31	4	32	1	40	1	31	1	39	0	173	7	3.9
Pennsylvania	399	4	421	0	419	6	458	8	456	12	2153	39	1.8
Rhode Island	50	0	73	2	30	0	40	1	38	3	231	6	2.5
South Carolina	29	0	37	0	47	0	40	0	35	0	191	0	0.0
South Dakota	11	0	17	0	16	0	12	0	14	0	70	0	0.0
Tennessee	153	0	155	0	195	3	199	1	141	0	837	4	0.5
Texas	148	0	147	0	154	2	147	0	166	0	762	2	0.3
Utah	8	0	10	0	10	0	24	0	9	0	61	0	0.0
Vermont	31	1	19	0	20	0	23	0	27	0	120	1	0.8
Virginia	120	3	122	5	101	2	115	3	146	1	604	14	2.3
Washington	46	1	47	2	33	0	42	0	41	0	209	3	1.4
West Virginia	43	3	41	0	36	2	26	1	0	2	176	8	4.3
Wisconsin	19	0	99	0	98	11	116	1	115	5	507	25	4.4
Wyoming	0	1	4	0	5	0	2	0	2	0	13	1	7.2
U. S. Territories and Possessions	1	0	21	125	4	118	104	4	36	4	516	35	6.4
Totals	5623	5	5563	5	5695	1663	5658	5	5658	5	28115	56	0.2
Totals—Examined	5623	5	5563	5	5695	1663	5658	5	5658	5	28115	56	0.2
Passed	5623	5	5563	5	5695	1663	5658	5	5658	5	28115	56	0.2
Failed	5	5	5	5	5	5	5	5	5	5	5	5	0.2
Percentage Failed	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

In the District of Columbia one osteopath was granted the privilege to practice surgery by reciprocity

The 84 graduates of unapproved schools were licensed in nine states Alabama Michigan New Jersey, New Mexico, Tennessee and Washington each licensed one, and Arkansas licensed two In most of these states there was a specific reason for registration Illinois recognizes a medical school which is not in good standing with other state boards The Massachusetts law has already been described

These data are illustrated in chart 2 Those states which licensed more than ten such individuals are indicated in black and those licensing fewer than ten by slanted lines

TABLE 8—Registration—1904-1933

Year	All Candidates Examined			Registered Without Written Examination		Total Registered
	Examined	Passed	Percentage Failed	Examined	Written	
1904	7 039	5 676	19.4	999		6 675
1905	7 180	5 690	20.5	394		6 084
1906	8 036	6 369	20.7	1 499		7 868
1907	7 275	5 727	21.3	1 427		7 154
1908	7 773	6 087	21.7	1 250		7 367
1909	7 290	5 860	19.6	1 373		7 233
1910	7 005	5 713	18.4	1 640		7 353
1911	6 964	5 582	10.8	1 243		6 825
1912	6 874	5 466	20.5	1 271		6 737
1913	6 449	5 250	18.6	1 291		6 541
1914	5 577	4 377	21.0	1 437		5 814
1915	5 132	4 075	15.5	1 303		5 895
1916	4 850	4 143	14.9	1 350		5 493
1917	4 761	4 082	14.1	1 366		5 442
1918	3 662	3 179	13.2	1 046		4 225
1919	4 790	4 074	14.2	2 541		6 615
1920	4 794	4 000	15.3	2 553		6 613
1921	4 817	4 221	12.4	2 177		6 398
1922	4 020	3 528	12.2	2 057		5 585
1923	4 718	4 019	14.8	2 397		6 416
1924	5 385	4 749	11.8	1 904		6 653
1925	5 993	5 441	9.2	1 640		7 251
1926	5 767	5 307	7.9	1 929		7 266
1927	5 350	4 993	7.2	2 169		7 162
1928	5 442	5 084	6.7	2 223		7 307
1929	5 623	5 276	6.2	2 414		7 690
1930	6 563	5 241	5.7	2 362		7 609
1931	5 695	5 260	6.2	2 205		7 468
1932	5 603	5 255	7.6	1 850		7 103
1933	5 658	5 229	7.6	1 651		7 180

TABLE 9—Source of Physicians Registered—1922-1933

Year	Graduates of Approved Schools		Others		Totals
	Number	Per Cent	Number	Per Cent	
1922	4 06	80.7	1 079	19.3	5 550
1923	5 101	80.9	1 225	19.1	6 416
1924	5 672	85.3	981	14.7	6 653
1925	6 294	86.4	987	13.6	7 281
1926	6 418	88.7	818	11.3	7 236
1927	6 406	89.4	766	10.6	7 162
1928	6 554	90.1	723	9.9	7 307
1929	6 997	91.0	693	9.0	7 690
1930	7 007	92.1	602	7.9	7 609
1931	6 927	92.8	541	7.2	7 468
1932	6 660	93.7	445	6.3	7 105
1933	6 732	93.8	448	6.2	7 180

TABLE 10—Graduates of Other Than Approved Medical Schools Registered—1933

	Examination		Reciprocity and Endorsement		Totals
	Osteopaths	Graduates of Unapproved Schools	Osteopaths	Graduates of Unapproved Schools and Undergrads	
Alabama	0	0	0	1	1
Arkansas	0	1	0	1	2
Colorado	5	0	0	0	5
Connecticut	2	0	0	0	2
Dist. of Columbia	0	0	1	0	1
Illinois	0	25	0	0	25
Massachusetts	15	35	0	0	53
Michigan	0	0	0	1	1
New Jersey	0	0	0	1	1
New Mexico	0	0	0	1	1
Tennessee	0	1	0	1	2
Texas	4	0	13	0	17
Washington	0	2	0	0	2
Wisconsin	6	0	0	0	6
Total	35	79	23	6	143

It is to be regretted that some states even in small numbers grant licenses to individuals unacceptable to the medical profession The medical profession should be ever watchful and untiring in its efforts to pre-

TABLE 11—*Graduates of Medical Faculties in Countries Other Than the United States and Canada Examined—1933*

Marginal Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	Totals	L'examined—Passed	L'examined—Failed	No Boards L'examined by			
AUSTRIA																																
1 Karl Franzens Universität Graz	1 1															1 1	1 0									5	3	2	400	3	1	
2 Leopold Franzens Universität Innsbruck	1 0	1 0			2 0											3 3	1 0									1	1	0	00	1	2	
3 Universität Wien																							0 1			12	8	4	13	6	1	
CUBA																																
4 Universidad de la Habana					2 0										1 0				1 0							4	4	0	00	3	4	
CZECHOSLOVAKIA																																
5 Deutsche Universität Prag																1 4										2	1	4	800	1	5	
6 Karlov University, Praha																																
7 Masarykovy University Brn							1 0									0 1										2	1	0	00	1	6	
8 Univerzity Komenského Bratislava																0 1										1	0	1	1000	1	7	
DOMINICAN REPUBLIC																																
9 Universidad de Santo Domingo																										1	0	1	000	1	5	
ENGLAND																																
10 Licentiate of the Royal College of Physicians of London																																
11 University of London																1 0										1	1	0	00	1	10	
12 University of Sheffield																0 1										2	2	0	00	1	11	
ESTONIA																																
13 Tartu Ülikool							1 0																			1	1	0	00	1	12	
FRANCE																																
14 Université de Lyon																1 0																
15 Université de Montpellier																																
16 Université de Paris																2 1											1	0	1	1000	1	13
17 Université de Toulouse																																
18 Albert Ludwigs Universität, Freiburg																																
19 Friedrich Alexanders Universität, Erlangen																1 2	1 0										3	2	400	3	18	
20 Friedrich Wilhelms Universität, Berlin						1 0										0 1											1	0	1	1000	1	19
21 Humboldt Universität, Berlin																1 0											3	3	0	00	3	20
22 Julius Maximilians Universität, Würzburg																																
23 Universität Greifswald																																
24 Universität Heidelberg	1 0															1 1											1	0	1	000	1	21
GERMANY																																
25 National University of Athens																0 1																
HUNGARY																																
26 Magyar Királyi Erzsébet Tudományegyetem Pécs																																
27 Magyar Királyi Pázmány Péter Tudományegyetem Budapest																		2 2									2	2	0	00	2	26
IRELAND																																

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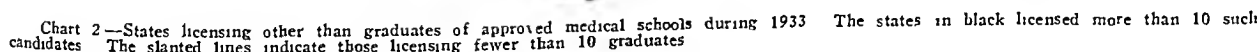
Several years ago when Great Britain after having had an avalanche of applications to its medical schools

TABLE 12—*Graduates of Medical Faculties of Universities in Countries Other than the United States and Canada Examined by Licensing Boards of the United States and Possessions, 1928-1933, Inclusive*

	1928-1933 Inclusive		1933			1928-1933 Inclusive		1933	
	Number Examined	Percentage Failed	Number Examined	Percentage Failed		Number Examined	Percentage Failed	Number Examined	Percentage Failed
AUSTRALIA									
University of Melbourne	2	00			Regia Università di Modena	6	66.7		
University of Sydney	1	00			Regia Università di Napoli	116	67.2	56	73.1
AUSTRIA									
Karl Franzens Universität Graz	11	34.5	5	40.0	Regia Università di Padova	9	55.6	1	100.0
Leopold Franzens Universität, Innsbruck	1	33.3	1	00	Regia Università di Palermo	23	76.0	11	45.5
Universität Wien	61	29.6	12	52.7	Regia Università di Pavia	4	75.0	1	00
BELGIUM									
Université Catholique de Louvain	5	40.0			Regia Università di Pisa	2	50.0	1	00
Université de Liège	1	00			Regia Università di Roma	41	56.1	19	31.3
CHINA									
Hunan Yale College of Medicine Changsha	1	00			Regia Università di Siena	1	00		
Mukden Medical College	1	100.0			Regia Università di Torino	1	100.0		
Pennsylvania Medical School Shanghai	2	00			JAPAN				
COLOMBIA									
Universidad de Cartagena	1	00			Japan Medical College Hongko, Tokyo	1	00		
CUBA									
Universidad de la Habana	17	35.3	4	00	Kelō Gijuku University, Tokyo	3	33.3		
CZECHOSLOVAKIA									
Deutsche Universität Prag	17	47.1	1	50.0	Kumamoto Medical College	1	100.0		
Karlovy University, Praha	11	27.3	1	00	Nagasaki Medical College	1	100.0		
Masarykovy University, Brno	2	100.0	1	100.0	Osaka Imperial University	1	00		
Univerzita Komenského, Bratislava			1	100.0	Tohoku Imperial University, Sendai	2	100.0		
DENMARK									
Københavns Universitet	3	66.7			Tokyo Charity Hospital Medical College	6	66.7		
DOMINICAN REPUBLIC									
Universidad de Santo Domingo	3	33.3	1	00	Tokyo Imperial University	2	00		
EL SALVADOR									
Universidad de El Salvador San Salvador	2	50.0			Tokyo Women's Medical College	1	00		
ENGLAND									
Licentiate in Med. Surg. & Midwifery, Apothecaries Society of London	2	00			MEXICO				
Licentiate of the Royal Coll. of Phys. of London			1	00	Escuela de Medicina de Nuevo León, Monterrey	4	00		
Licentiate of the Royal Coll. of Phys. of London					Escuela de Medicina Oaxaca	1	00		
Member of the Royal Coll. of Surgs. of England	15	6.7			Escuela Libre de Homeopatía, México D.F.	4	00		1 100.0
Member of the Royal Coll. of Surgs. of England	1	00			Escuela Libre de Homeopatía del Estado de Puebla			1	00
University of Liverpool	1	00			Escuela Médica Militar México D.F.	1	00		
University of London	2	00	2	00	Instituto Literario y Científico, San Luis Potosí	2	00		
University of Oxford	1	00			Universidad de Guadalajara	14	50.0		
University of Sheffield			1	100.0	Universidad Nacional México D.F.	21	4.8	3	00
ESTONIA									
Tartu Ülikool			1	00	NETHERLANDS				
FRANCE									
Université de Bordeaux	5	60.0			Universiteit van Amsterdam	2	50.0		
Université de Lyon	1	00	1	00	NEW ZEALAND				
Université de Montpellier	1	00	1	100.0	University of Otago, Dunedin	1	00		
Université de Paris	26	30.7	6	16.7	NORWAY				
Université de Toulouse			1	00	Kongelige Frederiks Universitet, Oslo	2	00	1	00
GERMANY									
Albert Ludwigs Universität Freiburg	7	28.6	6	40.0	POLAND				
Albertus Universität Königsberg	0	50.0			Uniwersytetu Jana Łwów	4	25.0		
Christian Albrechts Universität Kiel	4	50.0			Uniwersytetu Stefana Batorego, Wilno	1	00		
Eberhard Karls Universität, Tübingen	2	50.0			Uniwersytetu Warszawski	2	50.0		
Friedrich Alexanders Universität Erlangen	3	33.3	1	100.0	PORTUGAL				
Friedrich Wilhelms Universität, Berlin	28	46.4	3	00	Faculdade de Medicina de Lisboa	4	00		
Georg August Universität Göttingen	1	00			Faculdade de Medicina do Porto	8	67.5		
Hamburgische Universität	1	00	1	00	Universidade de Coimbra	3	33.3		
Hesslan Ludwigs Universität, Gießen	1	00			ROMANIA				
Johann Wolfgang Goethe-Universität Frankfurt am Main	2	50.0			Universitatea din Bucuresti	2	50.0		
Julius Maximilians Universität Würzburg	7	85.7	1	100.0	Universitatea din Iasi	2	00		
Ludwig Maximilians Universität München	12	25.0			Universitatea Regele Ferdinand I in Cluj	5	60.0	3	66.7
Rheinische Friedrich Wilhelms Universität Bonn	6	33.3			SCOTLAND				
Schlesische Friedrich Wilhelms Universität, Breslau	4	75.0			Licentiate of the Royal Coll. of Phys. of the Royal Coll. of Surgs. Edinburgh and of the Royal Faculty of Phys. & Surgs. of Glasgow	10	40.0	3	66.7
Thüringische Landesuniversität Jena	7	42.9			School of Medicine of the Royal Colleges Edinb.	1	100.0	1	00
Universität Greifswald	1	00	1	00	University of Aberdeen	2	50.0	3	33.3
Universität Heidelberg	1	00	2	00	University of Edinburgh	37	81	15	56
Universität Leipzig	3	33.3			University of Glasgow	5	20.0	1	00
GREECE									
National University of Athens	27	77.8	1	100.0	University of St Andrews	1	100.0	56	13.4
HONDURAS									
Universidad Central de la Republica de Honduras Tegucigalpa	1	00			SOUTH AFRICA UNION OF				
HUNGARY									
Magyar Királyi Erzsébet Tudományegyetem Pécs	6	50.0	5	40.0	University of the Witwatersrand Johannesburg	1	00		
Magyar Királyi Ferencz József Tudományegyetem Szeged	1	100.0			SPAIN				
Magyar Királyi Pázmány Petrus Tudományegyetem Budapest	27	25.0	2	00	Universidad Central de España Madrid	8	37.5	1	00
Magyar Királyi Tisza István Tudományegyetem Debrecen	1	00			Universidad de Barcelona	2	00		1 00
IRELAND									
Licentiate of the Royal Coll. of Phys. of Ireland					Universidad de Sevilla				
Licentiate of the Royal Coll. of Surgs. of Ireland	2	00			SWEDEN				
Licentiate of the Royal Coll. of Surgs. of Ireland			1	00	Kungl. Universitetet i Uppsala	1	00		
National University of Ireland	15	13.3	2	00	SWITZERLAND				
Queen's University Belfast	6	33.3			Universität Basel	1	00	1	00
University of Dublin	3	33.3			Universität Bern	8	50.0	1	00
ITALY									
Regia Università di Benito Mussolini, Bari	1	100.0			Universität Zürich	6	50.0		
Regia Università di Bologna	12	41.7	1	00	Université de Genève	9	33.3	1	00
Regia Università di Catania	4	50.0			Université de Lausanne	1	00		
Regia Università di Firenze	5	40.0	2	50.0	SYRIA				
Regia Università di Genova	3	66.7	2	100.0	American University of Beirut	3	00	1	00
Regia Università di Messina	1	00			Université de St. Joseph Beyrouth	3	100.0	1	100.0
Regia Università di Milano			1	00	TURKEY				
Regia Università di Torino									
Regia Università di Torino									
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Those individuals desiring to study medicine, who are unable to gain admission to schools either in the United States or in Europe, may endeavor to go elsewhere. The Council is attempting to make a study of medical education in South and Central America and a preliminary report was presented to the Annual Congress on Medical Education, Licensure and Hospitals

and Canada admitted to licensing examinations in this country. A similar tabulation is presented for the year 1933. One hundred and thirty-three schools are included and 8 of the licensing corporations of Great Britain, and 902 were examined during the five year period and 200 in 1933. The largest number examined represented the Regia Università di Napoli, 116, of whom 67.2 per cent failed, the Universität Wien in the five year period was second (61) and the Regia Università di Roma was third (41), while there were 37 from the University of Edinburgh. A study of the percentage failed is of interest.



In table 12 are assembled figures showing the standing during the five year period 1928-1932 of the graduates of medical faculties outside the United States

In twenty-nine states there is a requirement that the applicant must either be a naturalized citizen, have taken out first papers or declared intention of becoming a citizen, before a license to practice medicine will be granted. The states of Arkansas, Georgia, Kansas, Kentucky, Nebraska, Oklahoma, South Dakota, Tennessee and Wyoming require naturalization. Thirteen states require that first papers shall have been taken out, namely, Alabama, Florida, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, New Hampshire, North Dakota, Oregon, Virginia and Wisconsin. In Idaho, Indiana (reciprocal applicants only), Nevada, New Jersey, New York, Ohio and Rhode Island the applicant must have declared his intention of becoming a citizen before being eligible for registration.

BASIC SCIENCE BOARDS

Boards for the examination in the basic sciences of all those desiring to secure ultimately the right to practice the healing art functioned in seven states in 1933, namely, Arkansas, Connecticut, District of Columbia, Minnesota, Nebraska, Washington and Wisconsin. The states of Arizona and Oregon enacted basic science laws during the year, which became effective Jan 1,

• TABLE 1—Subjects of Examinations

	Examinations Required in						
	Anat omy	Bacteri ology	Chem istry	Diag nosis	Hy giene	Pathol ogy	Physi ology
Arizona	+	+	+		+	+	+
Arkansas	+	+	+		+	+	+
Connecticut	+	+		+	+	+	+
District of Columbia	+	+	+		+	+	+
Minnesota	+	+	+		+	+	+
Nebraska	+	+			+	+	+
Oregon	+		+		+	+	+
Washington	+		+		+	+	+
Wisconsin	+			+	+	+	+

1934 Statistics based on the number of candidates certified in 1933, and those who failed to secure this certification, together with totals for other years, are included in the accompanying tabulations. Similar data have been published in the State Board Number of THE JOURNAL since 1928.

The subjects in which examinations were conducted are listed in table 1.

As indicated in table 2, 658 candidates were examined by the seven boards in operation. Of this number,

TABLE 2—Applicants Examined—1933

	Year Enacted	Physi cians or Medical Students		Osteo paths		Chiro prac tors		Unclass ified		Total Ex amined	Passed	Failed	Percentage Failed
		P	F	P	F	P	F	P	F				
Arkansas	1923	61	2	0	0	0	0	0	0	63	61	2	3.2
Connecticut	1923	112	1	15	2	0	0	0	0	133	127	6	4.5
District of Columbia	1929	20	14	0	0	0	0	0	0	43	29	14	32.6
Minnesota	1927	88	3	4	8	0	1	0	2	138	92	46	33.3
Nebraska	1927	75	13	1	1	0	0	0	3	93	76	17	18.3
Washington	1927	73	0	2	4	2	3	0	1	101	77	24	24.4
Wisconsin	1925	59	0	0	0	0	2	0	0	61	59	2	3.3
Totals—Examined		598		43		11		6		658			
Totals—Passed		527		28		2		0		557			
Totals—Failed		71		15		9		6			101		
Percentage Failed		11.0		35.0		81.8		100.0					15.3

598 were doctors of medicine and medical students (referred to hereafter as physicians), 43 osteopaths, 11 chiropractors and for 6 it was unable to determine what profession they represented. Of the physicians examined, 119 per cent failed, 350 per cent of the osteopaths failed and 81.8 per cent of the chiropractors, and all of those unclassified failed. There were 527 physicians who passed, 28 osteopaths and 2 chiropractors. Minnesota examined the largest number, 138, and also had the highest percentage of failures, 33.3 per cent, while Connecticut examined 133 and had only 4.5 per cent failures. The District of Columbia, on the other hand, examined only 43, of whom 32.6 per cent failed. Of osteopaths, Connecticut examined the highest number, 17, and Minnesota examined 12.

The number of certificates granted by examination, reciprocity and endorsement are listed in table 3. A total of 557 certificates were granted after examination, of whom 527 were physicians, 28 osteopaths and 2 chiropractors. There were 117 candidates certified without examination, by reciprocity or endorsement,

consisting of 108 physicians, 8 osteopaths and 1 chiropractor. Wisconsin accepted the greatest number without examination, 58 of whom were physicians, 7 osteopaths and 1 a chiropractor, while Minnesota registered 40 physicians and Nebraska, 10 physicians and 1 osteopath. Wisconsin registered seven of the eight osteopaths by endorsement.

Table 4 shows the number of candidates examined and certified from 1927 to 1933 inclusive. In 1933, 119 per cent of physicians failed, as compared with 50.0 per cent of nonmedical practitioners. In 1928, when five boards were functioning, there were 646 physicians examined, of whom 60, or 9.3 per cent, failed.

TABLE 3—Certificates Issued by Examination, Reciprocity and Endorsement—1933

	Examination					Reciprocity and Endorsement				
	Physicians or Med Students	Osteopaths	Chiropractors	Unclassified	Totals	Physicians	Osteopaths	Chiropractors	Unclassified	Totals
Arkansas	61	0	0	0	61	0	0	0	0	0
Connecticut	112	15	0	0	127	0	0	0	0	0
District of Columbia	20	0	0	0	20	0	0	0	0	0
Minnesota	88	4	0	0	92	40	0	0	0	40
Nebraska	75	1	0	0	76	10	1	0	0	11
Washington	73	0	0	0	73	0	0	0	0	0
Wisconsin	59	0	0	0	59	58	7	1	0	66
Total	527	25	2	0	557	108	8	1	0	117

and 59 nonmedical practitioners, of whom 28, 47.5 per cent, failed. In 1933, 635 physicians and 39 other practitioners were certified. During the seven year period a total of 4,239 physicians were examined, of whom 107 per cent failed and 470 other practitioners, of whom 51.3 per cent failed. During this period, 560 physicians were certified without examination, while only 26 other practitioners were so registered.

Altogether, 4,344 physicians and 255 others have been certified in the seven states. From the high per

TABLE 4—Total Candidates 1927-1933

Year	Number of Boards	Physicians or Medical Students					Other Practitioners				
		Examination				Total Certified	Examination				Total Certified
		Examined	Passed	Failed	Percentage Failed		Examined	Passed	Failed	Percentage Failed	
1927	5	303	270	33	10.9	303	23	15	8	34.8	1
1928	5	640	586	54	8.4	640	50	31	19	38.0	0
1929	7	608	610	58	9.7	608	66	31	35	52.3	0
1930	7	683	606	77	11.3	683	78	30	48	61.5	4
1931	7	680	586	94	13.8	680	107	48	59	55.1	0
1932	7	657	590	67	10.2	657	78	44	34	43.6	9
1933	7	598	527	71	11.9	598	60	30	30	50.0	2
Totals		4,239	3,784	455	10.7	560	470	299	241	51.3	255

centage of failures in the nonmedical group it seems apparent that the enforcement of basic science laws affects most seriously this group. Examination of the records of a considerable number of states having basic science laws will show that before such laws were enacted the number of nonmedical practitioners appearing for examination and licensure was very considerable and was growing.

The basic science board seems desirable in states having a multiplicity of examining and licensing boards. The object of these boards has been to provide a means

of insuring that all candidates seeking authority to care for sick and injured people shall first possess a reasonable knowledge of the sciences fundamental to the healing art

NATIONAL BOARD OF MEDICAL EXAMINERS

Statistics are herewith presented regarding the examinations and the issuance of certificates by the National Board of Medical Examiners. Similar material has been presented consecutively for sixteen

TABLE 1—Examinations in Part III

Examinations of	Total Examined	Passed	Incomplete	Failed	Percentage Failed
1922	28	28	0	0	0.0
1923	75	75	0	1	1.3
1924	120	114	0	6	5.0
1925	217	206	0	11	5.1
1926	255	243	0	12	4.7
1927	204	272	0	22	7.5
1928	392	306	0	16	5.0
1929	323	336	1	15	4.3
1930	419	399	0	20	4.8
1931	437	410	0	18	4.1
1932	549	521	0	28	5.1
1933	552	527	0	25	4.5
Totals	3 521	3 440	1	174	4.8

years. The National Board was organized in 1915 and since 1922 has conducted its examinations in three parts, parts I and II being written examinations and part III a practical and clinical examination.

TABLE 2—Parts I, II and III Excluding Duplications

	Total Examined	Passed	Incomplete	Failed	Percentage Failed
1922	525	381	53	86	18.4
1923	775	594	79	102	14.7
1924	978	756	69	153	16.8
1925	1 167	915	50	202	18.1
1926	1 161	930	105	126	11.9
1927	1 245	947	142	159	14.4
1928	1 430	1 101	211	118	9.7
1929	1 723	1 280	319	124	8.8
1930	2 043	1 540	322	175	10.2
1931	2 218	1 632	410	176	9.7
1932	2 341	1 849	355	137	9.9
1933	2 277	1 805	250	191	9.6
Totals	17 886	13 737	2 400	1 749	11.3

Four examinations were held in parts I and II during 1933, at which 1,234 and 714, respectively, were examined. In part I, 782 passed and 136, or 14.8 per cent, failed, and in part II, 651 passed and 63, or 8.8 per cent, failed. Since 1922 a total of 10,436 examinations have been given in part I and 5,312 in part II and up to Dec. 31, 1933, 6,707 individuals have been successful in passing part I and 4,712 in passing part II. The figure 10,436 includes over the twelve year period 2,536 who took incomplete examinations in part I and of the 5,312 who were examined in part II, 33 were incomplete. An incomplete examination is arranged for candidates taking part I at the end of their second medical year in schools whose third year curriculums include courses in one or two subjects of this part. The subjects thus postponed may be taken at any examination period after the candidate has completed them in his medical school. Also listed under this heading are those who wish to spend some additional time on one or two subjects. Incomplete examinations were not included when computing percentages since they represent neither a candidate eligible for certification nor a failure.

The figures cover the totals of each examination given during a calendar year and include some who fail and are reexamined during the same year and

also some who pass parts I and II in the same year. Therefore they represent examinations conducted rather than individuals examined.

In the twelve year period there were 1,193 failures in part I, 15.1 per cent, and 567 in part II, 10.7 per cent.

The results of the examinations in part III since 1922 are presented in table 1. In 1933, 552 were examined, as compared with 549 in 1932. Of those examined, 4.5 per cent failed, while 5.1 per cent failed in 1932. During 1933, 527 were granted certificates. In 1922, 28 were examined, all of whom were granted certificates. During the twelve year period 3,621 were examined, of whom 3,446 were granted certificates and 174, or 4.8 per cent, failed. Here again a candidate having failed may subsequently receive a certificate. Since the National Board has functioned, 3,714 certificates have been granted.

The figures in table 2 represent the number of individuals examined during any one year. The classification as passed or failed, in cases in which more than one examination has been taken in a given year, was based on the results of the last examination during the year in question. For example, if in 1933 a student passed part I but later failed part II, he is listed as having failed. Taking this into consideration, there were 2,277 who took the examinations of the National Board during 1933, as compared with 2,341 in 1932. Only 525 were examined in 1922. A total of 13,737 individuals passed one or more of the examinations and 1,749, or 11.3 per cent, failed. Incomplete examinations have been taken by 2,400 individuals, many of whom have since received certificates.

Diplomates licensed on the basis of their credentials in the United States increased from 2 in 1917 to 391 in 1933, 2,190 having been so licensed since the National Board was created. A total of 3,714, however, have received the certificate of the National Board. In 1933, diplomates were registered as follows:

Number Registered		Number Registered	
Alabama	4	New Jersey	19
Arizona	3	New Mexico	1
California	9	New York	108
Colorado	2	North Carolina	3
Connecticut	29	North Dakota	1
Georgia	1	Ohio	7
Hawaii	6	Oregon	8
Idaho	2	Pennsylvania	15
Illinois	26	Puerto Rico	1
Iowa	1	Rhode Island	6
Kentucky	4	South Carolina	1
Maine	1	South Dakota	2
Maryland	5	Tennessee	1
Massachusetts	85	Utah	1
Minnesota	6	Vermont	2
Mississippi	1	Virginia	5
Missouri	9	Washington	8
Nebraska	1	West Virginia	1
New Hampshire	3	Wisconsin	3
Total			391

The certificate of the National Board of Medical Examiners is granted recognition by the licensing boards of the following forty-two states and three territories:

Alabama	Iowa	Nevada	Puerto Rico
Arizona	Kansas	New Hampshire	Rhode Island
California	Kentucky	New Jersey	South Carolina
Canal Zone	Maine	New Mexico	South Dakota
Colorado	Maryland	New York	Tennessee
Connecticut	Massachusetts	North Carolina	Utah
Delaware	Minnesota	North Dakota	Vermont
Georgia	Mississippi	Ohio	Virginia
Hawaii	Missouri	Oklahoma	Washington
Idaho	Montana	Oregon	West Virginia
Illinois	Nebraska	Pennsylvania	Wisconsin
			Wyoming

Some of these states, however, have additional requirements.

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SATURDAY, APRIL 28, 1934

A SPECIFIC METABOLIC FUNCTION OF THE THYROID

Many of the metabolic alterations of hypothyroidism have been well characterized by the results of investigations associating the clinical condition with changes in protein, water and salt metabolism. Although treatment of the disease with thyroid preparations results in a return toward the normal metabolic status, little is known concerning the precise nature of the variations produced in the intermediary processes of metabolism. Exact studies in these instances are of particular value, since a clear understanding of the chemical changes of body constituents may aid in the formulation of a picture of the mode of action of the thyroid hormone.

A carefully conducted study of this type by investigators in Berlin and Marburg¹ has made available a qualitative indication of the course of the altered metabolism in hypothyroid conditions and has followed the changes resulting during long treatment with thyroxine. The particularly striking feature of the urine obtained from hypothyroid patients was the high content of purine bases, this increase involved primarily adenine, an unoxidized purine present at most in minute quantities in ordinary human urine, but in these cases in amounts as great as sixty-four times the normal. The urine also contained the amino acid lysine in the naturally occurring isomeric form. The latter observation was interpreted as additional specific evidence of the inhibition of oxidation processes in hypothyroidism, since the excretion of this amino acid has been reported in other circumstances conditioned by impaired oxidation.² Treatment with thyroxine until a distinct clinical improvement was observed resulted in a gradual restoration of the normal urinary picture, the excretion of adenine rapidly decreasing to the usual level, the lysine disappeared from the urine under the influence of the hormone therapy.

As is well known the greater portion of purine bases is normally transformed by oxidation to uric acid. The

marked increased excretion of these purine compounds, particularly the unoxidized base adenine, together with the elimination of an unaltered amino acid, is interpreted as demonstrating the diminished oxidizing ability of the hypothyroid patients. It is the limitation of this function that apparently promotes alterations in the normal metabolic transformations of the purines, hence the investigators were led to consider their observations as an example of hormonal control of definite intermediary reactions of metabolism. However, it is perhaps somewhat early to assign solely to the thyroid gland the regulation of purine metabolism, in view of the fact that it may be possible to detect increases in unoxidized purines in the urine of individuals with a diminished metabolism resulting from some cause other than a hypofunctioning of this endocrine organ. Nevertheless, this suggested concept of the relationship between the thyroid and purine metabolism is of interest, other investigations of this type should produce further interesting information regarding the mode of action of thyroxine and other humoral agents.

A NEW METHOD OF PHYSIOLOGIC RESEARCH

At the beginning of one of the chapters of Claude Bernard's "Introduction to the Study of Experimental Medicine" he remarks

Only within very narrow boundaries can man observe the phenomena which surround him, most of them naturally escape his senses, and mere observation is not enough. To extend his knowledge, he has had to increase the power of his organs by means of special appliances, at the same time he has equipped himself with various instruments enabling him to penetrate inside of bodies, to dissociate them and to study their hidden parts. A necessary order may thus be established among the different processes of investigation or research, whether simple or complex: the first apply to those objects easiest to examine, for which our senses suffice, the second bring within our observation, by various means, objects and phenomena which would otherwise remain unknown to us forever, because in their natural state they are beyond our range. Investigation, now simple again equipped and perfected, is therefore destined to make us discover and note the more or less hidden phenomena which surround us.¹

In harmony with this conception of medical research the invention of new methods of investigation is one of the most likely aids to progress in the development of knowledge. Usually the expectation of the contributions from novel experimental technics should not be widely heralded until there is a modicum of real accomplishment to its credit. Now and then, however, the enthusiasm for a procedure of promise warrants modest mention. Thus, when physiologists succeeded in extirpating the liver without immediately fatal consequences it was soon evident that real contributions to the understanding of the hepatic functions were near at hand. Again, the ability to separate the thyroids from the parathyroid glands and the medulla from the

¹ Flossner O, Kutscher F and Wittneben W. Ztschr f physiol Chem 220 13 1933
² Hoppe Seyler F A. Ztschr f physiol Chem 214 267 1933

¹ Bernard Claude. An Introduction to the Study of Experimental Medicine translated by H C Greene. New York. Macmillan Company 1927

cortex of the suprarenals, gave assurance that new discoveries in hormone physiology were likely to follow.

Somewhat comparable hope of advancement will be awakened by the new method of electrical excitation of the nervous system by remote control that has been developed in the research laboratories of physics at Harvard University and of the department of surgery at the Yale University School of Medicine by Light and Chaffee.² It takes one back to the days of laboratory experiments in the courses in physiology in which electrical stimulation of muscles and nerves was effected by the use of wire coils. Changes in the primary circuit, as in opening or closing it with a "key," induced electrical manifestation in the isolated secondary coil, which could readily be applied to exposed irritable tissues. In the procedure a small secondary coil, usually of 2,000 turns of copper wire, is actually implanted in an animal and one or both of its electrodes are taken to excitable centers. The wound is closed and after the animal recovers he can be placed within the magnetic field created by a specially designed primary circuit. The latter is entirely away from the experimental animal, but when the latter is placed within the range of the primary coil induction currents or "shocks" of the most varied character can be developed at selected localities in the body. Thus, as the investigators claim, the apparatus as designed removes the restrictions of time, anesthesia and restraint from experimental exploration of functions susceptible to electrical excitation. It provides a wide range of control of current, frequency and individual wave contour.

With this apparatus, which functions without moving parts, tests made thus far have produced typical Jacksonian attacks from stimulation of the motor area in the monkey, a condition of somnolence after stimulation of the hypothalamic region, contraction of the tongue from implantation of the electrode on the hypoglossal nerve, a copious flow of highly acid gastric juice, and violent peristalsis, from stimulation of the vagus on the lower esophagus. The implanted coils are covered with collodion, and some of these have now remained in place for as long as seven months without evidence of irritation of tissue or of cyst formation. What Light and Chaffee anticipate may be presented in their own words. It is hoped that this apparatus will make possible the study of functions which do not yield to stimulation of short periods but which may respond during experiments in which the excitation stimulates the character of that function and goes on, day and night, without disturbing in any way the habits or activity of the animal. It should be particularly useful in the study of the nervous control of autonomic functions such as sleep, sugar and water metabolism, menstruation, blood pressure normal and possibly abnormal digestive activity and temperature control.

² Light R U and Chaffee E L. Electrical Excitation of the Nervous System—Introducing a New Principle Remote Control Preliminary Report Science 78: 299 (March 30) 19 4

CREATINURIA AND PHYSICAL FITNESS

The significance of creatinuria is a persistent problem in the story of metabolism. Although the urine of adult males on a creatine-free diet does not contain creatine, that substance is a constant and apparently normal component, along with the always present creatinine, in the urine of either sex up to the age of puberty. In women, of course, creatinuria is a physiologic occurrence, though only an intermittent one. During adult life in both sexes creatinuria may be induced, or increased, by a variety of experimental or pathologic conditions. It is quite usual in starvation. Lately creatinuria has been extensively studied in relation to certain types of muscular dystrophies.¹

Several years ago, when Powis and Rapier² discovered a diminished excretion of creatine during the night, they concluded that the chief explanatory factor appears to be the state of rest of the skeletal muscles associated with the temporary cessation of voluntary control that occurs during sleep. Other investigators have attempted to relate the creatinuria of childhood to the endocrine changes that result in puberty. A recent investigation by Light and Warren³ at the Lawrenceville School in New Jersey shows that among normal boys on an uncontrolled diet the percentage showing creatinuria remains fairly constant at ages from 14 to 17, drops perceptibly between 17 and 18, and was present in only one out of six boys between 18 and 19. The average creatine excretion for each yearly period declines with increasing age. Light and Warren were impressed by the wide latitude in years among adolescent males, during which creatine may be absent from a twenty-four hour urine specimen of an individual on a normal protein diet. What impressed them most during these studies was the frequent finding of the presence of creatine in one subject and its absence in another, both of whom were approximately the same age, weight and height on the same diet, and collecting the urine at the same time. The investigators were further impressed with the frequency of a certain lethargy and aversion to physical exercise among the subjects still excreting creatine.

In these studies, as Light and Warren point out, a close relationship between creatinuria and muscular activity in adolescent males is suggested by the definitely lowered creatine excretion among a group of boys on a high protein diet while resting in bed, as compared to the amounts excreted by the same subjects the following day, when attending to their usual school routine of study and exercise and on a normal protein diet. The marked increase in creatine excretion encoun-

¹ Magee M C. Creatine and Creatinine Metabolism in Progressive Muscular Dystrophy. Am J Dis Child 43: 19 (Jan) 1932. Harris M M and Brand Erwin. Metabolic and Therapeutic Studies in the Myopathies. J A M A 101: 1047 (Sept 30) 1933. Reinhold J G. Clark J H. Kingley G R. Custer R P and McConnell J W. The Effects of Choline (Glycocoll) in Muscular Dystrophy. ibid 102: 261 (Jan 27) 1934.

² Powis F and Rapier H S. Biochem J 10: 363 1916

³ Light A B and Warren C R. Creatinuria Among Adolescent Males. J Biol Chem 104: 121 (Jan) 1934

tered on the first day of muscular activity following a period of confinement to bed due to an illness or injury, and its progressive decrease on each succeeding day, points to the fitness of skeletal muscles to meet the demands of exercise as an additional factor in the phenomenon of creatinuria among adolescent males

Current Comment

ARE MORE DOCTORS NEEDED?

The evils of overproduction in many fields have been vehemently discussed of late. The spotlight has been turned on surpluses of cotton and corn, but little has been said of the graver menace of excess production of physicians. The Commission on Medical Education in its final report a year ago pointed out that the ratio of doctors to population was increasing. Elsewhere in this issue of *THE JOURNAL*, the Council on Medical Education and Hospitals presents its annual compilation of the reports of the state boards of medical examiners. In 1933, 5,012 persons were added to the medical profession through licensure, the losses by death for the same period being approximately 3,500. The net gain, 1,500, is about one per cent of the number of physicians actually practicing in the United States. The census of 1930 shows an increase in population during the preceding decade of 6 per cent, or an annual rate of increase that is something less than six tenths of 1 per cent. Since all students of the question agree that the rate of increase is diminishing and that the country is tending toward a stable population, it is evident that the medical profession is increasing faster than the general population and that, unless the states promptly initiate measures to restrict the number of those licensed to practice medicine, a great surplus of unemployed doctors will become apparent. The social implications of such a condition would by comparison render the well known surfeit of agricultural products relatively innocuous.

CULTIVATION VACCINIA

Artificial cultivation of vaccine virus was first accomplished, about twenty years ago, by Steinhardt, Israeli and Lambert.¹ These investigators found that this filtrable agent multiplies (or is multiplied) in symbiosis with viable tissue fragments suspended in homologous plasma. Their simple cover glass technic was of main interest at the time in suggesting the possibility that this virus is perhaps not a fully autonomous vital unit. It suggested that it is possibly an enzyme-like or bacteriophage-like colloidal particle, capable only of symbiotic proliferation. This concept of filtrable viruses is one of the most plausible working hypotheses of the present time. Rivers and his co-workers² of the Rockefeller Institute afterward modified the Steinhardt

cover glass technic so as to make possible the cultivation of this virus on a large scale. In their final modification, an emulsion of minced chick embryo in Tyrode's solution is used as the culture medium. Rivers and Ward³ now report that, if transfers to fresh flasks of embryonic suspension are made at intervals of from four to five days, the virus can be cultivated indefinitely. A gradual reduction in antirabbit virulence, however, takes place, the two year old cultivation virus being practically avirulent for rabbits. At any time, however, a restoration of antirabbit virulence can be effected by testicular passage. The antihuman specificity of the cultivation virus, however, apparently suffers little or no qualitative deterioration. Thus far, 118 children have been vaccinated with cultivation vaccinia. Of these, 100 gave positive local pustular reactions. Eight of the hundred were afterward revaccinated with the routine board of health vaccine and found to be refractory. Two children in whom the cultivation virus did not take, however, were afterward successfully vaccinated with board of health calf lymph. The fact that the cultivation virus can be obtained free from bacterial contamination, can be used without the addition of chemical antiseptics, and causes only mild local reactions, with no fever or other objectionable systemic reactions, suggests extensive clinical study. Rivers' data, however, do not suggest its substitution for the more efficient routine calf lymph vaccine. It merely suggests its tentative use as a preliminary specific immunizing agent preparatory to routine vaccination with calf lymph.

MICRO-ORGANISMS, CAROTENE AND VITAMIN A

Investigations of vitamins seem to have established clearly that these essential dietary factors cannot be produced *de novo* by the animal organism. The fundamental thesis about the deficiency disorders now designated as avitaminoses is that the body is dependent on exogenous sources for certain organic substances without which it cannot function or develop properly. Sugar and fat can be synthesized readily in certain tissues—not, however, those vitamins with which we are at present familiar. Our complete dependence on food sources for these indispensable compounds has been questioned in view of the possibilities presented by the alimentary bacteria. They are always present in large numbers in the intestinal tract. They perish there readily, so that disintegration of the bacterial bodies can yield familiar nutrients for subsequent digestion and absorption by the host. Evidence is already at hand to show that, in some instances at least, alimentary bacteria correspond to plants in producing vitamin B. With respect to vitamin A the evidence has been negative. Recently, however, it has been demonstrated at the University of Wisconsin⁴ that certain micro

¹ Steinhardt, Edna R., Israeli, Clara and Lambert, R. A. *J. Infect. Dis.* 13: 294, 1913.

² Carrel, Alexis and Rivers, T. M. *Compt. rend. Soc. de biol.* 96: 848 (April 1) 1927. Rivers, T. M., Haagen, E. and Mackenfuss, R. S. *J. Exper. Med.* 50: 191 (Aug.) 1929.

³ Rivers, T. M. and Ward, S. M. *J. Exper. Med.* 58: 635 (Nov.) 1933.

⁴ Baumann, C. A., Steenbock, Harry, Ingraham, M. A. and Fred E. B. *Fat Soluble Vitamins XXXVIII. Microorganisms and the Synthesis of Carotene and Vitamin A.* *J. Biol. Chem.* 103: 339 (Dec.) 1933.

organisms can synthesize carotene, a recognized precursor of vitamin A in animal nutrition. Attempts by Baumann, Steenbock, Ingraham and Fred to effect the transformation of carotene into vitamin A by micro-organisms failed. Animals depleted of vitamin A were protected against avitaminosis by feeding dried cultures of the carotene-forming micro-organisms. The effect must have been due to the bacterial carotene. The Wisconsin investigators point out that, if the evidence is acceptable that carotene is actually synthesized by the organisms in question, in this respect these organisms resemble plants more closely than animals, since carotene when present in animals is of exogenous origin. The absence of vitamin A from micro-organisms and their failure to transform carotene into vitamin A likewise associate these organisms with plants, since vitamin A as such has not been demonstrated in a plant material. The similarity in structure of the carotene and the phytol molecules, as well as the fact that carotene always accompanies chlorophyll in plants, has led to the belief that carotene synthesis is in some way associated with chlorophyll activity. Micro-organisms, however, afford an illustration of the fact that the formation of carotene is not dependent on the presence of chlorophyll.

Association News

THE CLEVELAND SESSION

Medical Golfers to Play, June 11, in Eight Events

The twentieth annual tournament of the American Medical Golfing Association will be held at the Mayfield Country Club, Cleveland, Monday, June 11. Thirty-six holes will be played for the fifty prizes offered in eight events. This includes the championship event which has as its major prize the famous Will Walter Trophy, awarded since 1923 for low gross thirty-six holes. This trophy, designed by Edgar Millar and executed by the Cellini Shop, Evanston, Ill., symbolizes the evolution of medicine. The first handle depicts the age of primitive ignorance, with shaman witch doctor, spells and the invocation of nature gods to cure ailing mankind, from antiquity to 500 B. C. The second handle shows the age of Greek thinkers, bearing the serpents symbolic of Aesculapius, god of medicine—an age of thought and research, from 500 B. C. to 640 A. D. The third handle represents the age of medieval superstition from 640 A. D. to 1500 A. D., with an astrologer, the physician common to the dark ages. The fire of incantation rises behind the figure as he traces a cabalistic sign in the air. The fourth handle depicts the age of modern medical research, from the Renaissance to modern time with increasing light spreading from a figure symbolic of an enlarging vision. Winners since the cup was placed in competition have been Drs. E. A. Seaforth, San Francisco, 1923; George McKee, Pittsburgh, 1924; Homer Nicoll, Chicago, 1925; S. M. Hill, Dallas, Texas, 1926; George McKee again in 1927; Walter Sheldon, Rochester, Minn., 1928; John Loudon, Yakima, Wash., 1929 and 1930; George McKee 1931; S. M. Hill, 1932 and Mark Bach, Milwaukee 1933. Dr. Homer Nicoll is president. Drs. Charles Lukens, Toledo, and John W. Povers, Milwaukee, are vice presidents of the association which has a total membership of 1,110, representing every state in the Union. All male Fellows of the American Medical Association are eligible to membership. A cordial invitation is extended to every medical golfer to write the executive secretary, Bill Burns, 4421 Woodward Avenue, Detroit, for an application blank. An enjoyable day on June 11 will be the result.

MEDICAL BROADCASTS

National Broadcasting Company

The American Medical Association broadcasts on a coast-to-coast network each Monday afternoon from 4 to 4:15 Central daylight saving time (5 o'clock Eastern standard time, 3 o'clock Mountain standard time, 2 o'clock Pacific standard time).

The next three broadcasts will be as follows:

April 30 Science Saves Babies Morris Fishbein M.D.
May 7 Hospital Day W. W. Bauer M.D.
May 14 Pursuit of Longevity Morris Fishbein M.D.

Columbia Broadcasting System

The Association broadcasts on a Western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4:30 to 4:45 Central standard time. The next three broadcasts will be as follows:

May 3 Facts or Fallacies W. W. Bauer M.D.
May 10 Things Men Fear Morris Fishbein M.D.
May 17 Mischievous Misconceptions W. W. Bauer M.D.

ANNUAL CONGRESS ON MEDICAL EDUCATION, LICENSURE AND HOSPITALS

Thirtieth Annual Meeting held in Chicago Feb. 12 and 13, 1934
(Concluded from page 1308)

DR. G. M. WILLIAMSON, Grand Forks, N. D., in the Chair
JOINT SESSION OF THE COUNCIL ON MEDICAL
EDUCATION AND HOSPITALS AND
THE FEDERATION OF STATE MEDICAL
BOARDS OF THE
UNITED STATES

The Privilege of Reexamination in Professional Licensure

BERNARD C. GAVIT, J.D., Bloomington, Ind. The average of failures at bar examinations, including first timers and repeaters, for the United States for the year 1932 was 55 per cent. That result is rendered more painful by the further fact that ultimately in the neighborhood of 90 per cent of those who took the examinations for the first time will succeed at a subsequent examination in passing and being admitted to the bar. The medical profession is years ahead of the legal profession on the subject of licensure. The reasons are not hard to find. The medical profession has succeeded in eliminating to all practical purposes the commercial medical school. But last year there were 185 organized law schools in this country, and in the neighborhood of 55 per cent of those schools must be classified as commercial schools. They enroll about 55 per cent of the law students. At least ten new law schools were organized during 1933, all of them commercial, making no pretense of meeting any standards.

The medical profession has something more than a vocal belief in its place in society and the professional character of its members. A minimum of learning and character development is actually accepted as an essential point of departure. The bitter truth is that the legal profession is still given to talk. It is confused by the difficulty of actually choosing between its vocal standard which makes of the lawyer an aristocrat of learning and character, and the vicious American dogma of equality which makes every moron a potential lawyer. The problem of reexamination is very pertinent for the bar examination is the only mechanism at present that may possibly filter out some of the undesirables. It is obviously inadequate. The past results wherein some 90 per cent of all applicants regardless of their original preparation have succeeded in finally passing demonstrate that the minimum of a formal legal education required by the best of bar examinations is indeed a minimum for it can be acquired successfully by almost any one regardless of his scholastic and social background if he is persistent.

Medicine and law again part company for medical training and licensure include clinical experience. A very few states require a short clerkship for final admission to the bar, usually

only after the formal bar examination. Indeed, it seems that law schools will never be able to finance and conduct any extended clinical experience for law students on a parity with medical school training in their own hospitals, although a slight beginning has been made in a few schools. The practical difficulties seem insurmountable, and indeed the obvious solution seems to be a law office training following formal instruction supervised by the schools.

The best of bar examinations is an inadequate tool in solving the problem of admission to the bar. Any ex post facto determination of a candidate's fitness is unjust to the candidate, any strictly formal examination is unjust to the public and the bar. The commercial law school must go. But in the meantime we must struggle with the bar examinations and make them as effective as possible. The problem is immediate. The most effective immediate prophylactic is a limitation on the number of reexaminations permitted for each applicant. About one fourth of the states now have some such limitation, although the number of repeater examinations allowed is too high, being often as many as six or more. There is no good talking about law and medicine being professions unless one means that ideals of conduct forsake the immediate personal gain for a social value. A great many students are improved on by the sales talk of commercial schools. But the fact remains that one need not be too much concerned over those whose powers of perception are somewhat limited and who ultimately seem satisfied with a mediocre training. With good grace we can draw the line against the applicant who fails three times. A lawyer is in no position to give much advice to the physician on this subject. Medical standards for admission to examination for a license are so high that the problem of reexamination after failure is relatively unimportant. I suppose, however, that there are some who could still profitably be finally eliminated by the state medical examinations. There would seem to be no harm if medical reexaminations were limited to two. Certainly in the legal field it is a necessary expedient, for until the legal system turns to the elimination of the poorer grades of lawyer material through the standard schools some elimination must be effected through the state bar examinations. At present the elimination is negligible. Our final objective must be the elimination of the boards themselves through the imposition of the proper standards at the beginning rather than the end. The selection and training of professional men must ultimately be left to the schools, under proper supervision by an intelligent authority. In the meantime, tangible but indirect benefit can come by an early elimination of the repeater.

DISCUSSION

DR G M WILLIAMSON, Grand Forks, N D. Twenty-five years or more ago, state boards of examiners in medicine were having a similar experience as the state bar boards are having today. The commercial medical school is of the past and when the American Bar Association adopts a similar plan and organizes a council of the association to formulate and direct uniform courses of study, improvement will quickly follow. When state medical boards insisted that applicants for license must be graduates of an approved college and then that the college must be in class A, requiring at least two years in a college of liberal arts, commercial medical schools disappeared, in a similar manner, graduates of commercial law schools would find no place to go and the schools would cease to exist. State medical boards are bothered but little by repeaters. I attribute that to the uniform training medical students receive. When the American Bar Association adopts a plan similar to that which has worked satisfactorily for the medical profession, insisting on a high standard of preprofessional and professional training in approved colleges, repeaters will eliminate themselves. To a large extent the solution of this problem by the American Bar Association lies at the door of the state bar boards. If they would insist after a third failure that a candidate could not reappear at a fourth examination unless he produced evidence of a year's study in a college approved by the state bar board there would be fewer persons admitted to the bar and the quality of men practicing before the bar would be of a higher standard.

DR IRWIN D METZGER, Pittsburgh. In Pennsylvania we have almost come to the point where we say that the state

board examination is useless. We have been so careful in the examination of schools and hospitals, in their approval, as to satisfy us as members of the board that candidates, when they are admitted to the examination, should pass. If we approve the schools from which they were graduated, if we approve the hospitals in which they have had their clinical training should we not accept them as being qualified to practice medicine? We say, therefore, after the second examination, "You cannot take a subsequent examination unless you have had a year's work which shall be outlined by the board. It may be in a hospital, it may be in a medical school, but it must be specific. After you have had the additional year, you have another chance to take the examination and may repeat the second examination"—that means four of them, with one exception. We have what we call a practical examination in Pennsylvania, to which we admit candidates for various reasons who are not eligible for licensure by endorsement. If a person has been out of medical school for ten or more years, he is admitted to the practical examination. The main purpose is to catch exploiters that might have been traveling from place to place. In that examination, no second examination is given at all. Under the direction of the attorney general we are compelled to admit such applicant to a written examination for the second examination. Obviously, they seldom pass. Several have attempted to pass. The whole point is that it becomes in medicine a matter of assurance that these particular courses they have taken have actually "taken" with them, and that they have become trained adequately in medicine. The only excuse we have for examination in Pennsylvania is to see whether these people can apply practically what they have learned in the medical schools. Our questions are all based on that.

DR T J CROWE, Dallas, Texas. Two examinations are given in Texas if a candidate desires it; that is, the examination is bisected. We give what we call the technical subjects after the completion of the sophomore year in the medical college, while those subjects are fresh in mind. I believe that the state board should be a permanent organization and conduct examinations all the year round and give plenty of time to them. We had in our state an attempt on the part of the University of Texas to eliminate its graduates from the state board examination. They believe that a university supported by the state and passing on the qualifications of their graduates should be sufficient to entitle them to practice in the state.

DR C H EWING, Larned, Kan. In Kansas we permit no applicant to take the examination except that he be a graduate of a class A medical school. So why should we have these failures? We do not have them. It is a reflection on us if we do have failures. However, that does not apply to all of these boards, for they are compelled by the state laws to examine a different class of applicant.

DR FRANK M FULLER, Keokuk, Iowa. I suggest that we begin raising the standard of entrance rather than the standard of final examination. A good deal was said yesterday about the purpose of medical education. Some time ago I heard a definition of the purpose of education. The purpose of education is to train the mind and the will to do the thing that is to be done, at the time it should be done, whether you want to do it or not.

DR GILBERT FITZ PATRICK, Chicago. Did I understand the speaker to say that candidates in Iowa are examined by number? I would like to say that we ought to know more about the candidate. You are proposing to grant the man a franchise equal to his citizenship. I should like to see the biography of the man included in his application, so that I would know something about him.

DR FULLER. We have all that biography in Dr Biering's office, but in the examining board we are absolutely indifferent. We know that, if he has an application in, he is qualified to take the examination.

DR LANGLEY PORTER, San Francisco. If the state boards protect the communities from men who are incapable to practice they are doing their duty. They should not worry whether a man is a high grade student or a low grade student. That is the business of the medical schools.

BERNARD C GAVIT, J D, Bloomington, Ind I suppose it is obvious that the lawyers are at least twenty-five years behind the medical profession when it comes to the subject of licensure. Probably the best argument we have for any improvement is that that is a reasonably safe distance behind, even for a lawyer. There is one situation which, so far as a lawyer is concerned, is not humiliating. In Pennsylvania they have a system with their state board which I think approaches the ideal, and it is the only one in the country. They require the student to register with the state board when he starts his prelegal training, when he enters college, and they appoint a member of the bar, who supervises that man's prelegal education and his education through law school, so that when he comes up for examination they have a check on him, and if he should have been eliminated he is eliminated long before he gets into the law school.

Resumé of the History and Present Application of Medical Licensure in the United States

DR J N BAKER, Montgomery, Ala As one reviews the evolution of licensure as applied to the healing art, a spirit of altruism and what seemed best for the public weal largely dominate the picture. Orthodox medicine sponsored and furnished the leadership for the creation, in the various states, of machinery with which to measure all who assayed to treat diseases by any method whatever. Thus came into being in the states the medical licensing boards. Practically all of these laws more clearly defined the basic fact that the application of any mode of treatment to the human body must rest on at least an elementary knowledge of the structure of its component parts, as well as the changes that may take place as a result of disease. This attitude served to strengthen our position that the protection of the public interest is paramount and the sole justification for regulative laws, and also to show to lawmakers more clearly that any restrictive legislation on their part must be founded on the public weal. The second important service contributed by organized medicine was the effort put forth to right its own defects. In 1900 this country boasted 160 medical schools, some of which were more frankly commercial than scientific, with a few that were notoriously unsavory. Today it has but 77, in 1905 only 5 of the 160 exacted any premedical college training, whereas today every recognized medical school requires at least two years of college work and several demand a college degree for entrance to the study of medicine.

A questionnaire was sent to all licensing boards. On these returns, together with other available material, the succeeding comments on the present status of licensure are largely based.

Alabama is the only state having but one board passing on all applicants for the healing art. The personnel of the board is selected by organized medicine and is 100 per cent regular or orthodox. The legislature of Alabama in 1875 entrusted to the organized medical profession of the state the direction and control of both public health and medical licensure as well as the enforcement of its medical practice act. Thus far it has withstood all assaults.

At the beginning of this century there were in operation forty-one homeopathic and twenty-four eclectic schools, twelve of which were located in the state of Ohio alone. At present the list of the medical schools approved by the Council on Medical Education and Hospitals bears the names of but two such schools. Fifteen states make provision on their boards for one or both of these groups. Has not the time arrived for these boards to adjust minor internal differences and present to the public and to legislatures a solid and united front for orthodox medicine?

Osteopathy received its legal christening in Vermont in 1896 as a separate school of the healing art. The exaggerated importance attached by this school to vertebral displacement and nerve impingement seems to have caught the popular fancy and the grotesque mimicry of its manipulative therapy is seen to form the sole basis for numerous heterodox systems having no scientific leg on which to stand. These mixed boards represent compromise measures on the part of orthodox medicine. At present there are fifteen such mixed boards, most of which are meeting their problems in a harmonious manner.

There are eighteen states having separate boards for the various schools practicing the healing art. Here is the first

line of defense created by orthodox medicine for medical licensure battered down before the onrush of the followers of heterodox healing. It may be that an appreciation of the necessity for minimal scientific training, in states now having multiple boards, has led to the more recent experimental venture of basic science boards, the first of which were established in Wisconsin and Connecticut in 1925. There are now nine states operating under some plan whereby a "base line" of the fundamental sciences is set for all who propose to practice the healing art. Sufficient evidence has not yet accumulated to justify final conclusions regarding this newer venture. A final word concerning the National Board of Medical Examiners—the aristocrat of medical licensure and the fulfillment of the goal fixed by orthodox medicine for a single yardstick in the hands of one scientifically trained board. The fact that practically all states have given recognition to the diplomates of this national, unofficial board attests appreciation of the work being done within the ranks of organized medicine to elevate the standards of medical practice.

Within its own ranks, organized medicine must continue its purifying activities until complete unison is attained. This should not be difficult. As the standards are lifted, the unfit will fall by the wayside.

Reciprocal Agreements

DR JOHN R NEAL, Springfield, Ill Thirty-six of forty-four states that replied to the questionnaire practice some form of reciprocity. Florida does not reciprocate, because it is a tourist state and lies too near the center of population. Colorado, Connecticut, Idaho, Massachusetts, New Mexico, Rhode Island and Vermont are the other seven states that do not enter into reciprocal agreements. Colorado grants licenses on satisfactory credentials and by examination. Connecticut requires an examination of all applicants except diplomates of the National Board of Medical Examiners and physicians who have been in active and reputable practice in the United States for five years. Idaho does not enter into reciprocal agreements but judges each applicant on his merits. Massachusetts has no legal authority to enter into reciprocal agreements. New Mexico licenses by endorsement of credentials on the theory that reciprocity involves too many obligations. Rhode Island has not participated in reciprocity for two reasons: a lack of clear legal authority and lower standards for licensure in those states which by location would make of them the most convenient and logical to participate in reciprocity. Vermont does not like the reciprocity method of licensure. That state endorses the certificates of applicants from all states that have standards equal to her own. Among the thirty-six states that participate in reciprocity the practice is even less uniform.

Six states, Arkansas, Connecticut, Minnesota, Nebraska, Oregon and Wisconsin and the District of Columbia have a basic science law. Several other states, notably Texas, have laws that function in a way that achieves practically the same purpose. Arkansas requires the basic science examination of all graduates of medical schools who apply for reciprocal licensure. The other states modify this requirement in some cases. Minnesota, for example, accepts certificates of registration in basic science requirements.

An oral or written examination is not required of acceptable reciprocants in twenty-seven states.

Kansas and Nebraska charge applicants whatever fee the reciprocating state exacts from licentiates of their boards. The fee in other states ranges from \$20 to \$100.

The practice of medicine is a stable calling. The nature of medical practice discourages a shifting from state to state. Only the strongest motives can persuade the successful physician to give up his practice and begin again in a new locality. Daily the public learns more about the possibilities of the treatment and prevention of disease and becomes more exacting in its demands of skill and efficiency from the medical profession.

Illinois is one of the great population centers of the country. It attracts the migratory physician. Americans unqualified to enter medical schools in this country can acquire degrees in Europe and return to the United States with glowing credentials bearing the seal of illustrious institutions. Thirty-five states in this country have multiple examining boards that include respectively chiropractic, naturopathic, osteopathic, homeopathic

eclectic, basic science and others. Some states require a year's internship and some do not.

These are important things to consider in granting a license for the practice of medicine. It is felt that the qualified physician would welcome a test of his knowledge. For these reasons Illinois requires a clinical examination of all applicants for license. Candidates in convenient groups are taken to the ward, the surgical quarters, the eye, ear and nose infirmary, and the diagnostic laboratory of a general hospital. They are asked to diagnose the conditions and prescribe appropriate treatment of the patients and to recognize laboratory specimens. This procedure, it is felt, emphasizes, in the requirements for licensure, the interests of the public.

The ideal in reciprocal agreements would be uniformity. In the absence of that probability, each state must continue to set up its own requirements. The interests of the public demand an emphasis on the practical ability of the candidate rather than on the character of his credentials.

DISCUSSION ON MEDICAL LICENSURE AND RECIPROCITY

DR. P. E. BLACKBURN, Louisville, Ky. Dr. Baker reveals many reasons for any lack of conformity and coherence in our present licensure laws. I should like to add that there is a difference in point of view between the profession and the public, notwithstanding the legal construction of licensure purposes. The people think in terms of adequate and economical service while the profession, in the main, thinks of the scientific quality of service. On the one hand, the medical schools and organized medicine are crying for higher standards, and, on the other, the public too often decries the present high standards. Licensing boards furnish the battleground. There is no question that reciprocal relationships between states have had a beneficent influence. The Federation of State Medical Boards serves a fine purpose in keeping the medical profession unified in its ideals toward legitimate practice. As to the cults, although it is only the orthodox medical profession that can give scientific determination as to their value, we cannot deny the right of the public to give them a trial. Fortunately, their own limitations shorten their period of popularity. I am optimistic enough to believe that our legislators will continue to recognize that contributions to the relief of human suffering and the prolongation of life in the last century are products of medical science rather than the offspring of mysticism and cultism.

DR. HAROLD RAPINS, Albany, N. Y. Any one who had no knowledge of licensing boards in this country, after hearing Dr. Baker's paper, would certainly think that there was an infinite number of ways of attempting to do the same thing. When I started in this work I thought that the most desirable thing was to have a uniform type of licensing boards. I have changed my opinion. Apparently the different types of boards that have originated in different jurisdictions arose out of the needs of those jurisdictions. As a member of the National Board of Medical Examiners I am glad to see its influence spread, but I feel that it is not desirable, even if it were possible, to have national licensure. The public conception of what is the proper practice of medicine varies so much throughout the United States that I believe it is impossible to arrive at any common denominator except the very lowest one. I think that from a practical point of view the state is about the proper administrative unit for the carrying out of the medical practice acts. The point raised by Dr. Neal that there are three interests in the administration of the medical practice acts should be emphasized: the interests of the board, of the candidates, and of the public. The paramount interest must be that of the public. The state boards are legal bodies. They are appointed as part of a government, and their duty is primarily to the public of the state to see that only properly qualified practitioners may practice. A state board's sole duty is to pass on the ability of a candidate to practice. Certain individuals coming from one state to another suffer because the boards in the state where they were originally licensed also license students from inferior schools. It is wiser not to recognize a state board that examines from inferior schools such as in Massachusetts, even though an injustice may be worked on Harvard graduates. In the long run, the public would be better protected in that way. Dr. Neal raised an interesting question when he said it might be a good thing to use the transfer of a man from

one state to another as a time to reexamine him. That is a good idea, but I am not sure that it would be altogether just. When a man begins practice he should know something about the general body of medicine, but if he has been out ten years and has been doing good work in gynecology it is probably not reasonable to examine him in otolaryngology. This will, to a certain extent, I hope, be compensated for by the examinations now given by the specialty boards. I think it was President Jordan of Stanford, who was an eminent ichthyologist and was noted for the fact that he could recognize the name of any student on his campus. As he became more experienced he would forget a student's name. Finally he recognized only a few. Some one asked him why he no longer remembered the names of Stanford students. He said, "It is like this. I find that every time I remember a student's name I forget the name of a fish." I believe that every time a man really learns more about psychiatry or otolaryngology or gynecology or cardiology in the field in which he is concentrating, he is doing wisely to forget some of the things that he had to learn when he took his first licensing examination.

DR. FREDERICK ETHERINGTON, Kingston, Ont. We have had in Canada since 1912 the Canadian Medical Act, the chief function of which was to set up a board to conduct an examination that would qualify the candidate in any province of the dominion. Our experience has been wholly favorable, so that one by one the provinces are eliminating their own examinations and accepting that of the Canadian Medical Council. The practitioner takes the license and registers with the provincial council and is still under that council in matters of behavior. In that country the one examination for all practitioners is the one that is coming into vogue. I do not speak with any authority for the licensing boards, but I thought that our experience might be of benefit in the discussion.

DR. H. M. PLATTER, Columbus, Ohio. We seem to be passing at present through the period of trial and error. There are a great many things in each one of our administrations which ought to be eliminated. I believe that reciprocity in its essence is the practical application of the Golden Rule, the doing to others what we would have them do to us. I agree that the licensure of an older man by reciprocity is quite another thing. There is quite a percentage of physicians who go to sea after graduation, and if they are unfortunate enough to have to move to another state, perhaps it is well that the licensing boards should look them over. In addition to the practical examination there should be a searching questionnaire sent out concerning the applicant, particularly to his county medical society and to the medical members of the community in which he practiced. We should, through the Federation and the Council and the medical college association, get together to discuss the barriers that are interposed in the several states and attempt to get closer toward uniformity.

DR. W. SCOTT NAY, Underhill, Vt. Vermont endorses the certificates of all the states which have requirements and standards equal to our own, and that includes New York.

Medical Licensure in Latin America Preliminary Report

DR. WILLIAM D. CUTTER, Chicago. I am presenting this morning only briefly a preliminary study which is based largely on the laws of those countries and the legal requirements with regard to licensure. For the sake of convenience I have used the term "Latin America" to include those countries of North America and Central America, the West Indies and South America in which French, Spanish or Portuguese is the common language. In the Spanish and Portuguese speaking countries of America the right to practice medicine is based on the possession of a medical degree conferred by a legally recognized university. Generally the university degree 'physician and surgeon' has the same effect as a state license in this country. Any inquiry, therefore, into the requirements for medical practice in Latin America involves an analysis of the conditions under which the medical degree is obtained.

In the countries to the south of us there are forty-nine schools of medicine, distributed as follows: Mexico, 11, Cuba, 1, Haiti, 1, Dominican Republic, 1, Nicaragua, 2, Guatemala, 1.

Honduras, 1, El Salvador, 1, Brazil, 9, Argentina, 4, Chile, 3, Colombia, 3, Ecuador, 3, Bolivia, 2, Venezuela, 2, Dutch Guiana, 1, Paraguay, 1, Peru, 1, Uruguay, 1

It is impossible to formulate any generalization that holds literally true for each of the nineteen countries and forty-nine medical schools, but certain comments are generally applicable.

In the first place, the preliminary education necessary for matriculation in the faculty of medicine is almost universally the completion of the secondary school course, with or without the bachelor's degree. The "liceo" resembles the French secondary school, the "lycee." It may be accepted as extending beyond the four year high school of the United States. The courses, however, lean strongly toward the classical and humanistic studies, while the natural sciences receive decidedly less emphasis. Instruction is chiefly by lecture and demonstration. Laboratory facilities for individual experimentation are not generally found. Following the Spanish custom, large numbers of students enroll in the faculty of medicine merely as a means of securing a liberal education and a university degree without any thought of ever engaging in practice. It is possible that the character of the instruction is in some measure adjusted to the needs and capabilities of those students who lack a professional aim. Where classes are large, instruction is likely to utilize more extensively didactic methods. In consideration of the marked differences in the preliminary educational requirements and methods of instruction, it is suggested that the state medical boards composing the federation would do well to defer a definite evaluation of credentials from Latin American countries until more complete information is available.

DISCUSSION

DR FREDERIC W. SCHLUTZ, Chicago. The student body in the medical schools of Latin American universities are inordinately large in some of the universities. This is particularly true of Rio de Janeiro, Montevideo, Buenos Aires, Santiago and Lima. The student body divides into two groups, a comparatively small group, which is seriously seeking a medical education, and a much larger group, which uses medical education more as a medium to provide a cultural background. The sometimes enormous size of the student body influences the type of teaching that is offered. Practically without exception the Latin American university clinics have a wealth of fine clinical material. The hospitals are large, many of them exceeding 1,000 beds, and the outpatient departments are even larger, all of the material, almost without exception, being free cases. This vast amount of material cannot be adequately handled for thorough teaching. There are economic limitations and particularly limitations of lack of adequate staff. Teaching is almost precluded with these large groups and, it was my observation, almost nonexistent except to the small intimate group composed largely of the house officers. This throws the greater emphasis on didactic teaching, the amphitheater clinic and the outpatient teaching. This is exceptionally fine in most of the Latin American universities. It is the best of the medical teaching in Latin America, especially as exemplified in the French, Spanish and Italian schools. The medical libraries in some of the universities were far more complete in current journal material than they are in many North American universities. Their pathologic collections and the museums of pathology were excellent. Their laboratories, except possibly the laboratories in some of the universities in serology and in tropical medicine, were decidedly inferior to those of other countries. In comparison with the size of their hospital clinics, the staff and the house officers and assistants were surprisingly small. The junior men and house men who hold these positions have unequalled opportunities for fine clinical training but the numbers who are so fortunate as to secure these positions seem to be very small, and at the clinics that I visited were limited almost entirely to natives of their own countries. I had the impression that the attendance of foreign students at the universities is relatively small. The language difficulty is probably the chief factor. One needs to know Spanish, French or Italian. Unless the regulations for foreign medical men have changed in recent years it is not easy for the foreign practitioner to be registered in Latin American republics. A few years ago a four year residence period was required of the foreign student and then he had to take his examination for licensure in Spanish.

DR T. J. CROWE, Dallas, Texas. I am from a border state. We frequently have Spaniards coming to us for legalization, and we have great difficulty in determining their qualifications, for the reason that the Mexican government will not sign an affidavit in English. I believe that either the Federation of State Medical Boards or the Council on Medical Education and Hospitals should ascertain the standing of the colleges, not only of Mexico but of Central and South America, and symbolize them in some way in the handbook of rules and regulations of state boards, so that we who cannot speak Spanish will know which of those institutions are really worthy of consideration for examination. We take a foreigner only on examination. They have overnight revolutions in those countries, and the fellow who was at the head of the institution yesterday is exiled tomorrow and is in Texas looking for a license, when his crowd gets back in, maybe the next week, he goes back. We cannot tell anything about the individual half of the time.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Clinical Meeting—The tenth annual meeting of the Fort Smith Clinical Society was held, March 22, under the auspices of the staffs of St. Edward's Mercy, St. John's, and Sparks Memorial hospitals. The morning session was given over to clinics. The following physicians presented papers in the afternoon:

James H. Buckley. Recent Developments in the Newer Therapy of the Ear, Nose and Throat.
David W. Goldstein. Common Skin Diseases.
Arthur F. Hoge. Immediate Treatment of Extensive Burns.
Herbert Moulton. Relationship of Ophthalmology to the Practice of Medicine.
Arless A. Blair. Coronary Heart Disease and Angina Pectoris.
Curtis H. Kennedy. Evils of Present Day Prescription Writing and Dispensing.
Paul C. Schnoebele. St. Louis. Correlation of Clinical and X-Ray Findings in the Diagnosis of Gastrointestinal Lesions.
Leith H. Slocumb. St. Louis. Rectal Conditions. Diagnosis and Treatment.
Rutherford B. H. Gradwohl. St. Louis. Blood Development and Schilling Methods.

CALIFORNIA

Nutritional Survey—The San Francisco Health Department inaugurated a six weeks survey of the nutritional status of children whose families are on relief, March 1. Height and weight and an estimation of posture and muscle tone are included in a complete physical examination. Physical defects are recorded and efforts toward correction of these are made through the parents and school health authorities. A second survey will be made in about six months, in which it is hoped to determine whether there is an increase or decrease in the nutritional status in the population as measured by the health of children.

Society News—A clinical program made up the meeting of the San Francisco County Medical Society, April 10, with the following members of the staff of Stanford University School of Medicine, San Francisco, among others, as the speakers: Drs. Leo Eloesser, George D. Barnett, Karl L. Schaupp, L. Henry Garland and David A. Wood. Dr. Alfred Bichschowsky, director, University Eye Clinic, Breslau, Germany, gave a series of four lectures before the society, April 11-14. —Dr. William M. Gratiot, Monterey, addressed the Monterey County Medical Society, February 2, among others on 'Exfoliative Dermatitis'. —At a meeting of the Orange County Medical Society, February 6, Dr. W. M. Anderson, Los Angeles, spoke on 'Physical Diagnosis of the Heart'. —Among others, Dr. Albert G. Bower, Glendale, discussed 'Scarlet Fever and Its Treatment' before the Santa Barbara County Medical Society, February 12. —The Sonoma County Medical Society heard Drs. Harry E. Alderson and Charles Albert Shumate, San Francisco, discuss 'Skin Diseases and Their Treatment', February 8. —Dr. Harry Clare Shepardson, San Francisco, addressed the Stanislaus County Medical Society, January 12, on 'Treatment of Diabetes and Diabetic Coma'. —A paper on 'Pelvic Pain' was presented before the

Tulare County Medical Society, February 4, by Dr Robert Glenn Craig, San Francisco—Dr Jacob C Geiger, director, San Francisco County Health Department, was chosen president-elect of the Northern California Public Health Association at its annual meeting in Stockton, March 17, and Dr Ira O Church, Oakland, health officer of Alameda County, was elected secretary

COLORADO

Memorial Lecture—Dr Paul J Hanzlik, professor of pharmacology, Stanford University School of Medicine, San Francisco, gave the first annual Phi Rho Sigma Memorial Lecture at the University of Colorado School of Medicine April 16, on "Novel Antitoxic and Protective Action of Dyes." The lecture is sponsored by the local chapter of the fraternity in remembrance of deceased alumni

Society News—Dr Daniel R Higbee, Denver, spoke on "Relationship of Focal Infection to Pyelonephritis" before the Larimer County Medical Society, recently, in Berthoud—Speakers before a recent meeting of the Mesa County Medical Society in Grand Junction were Drs Donald M Maxwell and Frank J McDonough, Grand Junction, on "Use of Endocrines in the Treatment of Gynecological Conditions" and "Abdominal Diagnosis in Children," respectively—At a meeting of the Pueblo County Medical Society, recently, Dr Lester L Ward discussed digitalis

CONNECTICUT

Progress in Tuberculosis Survey—The number of roentgenograms taken in the school survey for tuberculosis cases in Connecticut between February 1 and 19 was 5,701, bringing the total to 44,131. The work has been completed in 116 towns and is under way in thirty-eight others leaving fifteen, or less than 10 per cent, of the 169 towns in the state that have not participated. The number of plates made represents slightly more than one third of the enrolment in the public schools, the bulletin of the state health department reports, and, since some of them were taken in parochial schools, the number would be a little less than one third of the total school population. When public funds were used for payment, a larger proportion of children had roentgenograms taken

DISTRICT OF COLUMBIA

Medical Bills in Congress—H R 9202, introduced by Representative Norton, New Jersey, proposes to authorize the commissioners of the District of Columbia to borrow from the Federal Emergency Administration of Public Works \$20,000,000 for the acquisition, purchase, construction and development of a tuberculosis hospital in the District of Columbia, for an extension of or an addition to the Gallinger Municipal Hospital, for a sewage and refuse-disposal plant and for other purposes. H R 9089, introduced by Representative Smith Virginia, proposes to confer police powers on the health officer of the District of Columbia, his deputy, assistants, agents and inspectors, including sanitary and food inspectors, milk and dairy inspectors and dairy farm inspectors

Group Hospitalization—The Medical Society of the District of Columbia has approved a plan for group hospitalization on the recommendation of its committee on medical economics. Through the Hospital Service Association, hospital care will be furnished up to and including twenty-one days for each contract year at a cost of \$9 for each subscriber. An enrolment fee of \$1 is also charged. If additional attention is required, the subscriber will be given a 25 per cent discount from regular hospital charges for similar accommodations. Under the contract, this care means bed and board, general nursing care, use of the operating room, surgical dressings, ordinary medication, routine laboratory examinations and other customary routine care, and obstetric cases after the contract has been in existence ten months. The benefits offered shall not include the services of the subscriber's attending physician or surgeon, roentgenologist, pathologist, physical therapist, anesthetist, special nurses, or their board. To be eligible for the plan, the subscriber must be under 65 years of age, in sound health, and must have been regularly employed for at least two months in an occupation approved by the Hospital Service Association. A hospital must be approved by the Medical Society of the District of Columbia, must not engage in the corporate practice of medicine and must bind itself to remain in this hospital group only while a member of the association. Any accumulated surplus will be used to reduce the cost to subscribers or to provide them with hospitalization over a longer period. Hospitals participating in the plan include Emergency, Garfield, Providence, Georgetown, Sibley, Columbia, Episcopal Eye Ear and Throat, George Washing-

ton and Homeopathic Casualty Hospital had endorsed the plan but, when this report was received, was unable to take action until the next meeting of its board

FLORIDA

State Medical Meeting at Jacksonville, April 30 May 2—The sixty-first annual meeting of the Florida Medical Association will be held at Jacksonville, April 30 May 2, with headquarters at the Mayflower Hotel, and under the presidency of Dr William M Rowlett, Tampa. Dr Howard A Kelly, emeritus professor of gynecology, Johns Hopkins University School of Medicine, Baltimore, will speak Tuesday on "Readjustments in Surgery and Medicine." Other physicians participating in the program are

John S Helms Jr Tampa Surgical Management of Thyrotoxicosis
Julian E Gammon Jacksonville Arthritis
Matthew Jay Hipse Miami Treatment of Agranulocytosis with Yellow Bone Marrow
Arthur H Weiland Coral Gables Fractures of the Elbow
Gaston H Edwards Orlando A Perineorrhaphy
Kenneth A Morris, Jacksonville, Surgical Treatment of Pulmonary Tuberculosis
Bundy Allen and John R Boling Tampa Diagnosis and Surgical Management of Gastric and Duodenal Lesions
Orion O Feaster St Petersburg The Roentgenologist as a Consultant in Acute Abdominal Conditions
Joseph S Stewart Jr, Miami Intestinal Obstruction
Lloyd J Netto West Palm Beach Fibroid Tumors
William H Spiers Orlando Tuberculin in the Treatment of Arteriosclerosis
Louis Iverson Pensacola Recent Progress in Aviation Medicine
John S Tuberville Century Clinical Nature of Malignancies and the Principles of Treatment
Ralph N Greene Jacksonville Suggestions as to the Care of Brain Injury Cases
Paul Easton Jacksonville Action of Quinine on Malaria

Entertainment will include a golf tournament, luncheons, fishing, a smoker and the association dinner. Other societies convening during the annual session are the Florida Railway Surgeons Association, the Florida Society of Dermatology and Syphilology, and the woman's auxiliary of the state medical association

ILLINOIS

State Tuberculosis Meeting—The twenty-fifth annual meeting of the Illinois Tuberculosis Association will be held at the Hotel Emmerson, Mount Vernon, April 30-May 1. The tentative program is as follows

Dr Carl A Hedblom Chicago Thoracic Surgery with Special Reference to Thoracoplasty
Dr Henry C Swamy Chicago Pathological Aspects of Tuberculosis
Dr David O N Lindberg Decatur Use of Tuberculin and X Rays in Diagnosis of Early Tuberculosis
Dr Robinson Bosworth, Rockford Home Treatment of Tuberculosis
Dr Maxim Pollak Peoria Recent Developments in the Use of Artificial Pneumothorax

At the banquet, the speakers will include Drs Edward S Murphy, Dixon, Frank J Jirka, director, state department of health, Harold M Camp, Monmouth, and Henry Kennon Dunham, Cincinnati. Tuesday Child Health Day, will be given over to a specially arranged program on the health of children

Chicago

Hospital News—A gift of \$600 was recently given to the University of Chicago by Mr and Mrs Robert V Merrill to establish a memorial in honor of their son. According to the conditions, \$400 of the original \$600 shall be invested by the university, the income to be expended in behalf of children who are patients of the Bobs Roberts Hospital or clinic as gifts or loans, without interest, to their parents or guardians when they are unable to provide supplementary care

Society Disapproves of Radio Advertising—The exploitation of drugs, preparations and so called cures over the radio is viewed with disfavor by the Chicago Medical Society, according to a resolution unanimously adopted by the council, April 10. The symptoms and conditions for which these preparations are recommended frequently are indications of serious conditions calling for careful study by a qualified physician. It was further resolved that physicians request their patients to cooperate in sending protests to the Federal Radio Commission and to broadcasting stations against misleading and unwarranted radio medical advertising

Society News—The Chicago Urological Society was addressed, April 26, by Drs Herman L Kretschmer on "Resection of the Kidney," Frederick Lieberthal, "Perirenal and Pelvic Fibrolipomatosis and Its Relation to Replacement Lipomatosis," and Aloysius J Wochinski, "An Evaluation of the Serial Pyelography."—Dr Dallas B Phemister discussed "The Recovery of the Ancient Medical Manuscripts During the Late Middle Ages" before the Society of Medical History of Chicago, April 25. Dr Clarence A Earle presented "A Sketch of the

Life of Dr John A Kennicott,' and Dr James E Lebensohn, "1934—The Semicentenary of Local Anesthesia"—At the meeting of the Biological Photographic Association, April 24, Dr Max Thorek, among others, discussed "Photography in Medicine and Surgery"

IOWA

Society News—Dr Walter E Anthony, Ottumwa, will address the Wapello County Medical Society, May 8, on "Dyspnea as a Diagnostic Symptom" Dr Ralph J Selman Blakesburg, discussed "Early Frontier Medical Experiences" before the society, April 17 Drs Fred Moore and Dennis H Kelly, both of Des Moines, addressed the First Councilor District meeting in Charles City, April 3, on "Correlation of Child Health and the State Department of Health" and "Treatment of Infectious Diseases in Children," respectively

State Medical Meeting at Des Moines, May 9-11—The eighty third annual session of the Iowa State Medical Society will be held at Des Moines, May 9-11, with headquarters in the Hotel Fort Des Moines, and under the presidency of Dr Charles B Taylor, Ottumwa Guest speakers and their subjects are

Dr Roy Wesley Scott, Cleveland Syphilis as the Cause of Heart Disease
Dr Verne C Hunt Los Angeles Surgical Lesions of the Stomach and Duodenum
Dr John J Shea, Memphis Relationship of Otolaryngology to General Medicine
Dr Rosco G Leland Chicago Some Causes of Professional Unrest
The oration in medicine will be given by Dr George B Crow, Burlington, and the oration in surgery by Dr Edward M Myers, Boone Dr William E Ash, Council Bluffs, will be the toastmaster at the annual banquet, Thursday evening, when Dr Taylor will deliver the presidential address on "Who Are Graduates in Medicine?" Dr Gordon F Harkness, Davenport, president elect, will also speak on "Why Are We Here, and Where Are We Going?" Sectional conferences will occupy the program Wednesday and Thursday afternoons, with discussions on the various specialties Wednesday morning will be given over to a symposium on arthritis, in which participants will be Drs John C Parsons, Creston, John K. von Lackum, Cedar Rapids, Archibald F O'Donoghue, Sioux City, Charles W Ellyson, Waterloo, Addison C Page, Des Moines, and Oliver J Fay Des Moines Entertainment will include a formal reception, Wednesday evening, in honor of Dr Walter L Bierring, commissioner of health of Iowa, and President-Elect, American Medical Association The woman's auxiliary of the society will convene in its fifth annual meeting, May 9, and the State Society of Iowa Medical Women will hold its thirty seventh annual meeting, May 8

KANSAS

State Medical Meeting at Wichita, May 9-11—The seventy sixth annual meeting of the Kansas Medical Society will be held at Wichita, May 9-11, under the presidency of Dr William F Bowen Sessions will be held at the Allis and Lassen hotels The tentative program includes the following physicians, who will discuss the topics named, among others

Edgar V Allen Rochester Minn, Hypertension
Louis A Brunsting Rochester Minn Recent Advances in Eczema
Cyril M MacBryde St Louis Anterior Hypophysis
Paul B Magnuson, Chicago Arthritis with Injuries Superimposed
Thomas A Brown St Louis Puerperal Infections
Harry S Gradle, Chicago Eye Injuries and Their Immediate Treatment
Oscar W Bethea New Orleans Specific Treatment of Asthma
Edwin C Ernst St Louis A Rays
Alfred I Folsom Dallas Prostatic Resection
Karl A Meyer Chicago Present Status of Gastric Surgery
Lee W Dean St Louis Functional Ear Test for Hearing
Louis Rudolph Chicago Vertex Dystocia
John L Jelks Memphis Rectocolonic Disease

MARYLAND

The Thayer Memorial Wards—February 24 marked the official opening of the Thayer Memorial Wards in the Hurd Memorial Hall of Johns Hopkins Hospital Judge Henry D Harland president, board of trustees, Johns Hopkins Hospital presided and speakers included Dr Simon Flexner director, Rockefeller Institute for Medical Research on Dr Thayer Physician, Scientist, Cosmopolitan Joseph S Ames PhD president of Johns Hopkins University, Dr Thayer as a Teacher," and Dr John M T Finney emeritus professor of surgery Johns Hopkins University School of Medicine Dr Thayer as a Man' The Thayer wards are two old wards remodeled to form cubicle rooms There are twenty-two cubicles on each floor one for women one for men The cost of alterations was about \$30,000 A large part of this sum was contributed by friends of Dr Thayer

MASSACHUSETTS

Another Physicians' Art Society—The newly organized Physicians' Art Society opened an art exhibit in the Boston Medical Library, April 23, which will continue until May 5 The total number of exhibits in all fields of art is 129, the work of the following physicians and dentists

Dr William Lloyd Aycock Boston	Dr Lewis M Hurxthal Brookline
Dr Edward P Bagg Jr Holyoke	Dr Percy E Ireland Boston
Lawrence W Baker DMD Boston	Dr Frederick C Irving Brookline
Dr James Dellinger Barney Boston	Dr James C Janney Cambridge
Dr Richard J R Caines Winthrop	Dr Ralph C Larrabee Boston
Dr Walter B Cannon Cambridge	Dr James Howard Means Boston
Dr William B Castle Boston	Dr Harris P Mosher Boston
Dr Frederic J Cotton Boston	Dr Albert A Pastene Norton
Dr William P Coues Brookline	Dr Claude D Payzant West Medford
Dr Harold W Dana Brookline	Dr H Hale Powers Brookline
Dr Cecil K Drinker Brookline	Dr Eli C Romberg Boston
Dr Maurice A Gilbert Chelsea	Dr Walter F Sawyer Fitchburg
Dr William W Harvey Boston	Dr Somers H Sturgis Boston
Dr S Hertz Boston	Dr Fritz B Talbot, Brookline
Dr Lewis W Hill Boston	Dr Grantley W Taylor Brookline
	Dr Sidney C Wiggan Newton

The Physicians' Art Society was organized in Boston in February to foster arts and crafts among members of the medical and allied professions, and to hold annual exhibits of the work of its members Dr James Dellinger Barney is president and James F Ballard, director of the Boston Medical Library, secretary Membership is open to all members of the Massachusetts Medical Society, Massachusetts Homeopathic Medical Society, Massachusetts Dental Society, and allied dental societies, and other related organizations, and also hospital interns and medical students

MINNESOTA

Dr Bierring Gives Jackson Lecture—Dr Walter L Bierring, President-Elect, American Medical Association and state health commissioner of Iowa, gave the first annual lecture under the Clarence Martin Jackson Lectureship at the University of Minnesota Medical School, Minneapolis, February 27 He discussed "Historical Sequence of Medical Events" The lectureship was established by Phi Beta Pi in honor of Dr Jackson, who is head of the department of anatomy at the medical school

County Society Extension Course—The newly organized Renville County Medical Society inaugurated a university extension course, April 10, with Dr Emil C Robitschek speaking on 'Colles Fracture' The second in the series was given April 17, with Dr E A Loomis as the speaker on "Refraction, with General Practitioner's Equipment", the third, April 24 with Dr Edgar T Herrmann, anaphylaxis Subsequent speakers and their subjects are

May 1	Dr Frederick H K Schaaf	Bedside Diagnosis
May 8	Dr Hewitt B Hannah	Neuritis
May 15	Dr William H Condit	Gynecology Office Practice
May 22	Dr Thurston W Weum	Technic of Labor
May 29	Dr Frederick C Rodda	Abnormal Child Examination and Diagnosis

MISSISSIPPI

State Medical Meeting in Natchez, May 8-10—The Mississippi State Medical Association will convene in annual session in Natchez, May 8-10, with headquarters at the Eola Hotel, and under the presidency of Dr John W D Dicks Natchez Dr John M T Finney, Baltimore, will deliver the annual oration Tuesday evening Out-of-state speakers will include Drs H Earle Conwell Fairfield Ala, on "Problems Frequently Encountered in the Treatment of Fractures", Kosciusko W Constantine, Birmingham Ala, 'Glaucoma', Waller S Leathers, Nashville, Tenn, An Analysis of the Hookworm Problem in Mississippi" and James S McLester Birmingham The Physician of Yesterday and Today" Other speakers will include

Dr Paul B Brumby	Lexington Role of Glucose in Surgery
Dr Leslie V Rusch	Meridian Present Status of Surgery in Gall bladder Disease
Dr Robert H Brumfield	McComb Stricture of Ureter
Dr Thomas F Welford	Columbus Retrocecal Appendixes
Dr De Witt Hamrick	Corinth Dietary and Glandular Deficiencies in Eye Ear Nose and Throat
Dr Guy C Jarratt	Vicksburg Congenital Syphilis
Dr George W F Rembert	Jackson Allergic Phenomena
Dr Henry Bo well	Sanatorium The General Practitioner and Tuberculosis
Dr William Krau	Meridian Principles Underlying the Treatment of Malaria

Mayor S B Laub Natchez will give an address of welcome on behalf of the city of Natchez and Dr James C Rice Natchez on behalf of the Homochitto Valley Medical Society

NEBRASKA

Society News—At a meeting of the Southwestern Nebraska Medical Society, McCook, March 8, speakers were Drs David L Morse, Hayes Center, on "The Tonsil Problem", John N Stewart, Stratton, "Measuring Impalpable Objects with X-Rays" and George W Hoffmeister, Imperial, "Recent Literature on Causes of Prostatic Hypertrophy"—Dr Geza de Takats, Chicago, will address the Omaha-Douglas County Medical Society, Omaha, May 15, on "Diagnosis and Treatment of Peripheral Vascular Disease"

NEW JERSEY

Bill Passed—A 373 has passed the assembly, proposing to appropriate \$10,000 to the state department of health for the purchase of diphtheria toxoid and/or toxin-antitoxin and smallpox vaccine, which is to be distributed free by the department in accordance with its rules and regulations

Paging Mr Rando—Arthur Joseph Rando who has served as intern and resident physician at several New Jersey hospitals, has obtained these positions by a false claim that he is a graduate of Tulane University of Louisiana New Orleans, recent investigation revealed. Officials of Tulane state that Rando is not known there. A further claim that he had been employed at Charity Hospital, New Orleans, was not substantiated by the hospital. Records of the American Medical Association do not show that any physician by this name was ever graduated from any medical school, obtained a license to practice or has ever been enrolled in any medical college. When visited by investigators for the New Jersey state board of medical examiners, Rando made an appointment to see them later, but when the investigators called at his home several days later, they were informed that he had departed.

NEW YORK

Bills Passed—The following bills have passed the assembly and the senate. A 415, to amend the pharmacy practice act by proposing, among other things, (1) to define a pharmacy as "any place registered by the board in which drugs, chemicals, medicines, prescriptions or poisons are possessed for the purpose of compounding, dispensing or retailing or in which drugs, chemicals, medicines, prescriptions or poisons are compounded, dispensed or retailed or in which such drugs, chemicals, medicines prescriptions or poisons are by advertising or otherwise offered for sale at retail," and (2) to provide that every pharmacy shall be under the personal management of a duly licensed and registered pharmacist, A 485, to amend the workmen's compensation act by proposing to make dermatitis venenata compensable when acquired in "any process involving the use of or direct contact with acids, alkalis or oil, or with brick cement, lime concrete or mortar capable of causing dermatitis (venenata)", and S 1677, to amend the education law relative to credentials by proposing to make it unlawful for any person to attempt to obtain by fraudulent means any certificate of registration or any diploma, certificate or other instrument, or duplicate thereof, purporting to confer any literary, scientific professional or other degree. The following bills have passed the assembly. A 1567 to amend the law prohibiting the admittance of unvaccinated children to schools in cities of 50,000 or more inhabitants by proposing that an unvaccinated child shall be admitted to school on the recommendation of the city board of health or such other board, commission or officers of such city having jurisdiction of the enforcement of the law, A 2118 to amend those provisions of the medical practice act relating to osteopathy by proposing to extend to a considerable degree the scope of a license to practice osteopathy. S 1375 has passed the Senate proposing to amend the law relating to registered nurses by requiring applicants for such registration to be citizens of the United States.

New York City

Seventh Harvey Lecture—Dr Thomas M Rivers of the Rockefeller Institute for Medical Research delivered the seventh lecture of the Harvey Society at the New York Academy of Medicine, April 19. His subject was "Filterable Viruses, with Particular Reference to Psittacosis"

Hospital Advisory Board—Dr Sigismund S Goldwater, commissioner of hospitals, has appointed the following board of administrative consultants: Drs Willard Cole Rappleye, Jacob J Golub, Willis G Nealley, John H Wyckoff, Jr, George Baehr, Ernst P Boas and Haven Emerson and Clarence E Ford assistant commissioner, state social welfare department.

Hospital News—Dr Richard H Jaffe, Chicago, delivered a lecture at Mount Sinai Hospital April 6 on "Modern Concepts of the Pathogenesis of Progressive Pulmonary Tuberculosis". Dr Richard Bauer, Vienna, gave a lecture on "A New

Treatment for Various Types of Coma," March 1, at Mount Sinai Hospital—Louis I Dublin, Ph.D., delivered an address at the annual meeting of the directors of the Hospital for Joint Diseases, April 4, on "The Hospital, the Doctor and the Community."

Afternoon Lectures at the Academy—Recent Friday afternoon lectures at the New York Academy of Medicine have been delivered by the following speakers, among others:

- Dr Robert T Frank, The Endocrine Glands and Their Relation to the Diagnosis and Treatment of Obstetrical and Gynecological Conditions
- Dr Samuel J Kopetzky, Significance and Treatment of Paranasal Sinus Infections in Infants and Adults
- Dr Alexander Randall, Philadelphia, The Story of Renal Tuberculosis
- Dr Louis C Schroeder, Disorders of Adolescence from the Standpoint of the Pediatrician
- Dr Walter C Altare, Rochester, Minn, Digestive Troubles of the Constitutionally Inadequate

Society News—Dr Leopold Jaches addressed the New York Roentgen Society, March 19, on "Bone Changes in Cases of Disturbance of Lipoid Metabolism"—A symposium on acute and chronic empyema was presented before the New York Surgical Society, March 14, by Drs John F Connors, Harold Neuhoof, Adrian V S Lambert and Walton Martin—Drs Charles Gordon Heyd and Charles Hendee Smith addressed the Medical Society of the County of Queens, March 27, on "Hyperthyroidism in Children and "Pneumonia in Children," respectively—Dr George W Crile, Cleveland, addressed a joint meeting of the Queensboro Surgical Society and the Brooklyn Surgical Society, April 11, on "Pathologic Physiology of the Sympathetic Nervous System and Its Treatment by Adrenal Denervation"—Dr Joseph C Beck, Chicago, was guest speaker at a joint meeting of the Medical Society of the Greater City of New York and the Society of Plastic and Reconstructive Surgery, April 13, on "Plastic Repair of Defects Following Radical Surgery for Malignancies About the Head and Neck."

NORTH CAROLINA

Society News—Dr George E Williams, Valdese, addressed the Catawba Valley Medical Society, Lincolnton, March 13 on "The Value of Psychiatry in the Practice of Medicine"—Dr Michael A Burns, Philadelphia, addressed the Guilford County Medical Society, High Point, March 2, on treatment of neuroses—Drs Donnell B Cobb, Goldsboro, and John A Winstead, Rocky Mount, addressed the fourth district medical society at a meeting in Smithfield, February 27, on diagnosis of diseases peculiar to women and amebic dysentery in infants, respectively—Dr Springl Weizenblatt addressed the Buncombe County Medical Society, Asheville, March 5 on tuberculous disease of the eyes—Drs Alva B Craddock, Paul H Ringer and Julian A Moore, Asheville, addressed the Mecklenburg County Medical Society, Charlotte on diagnosis and treatment of tuberculosis—At a meeting of the Durham Orange County Medical Society, at Duke University School of Medicine, Durham, March 9, speakers were Drs Oscar L Miller, Charlotte, on "Fractures of Both Bones of the Fore arm" and Luther Emmett Holt Jr, Baltimore, on "Absorption and Utilization of Fat"

OREGON

Society News—The Southern Oregon Medical Society will hold its annual meeting at Medford, May 8. Among the speakers will be Dr George W Swift, Seattle, on "Traumatic Diseases of the Brain"—Drs Raymond E Watkins and Frank R Menne, Portland, addressed the Central Willamette Medical Society, Corvallis, March 1, on "Carcinoma of the Female Genital Organs"—Dr J B Gillis, Jacksonville, addressed the Jackson County Medical Society, Ashland, March 7, on focal infection—Dr Gilson A Ross, Eugene, presented a paper before the Lane County Medical Society, Eugene, March 15, on treatment of fractures of the neck of the femur—At a joint meeting of the medical societies of Union, Wallowa and Umatilla counties at Hot Lake Sanatorium, March 9 Dr Lyle B Kingery, Portland, gave an address on skin diseases.

State Society Rejects Fee Schedule for Medical Relief—The council of the Oregon State Medical Society at a meeting in Portland April 4, adopted a resolution approving the action of its medical advisory committee in refusing to accept a fee schedule offered by the state relief committee. The relief committee had previously rejected a fee schedule drawn up by the society's representatives. In explanation of this action the resolution states that the fee schedule proposed was unreasonably low, not based on cost of the service to be rendered, but purely arbitrary. It is set out that a craft or profession is qualified to determine what is a reasonable and acceptable price for its services. The council took the position that "we will continue to care for our patients as we

always have whether they have means to pay us or not
We are carrying a load that belongs to the whole public,
not to us alone."

PENNSYLVANIA

Personal—Dr Howard K Petry, clinical director, Torrance State Hospital, has been appointed superintendent of the Harrisburg State Hospital, to succeed Dr Edward M Green, who recently resigned after serving sixteen years—Dr Arthur E Davis has been appointed director of public health of Scranton

Society News—Dr Willard H Kinney, Philadelphia, addressed the Cambria County Medical Society, Johnstown, April 12, on "Hematuria—Its Significance and Management" and Dr Louis H Mayer Jr, Johnstown, explained the technic of examination for the emergency relief program—Speakers at a meeting of the Allegheny County Medical Society, Pittsburgh, April 17, were Drs Ehrhardt Ruedemann, on "The Ear in General Medical Diagnosis", J Watson Harmeier, "Headache," and Josiah R Eisaman Jr, "Abdominal Pregnancy"—Dr George J Feldstein addressed the Pittsburgh Pediatric Society, April 20, on vaccine therapy of whooping cough

Philadelphia

Society News—Dr Frank H Lahey, Boston, addressed the Philadelphia County Medical Society, March 28, on "Diagnosis and Management of Hyperthyroidism and Associated States"—Mary J Hogue, Ph D, among others, addressed the Physiological Society of Philadelphia, March 19, on "The Effect of Amebicidal Drugs on Tissue Culture Cells"—Dr William Drayton Jr and George E Coghill, Ph D, addressed the Philadelphia Neurological Society, March 23, on "Pneumocranium in Treatment of Traumatic Headache, Dizziness and Character Change" and "Growth of Spinal Cord in Relation to Reflex Action," respectively—At a joint meeting of the Philadelphia Psychiatric Society and the section on medical history of the College of Physicians of Philadelphia, April 13, Dr Theodore Diller, Pittsburgh spoke on "Human Credulity as Illustrated by Belief in Witchcraft"

Symposium on Amebic Dysentery—Members of the faculty of the Woman's Medical College of Philadelphia presented the program of the Philadelphia County Medical Society, April 11 Drs John Stewart Rodman and Henry D Jump and Helen Ingleby discussed the surgical complications, pathology and prophylaxis and treatment of amebic dysentery—Dr Chevalier Jackson spoke on "Prophylaxis of Bronchiectasis" and Dr Winifred Bayard Stewart on "Encephalitis in Children, Apparently Congenital and Due to Maternal Influenza" A special meeting was held, April 13, for senior medical students of Philadelphia in the interest of promoting the periodic health examination Speakers were Drs Thomas A Shallow, on "The Relation of the Doctor to the Public and the Commonwealth", Moses Behrend, "Value of Medical Organization" and Francis F Borzell, "Medicine and Economics"

SOUTH CAROLINA

State Medical Meeting at Charleston—The eighty-sixth annual session of the South Carolina Medical Association will be held at Charleston May 1-3, under the presidency of Dr Robert E Abell, Chester Guest speakers will be

Dr Fred W Rankin Lexington Ky Diagnosis and Surgical Treatment of Malignant Lesions of the Large Bowel
Dr James R McCord Atlanta Ga Conservative Treatment of Eclampsia
Dr Roscoe G Leland Chicago Trends in Medical Economics
Dr Jack C Norris Atlanta Cardiovascular Renal Disease

Among South Carolina physicians who will present papers are

Dr Walter R Mead Florence Intracranial Hemorrhage Without Paralysis
Dr Lawson Paul Barnes Bennettsville Importance and Ease of Prescribing Diets
Dr Joseph Decherd Guess Greenville Hemolytic Anemia of Pregnancy
Dr Julian P Price Florence Use and Abuse of Drugs in Treating Children
Dr Charles Williams Bailey Spartanburg Anemia in Infants and Young Children
Dr Marion H Wyman Columbia Resistance to Infection by Fixed Tissue Cells

The South Carolina Public Health Association will hold its annual meeting Tuesday morning May 1 speakers will be Drs John A Ferrell New York president American Public Health Association L L Williams and Calvin C Applewhite of the U S Public Health Service on malaria and community sanitation, respectively and William A Mulherin Augusta Ga on preventive pediatrics The president's reception and ball will be held Wednesday evening at the Francis Marion Hotel

VIRGINIA

Personal—Dr George B Arnold has been appointed superintendent of the State Colony for Epileptics and Feeble-minded Colony, to succeed Dr John H Bell—Dr Hugh C Henry, Petersburg has been appointed a member of the state advisory board on mental hygiene

County Societies Organized—Six counties included in the Medical Society of Northern Virginia recently formed medical societies with provisional presidents to serve until the meeting of the district society, as follows Clarke County, Dr Charles O Dearthmont, White Post Warren County, Dr David M Kipps, Front Royal, Shenandoah County, Dr William C Ford, Woodstock, Frederick County, Dr Hunter H McGuire, Winchester, Rappahannock County, Dr James G Brown, Woodville, and Page County, Dr George R H Long, Luray

WASHINGTON

Society News—Drs Milo T Harris, Port Arthur, Texas and Samuel E Light addressed the Pierce County Medical Society, Tacoma, recently, on "Roentgenologic Diagnosis of Diaphragmatic Hernia" and "Relation of Dermatology to General Medicine," respectively—Drs Laurence Selling Portland, Ore, and Charles M Doland, Spokane, addressed the Spokane County Medical Society, Spokane, February 8 on "Acute Encephalomyelitis" and "Abdominal Injury Without External Evidence of Trauma," respectively

GENERAL

Change in Status of Licensure—The California State Board of Medical Examiners reports the following

Dr John P Sandboldt Monterey found guilty on two charges of violation of the federal narcotic law placed on probation for five years during which time he must not apply for or have a federal narcotic permit nor have narcotics in his possession The periods of probation on the two charges are to run concurrently

Dr Peder S Bruguere San Francisco license restored February 26 placed on probation for two years

Dr Schuyler A Barber Porterville license restored February 26 placed on probation for five years without narcotic possession or privileges

National Tuberculosis Association—The thirtieth annual session of the National Tuberculosis Association will be held in Cincinnati, May 14-17, with headquarters at the Netherland Plaza Hotel At the opening general meeting Monday evening, Dr Stuart Pritchard, Battle Creek, Mich, will give his presidential address and Dr Marion Dorset, Washington D C, will give an address on "The Role of Tuberculin in Tuberculosis Control" Ralph W G Wyckoff Ph D New York will show a motion picture on growth of acid fast bacilli and the Trudeau medal will be awarded Among speakers listed on the tentative program are

Dr Alphonse R Dochez New York Acute Infections of the Upper Respiratory Tract

Drs George R Duncan and Ernest S Mariette Oak Terrace Minn Hyperpyrexia in the Treatment of Tuberculosis

Drs Alfred H Caulfield and George C Anglin Toronto Ont Futurity Handicap of the Tuberculosis Contact

Dr Isadore D Bronfin Denver Amyloid Degeneration of the Suprarenal Glands as a Factor in Producing Symptoms of Addison's Disease in Chronic Pulmonary Tuberculosis

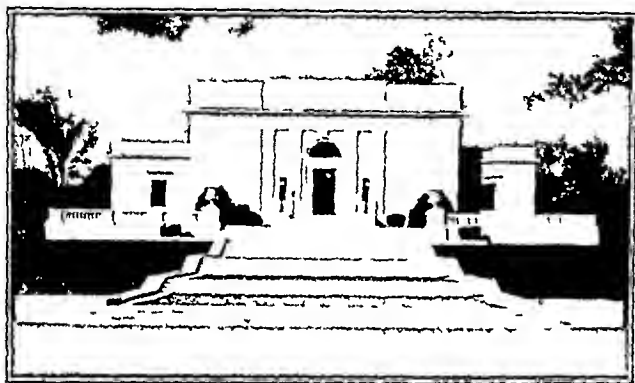
Dr Donald E Vochem Newark Ohio The Problem of Anemia in Clinical Tuberculosis

A symposium on collapse therapy will be presented by Drs Ronald V Christie, Montreal, Que, Edgar M Medlar, Mount McGregor, N Y Lawrason Brown, Saranac Lake, N Y and Carl A Hedblom Chicago The American Sanatorium Association will hold its annual session Monday, May 14

Medical Bills in Congress—Senator Copeland, April 20 announced in the Senate his intention next week, or very soon thereafter, to call up for consideration S 2800 the Copeland food drugs and cosmetics bill *Changes in Status* H R 3768 has passed the House changing the name of the retail liquor dealers stamp tax in the case of retail drug stores or pharmacies to medicinal spirits stamp tax S 2794 to amend the longshoremen's and harbor workers compensation act has been reported to the Senate with amendments (S Rept 588) Among other things, the bill would authorize a deputy commissioner to suspend payment of compensation if the injured employee unreasonably refuses to submit to medical and surgical treatment The companion bill in the House H R 8057 has been reported to the House, with amendments (H Rept 1244) *Bills Introduced* S 3382 introduced (by request) by Senator Thomas Oklahoma provides that Osage Indians who are habitual drunkards or habitual users of narcotics may be committed to institutions H R 9121 introduced by Representative Brunner New York and H R 8977 introduced by Representative Rudd New York propose to amend the Radio Act of 1927 as amended

so as to require all radio broadcasting stations to allocate not less than one fourth of their operating time to educational, religious, agricultural, labor, cooperative and similar non profit-making associations

Pharmacy Building to Be Dedicated—The American Institute of Pharmacy, new headquarters of the American Pharmaceutical Association in Washington, D. C., will be dedicated during the annual session of the association, May 7-12. The new building, located on Constitution Avenue, near the Lincoln Memorial, is of white Vermont marble, with twenty-four rooms. In one end will be a pharmaceutical library, in the other a museum depicting 150 years of American pharmacy. The ground floor contains rooms for storing valuable books and documents and for offices. It is expected that the Revision Committees of the U. S. Pharmacopeia and of the National Formulary, the American Association of Colleges of Pharmacy and other professional organizations will have quarters in the building. It was originally planned to include a research laboratory, but the plan was abandoned when a mem-



Headquarters of the American Pharmaceutical Association

ber of the association offered to build a separate building for this purpose. The main doors and outside lighting fixtures are of bronze. Panels on each side of the main entrance will hold decorations illustrating the history of pharmacy. Henry A. B. Dunning, Pharm. D., Baltimore, is chairman of the building committee and others associated with him in completing the undertaking have been Samuel L. Hilton, Pharm. D., Eugene G. Eberle, Pharm. M., and Evander F. Kelly, Pharm. D., all of Washington, Robert L. Swain, Baltimore, and James H. Beal, Se. D., Fort Walton, Fla.

CANADA

Banting Research Foundation—During the past year twenty research workers received grants from the Banting Research Foundation, according to a report in *Science*. Grants have been made during the six and a half years of the fund's existence to sixty-three workers, principally in Canadian universities. It also aids in the support of the department of medical research of the University of Toronto, under the direction of Dr. Frederick G. Banting. The capital sum now amounts to about \$700,000.

Vancouver Summer School—The annual Vancouver Medical Association summer school will be held, June 26-29, at the Hotel Vancouver. Speakers will be Dr. Frank W. Lynch, San Francisco, obstetrics and gynecology, C. E. Dolman, Dr. P. H., Toronto, laboratory problems, Drs. Howard C. Naffziger, San Francisco, surgery, Max Cutler, Chicago, Walter C. Alvarez, Rochester, Minn., gastro enterology, and Charles A. Aldrich, Winnetka, Ill., pediatrics.

New Radium Source Reported—Newspapers reported April 6, that a new deposit of pitchblende giving promise of a greater supply of radium has been discovered in the Beaver Lake area of Northwest Territory. Since the discovery of radium ore at Great Bear Lake four years ago Canada has become a producer of radium, several thousand milligrams having been produced by the refinery at Port Hope, Ont. which operates the deposits at Great Bear Lake. The province of Ontario has purchased several hundred milligrams for use in its cancer clinics. A recent statement from the government department of mines points out that, contrary to a general belief, the government has no connection with the commercial production of radium. The department of mines devised the method used in treating the ores and mapped the area but it has no control over production or prices.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 31, 1934

New Legislation for the Labeling of Food

New legislation on food qualities and food contents will be recommended by a departmental committee, which has just drafted its report. It advises that parliament shall empower the minister of health to make orders as to the contents and qualities of particular foods on the findings of an advisory committee, which shall consult the interests affected and hear evidence. In the event of a uniform standard being suggested, the committee would adjudicate and lay its conclusions before the minister of health. Bread, jam, meat paste, egg powder, custard powder and ice cream are among the great range of commodities that might come under such a procedure. At present, legal standards have been adopted for a few articles, such as milk, butter, cream and margarine. There are in existence already regulations limiting the proportion of preservatives in certain products and provisions in the food and drugs act against the sale of articles "not of the nature, substance and quality demanded." But the interpretations of public analysts as to what is a genuine article vary from district to district, even with regard to cheese, for instance. The matter has been under consideration since 1931. Authorities on food values declare that parliament cannot delay action much longer, as it is astonishing how many kinds of food are sold under names that give the housewife no guaranty of what she gets for her money. The commonest example is "bread," a word that may mean almost anything.

The Contraceptives Bill

In the house of lords, Lord Dawson (president of the Royal College of Physicians) moved the third reading of his contraceptives bill (*THE JOURNAL*, March 10, p. 780) to control the public exhibition of drawings and diagrams of contraceptives and their sale in streets and other public places by means of hawking and automatic machines, these being regarded as an offense against public manners. He considered that the best way of dealing with evil was to promote good, and the best way of dealing with contraception was to remove the atmosphere of falsity that surrounded it. If a ballot should be taken among married persons under the age of 40 he thought that three fourths or more would desire to be in a position to regulate the numbers and spacing of their families. How otherwise was to be explained the steady fall in the birth rate? He appealed to the ministry of health to permit a wider discretion to local authorities, so that birth control instruction might be given to married women. This would direct the movement into regular channels and save newly married women, medically unfit for pregnancy, from endangering their lives. The bill was passed.

Increase in Road Accidents

Notwithstanding all attempts to prevent road accidents, the number for 1933 shows a substantial increase. In Great Britain last year 7,202 persons were killed on the roads, compared with 6,667 in the previous year, and the total number injured was 216,328, compared with 206,450. The accidents numbered 191,782, compared with 184,006. The figures for England and Wales alone are still more unsatisfactory, for in Scotland there was a decrease of one in the number killed. The number of accidents resulting in killed or injured in England and Wales was 175,738, compared with 167,752 in the previous year. The killed numbered 6,498, against 5,962, the injured 198,539, against 188,680. There is, of course, a demand that something more

be done. The government is about to introduce at once a new road traffic bill, of which the following are the principal proposals. A 30-mile limit for private automobiles and motorcycles in "built-up areas" (defined as an area where a system of street lighting is maintained), with lower limit for heavier goods vehicles. The erection of traffic signs if an unlighted length of road is subject to, or a lighted length of road exempted from, the 30 mile limit. The number of separate speed limits to be reduced from six to four. A conviction for exceeding the speed limit or for careless driving to be endorsed on the driver license. A person convicted of careless driving to be liable to disqualification for one month on a first conviction and three months on a second. A new applicant for a driver's license must satisfy the authority of his competence to drive. The use of horns and similar appliances to be regulated. Pedal cyclists may be required to paint a white patch on the rear mudguard. Reflectors not complying with the statutory requirements as to optical efficiency must not be sold. Local authorities may establish crossing places for pedestrians, to be complied with under penalty of a fine. It is claimed that this system has been a great success in Paris. In a broadcast the minister of transport appealed for the exercise of caution. The National Safety First Association has begun a six months intensive campaign, for which it has received a grant of \$25 000 from the Road Fund. A sound film has been produced for children and already has been shown to 500,000. A new series of posters and instructional matter are in hand for use in schools.

The Village Settlement Treatment of Tuberculosis for Ex-Service Men

The treatment of tuberculosis in village settlements, introduced by Sir Penderill Varrier-Jones, under which patients live with their families and carry on industries, has been described in previous letters. The first settlement was at Papworth in Cambridgeshire and proved so successful that it has been taken as a model. Preston Hall, near Maidstone, was established as a settlement for ex-service men. It comprises three sections—the sanatorium, the training center and the settlement where ex-patients live with their wives and children while earning a living at industries. The village population numbers 902 and is made up as follows: sanatorium 250 patients, staff, 58; settlement, 594. Printing is one of the industries carried on in the settlement, and the excellent printed report is a specimen of the work done. Dr J B McDougall, the medical director, insists on the importance of after-care in the treatment of tuberculosis and shows the exceptional advantages of the village settlement for this. But he does not consider the village settlement as the solution for the eradication of tuberculosis in this country. He criticizes the view that the village settlement should continue to provide security for tenure in employment for indeterminate periods, regardless of the clinical condition and suggests how the scheme can be made available for a larger number of patients who are likely to derive medical benefit from prolonged after-care. The essential object of the village settlement in the treatment and after care of pulmonary tuberculosis is to bring the active disease to a state of arrest for a period sufficiently long to reduce liability to relapse to a minimum. But the settlement should not become a center for the employment in perpetuity of arrested cases.

The Lowest Birth Rate on Record

In the last twenty years the recording of the lowest birth rate ever known since statistics on this matter have existed has become monotonous. The rate for 1933 is 14.4 per thousand of population and the lowest ever recorded. It was also the lowest for the fifth year in succession. The death rate was 12.3 and the mortality of infants under 1 year 64 per thousand live births.

PARIS

(From Our Regular Correspondent)

March 7, 1934

Staphylococcus Vaccine in Treatment of Herpes Zoster and Varicella

Dr Pacreau of St Nazaire has recently made a contribution to the subject of staphylococcus vaccine in the treatment of herpes zoster and varicella, which appears decisive. In eighteen months he treated twenty-five cases of herpes zoster by this method with success. The injections are made every two days. The first dose in normal subjects is 0.5 cc, then, depending on the case, one can renew the dose or increase it to $\frac{3}{4}$ cc and then to 1 cc. Three injections generally suffice to effect a permanent cure. The author prefers a stock vaccine that contains staphylococcus anatum. In cases of herpes zoster thus treated, from the first injection of vaccine, the pains diminish and sometimes disappear completely in forty-eight hours, and the patient regains his sleep. The extension of zosterian dermatitis is checked and often the vesicles diminish in size and begin to dry up. As a rule after the second injection there is no longer any sensitiveness of the skin nor neuralgia. The vesicles are transformed into brownish crusts loosely adherent, which, as they drop off, leave a normal pink epidermis. A third injection in about half of the cases, was made to insure the cure. How does the antistaphylococcus vaccine act in herpes zoster? It does not seem likely that it is through the febrile reaction, for numerous cures have been effected without the slightest general reaction having been observed. Furthermore Dr Craps in Brussels had previously discovered that injections of foreign proteins (horse serum) do not produce any result whatever. Recently Dr Pacreau observed an etiologic connection between herpes zoster and varicella. In one family, herpes zoster was diagnosed in the mother, and about twelve days later the two daughters and the father developed typical varicella, which in the father became infected and generalized, nevertheless a cure was quickly effected by vaccinal and local treatment. While it is impossible to say to what extent each of these treatments contributed to the patient's recovery, the author thinks that, while the external treatment facilitated the disappearance of pyodermitis the vaccine doubtless combated effectively the varicella. The author says that, of all the common treatments—local dressings with or without analgesics, internal medications, autohemotherapy—none can give such rapid and good results as antistaphylococcus vaccination.

Suboccipital Puncture

Suboccipital puncture was used at first only by neurologists but it is coming to be used more generally throughout France and some physicians prefer it to lumbar puncture. Mr Basch who discussed this method before the Société des médecins des hôpitaux de Paris, stated that with this method one can easily follow the variations of the cerebrospinal fluid of syphilitic patients under treatment. The accidents due to faulty technique are exceptional if the mastoid processes are properly taken as the bench marks. This puncture gives no meningeal reaction and no secondary headache. Mr Basch gave his observations on forty-eight punctures that he performed and he confirmed the favorable opinion previously expressed by Mariano Castex and P Ravaut. A general discussion followed before the society from which it appears that suboccipital puncture has given satisfaction to all who have used it but that prudent reservations should be made as to its generalization among inexperienced persons. There were however some opponents. Mr Guillaum held that lumbar puncture is preferable to suboccipital puncture for the latter does not furnish all the necessary information in medullary disorder. Mr Combarac preferred

lumbar puncture and called attention to the danger of puncturing the bulb, but Mr. de Genns replied that such an error is anatomically impossible.

The Annual Art Exhibit of Physicians

The Salon des medecins is an annual exhibit of paintings, sculptures and engravings made by physicians. This exhibit was established forty years ago and is always a success. It is held early in March and attracts even the professional art critics, who write it up in the daily press. All profits from the sale of tickets and from entry fees (\$6) go to the support of the Maison du medecin, a home for aged physicians. The exhibit this year was unusually good. Works also of widows, wives, daughters and sisters of physicians are admitted. There were a number of humorous drawings and caricatures. The sculptures, although fewer in number, had higher artistic value. Dr. Sabouraud, the dermatologist, is an excellent artist whose works have attracted attention at the exhibits. A place was reserved this year for the exhibit of medallions engraved by Professor Hayem, who died recently at the age of 90. He was a remarkable engraver.

Death of Professors Pinard and Bousquet

Professor Pinard died recently, following a cerebral congestion, at the age of 90. An eminent obstetrician, he is regarded in France as the father of puericulture. His professional card bore simply the words "Dr. Pinard, puericulteur." A pupil of Tarnier, he was professor of obstetrics and gynecology at the Faculte de medecine de Paris, a member of the Academy of Medicine, and Grand Officer of the Legion of Honor. Before his death he was able to witness the opening of the Institut de puericulture de la Faculte de Paris, the creation of which he had long since demanded. In 1919 he was elected member of the chamber of deputies for Paris. He presented an extensive program designed to raise the birth rate, which however he was unable to get parliament to adopt. His health was excellent, among the members of the Academy of Medicine, his age was surpassed only by Dr. Gueniot, who is now 102 years old.

Likewise the death of Professor Bousquet, former superintendent of the Ecole de medecine de Clermont-Ferrand, an eminent surgeon and the author of numerous classic works, at the age of 82, is announced. Bousquet began his career as a military surgeon.

BERLIN

(From Our Regular Correspondent)

March 5, 1934

Some Restrictions on Private Practice Removed

Some important regulations pertaining to the *krankenkassen* (THE JOURNAL, Dec. 30, 1933, p. 2132) have been recently introduced. The last of the ambulatoriums of the *kranken-kassen* (which existed in Berlin) were closed by the end of 1933. Thus an unsatisfactory institution, which the medical profession had constantly combated ever since its creation during the postwar years, on the ground that it did not constitute a well ordered individual system of treatment, has come to an end. Economic objections were likewise urged against the system, for the physician should be free to practice as he chooses and should not be an officer employed by the *kranken-kassen* and dependent on their behests. Hours of service, in the relationship of an employee, are not in keeping with the ethical and practical tasks of the medical profession. By this new regulation the treatment of the families of the members of *kranken-kassen* has been finally restored to physicians who are free to practice as they see fit. Only a few diagnostic institutes, chiefly for serologic and bacteriologic experiments, will remain open.

In Greater Berlin the dispensary, which imposed extensive restrictions on the practicing physician in the prescribing of

medicines, has been abolished. The Berlin dispensary had frequently been severely criticized by experts in that field. The prescribing of medicines and remedies is still controlled, however, by the "Richtlinien für die wirtschaftliche Verordnungsweise," which was set up by the federal commission on physicians and *kranken-kassen* and has been frequently amended and improved during recent years. The financial side of the prescribing of medicines and remedies has been regulated by an agreement entered into by the *Kassenärztliche Vereinigung Deutschlands* and the league of the *kranken-kassen*, whereby a fixed norm for the average consumption of these substances is established. In Berlin the established norm for general practitioners (which includes office requirements) is fixed at 4 marks (\$1.52) for each case treated. The norms for the other groups of physicians are likewise fixed. If the cost of the medicines and remedies prescribed by a panel physician exceeds by more than 20 per cent the norm established for his group, he must pay the excess amount, it being deducted from his share of the total compensation. These sums are then turned over to the *kranken-kassen*. The law provides, however, for certain exceptions, for example, in the event of a small number of cases treated (under fifty), because a strict application of the law would work a hardship on the physician concerned, and likewise in cases of disease of a peculiar type. Furthermore, the deduction of the excess sum may be omitted if the later activities of the physician concerned have been kept within the limits prescribed and the discovered excess amount has been compensated for.

The following articles may not be prescribed for *kranken-kassen* patients: wine and other alcoholic beverages without pronounced therapeutic effect (except in cases of threatened danger to life), bottled drinking waters without marked therapeutic effect, effervescent mixtures without marked therapeutic effect, artificial bath improvers without marked therapeutic effect, which serve mainly to aromatize the bath water, cosmetic applications that serve for the cleansing, staining or beautifying of the skin, the hair, the nails, the teeth or the mouth cavity, of healthy persons, preparations that serve to arouse the sexual impulse, preparations that serve as contraceptives, remedies or devices to induce abortion, even though they have been advertised as remedies in menstrual disorders, remedies to combat drunkenness, preparations that contain medicine in candy form, with the exception of quinine chocolate wafers for children, preparations intended for the public, which are marketed often by the producer himself, and preparations listed officially as "patent medicines." This list may be changed from time to time.

By economical treatment is meant that the physician is under obligations to treat his patients adequately and in a practical manner. He must refuse all treatment that is not necessary and must prescribe all therapeutic measures, particularly medicines and cordials, in an economical manner. He must protect the *kranken-kassen* against expenditures so far as the nature of the service to the patient permits. The treatment must not go beyond what is necessary. The issuance of certificates with regard to incapacity to work must be based on a conscientious appreciation of the existing conditions. This definition has been expressly emphasized in the agreement mentioned. The *kranken-kassen*, in turn, agree to use their utmost endeavors to induce the insured to make economical use of the *kranken-kassen*.

If the *kranken-kasse* has reason to believe that a panel physician is not heeding the established requirements and is going beyond reasonable needs or thinks that he does not treat patients properly, it may appeal to the *vereinigung* and demand an investigation. The activities of the *kranken-kassen* are further supervised by an examining board appointed by the

Kassenärztliche Vereinigung, in the deliberations of which the Krankenkassen may participate through their medical representatives

A new announcement concerning admission to Krankenkassen practice is of interest. A rumor has been circulated that elimination of all women from medical practice is contemplated. That is not the case, but admission of women to medical study, and likewise the licensure of women physicians and their location in a medical practice, are under the control of the authorities. The medical organizations have no say in the matter. With respect to admission to panel practice, it is provided that men and women physicians shall be temporarily suspended from panel practice if they or their spouse have an income from other sources amounting to at least 500 marks (or correspondingly more if there are children in the family). No special regulation applicable to women physicians is contemplated. With regard to new admission to panel practice, married applicants will be given preference, and married applicants who have children will be accepted first. A recent regulation provides that in Berlin (likewise in many other cities) physicians may not hold consultation hours and receive patients at two different places.

The Economical Use of Expensive Drugs

The economical use of expensive drugs was recently discussed by Dr. Rudolf Hopmann before the Allgemeiner Aerztlicher Verein in Cologne. With regard to the prescribing of insulin, for example, it is not correct merely to ask, "What is the smallest dose that will be effective?" The whole situation must be taken into account, with the idea of restoring the patient's working capacity even with the use of considerable quantities of insulin, for example when the prescribing of strict diets is out of the question. In principle insulin therapy should be preceded by a purely dietetic treatment. In the presence of a constitution characterized by corpulence and sthenia, days of severe diet may be kept up longer than in the case of lean persons. In dealing with the latter if there is danger of acidosis, insulin had better be prescribed, the days of severe diet be omitted and a moderate diet, with at least 100 Gm. of carbohydrates, instituted. The insulin requirements must generally be based on the actual amount of sugar in the twenty-four hour specimen of urine and on the fasting blood sugar. The insulin deficit must, however, be regarded as permanent and continuous. Even the damaged islands of Langerhans produce a certain quantity of insulin. These can be stimulated by special treatment interspersed protein and carbohydrate days, and von Noorden's so-called zigzag diet. In some diabetic persons, muscular activity improves insulin utilization. The best method of administering liver extracts is by intervals of action and repose. The intervals may be several weeks or even months in length. The cost of this method of injection as compared with peroral liver treatment considering both the factors time and effect is as 15 to 75.

Observations on Electrosurgery

Prof. K. H. Bauer, professor of surgery at the University of Breslau, has reported on 500 operations performed by electrosurgery. By histologic sections it was shown that although the process of wound healing was slower than with the scalpel incision and in some instances complicated by later hemorrhages (on the fifth day) it was marked by fewer evidences of infection, by accelerated regeneration and by relative absence of operative shock. The question is: "What patients may be operated on better with the electric knife than by the older method?" The new method appears to be adapted especially to papillomas of the bladder, divisions of the cord with the aid of the thoroscope and coagulation of the gas-trian ganglion.

also to operations on "bleeders," operations on parenchymatous organs, in total removal of malignant tumors. As cancer cells appear to be more sensitive to heat than other cells, good results were possible also in nonradical procedures, reinoculations are avoided and recurrences can be attacked anew after several previous operations.

Reduction of Occupational Diseases

According to the annual reports of the industrial unions, the occupational diseases showed a decline between 1929 and 1932. In 1929, 22,258 cases of occupational illness were reported, the number was reduced, in 1932, to 6,493. In 1930 the number of compensated occupational disorders reached the maximum, whereas in 1932 the number was reduced to 1,711. The decline is due partly to the introduction of legal measures and partly to the repercussive effects of the changes in economic conditions. The number of cases of pneumoconiosis reported last year was 605, whereas in 1929 more than 1,750 cases were notified.

THE NETHERLANDS

(From Our Regular Correspondent)

Feb. 27, 1934

Tobacco Consumption in the Netherlands

The consumption of cigars showed a steady increase from 1924 to 1930, but in 1931 and 1932 there was a decrease. The consumption of cigarettes maintains its ascending curve. The consumption per person is increasing for cigars, 146 in 1923, 174 in 1930 and 167 in 1932, for cigarettes, 274 in 1923, 455 in 1930, 444 in 1931 and 450 in 1932. The total value of cigars, cigarettes and tobacco consumed amounted to 142,000,000 florins (\$92,300,000) in 1923, 152,000,000 in 1924, 138,000,000 in 1925, 183,000,000 in 1930, 180,000,000 in 1931 and 163,000,000 in 1932. The cost per person was 19.89 florins (\$14) in 1923, 23.25 florins in 1930 and 20.01 florins in 1932. One observes also in recent years a marked increase in the consumption of cheaper brands of tobacco to the detriment of the better qualities. The number of two-cent cigars rose from 197,175 in 1931 to 279,538 in 1932, whereas the number of two-florin cigars dropped from 6,000 in 1931 to 3,000 in 1932.

An Emblem for Physicians' Automobiles

The commission appointed by the government to select an emblem for physicians' automobiles has chosen the caduceus with a serpent coiled about it. As to the significance of the emblem there are now many emblems recognized locally, the holders of which enjoy certain privileges, for example, the right to exceed the speed limit, priority of passage on ferryboats and parking in places otherwise prohibited. But these privileges have little value unless there is a traffic officer present to enforce them. On the open highways there are no traffic officers, so that these privileges are of little avail. The commission does not deem it desirable to attach to this insignia any special obligations. Every automobilist from whom one requires aid on the highways must stop whether he is a physician or not and whether or not the car bears a special emblem. From that point of view instead of relying on an emblem that is too small to be noticed on a rapidly moving car it would be preferable to agree on a signal (for example, a handkerchief held in an extended arm) which would signify "If a physician please stop." The installation along the highways, of aid stations supplied with surgical dressings and equipped with a telephone would be equally desirable. The commission ends its report with the following conclusion: adoption of an emblem for the simple purpose of bringing the automobilists and physicians together without attaching thereto any special privileges or obligations, and the possible internationalization of the emblem.

Statistics on Cremation

T Van Den Brink gives, in the *Mensch en Maatschappij*, statistics on cremation in the Netherlands and in other countries. The Association for Optional Cremation was founded in 1874. The first cremation occurred in 1914. Progress has been more rapid in recent years. From a total of 262 in 1925 the number rose to 555 in 1931. During the first eleven months of 1932, 585 bodies were cremated. In 1931 the percentage had not yet reached 1 per cent, there having been 555 cremations and 77,000 deaths. This figure is much lower than that of other countries. In 1930 the number of cremations per thousand deaths in various countries was as follows: Japan, 494, Argentina, 135, Switzerland, 106, Germany, 76, Denmark, 44, Austria, 43, Norway, 41, Czechoslovakia, 23, Sweden, 14, England, 10, Netherlands, 7, and France, 2. Switzerland, in spite of its small population and restricted area, has twenty crematories. By the end of December 1930 the number of members in the Association for Optional Cremation had risen to 9,000, representing about 35,000 advocates of cremation. The Netherlands is today the only country of Europe that has no law regulating cremation. By its refusal to recognize cremation officially, the government seems to stamp it as illegal. It is surprising that no attempt has been made to regulate the question by a modification of the law of 1869 in regard to burials.

The Public Health in Dutch Guiana

From a comparison of the mortality figures in the metropolis and in Dutch Guiana, it is evident that the number of deaths from unknown causes is still high in the colony, particularly from cancer, which is much less often recognized than in the Netherlands. Vaccinations against infectious diseases, and the surveillance of schools, have given encouraging results. More than 26,000 patients took a course of treatment for trichinosis in 1932. The crusade against leprosy has been active. Patients have been compelled to accept treatment and if necessary isolation in a leprosarium, special schools for leprous children makes it possible to treat patients promptly. Free treatment in the polyclinics has been instituted for venereal diseases. Dr Lampe has pointed out that the effectiveness of arsphenamine and bismuth compounds in the treatment of syphilis seems to be decreasing owing to the appearance of more resistant forms of virus.

Aid for Foreign Physicians

The recent events in Germany are the cause of so many Jewish physicians being obliged to leave Germany and being without resources. Dutch physicians have appointed a commission that, aside from all political considerations, will endeavor to support the morale and undermined financial status of their unfortunate colleagues. The new regulations of the Netherlands no longer permit foreigners to hold the position of assistant in a hospital or a laboratory. In the hope of aiding their confreres, the Dutch physicians have sent letters of inquiry to other countries to ascertain whether these physicians can secure permanent openings there.

Foreign Students

A large number of foreign students have come to our universities. The government is considering the erection of certain barriers to the admission of foreign students. The minister of public education has pointed out that this increase in foreign students required additional expenditures for laboratories and that the places in the laboratories and hospitals were often occupied by them. He thinks that this danger must be combated as soon as possible by excluding all foreign students from enrollment in the universities and higher schools of learning.

BUENOS AIRES

(From Our Regular Correspondent)

Feb 15, 1934

Protest Against Free Service to the Rich

The recently founded Colegio de Medicos has studied various professional problems, which are discussed in *Revista*, the official journal of the association. The principal activities of the members have up to the present been concentrated on hospital problems. The city, the government and several private institutions support free hospitals, where anybody who presents himself at the institution is taken care of. Many of these persons are well to do, some are even rich. The physicians serving in those hospitals receive no salary or at best very small salaries. There is a large number of patients in proportion to the number of physicians, for instance, at the Rawson Hospital 16,000 hospital patients and 284,000 outpatients were treated in one year by only twenty-four physicians. Each pharmacy assistant filled 230 prescriptions in one day. It is impossible to do good work. The members of the Colegio de Medicos hold that free hospital service by the city or the government should be given only to the poor, patients whose incomes vary from 160 to 350 pesos a month, according to the size of their families. For obstetrics and surgery, the basis of the calculation would be raised one third. Free services are attacked because they demand from the state resources beyond its means and compel physicians to serve without remuneration people who can pay. The members of the Colegio de Medicos hold also that assistant physicians and heads of departments should have adequate remuneration. As a result of these negotiations the city of Buenos Aires passed a law of graduation of physicians in the hospitals. Down in the scale is the assistant physician, who obtains appointment by passing an examination, five years later he may be assigned as an associate physician. There will be a physician for each twenty beds in a hospital. The head of a department is appointed for ten years. Besides these there will be intern physicians assigned after examination. Each hospital will have its own medical director, a position obtained only by promotion from the lower to the immediate position.

Another problem studied by the Colegio de Medicos was the economic and professional relations between physicians and institutions of mutual aid and welfare, many of which are flourishing but pay little to the physicians who work for them and are the bases of their activities.

Institute for Diagnosis of Neoplasms

An institute for the diagnosis of neoplasms, supported by the centers of public welfare and sanitary administration of the federal capital was inaugurated February 9 in Buenos Aires, with Dr Domingo Mosto, associate professor of pathologic anatomy of the University of Buenos Aires, as director. This institution will make all biopsies and examine all specimens sent by physicians or by municipal hospitals. The purpose is to obtain early diagnosis with the aim of an early treatment of cancer. Besides this municipal institution there is at Buenos Aires the Instituto de Medicina Experimental, with Dr A. H. Roffo as director. This institution is exclusively for the study of cancer and it is supported by the national university of Buenos Aires and by the national government of Argentina. It is equipped with wards, polyclinics and laboratories.

Death of Professor Iribarne

Dr J. Iribarne, professor of gynecology of the Faculty of Medicine of Buenos Aires, aged 49, died as result of an automobile accident. Twice he was dean of the Faculty of Medicine of Buenos Aires. He was also an organizer of medical and social works. He was president of the Argentine Social Museum and the editor of several medical journals.

Marriages

EVERETT WALKER McCauley, Burlington, N C, to Miss Ella Irene Wilson of Townesville, February 2

LUCIUS H BRACEY, South Hill, Va, to Mrs Gladys Yancey Bramham of Durham, N C, February 22

RICHARD ADDISON THAYER to Miss Barbara F Pierson, both of Beloit, Wis, February 24

DUDLEY CIRCUS BABB, Baltimore, to Miss Margaretta Laurenson Lackey, April 2

HUGH P GREELEY to Mrs Mark Trövell, both of Madison, Wis, March 23

Deaths

Jacques Holinger @ Chicago, Universität Basel Medizinische Fakultät, Basel, Switzerland, 1892, member of the American Otolaryngological Society, associate professor of laryngology, rhinology and otology, University of Illinois College of Medicine, aged 68, on the staffs of the Alexian Brothers' Hospital, Illinois Masonic Hospital, Grant Hospital and St Joseph's Hospital, where he died, March 30, of coronary occlusion

Earle Russell Hare @ Minneapolis, University of Minnesota Medical School, Minneapolis, 1900, at one time secretary of the Minnesota State Medical Association, member of the Western Surgical Association and the American Association of Anatomists, formerly instructor in anatomy and surgery at his alma mater fellow of the American College of Surgeons, surgeon to St Barnabas Hospital, aged 61, died, April 8

Richard Jordan, New Canaan, Conn, Medizinische Fakultät der Universität Leipzig, Saxony, Germany, 1895, member of the American Otolaryngological Society, fellow of the American College of Surgeons, formerly visiting otolaryngologist to the Lenox Hill Hospital and the Fifth Avenue Hospital, New York, aged 64, died, February 5, in the Polyclinic Hospital, New York, of pulmonary embolus

William Crissey Kellogg @ Augusta Ga, Johns Hopkins University School of Medicine, Baltimore, 1900 professor of clinical ophthalmology and otolaryngology, University of Georgia Medical Department, fellow of the American College of Surgeons, on the staffs of the Lamar Hospital and the Wilkenford Hospital for Women and Children, aged 59, died February 14, of pneumonia

Ernest White Patton @ Chattanooga Tenn, University of Nashville Medical Department, 1908, fellow of the American College of Surgeons, past president of the Chattanooga and Hamilton County Medical Society, on the staffs of the Baraness Erlanger Hospital and the Newell and Newell Sanitarium aged 52, died suddenly, March 15, at his home in Lookout Mountain, of heart disease

Archibald Byron Macallum, London, Ont Canada University of Toronto Faculty of Medicine, Toronto 1889, emeritus professor of biochemistry, McGill University Faculty of Medicine, Montreal, formerly lecturer and professor of physiology and biochemistry at his alma mater member of the Association of American Physicians aged 74 died, April 5

Willis Bryant Jones, Atlanta, Ga, Columbia University College of Physicians and Surgeons New York, 1901 member of the Medical Association of Georgia, on the staffs of the Grady, Crawford W Long, Wesley Memorial and Georgia Baptist hospitals, aged 59, died, March 3, in the Union Memorial Hospital, Baltimore, of intestinal obstruction

Henry McMahon Painter, New York College of Physicians and Surgeons in the City of New York Medical Department of Columbia College, 1888, formerly professor of clinical obstetrics at his alma mater consulting obstetrician to the Sloane Hospital for Women, aged 71, died March 11 of chronic myocarditis

Clarence Clifton Miles, Greenport, N Y College of Physicians and Surgeons Medical Department of Columbia College New York 1876 member of the Medical Society of the State of New York, formerly coroner and bank president aged 79 died March 8 at the home of his daughter in West Newton Mass

Roscoe William McKinley, Burlington Wash National University of Arts and Sciences Medical Department St Louis 1917 member of the Washington State Medical Association

served during the World War, on the staff of the Burlington General Hospital, aged 43, died, March 14, of lobar pneumonia

Snow Parker Freeman Cook @ Gloucester, Mass, University of Pennsylvania School of Medicine, Philadelphia, 1886 member of the New England Ophthalmological Society, aged 71, on the staff of the Addison Gilbert Hospital, where he died, April 6, of ulcerative colitis and cerebral hemorrhage

Monroe David Reese @ Lebanon, Pa, University of Pennsylvania School of Medicine, Philadelphia, 1921, member of the American Academy of Ophthalmology and Oto-Laryngology past president of the Lebanon County Medical Society, aged 37, died, March 22, of carcinoma

James Gordon Bonine, Cassopolis, Mich, Illinois Medical College, Chicago, 1901 College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1902, formerly state senator, aged 57, died suddenly, March 3, in a hospital at Niles, of heart disease

Harry Warren Lincoln @ Brooklyn, Long Island College Hospital, Brooklyn, 1894, on the staffs of the Jamaica Hospital, Richmond Hill, N Y, Wyckoff Heights and Bushwick hospitals, aged 61, died March 25, in the Brooklyn Eye and Ear Hospital, of heart disease

Adelbert Howard Monty, Woonsocket, R I, Columbia University College of Physicians and Surgeons, New York, 1906, member of the Rhode Island Medical Society, on the staff of the Woonsocket Hospital, aged 50, died, February 9, in Providence, of myocarditis

Charles W Moody, Plainville, Conn, New York Homeopathic Medical College, 1884, at one time member of the board of education, aged 76, died, February 19, in the Bristol (Conn) Hospital, of fracture of the femur, hypostatic pneumonia and hypertrophy of the prostate

Ross Hopkins, Jefferson City Mo, Johns Hopkins University School of Medicine, Baltimore, 1903, member of the Missouri State Medical Association, for many years connected with the state board of health, aged 55, died, March 27, of muscular atrophy

Edward Cole Clavin, San Antonio Texas, University of Pennsylvania School of Medicine, Philadelphia, 1893, member of the State Medical Association of Texas, aged 65, formerly on the staff of the Santa Rosa Infirmary, where he hanged himself, March 3

James Churchill Hanchett @ Detroit, Chicago Homeopathic Medical College, 1888, member of the Utah State Medical Association, medical director of the Maccabees, aged 69 died, March 28, in the Henry Ford Hospital, of erysipelas and acute nephritis

James Marsh McLean, Bay City, Mich, University of Toronto Faculty of Medicine, Toronto, Ont, Canada, 1910 member of the Michigan State Medical Society, aged 47, on the staff of the Mercy Hospital, where he died, February 28 of pneumonia

Issi Otto Pond @ Perry, Iowa, State University of Iowa College of Homeopathic Medicine, Iowa City, 1901, past president of the Dallas County Medical Society on the staff of the Kings Daughters Hospital, aged 60, died, March 15, of heart disease

William Holcombe Aiken, Tuscaloosa Ala Tulane University of Louisiana School of Medicine, New Orleans, 1915, served during the World War, connected with the Veterans Administration Facility, aged 50, died, March 11, of heart disease

Melvil S Coxe @ Dunkirk, N Y, University of Buffalo School of Medicine 1904, for many years a member of the local board of health on the staff of the Brooks Memorial Hospital, aged 56 died, April 8, of cerebral hemorrhage

John Gill Lilly, Tupelo, Miss, Tulane University of Louisiana Medical Department New Orleans, 1899, member of the Mississippi State Medical Association, on the staff of the Tupelo Hospital, aged 61, died March 1, of heart disease

Reginald David Graham @ Duluth Minn Chicago College of Medicine and Surgery 1915, on the staff of the Duluth Hospital aged 49 died Dec 26 1933 of carcinoma which developed in roentgen burns of the hands

William Horner Gardner, Pittsburgh Western Pennsylvania Medical College Pittsburgh 1899 member of the Medical Society of the State of Pennsylvania aged 72 died March 23 of hypostatic pneumonia

George William Lewis Wilson N C University of Maryland School of Medicine Baltimore, 1895 member of the Medical Society of the State of North Carolina aged 70 died February 16 of arteriosclerosis

Arminius Hank Evans, Saxton, Pa., Medico-Chirurgical College of Philadelphia, 1892, member of the Medical Society of the State of Pennsylvania, formerly member of the school board, aged 76, died, March 5, of cerebral hemorrhage.

Frank Baker Hiller ♂ Kansas City, Mo., Rush Medical College, Chicago, 1891, formerly secretary of the state board of health of Missouri, served during the World War, aged 64, died, March 18, of heart disease.

Calvin Hawthorne Childress ♂ Norfolk, Va., Medical College of Virginia, Richmond, 1915, served during the World War, aged 42, died suddenly, April 1, on board the steamship *Robert L. Lee*, of angina pectoris.

Theodore E. Ingram, Marietta, Pa., Jefferson Medical College of Philadelphia 1885, member of the Medical Society of the State of Pennsylvania, aged 75, died, April 2, in a hospital at Wernersville.

John Cornelius Klutho, Los Angeles, Missouri Medical College, St. Louis, 1898, member of the California Medical Association, aged 58, was found dead March 16, of a self-inflicted bullet wound.

Joseph Muir, New York, University of the City of New York Medical Department 1884, aged 69, died, February 8, in the Mount Sinai Hospital, of chronic nephritis, uremia and chronic myocarditis.

A. Jerome Hermann, Middleburg, Pa., Medico-Chirurgical College of Philadelphia 1897, for many years county coroner, aged 62, died, March 10, in the Geisinger Memorial Hospital, Danville, of uremia.

Wyllis K. Ingersoll, Philadelphia, New York Homeopathic Medical College, 1879, aged 77, on the staff of the Hahnemann Hospital, where he died, March 23, of carcinoma of the prostate.

Ottis Dee McCoy, Wheeling, W. Va., College of Physicians and Surgeons, Baltimore, 1904, member of the West Virginia State Medical Association, aged 56, died, March 13, of pneumonia.

John Joseph Ogle, San Diego, Calif., Bennett College of Eclectic Medicine and Surgery, Chicago 1890, aged 87, died, February 4, in the Patton (Calif.) State Hospital, of chronic myocarditis.

Minot Kniffin Kellogg, Augusta, Ga., University of Georgia Medical Department, Augusta 1933, intern at the University Hospital, aged 24, died, February 10, of lobar pneumonia.

August George Ludwig Rindler, Davenport, Iowa (licensed in Iowa in 1887), aged 80, died, March 22, in the Mercy Hospital, of injuries received when struck by an automobile.

Maurice Markel, Pittsburgh, Jefferson Medical College of Philadelphia 1929, aged 35, died, January 14, in St. Francis Hospital, Miami Beach, of injuries received in an automobile accident.

Thomas Eugene Keaveney, Keithsburg, Ill., Creighton University School of Medicine, Omaha, 1926, aged 32, died, March 24, in the Mercy Hospital, Burlington, Iowa, of brain tumor.

Albert H. Gilbrech, Clarendon, Ark., Illinois Medical College, Chicago, 1904, member of the Arkansas Medical Society, aged 58, died suddenly, February 27, of coronary occlusion.

Ulysses Grant Risser ♂ Campbelltown, Pa., Jefferson Medical College of Philadelphia, 1897, aged 62, died, February 10, of carcinoma of the lesser curvature of the stomach.

Rufus Acos Harlan, Hillsboro, Iowa, College of Physicians and Surgeons, Keokuk, 1878, Hahnemann Medical College and Hospital, Chicago, 1884, aged 80, died, February 24.

Allen Morris Kincheloe, Hardinsburg, Ky., Kentucky School of Medicine, Louisville 1870, formerly county health officer, aged 86, died, March 6, of cerebral hemorrhage.

Horace Rinaldo Minnick, Bellflower, Mo., Cincinnati College of Medicine and Surgery, 1879, member of the Missouri State Medical Association, aged 80, died, February 14.

Alexander Boyd Montgomery ♂ Long Beach, Calif., Rush Medical College, Chicago 1897, served during the World War, aged 63, died, March 11, of acute septic arthritis.

Joseph Exter McDowell, National Military Home, Calif., University of Nashville (Tenn.) Medical Department, 1905, aged 57, died, January 4, of carcinoma of the prostate.

Daniel Gordon Milton, Webster, Fla., Georgia College of Eclectic Medicine and Surgery, Atlanta, 1907, aged 62, died, March 3, of angina pectoris and arteriosclerosis.

Fred Howard Heming, Meaford, Ont., Canada, University of Toronto Faculty of Medicine, 1892, local medical health officer, aged 63, died, January 3, of heart disease.

Charles Wesley Card, San Francisco, Cooper Medical College, San Francisco, 1884, aged 76, died, February 11, of cerebral hemorrhage and arteriosclerosis.

John J. Rife, Boston, Ind., Cincinnati College of Medicine and Surgery, 1869, for many years health officer of Boston, aged 92, died, February 17, in Richmond.

James Bethuel Keith, Imperial Beach, Calif., University of the City of New York Medical Department, 1894, aged 64, died, March 12, of cerebral hemorrhage.

William Raseboom Abbott, Cincinnati, Miami Medical College, Cincinnati, 1908, on the staff of St. Mary's Hospital, aged 49, died, March 26, of pneumonia.

Mary Temperance Cole, Monmouth, Ore. (licensed in Oregon in 1891), aged 82, died, February 25, in the Salem (Ore.) Deaconess Hospital, of senility.

Julius J. Stagg, Eunice, La., Tulane University of Louisiana Medical Department, New Orleans, 1898, aged 58, died, February 19, of cerebral hemorrhage.

Albert Jacob Berger, San Francisco, College of Physicians and Surgeons of San Francisco, 1904, aged 56, died, February 10, of chronic bronchitis.

Frank Wesley Carpenter, San Francisco, Cooper Medical College, San Francisco, 1894, aged 63, died, January 31, of arteriosclerosis and heart disease.

Milton R. Fisher, Palmyra, Pa., Jefferson Medical College of Philadelphia, 1877, aged 82, died, March 3, in the Good Samaritan Hospital, Lebanon.

Charles Abraham Mayor ♂ Philadelphia, Temple University School of Medicine, Philadelphia, 1910, aged 54, died, March 23, of heart disease.

Claude A. Dundore ♂ Philadelphia, Jefferson Medical College of Philadelphia 1887, aged 67, died, March 8, of heart disease and nephritis.

Patrick Joseph Mooney, Brooklyn, University of the City of New York Medical Department, 1893, aged 63, died, February 17, of heart disease.

William Gibson Black, Nashville, Tenn., College of Physicians and Surgeons, Baltimore, 1883, aged 76, died, March 26, of thrombosis.

August Schmidt, Los Angeles, Marion-Sims College of Medicine, St. Louis, 1892, aged 69, died, February 15, of carcinoma of the hand.

Ben Russell ♂ Sheffield, Ill., College of Physicians and Surgeons, Baltimore, 1896, aged 70, died, March 14, of acute dilatation of the heart.

Alphonse M. Schnorr, Philadelphia, Jefferson Medical College of Philadelphia, 1908, aged 70, died, March 27, of cerebral hemorrhage.

A. D. Kelly, Covington, Ky., Meharry Medical College, Nashville, Tenn., 1896, aged 73, died, February 26, of acute interstitial nephritis.

John Finland Haas, Kelleys Island, Ohio, Starling Medical College, Columbus, 1896, aged 70, died, February 27, of heart disease.

Leatha Ruth Tyler Frei, Santa Rosa, Calif., University of Oregon Medical School, Portland, 1908, aged 50, died, February 17.

Allen Forrest Latta ♂ Cumberland, Ohio, Louisville (Ky.) Medical College, 1895, aged 60, died, February 22, of coronary occlusion.

Herman Silverman, Los Angeles, Baltimore University School of Medicine, 1896, aged 66, died, March 6, of myocarditis.

David Nelson Bacon ♂ Bakersfield, Calif., Chattanooga (Tenn.) Medical College, 1892, aged 72, died, February 12.

John Ledbetter, Eatonton, Ga., College of Physicians and Surgeons, Baltimore, 1886, aged 78, died, February 3.

Edmund J. Bolio, Detroit, Michigan College of Medicine, Detroit, 1884, aged 87, died, March 1, of pneumonia.

John William Harpster, Anaheim, Calif., Rush Medical College, Chicago 1891, aged 65, died, February 18.

William Taylor McElroy, Beardstown, Ill., St. Louis Medical College, 1872, aged 79, died, March 24.

John R. Piercey, Prescott, Ark. (licensed, Arkansas, 1903), aged 57, died, February 26, of diabetes mellitus.

Correspondence

A FREE IODINE SOLUTION, SIMILAR TO PREGI'S SOLUTION, USED IN THE TREATMENT OF CHRONIC TRAUMATIC AND ARTHRITIC EFFUSIONS

To the Editor —At the annual meeting of the American Orthopedic Association, held at Toronto in June 1932, I read a paper entitled "Clinical and Experimental Observations with Regard to the Injection of Certain Agents, Pregl's Solution, in Chronic Arthritic Joints" This paper was published in the *Journal of Bone and Joint Surgery* (15 483 [April] 1933) and summarized my observations in connection with the use of a solution that I had found described in *Queries and Minor Notes* in THE JOURNAL, Nov 10, 1923, p 1628, in reply to a request with regard to the use of Pregl's solution of iodine in cases of varicose veins, and the formula was copied apparently from the *Schweizerische Apotheker-Zeitung* 60 322, 350

Having used various dilutions of tincture of iodine with but limited success in certain cases of chronic effusions of the knee joint, with considerable temerity I began to use a preparation following the formula referred to in the preceding paragraph, both clinically and experimentally, with rather satisfying results, particularly when the solution was fresh However as others began to make up and use this solution, it was realized that it did not fulfil the implied requirements of containing from 0.035 to 0.04 per cent of free iodine Nor did it maintain the color test as outlined in *Queries and Minor Notes* I received so many inquiries with respect to these inconsistencies that Don M Bavis, the chemist in my laboratory, began a series of experiments and reviewed much of the available literature He was unable to find the quotation from the *Schweizerische Apotheker-Zeitung* but in the *Zentralblatt für Chirurgie* 49 1050, 1922, R Dittrich and A Herman give a formula for Pregl's solution of iodine which reads exactly the same as the one quoted in THE JOURNAL with the exception that 6 Gm of crystalline sodium carbonate is used instead of 16 Gm The solution made by this corrected formula agrees in every particular with the description that Pregl himself gives and contains a slight excess of free iodine over 0.04 per cent, freshly made up This preparation, kept in a glass stoppered bottle, tightly corked, at room temperature for one month, and checked daily with hundredth normal sodium thiosulphate, maintained the 0.04 per cent free iodine After about one and one-half months under the same conditions and frequent opening of the bottle, there was still 0.035 per cent of free iodine present This solution when kept in an ice chest, would maintain from 0.04 to 0.035 per cent of free iodine for six months Apparently the lack of free iodine and the loss of color in the formula as published and previously used by me was due to the fact that there is an excess of sodium carbonate as the free iodine was rapidly converted into an iodide in the presence of an excess of alkali

I have been using this revised solution in the treatment of certain cases of myofascitis, the report of which, together with bacteriologic observations, is being prepared for publication The correction of this published formula will aid greatly in rectifying the estimated value of this free iodine solution in the treatment of chronic joint effusions

The corrected formula is as follows To 3 Gm of finely powdered iodine in a flask, add 6 Gm of crystallized sodium carbonate or 2.22 Gm of the anhydrous form dissolved in about 30 cc of distilled water Stopper and place in an incubator over night or until all the iodine is in solution The

next day add 4 Gm of sodium chloride and dilute to 1 liter Titrate with hundredth normal thiosulphate If it shows from 0.035 to 0.04 per cent of free iodine, use it as it is If it is too strong, warm gently until it is brought down to that figure Keep in a glass stoppered bottle in an ice chest

J E M THOMSON, M D, Lincoln, Neb

RICKETS RARE IN PUERTO RICO

To the Editor —In THE JOURNAL, March 24, I have noted the editorial comment pointing out that rickets is undoubtedly a rare disease in Puerto Rico In Public Health Bulletin 138, which is a report of the tuberculosis survey of the island of Puerto Rico made by Surgeon J G Townsend of the Public Health Service from Oct 11, 1922 to April 18, 1923, this observation was made The report also contains useful information regarding the prevalence of disease as related to economic conditions

R C WILLIAMS, M D, Washington, D C
Assistant Surgeon General, U S
Public Health Service

DANGEROUS DRUG REACTIONS

To the Editor —Too little emphasis has been given to the possibility that a drug may have, besides its direct action, an indirect or latent and potential effect Thus, cinchophen appears to cause liver injury only in sensitive individuals, in contradistinction to hydrazine, which produces liver damage in all subjects The recent work of Watkins (*Proc Staff Meet Mayo Clin* 8 713 [Nov 22] 1933) and of Madison and Squier (THE JOURNAL, March 10, p 755) indicates quite definitely that compounds such as amidopyrine and various barbituric acid derivatives can cause granulocytopenia, but unlike the action of benzene, which consistently attacks bone marrow, the condition is produced in only a small percentage of cases There has been a growing tendency to look on this latent toxic action of drugs as allergic In a recent article (*Am J M Sc* 187 155 [Jan] 1934) I proposed the theory that drugs which produce allergic reactions such as urticaria, angioneurotic edema and vasomotor disturbance may perhaps also cause a severe inflammatory reaction, which may terminate in necrosis, such a reaction being comparable to the Arthus phenomenon The acute yellow atrophy of the liver and the bone marrow injury in granulocytopenia may well be explained on this basis Such a concept necessitates accepting the possibility that any drug giving rise to mild allergic signs such as urticaria may in sensitive individuals produce serious visceral damage There is no absolute specificity as to the type of tissue attacked, although cinchophen appears to have a predilection for the liver and amidopyrine for bone marrow Arsphenamine is known to produce both liver and bone marrow injury Undoubtedly other tissues can be affected, Pettit (*Brit M J* 2 442 [Sept 8] 1928) reported a case of pancreatitis that appeared after cinchophen

It is to be emphasized that any drug in which the incidence of urticaria is high should be administered with trepidation One should be fully aware of the potential dangers before using a new drug like alpha-dimethoxyphenol which according to Tainter Stockton and Cutting (THE JOURNAL, Nov 4 1933 p 1472) causes urticaria with fair frequency Even the direct physiologic action is so potent that it should demand the vigilance of a physician trained in recognizing the manifold and often baffling manifestations of drug toxicity It must be recognized that at present nothing is known of the possible late sequelae which in the case of both cinchophen and amidopyrine went unrecognized for many years Judging

from the reports available it is fairly clear that the incidence both of toxicity and of hypersensitivity is manifested by urticaria is much higher for dinitrophenol than for cinchophen. The relatively wide use of dinitrophenol is therefore amazing, since few physicians now have the temerity to prescribe cinchophen. The indiscriminate use of any drug is deplorable but of as powerful an agent as dinitrophenol is distinctly disquieting.

Since drugs can cause obscure pathologic changes, the importance of a careful investigation of the patient's drug habits as an essential part of every anamnesis cannot be stressed too strongly.

ARMAND J. QUICK, M.D., New York

GRANULOCYTOPENIA

To the Editor—I should like to take this opportunity to make an addition to the report of two cases of granulocytopenia, published in *THE JOURNAL*, February 17. After the death of these patients it was discovered that they had used an undetermined, but quite large quantity, of amylol compound, over a fairly long period of time. In the light of recent investigations this fact has seemed to be of possible significance, both in helping to confirm the diagnosis and as an additional link in the chain of evidence against the barbiturates, or amidopyrine, or both, as etiologic agents in this disease.

PAULINE ZINNINGER, M.D., Canton, Ohio

HEREDOFAMILIAL ANGIOMATOSIS WITH RECURRING EPISTAXIS

To the Editor—J. F. Madden of the University of Minnesota Medical School, in his paper on "Generalized Angiomatosis" (*THE JOURNAL*, February 10, p. 442), erroneously states that "hereditary hemorrhagic telangiectasia was first reported by Sutton, in 1864, as internal hemorrhages and telangiectasia of the skin."

Erasmus Wilson, in 1869 called the condition eruptive angiomas. Chiari, in 1883, regarded it as a hemophilia of slight degree, Rendu, in 1896, as juvenile hereditary epistaxis associated with multiple hemorrhagic telangiectasias of the skin and mucous membranes, Ullman, in 1900, as angiomatosis.

Since H. Gawen Sutton of the Metropolitan Free Hospital published his paper on "Epistaxis" (*M. Mirror*, London 1 769-781 [Dec.] 1864), I was the first to refer to his work in my publications.

Sutton discussed the relation of rheumatic fever and tuberculosis to epistaxis and the connection between epistaxis and hemoptysis. He mentions cases of familial hemoptysis and familial epistaxis. But nowhere in his paper does he report a true instance of "heredofamilial angiomatosis (Goldstein) with recurring heredofamilial epistaxis" (Rendu-Osler-Weber's disease). Sutton's cases are no different than those reported by W. Fordyce in 1784 (*Haemorrhagia, Fragmenta Chirurgica et Medica*, London, T. Cadell, 1784, p. 41), J. P. Frank ("Nasenbluten," "Mundblutung," in *Specielle Pathologie und Therapie*, "Forstner and Gerold, Berlin 1 483, 490, 1840), Babington (*Lancet* 2 362, 1865), Verneuil (1894), Gastou (1894) and others. Erasmus Wilson (1869) did not report a typical familial case of Rendu-Osler-Weber's disease. G. Richelot (*Union med* 1 179-180 [April 10] 1847) reported an instance of familial epistaxis.

J. W. Legg (*Lancet* 2 856 [Dec. 16] 1876), Chiari (1883-1887), H. Senator (*Klin. Wchnschr.* 28 1-5 [Jan. 5] 1891) and Henri L. J. M. Rendu (*Bull. et mem. Soc. med. d. hôp. de Paris* 13 731-733 [Oct. 23] 1896, *Gaz. d. hôp.* 69 1322-1323 [Nov. 24] 1896) first differentiated this clinical entity as atypical hemophilia or pseudohemophilia.

Madden overlooked the reports by Fordyce (1784), Elsaesser (1826), Frank (1840), Richelot (1847), J. Wickham Legg

(1876), Senator (1891), and the term "pseudohemophilia" used by Rendu (1896).

Lales (1892), Kennan (1902), Swanton (1907), Bramwell (1907) and Davidson (1907) also reported cases of familial epistaxis, but they do not mention telangiectasias.

Further reference may be made to my publications (*Arch. Int. Med.* 27 102 [Jan.] 1921, 48 836-865 [Nov., part 1] 1931, *Arch. Dermat. & Syph.* 26 282-308 [Aug.] 1932, *Acta Dermatol. Venereologica* 13 661-694 [Dec.] 1932, *Tr. Am. Therap. Soc.* 1932, pp. 47-64, and *M. Times*, London 61 105-107 [July] 1933). In 1930 I first coined and used the name "Rendu-Osler-Weber's disease," which has since been adopted by French writers.

HYMAN I. GOLDSTEIN, M.D., Camden, N. J.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

VINCENT'S INFECTION OF THE MOUTH

To the Editor—I would like to be permitted to take issue with portions of your answer directed to the query entitled "Vincent's Infection of the Mouth" (*THE JOURNAL*, February 24, p. 639).

The majority of the dental profession especially those interested in and devoted to the pursuit of disorders of the oral mucous membrane have in recent years recognized the existence of a chronic Vincent's infection. The literature itself has been replete with references ascribed to this type of Vincent's infection.

Rosenthal says (*J. Am. Dent. A.* 20 438-446 [March] 1933). Some years ago I stated that Vincent's infection was entirely an acute process. Observation of many hundreds of cases and records of colleagues revealed no instance of chronic infection as we understand it today. Now more than 60 per cent of my cases are subacute or chronic. This type of Vincent's infection is painless. It closely resembles periodontoclasia or a gingivitis which will not respond to the usual treatment. Considerably more difficulty is encountered in overcoming chronic Vincent's infection than in combating the acute forms.

Thompson (*J. Am. Dent. A.* 18 1405-1412 [Aug.] 1931) classifies Vincent's infection into two forms acute and chronic. He says: "The chronic form is not characterized by pain or soreness and generally not by any systemic disturbance. Hemorrhage is the outstanding symptom and destruction of the soft tissue is common. There is not local indication of the disease. A smear is positive. Intensive and prolonged treatment is required in these cases." Taylor and Repetto in a discussion of this paper concur in their opinions with Thomson relative to the presence of a chronic type of Vincent's infection.

Merritt says (*Periodontal Diseases*, New York, Macmillan Company, 1930): "There is a form of Vincent's infection lacking in many of the symptoms of the acute type that is very much more common and which is often incorrectly diagnosed. This is the chronic or subacute type in which there is no slough and no marked objective symptoms."

Albray (*Dental Cosmos* 75 878-883 [Sept.] 1931), in a paper delivered before the New York Academy of Medicine states that in some mouths the infection will persist in subacute form for long periods of time, causing only slight discomfort and gradual destruction of the soft tissues and the alveolar process about the teeth.

It is true that fusiform bacilli and spirochetes may be found in pockets surrounding third molars, as described but this does in no full measure explain the securing of continued positive Vincent's smears from the remaining portions of the gums and gingivae of the patient in question.

LEWIS FOX, D.D.S., South Norwalk, Conn.

To the Editor—May I offer a criticism of your reply to a query signed M.D. Connecticut relative to Vincent's angina?

1 The onset need not be rapid but may well be extremely slow and then may result in an acute exacerbation with superficial or deep necrosis of gums, tonsils, tongue or oral mucosa. This stage may follow weeks of very mild tissue infection. 2 There is not always a fetid odor. The odor may be scarcely noticeable and depends on the stage of the disease and on the degree of cleanliness achieved. 3 There is not necessarily an increased flow of saliva. 4 The temperature may not be above 99 in the subacute or chronic cases or it may range to 105 depending on the severity of the infection and the tissues involved. 5 There is not necessarily extreme malaise, weakness and depression. These symptoms vary tremendously. 6 I have never seen mental depressions or a pronounced symptom in any case.

I have seen scores of chronic and subacute infections preceding and following the acute infection. I agree that the presence of fusiform bacilli and spirochetes do not make a certain diagnosis of Vincent's infection but one learns to diagnose these lesions clinically. The absence of spirochetes and fusiform bacilli in repeated smears may be of definite negative evidence.

Your concluding sentence stating that intravenous injection of neoarsphenamine has never been justified in the treatment of Vincent's

infection either theoretically or clinically and has been generally discarded by the practitioners most experienced in the study and treatment of the infection is especially controversial. I treated more than 400 patients in one acute outbreak and have treated scores of sporadic cases since. Not only was intravenous neoarsphenamine or sulpharsphenamine the only successful method of treatment but there was excellent clinical evidence that it was truly specific. I am enclosing two papers on the subject. Since these papers were written I have seen further clinical proof of the efficacy of intravenous arsphenamine. For example a patient with an acute tonsillitis apparently due to Vincent's infection improved spontaneously after having a temperature of 103 each afternoon for a week. Smears were positive. Instead of entirely clearing up the tonsils remained reddened the crypts showing a dirty grayish yellow exudate and the temperature running to 99.6 or 100 F. for another ten days. As in all previous cases there was complete resolution normal temperature and no further sore throat within forty eight hours after the first injection of neoarsphenamine.

I believe the theory that first prompted the use of one of the arsphenamines in these infections was based on the fact that a spirochete is present as a causative organism in Vincent's angina as it is in syphilis and in African sleeping sickness. Therefore it was reasonable to hope that a similar arsenical would be as nearly specific in Vincent's infection as in syphilis. My experience seems to bear out this theory.

H. J. HARRIS, M.D. Westport on Lake Champlain, N. Y.

ANSWER.—About thirty years ago Dr. Thomas L. Gilmer described the condition in the mouth which he called an acute ulcerative gingivitis. He and the pathologist for St. Luke's Hospital, Chicago, studied the condition and found that it was caused by symbiotic action of fusiform and spirochetal organisms. During the war this condition was common among the soldiers and was called trench mouth. Following the war it was almost epidemic in some places, notably during and after the influenza epidemic. The etiologic relation of fusiform and spirochetal organisms in this condition became well known in both the medical and the dental profession but spirochetal and fusiform organisms are almost universally recoverable from inflammatory and ulcerative conditions in the gingival pockets, although the symptoms are entirely different from those of acute ulcerative gingivitis. As the practice of making smears and staining for bacteria in such cases has increased in the last few years, the presence of these organisms has been assumed to imply and has been called Vincent's infection, whereas probably the organisms are not related to the etiology of the condition, at least, no satisfactory evidence of such relationship has been made. The condition is given importance in the mind of the patient and treatment is more rigorously executed when the patient is told that he has trench mouth. An early piece of work on this subject was *Acute Ulcerous Gingivitis*, by Thomas L. Gilmer (*Dental Review* 20 459, 1906). Probably the most authoritative work on this subject is *Oral Spirochetes and Related Organisms in Fusio-Spirochetal Disease*, by David T. Smith, M.S., associate professor of medicine, Duke University School of Medicine, Durham, N. C., published in 1932 by The Williams and Wilkins Company, Baltimore.

Cases of acute ulcerous gingivitis or stomatitis may be divided into two groups: those which are superficial and of easy access—lesions about the teeth, the buccal mucosa and the tongue—and those which are deep and therefore inaccessible—the tonsils and throat. During the World War, the most popular treatment for "trench mouth" was arsphenamine dissolved in glycerin and applied locally. Gradually this has given way to the more simple and less expensive remedies, such as solution of potassium arsenite, solution of sodium perborate, hydrogen dioxide, 5 per cent chromic acid, and "acrioviolet" (a mixture of acriflavine and gentian violet, equal parts). Thorough irrigation with physiologic solution of sodium chloride or iodosaline solution to remove the necrotic material may be followed by the application of alkalinized solution of hydrogen dioxide and finally by painting the area with compound tincture of benzoin. This is a slight modification of the treatment first recommended by Thomas L. Gilmer (*Dental Review* 20 459, 1906). With-out exception, the lesions show improvement in twenty-four hours and are completely healed within a few days. When this simple procedure yields such uniform success, there is nothing to recommend a more elaborate plan. In the *Dental Cosmos* (76 329, 1934) the Beldings, in discussing the use of neoarsphenamine and glycerin or solution of potassium arsenite state that if a patient is unable to afford the neoarsphenamine this may be omitted without seriously affecting the spirocheticidal activity.

Cases of acute ulcerous gingivitis sometimes develop while the patient is under antisyphilitic treatment with arsphenamine and mercury. This undoubtedly is explained on the ground that the mercury has increased the amount of gingival irritation and that the spirochetes have become arsenic fast.

When the ulceration involves the tonsillar crypts or is penetrating deep into the pharyngeal walls, local treatment should

be supported by the use of arsenicals. In such cases, intravenous injections of arsphenamine or sulpharsphenamine may be advisable. As is well known, this treatment is not without its untoward effect. It is decidedly unsafe to use the arsphenamine unless one is prepared to meet emergencies.

ALLERGY TO CAT HAIR

To the Editor.—A girl aged 9 years suffering from severe asthmatic attacks most of her life was brought to me by the state bureau of child welfare. I spent several months investigating by means of food proteins and bacterial proteins and even gave her a course of injections of an autogenous mixture. The attacks were not influenced much. The history gives no clue as to seasonal influences. It was only when I tried to test her with epidermal extracts that I found that cat gave her a definite skin reaction with pseudopods. She lives in the country and though she has had no cat in her house for several years there is an indefinite history that cat might be the cause. Owing to the fact that she lives quite a distance from my office and that it is considerable trouble to bring her in regularly for treatment, and also because the child is being treated without any remuneration I should like to hear an expression of the possibilities of her being cured by desensitization with protein extracts from cat epidermis before giving the treatment. Owing to the severe nature of the attacks when they come I would appreciate an early response. Please omit name.

M. D. Connecticut

ANSWER.—It would seem that exposure to cat hair might be the precipitating factor in this child's attacks of bronchial asthma. Cat hair is a common cause of such spells, more common than is the hair of dogs, a positive test to cat hair usually means that the patient is clinically hypersensitive to cat hair.

Cat hair is frequently encountered when there is no direct exposure to cats.

Coca in his book (*Asthma and Hay Fever*, by Coca, Walzer and Thommen) writes as follows:

Pelts of the domestic cat (*Felis domestica*) are gradually assuming importance as furs. The skins are dressed dyed to imitate other furs and sold under names suggestive of more costly skins to be used for those purposes for which genuine furs are employed.

Cat skins are commonly used for making carriage robes and for lining caps coats gloves slippers etc.

Cat hair is employed as a covering for toy animals and as an adulterant of hair stuffing bedding and furniture.

Other members of the cat family also supply furs. Chief among these are leopard (*Felis pardus*) panther (*F. panthera*) wild cat (*F. catus*) jaguar (*F. onca*) tiger (*F. tigris*) lion (*F. leo*) and the lynx (*F. lynx*). The latter is also known as the caracul or Persian lynx (*Felis or Lynx caracul*). This is to be distinguished from Karakul which is Astrakhan obtained from the pelts of young lambs.

Civet cheetah and genet are also members of this family.

Desensitization can be readily accomplished by a series of injections. It is usually sufficient to begin with 0.02 cc. of a 1:100,000 dilution, although if the patient is extremely hypersensitive it may be well to begin with a 1:1,000,000 or even a 1:10,000,000 dilution. Injections are to be given subcutaneously about twice a week, with increases (if no severe local or if no general reaction occurs) of about 50 per cent for each dose. The final dosage has not been definitely agreed on but probably 0.10 cc. of a 1:100 dilution is high enough.

There is considerable controversy among allergists as to the advisability or necessity of such desensitization. Elimination of cats and products made from cat hair is usually sufficient. However if exposure is unavoidable and if contact with cats brings on attacks of asthma, desensitization is definitely indicated and should be carried out. The result of such a series of injections is usually a success.

The material for the treatment can be purchased from several pharmaceutical houses.

USE OF NEOARSPHENAMINE IN VINCENT'S INFECTION

To the Editor.—In *Queries and Minor Notes* in *THE JOURNAL*, February 24, p. 640 the statement is made that intravenous injection of neoarsphenamine has never been justified in the treatment of Vincent's infection either theoretically or clinically and has been generally discarded by the practitioners most experienced in the study and treatment of the infection. Please explain in detail the treatment of this disease today also explain why this statement is made in the face of clinical evidence that the condition does clear up following the use of the arsenical. What is done in Vincent's infection of the lung. I know there have been two schools of argument but I think your statement is strong. Please give me the proof.

G. R. CLAYTON, Lafayette, Ind.

ANSWER.—The statement "intravenous injection of neoarsphenamine has never been justified in the treatment of Vincent's infection either theoretically or clinically" taken by itself and separated from the context, cannot be supported. The answer to the previous question spoke only of the treatment of acute ulcerative gingivitis which has been more or less improperly called Vincent's infection. The statements made in regard to

the treatment of acute ulcerative gingivitis obviously would not apply to Vincent's infection of the lung. The statement quoted in the query is based on the following facts. In acute ulcerative gingivitis a mixed culture attacks local areas of surface, producing rapid surface ulceration and necrosis. The bacteria do not penetrate deeply into the tissues. Theoretically, therefore, attack from the surface would be expected to be more effective than to attempt to reach the bacteria through drugs introduced into the blood stream. Clinically, this condition not infrequently develops in patients on treatment with neosarsphenamine. Next, under direct local attack, conditions improve within twenty-four hours and always clear up promptly without the use of intravenous injections. The essentials of treatment of acute ulcerative gingivitis are cleansing of the surfaces and removal of the membrane, and frequent application of substances that liberate oxygen, such as sodium perborate, hydrogen dioxide, 5 per cent chloric acid, or a mixture of acriflavine and gentian violet. The areas may be protected by painting with compound tincture of benzoin. When the areas attacked can be reached, they always yield rapidly to this treatment.

NONALLERGIC COSMETICS

To the Editor—I have a patient who develops a dermatitis on using any of the common foundation and cleansing creams such as DuBarry Max Factor or Madame White. I should like to know what I can recommend to this patient as a beauty preparation and also what is the irritating factor in these creams. Please omit name.

M D, North Dakota

ANSWER—There are several companies manufacturing lines of cosmetics that are not irritating to the large majority of individuals. Most of such preparations are free fromorris root, rice, lead, mercury and other chemicals that might be irritating to the skin.

Orris root, which is the rhizome of *Iris germanica*, *Iris pallida* and *Iris florentina*, has a pink flesh tint and a delicate odor of violets. It is widely used in the preparation of various kinds of cosmetics, including many foundation and cleansing creams. It is one of the main causes of dermatitis in individuals who are sensitive to it.

Among the preparations that may be recommended are the Marcelle products manufactured by C W Beggs Sons & Company, 1741 North Western Avenue, Chicago; Macauley preparations, made by Macauley Laboratories, P O Box 6 Flatbush Station, Brooklyn; the Mansfield preparations of E R Mansfield Company, Ltd, Los Angeles; Frost's preparations, produced by Frost's, Memphis, Tenn; and Non-Allergic Products, manufactured in St Louis.

DETECTION OF AMEBAS IN STOOLS

To the Editor—In a small town where there is no laboratory, only the study of fresh, warm stool specimens is possible for amebas. The method of Riparte and Petit as outlined for concentration is practical, but is there not an easier way to fix and stain for visualization of amebic cysts than by the hematoxylin method? If so outline. Kindly omit name.

M D California

ANSWER—The iron-hematoxylin method of staining amebas and their cysts is still the most reliable in spite of its time-consuming tediousness and the skill or luck required in its successful application. The iodine method is simple and is adequate for most purposes. A small drop of fecal emulsion and an equal drop of iodine solution (5 per cent iodine in 10 per cent potassium iodide) are placed on a slide and covered with a No 1 cover glass. This technic reveals the internal structure of trophozoites and cysts adequately for diagnosis in most cases. It is frequently not satisfactory in the examination of cultures in which the active amebas may have taken up many starch granules.

Two other methods have been employed with success by some workers.

1 Modified Mallory's phosphotungstic acid hematoxylin. This stain is prepared as follows:

Solution A	Hematoxylin (white crystals preferred)	0.2 Gm
	Distilled water	160 cc
	Dissolve by boiling	
Solution B	Phosphotungstic acid	10 Gm
	Distilled water	100 cc
	Dissolve by boiling	

When cool mix 80 cc of solution A with 20 cc of solution B. Allow the mixture to ripen for from one to five months in a covered, not stoppered, bottle in the sun if possible. The ripening can be hastened by the addition of a drop or two of hydrogen dioxide.

Smears of optimal thickness from the specimen of feces are placed while still moist in warm (37 C) Schaudinn's solution for from five to ten minutes.

Rinse in two or three changes of distilled water.

Place in the stain in a Coplin or other jar for from one to twenty-four hours. If the jar and stain are kept at incubator temperature, satisfactory results may be obtained by staining for from one to three hours.

Rinse in two or three changes of distilled water.

Place the slides for a few minutes successively in 50 per cent, 75 per cent and 85 per cent alcohol, then into 95 per cent and absolute alcohol for ten minutes each.

Clear in xylene and then on clove oil for from five to ten minutes each.

Blot, and mount in neutral balsam.

2 Recently a new method has been described by H E McDaniels (*Science* 79 187 [Feb 23] 1934).

To a drop of an emulsion of feces a drop of a saturated solution in methylene blue in methyl alcohol is added on a slide. This is covered with a No 1 cover glass. "All fecal remains, with the exception of certain crystals, are stained dark blue and thereby merged with the rest of the dark blue field. The whole preparation may be searched with the low power objective in a very short time. Examination with the 4 mm or oil immersion lens will show the nuclear chromatin of the amebae and cysts to be selectively stained with the methylene blue. Trophozoites are rounded up by contact with the methyl alcohol, but the nuclei may be seen distinctly, even in the presence of much ingested material. The only precautions to be observed are to reduce the amount of light and to make thin preparations, either use small drops of fecal emulsion and staining solution, or use large cover slips to spread the mixture over a larger area."

DIABETES MELLITUS OR RENAL DIABETES

To the Editor—I am writing you for your valued opinion of the case of a colleague in whom I am deeply interested and in whose case it seems to be certain points that make the diagnosis obscure. The discovery of sugar in the urine was made about two months ago by an insurance examiner and though there are no subjective symptoms of diabetes he continues to show sugar in definite quantities on ingestion of only moderate amounts of carbohydrates. His sugar tolerance after 50 Gm of sucrose is as follows:

	Blood Sugar Mg per 100 Cc.	Urine (Reduce to 100 cc Benedict's Solution)
1 12 hours fasting stomach	100	Negative
2 15 minutes after intake	125	
3 30 minutes after intake	182	Very slight
4 45 minutes after intake	167	
5 1 hour after intake	150	Definite
6 2 hours after intake	105	Very slight
7 3 hours after intake		Negative

The patient is 56 years of age. His height is 5 feet 6 inches (172.7 cm.), his normal weight 137 pounds (62 Kg.) he is well nourished and the past history is irrelevant. His daily regimen has recently changed in that he has been obliged to drive his car 25 miles to and from his office and there seems to enter the factor of worry incidental to his personal affairs. The question arises as to this being a true diabetes mellitus or the making of one of renal origin. Please omit name.

M D Florida

ANSWER—It is difficult to make the differential diagnosis between diabetes mellitus and renal diabetes from the data furnished. The fact that, in this case, glycosuria is definitely associated with alimentation might be taken to favor the diagnosis of diabetes mellitus rather than a glycosuria of renal origin. However, the rule that renal diabetes is characterized by a lack of relationship between alimentation and glycosuria holds only in moderate or severe cases, i e, when the renal threshold is considerably lowered. It is evident from the blood sugar curve cited that such is not the case here. At a blood sugar level of 182 mg per hundred cubic centimeters the urine test was only "very slight." The fact that a "definite" urine sugar test was obtained as the blood sugar level fell toward 150 mg may be due to the fact that the blood sugar level continued to rise for a short while before starting to drop.

From the high normal initial blood sugar level, from the fact that the blood sugar rose to a rather high peak and barely returned to the original level within two hours, and considering the probability that the renal threshold was not depressed the diagnosis of the condition is a mild or early diabetes mellitus. However, the mention of a recently changed daily regimen and of worry incidental to personal affairs is important. Certain cases of mild hyperthyroidism may show changes in carbohydrate metabolism similar to those described. These changes are hardly distinguishable from those of uncomplicated diabetes mellitus, except for the presence of the symptoms usually associated with disturbances of the thyroid gland. It would therefore be well to examine the patient with this possibility in mind.

It is also suggested that a repetition of the carbohydrate tolerance test using 100 Gm of sugar instead of 50 Gm, would furnish a result of greater diagnostic significance.

WRITINGS OF PHYSICIST MILLIKAN

To the Editor—In one of the editorials in *THE JOURNAL*, January 20 a quotation was given from an American physicist R A Millikan. Kindly let me know more of the writings of this man. Has he published any of his works? What are they? Where did you find this quotation?

THOMAS ST CLAIR, MD Latrobe Pa

ANSWER—Prof Robert A Millikan is at present the director of the Norman Bridge Laboratory of Physics, and chairman of the Executive Council, of the California Institute of Technology at Pasadena. Previous to his transfer to California in 1921 he was professor of physics at the University of Chicago. He is one of America's most distinguished students in this field, having received the Nobel prize from the Royal Swedish Academy in 1923 for his studies on the electron. Dr Millikan has written extensively on the relations of science to modern life and likewise on the possible interrelations of science and religion. At the present time he is active in the study of the cosmic rays.

The quotation to which our correspondent refers (in an editorial on "The Social Order and Human Health," *THE JOURNAL*, January 20, p 215) was taken from Harris, F S, and Butt, N I *Scientific Research and Human Welfare*, New York, Macmillan Company, 1924, page 4.

Many of the more popular lectures of Dr Millikan have been published in *Science* and similar magazines. A partial list of his writings includes

- 'A Scientist Confesses His Faith' Chicago 1923
- 'Suicidal Nationalism' California Institute of Technology bulletin 1924
- 'Science and Life' Pilgrim Press 1924
- 'Evolution of Twentieth Century Physics' Annual Reports Smithsonian Institution 1927 pp 191-199
- 'Science and the New Civilization' New York Charles Scribner's Sons 1930
- 'Radio's Past and Future' University of Chicago Press 1931
- 'Time Matter and Values' University of North Carolina Press 1932
- 'Science and Modern Life' in *The Creative Intelligence in Modern Life* University of Colorado semicentennial series vol V
- 'Evolution in Science and Religion' New Haven Conn, Yale University Press

BRAIN TUMOR OR PSEUDO UREMIA

To the Editor—A white man aged 32 has severe headache (worse in the morning) dizziness and vomiting. The vomiting has been projectile on two occasions but is always preceded by nausea. He is a coal man and has done heavy shoveling riding on a rough truck and frequently works while his feet are wet. The sinuses and teeth are normal. The entire physical examination is negative except for loss of the plantar reflex, loss of the lower abdominal reflex, a marked Romberg sign and the fact that both optic disks are under slight pressure, the left more marked (2 diopters) with its medial margin blurred. The headache is described as arising low in the occiput and extending along the right side to the frontal region. During the past ten days the headache has been in the frontal area. The Widal test is negative, the blood Wassermann and spinal fluid Wassermann reactions are negative (spinal fluid under negligible pressure). A blood urea nitrogen test returned 64 mg per hundred cubic centimeters. There is a trace of albumin in the urine with two coarse granular casts to a field. The patient was put on digitalis, potassium citrate and a protein-free diet and in three days the blood urea was down to 8 Gm. Comfort for two or three days was followed by violent occipital and frontal headache and dizziness. The blood urea nitrogen this time was 9 mg. The patient was now put on a regular (rather high protein) diet and after four days of this the blood urea was 15 mg. During this period he would have two or three days of comfort followed by violent headache, dizziness and occasional nonprojectile vomiting. No increase in pressure was shown by the optic disks. For the past ten days the patient has been on a low protein diet from 800 to 1000 cc of water daily and potassium citrate. He has had no violent headache, only slight dizziness and no vomiting. He sits up one hour each day but every other day complains of a slight frontal headache. Throughout his illness his pulse rate has remained between 74 and 82. The blood pressure is 120 systolic 65 diastolic. The temperature ranges between 98.4 and 98.8. Frequent attacks of hiccup still persist. No localizing signs relative to brain tumor can be picked up. Would you kindly tell me the prognosis in this case? Is this now pseudo uremia? Can anything particular in line of treatment be done? Please omit name.

MD Pennsylvania

ANSWER—From the data presented one must conclude that this is almost certainly not a case of pseudo-uremia but one presenting evidence of local intracranial disease quite probably of a neoplastic nature. The apparently abrupt onset with projectile vomiting and vertigo and the disturbed reflexes are significant. A papilledema of 2 diopters must be considered decidedly more than evidence of slight pressure and the asymmetry of the degree of disk choking speaks for local intracranial disease. The negative spinal fluid Wassermann reaction makes syphilis of the central nervous system highly unlikely, although not truly impossible. An increase in the content of the blood of urea nitrogen is not uncommon in instances of brain tumor, particularly when there has been much vomiting with subsequent dehydration. The perfectly normal arterial

tension with normal cardiac efficiency excludes any diagnosis of uremic or azotemic intoxication. It is hard to grasp the logic of the digitalis therapy, as no evidence of cardiac inadequacy was mentioned in the query. It is felt that the low protein diet, the digitalization, and the restriction of the fluid intake are not warranted by the reported observations. Remission of the intensity of symptoms is not infrequent in intracranial neoplastic disease, it is unjustifiable to assume that the transient improvement noted is necessarily attributable to the therapy instituted. The following suggestions appear appropriate from the data presented: 1 Further extensive neurologic studies, including careful mapping of possible areas of disturbed sensation, outlining the visual fields and, further, more exact studies of the spinal fluid pressure. 2 A liberal food and fluid intake. An increase in fluid intake is indicated all the more when azotemic retention occurs. The diagnosis and localization of brain neoplasms frequently tax the skill and ingenuity of the neurologist to the utmost.

EDEMA OF FEET IN TUBERCULOSIS

To the Editor—I have been a specialist in tuberculosis many years and I am seeking information concerning a certain condition about which there is practically nothing in the literature. The condition is the gradual onset of edema on the feet later accompanied by dyspnea and always proving fatal within a few months after onset. It is unaccompanied by fever or rapid pulse and while of course it is common in terminal cases I have seen it in moderately advanced cases in persons up and about often working. It usually is unaccompanied by any renal condition or cardiac condition. Of course in the approaching terminal cases there probably is a high grade of myocarditis from the long continued toxemia but from my own observation it is not a manifestation of either cardiac or renal disease in many cases. And I should like to know the cause of this symptom complex. Of course one can generalize and theorize and say it is a manifestation of toxemia but against that it usually occurs in those who are quiescent as regards their pulmonary tuberculosis. I have tried repeatedly full cardiac stimulation and diuresis but the course of the trouble is apparently uninfluenced by any medication. I have also tried intensive calcium therapy on the theory of undue liquefaction of the blood plasma also without effect. Also the urinary output is usually normal in quantity as well as quality. A salt free diet and limited fluid intake are also without results. In fact every one of these patients has died in spite of every effort. Therefore I am anxious to have some explanation of this symptom complex and of course some efficient type of treatment to overcome it. In conclusion I will say that while practicing in low altitudes I do not remember seeing this symptom complex. The altitude here is 6000 feet.

DAVID KRAMER MD Silver City N M

ANSWER—Like many other questions on edema, this one is difficult to answer. The type reported here appears to be a new observation.

Edema is due to faulty water exchange in the body, and this may in turn be due to several causes. A derangement of the organs that have to do with the movement of body water leads to edema. An insufficient heart may lead to "cardiac edema," and a derangement of the kidney to either nephritic or nephrotic edema. In addition, a long standing malnutrition or an interference with the brain stem may lead to edema. There is no theory, however, that can explain all aspects of edema from Starling's theory of the change of intravascular osmotic pressure to the chemical theory or to the derangement of a hypothetical nerve center. No doubt, changed osmotic pressure plays a part when other factors are present, no doubt, the change in ionic constellations or a colloid state within the cell is important. Perhaps there are central nervous system centers that through stimulation or suppression may lead to an interference with water movement that may result in edema. Yet none are altogether sufficient. It is possible that several factors operate in series aided by vicious cycles that almost always result.

For example, a gradually weakening heart will proportionately slow down water movement until the water depots (skin muscles, liver and spleen) become saturated and overflow into the tissue spaces. This will also tend to decrease oxidation in the water depots which in turn will change the ion constellations in the cells of these tissues. This will decrease the ability of the cell to hold water so that progressive syneresis or a giving up of the water by colloids is the result. The same may be said concerning edema of nephritis and particularly nephrosis in which the depletion of albumin leads to a lowering of osmotic pressure in the blood and a retention of water in the cells to the point of supersaturation when free water appears in the tissue spaces. Nor can it be denied that a nerve impulse from a nerve center in the brain may also increase or decrease the water holding power of the cells.

How then may these various possibilities bear on the problem presented? It is obvious that the condition is not one of the common forms of edema. It is apparently not even the terminal

edema occurring in tuberculous individuals. The two common factors in the problem presented appear to be chronic fibroid tuberculosis and high altitude. This would lead one to suspect that a decreasing oxidation within the cells may be a contributing factor.

The toxemia of the disease, added to the decreased power of oxidation within the cells, results in a changing ionic balance and a change in colloid stability. In addition, a low oxygen tension necessitating increased pulmonary ventilation in the presence of a diminished alveolar surface from diseased tissue or the emphysema of healing may in combination lead to such an intractable condition. As a suggestion, it may be useful to test the effect of high oxygen tensions on such patients. Irrespective of any apparent benefits from such a procedure there is little hope of a permanent recovery, as the body reserves have apparently become physiologically bankrupt.

USE OF OLIVE OIL IN GASTROINTESTINAL DISEASE

To the Editor—A patient of mine, aged 21 who three years ago because of epigastric discomfort, pyrosis and eructations, was ordered by her doctor to leave meat out of her dietary and to use olive oil freely. She has had occasional remissions of trouble in the interval. During the past six weeks her complaint has been of mild frigate eructations of gas with associated sourness and mild gastric discomfort. There is also a sense of what the patient calls spasm in the upper half of the abdomen occurring after stool. A fractional analysis has not been done. My diagnosis is (1) chronic peptic ulcer and (2) gastric stasis with fermentation the second condition being due to the oil. The questions I ask are: 1. What is the use of olive oil other than (a) as a cholagogue (b) to inhibit the rate of gastric secretion and (c) as a lubricant? 2. Is olive oil a food? 3. If so what is its metabolism and its waste product (passed with the feces) in the human being? 4. Does olive oil cause frequent eructations? I advised the patient to diminish her daily quantity of oil and to take fig and bran flakes if costive. Please omit name. M D, Canada

ANSWER—The evidence presented is insufficient to justify a diagnosis of chronic peptic ulcer or gastric stasis with fermentation, the latter in particular without a gastric analysis.

1. It should be remembered that massive doses of olive oil taken for its cholagogue effect not infrequently result in the passage of masses of fatty acids that the patient may believe are calculi. Certain alleged cures for gallstone sold as "patent medicines" are essentially olive oil and a saline which bring about the passage of soapy concretions that the victim thinks are gallstones.

2. Olive oil is a food, not a lubricant.

3. Olive oil is digested in the gastrointestinal tract like any other fat. If given in excess in the presence of a pancreatic disease in which fat digestion may be interfered with, or when the intestinal contents are hurried through with unusual rapidity, fat may appear in the stool. Otherwise no fat will be found in the stool.

4. Ordinarily not. Eructations may occur in any gastrointestinal complaint.

INTESTINAL MYIASIS

To the Editor—I have a patient under observation for the following condition which apparently has been very resistant to all forms of treatment and until I received the laboratory report the exact trouble was not known. She had been treated for years for worms. Her husband brought to my office what appeared to be worms but which the laboratory diagnosed as larvae of the common housefly and the laboratory workers had to wait until they came out of the pupal stage before the diagnosis could be made. Apparently the patient has an enormous number of these in the intestinal tract and is no doubt, an incubator for them. Not finding any form of treatment in any of the textbooks on this condition I would appreciate it if you would outline a treatment that would rid this patient of her complaint.

A. P. KIMBALL, M.D., Yuma, Ariz.

ANSWER—Myiasis is the term applied to a disease condition resulting from the occurrence of the larvae of flies of different species in the intestinal and urinary tracts. Among the species most generally responsible, according to Hewitt is *Musca domestica*, the housefly.

When the larvae are present in the stomach they may cause violent pains and dizziness and are often expelled by vomiting. In the intestine they give rise to abdominal pains and diarrhea not infrequently accompanied by hemorrhage caused by the larvae perforating the mucous lining of the intestine. Occurrence of the larvae in the urinary tract is more remarkable but cases have been on record since the seventeenth century.

Hewitt suggests several methods of infestation. All the flies are attracted to decaying animal or vegetable products, excrementous or purulent substances, for the purpose of depositing their eggs. Should these eggs be on food, the eggs or young larvae would be taken into the digestive tract. Intestinal infection may result from the flies, which frequent privies for the

purpose of ovipositing, depositing their eggs in the anal region, and the larvae on hatching enter by way of the rectum. Infection of the urinary tract is more difficult to understand, especially in the case of the male. Flies would be attracted to the genital apertures by the various albuminous and other secretions, especially in cases in which the organ is exposed for any length of time.

Treatment does not seem to have much effect, for the larvae leave of their own accord, through the anus, when approaching maturity. The usual vermifuges, such as santonin, pepo, oil of chenopodium or thymol, are of little value, but mild purgatives and high enemas may hasten their departure.

PREGNANCY IN WOMAN OF FORTY-FIVE

To the Editor—I have a patient aged 45 who was normally delivered of a living child eighteen years ago. She had two therapeutic abortions twelve and six years ago because of acute toxemia of pregnancy and at present has a delayed menstrual period not long enough for a urine test. To handle the case properly if there is a pregnancy I should like to know how frequently a pregnancy occurs at this age under similar circumstances what its average course is and the most advisable and also average procedure in delivery. Please omit name. M D, California.

ANSWER—These questions cannot be answered satisfactorily, even in a general way because not enough data have been supplied and because there is great difference of opinion on the subjects mentioned.

In the first place, the question of pregnancy must be settled. Secondly, if there is a pregnancy, no one can quote statistics as to its frequency under such circumstances. Pregnancy is rare at the age of 45 in healthy women and much more uncommon in women with chronic nephritis. It seems that this woman suffers from a latent chronic nephritis or what some authors call a low reserve kidney. As regards the average course of such a case, one cannot generalize. The pregnancy would in all likelihood aggravate the kidney disease and the kidney disease would more than likely produce a late abortion or abruptio placentae.

As regards the "average procedure" in delivery, only general rules apply. In the presence of threatening eclampsia the uterus should be emptied and, in any event, if the woman should be carried to the point of viability of the child, emptying the uterus ought to be considered.

The questioner is referred to the recent works of Dr. H. J. Stander and Dr. C. H. Peckham, and Dr. E. J. Stegitz's *Arterial Hypertension*, chapter on its obstetric aspects.

BRACHIAL PLEXUS NEURALGIA

To the Editor—I have recently seen a woman aged 24 who suffered with what appeared to be a brachial plexus neuralgia. Her general health is good and previously she was entirely well except for the neuralgic pain in the arm. She suffered her first attack of this trouble at about 10 years of age following measles. Since that time she has had one or two attacks each year. These have never been severe enough nor persisted long enough to require medical attention. Her recent attack began with an aching pain which lasted for two or three minutes and originated in the upper part of the arm and extended to include the entire arm and hand. There was an interval of four or five hours without pain. The attacks then recurred with gradually increasing severity and a shortening of the intervals between them until they occurred at intervals of from thirty minutes to one hour with the pain persisting for from fifteen to twenty minutes. The pain is described as that characteristic of trifacial tic, viz. excruciating lightning-like pain shooting through the right arm. The pain was so severe that she blistered the hand and lower arm in holding it before an open fire. She was surprised to find that she had produced this burn stating that the pain was so severe that she had not been able to feel the heat from the fire. There is no radiation of the pain along the long thoracic nerve or the radial subscapularis. There is no herpes or selectivity to either the lacerated ulnar or median and an absence of pain or soreness during the lull interval. I have not been able to find a report of such an attack of tic occurring as a brachial plexus neuralgia. I had occasion to ask a neurologist about the condition and he stated that he had not seen or read a report of such a case. I should like to know whether similar cases have been reported and what treatment might be offered in relieving these attacks should they recur.

ROY E. EMANUEL, M.D., Chickasha, Okla.

ANSWER—One is left by the correspondent to suppose many things particularly that careful examination was made and no evidence of organic disease was found. Lightning pains in the arms may be present in several disorders, such as proliferative osteoarthritis in the cervical region, syringomyelia, cervical pachymeningitis, and intraspinal tumor. In this particular case one might suspect syringomyelia because of the history of burning the hands without knowing it. No malady similar to trigeminal neuralgia, affecting the brachial plexus, has been distinguished.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY *Il written*
Examinations will be held in various cities April 30 *Oral* Cleveland
June 11 12 Sec Dr C Guy Lane, 416 Marlboro St Boston

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY *Oral* (all candi-
dates) Cleveland June 12 Sec Dr Paul Titus, 1015 Highland Bldg,
Pittsburgh

AMERICAN BOARD OF OPHTHALMOLOGY Cleveland June 11 and Butte
Mont July 16 *Application must be filed at least 60 days prior to date of*
examination Sec Dr William H Wilder, 122 S Michigan Blvd
Chicago

AMERICAN BOARD OF OTOLARYNGOLOGY Cleveland June 11 Sec
Dr W P Wherry 1500 Medical Arts Bldg Omaha

ARKANSAS *Basic Science* Little Rock May 7 Sec Mr Louis E
Gebauer 701 Main St Little Rock, *Regular* Little Rock May 14 15
Sec Dr A S Buchanan Prescott *Homeopathic* Little Rock May 8
Sec Dr Allison A Pringle Eureka Springs *Eclectic* Little Rock
May 8 Sec, Dr L L Marshall, 820 W 14th St Little Rock

CALIFORNIA *Reciprocity* San Francisco May 16 Sec Dr Charles
B Pinkham 420 State Office Bldg Sacramento

CONNECTICUT *Basic Science* New Haven June 9 *Prerequisite*
to license examination Address State Board of Healing Arts 1895
Yale Station New Haven

DELAWARE Wilmington June 12 14 Sec Medical Council of
Delaware Dr Harold L Springer 1013 Washington St Wilmington

FLORIDA Jacksonville June 11 12 Sec Dr William M Rowlett
Box 786 Tampa

IOWA Iowa City June 5 7 Dir Division of Licensure and Registra-
tion Mr H W Grefe Capitol Bldg Des Moines

MARYLAND *Homeopathic* Baltimore June 12 13 Sec Dr John A
Evans, 612 W 40th St, Baltimore

NATIONAL BOARD OF MEDICAL EXAMINERS The examinations in
Parts I and II will be held at centers in the United States where there
are five or more candidates May 7 9 (limited to a few centers) June
25 27 and Sept 12 14 Ex Sec Mr Everett S Elwood 225 S 15th
St, Philadelphia

NEBRASKA *Basic Science* Omaha May 12 *Medical* Omaha June
8 9 *Application must be filed at least fifteen days prior to date of*
examinations Dr Bureau of Examining Board Mrs Clark Perkins
State House Lincoln

NEVADA Carson City May 7 Sec Dr Edward E Hamer Carson
City

OHIO Columbus June 5 8 Sec Dr H M Platter 21 W Broad
St Columbus

OKLAHOMA Oklahoma City June 6 7 Sec Dr J M Byrum
Mammoth Bldg Shawnee

WYOMING Cheyenne June 4 Sec, Dr W H Hassel Capitol
Bldg Cheyenne.

Book Notices

Thirty First Annual Report 1932 1933 of the Imperial Cancer Research
Fund Under the Direction of the Royal College of Physicians of London
and the Royal College of Surgeons of England November 1933 Paper
Pp 19 London 1933

Studies made by Mr Crabtree and Dr Cramer on the action
of radium on cancer cells have elicited some interesting facts
related to radiosensitivity. Two methods were adopted. 1
Thin slices of tumor tissue were exposed to radium and various
inhibitors of metabolism and the amount of respiration and
aerobic glycolysis were recorded. 2 Tumor tissues that had
been exposed to the inhibiting solutions were transplanted and
their behavior was noted. It was established that hydrocyanic
acid inhibits respiration specifically but does not inhibit gly-
colysis. Transplantability and growth are not at all affected
even by exposure to a concentration of twentieth molar hydro-
cyanic acid for one hour at 37 C. Iodo-acetic acid and sodium
fluoride were found to have a definitely toxic action on the
living cell. After the appropriate concentration from which
complete recovery is possible had been established for these
various inhibitors of metabolism, the effect of radiation was
studied on tumor cells in which either glycolysis or respiration
was in abeyance. Other methods of arresting respiration are
by the withdrawal of oxygen (anaerobiosis) and by exposure
to cold. Experiments were devised in which radium radiation
was applied to tumor tissue while either respiratory or aerobic
glycolysis was profoundly modified. It was found that exposure
to hydrocyanic acid and to low temperature greatly increases
the susceptibility to radium. Anaerobiosis produces the opposite
effect, greatly increased resistance. Since both hydrocyanic
acid and anaerobiosis produce increased glycolysis and the effect
produced on radiosensitivity is in opposite directions it is con-

cluded that the biologic effect of radiation is not produced
through an action on the glycolytic mechanism. This is con-
firmed by the fact that iodoacetic acid and sodium fluoride
which inhibit primary glycolysis do not influence the effect of
radiation. These experiments suggest that the lethal action of
radiation on living cells is due to its action on the respiratory
mechanism. The authors believe that the problem of radio-
sensitivity of cancer cells is the resultant of a considerable
number of largely independent factors. It is also suggested that
local conditions of impaired vascularization may set up a degree
of anaerobiosis that influences susceptibility to radiation. Dr
Ludford's experiments utilizing vital staining by trypan blue
permitted a clear distinction to be made between the tumor
cells—carcinoma and sarcoma—that do not segregate the dye
and the nonmalignant associated cells that do. Further experi-
ments with other tumors of the mouse and rat have shown
that the distinction between normal and malignant cells by
these methods is not absolute but is, in part, an individual
peculiarity of the strain of tumor employed. Dr Watson has
studied the effects of adding fresh ox or horse liver to the diet
on tar carcinogenesis in mice. He found that a greater propor-
tion of the animals develop tar tumors and that they appear
earlier than in the control series. The studies discussed in
this report are of special interest and the results suggest
further avenues of approach in the effort to gain a deeper
knowledge of the factors underlying tumor growth. The inves-
tigations on radiosensitivity are particularly welcomed because
of the lack of understanding of the factors that determine sensi-
tivity and resistance to radiation.

The Nature and Treatment of Amentia. Psychoanalysis and Mental
Arrest in Relation to the Science of Intelligence. By L Pierce Clark,
Chief of Advisory Board of Research of Letchworth Village for Feeble-
minded. Assisted by the Staff of the Psychoanalytic Sonatorium of NYC.
N Y T E Uniker Ethel L Rourke W K Cushing and Margaret C
Calms. Foreword by Ernest Jones MD President of the International
Psychoanalytical Association. Cloth Price \$4.25 Pp 306 Baltimore
Willom Wood & Company 1933

Special recreational work and carefully developed educational
technics have already proved that feeble-minded persons can be
made to appear more adequate than was formerly considered to
be the case. There is no reason why technics, such as psycho-
analysis, should not be brought into this field to aid in the
adjustment of these classes of patients, and the thesis of
Dr Clark is that the application of the freudian methodology
does aid the feeble-minded child in making better adjustments to
society and assists him in leading a more contented life. There
is much discussion of the technics and mechanisms involved in
this work but significant features are those presented in the
discussion of eleven illustrative case studies, which take up a
large portion of the book. It must be admitted that these cases
are interesting and show that the children did make progress.
Because the cases were specially selected, there remains in the
mind of the reader the impression that now a technic has been
found that will prove significant in the handling of feeble-
mindedness, but because of the same fact that these are specially
selected cases some doubt is cast on the usefulness of an unvary-
ing application of the freudian method, although the author
does select his cases from among all of the various types of
feeble-mindedness. This volume can be considered only an
interesting preliminary report, and much more work will have to
be done before the analytic technic can be proved to have an
important place in the field of treatment for feeble-minded
patients. The bibliography is inadequate and the author is prone
to use such archaic terms as 'amentia' and 'mental arrest'
which were long since discarded by the meticulous psychologist.

Mikroskope und Chemie am Krankenbett. Von Hermann Lenhartz.
Fortgeführt von Erich Meyer. Ffventh edition revised by A V Domarus
and R Seyderhelm. Paper. Price 18 60 marks. Pp 370 with 182
illustrations. Berlin Julius Springer 1934

The high standard of this compact manual of laboratory
technic familiar to every German speaking physician has been
maintained in the present edition by careful revision and incor-
poration of the most popular newer laboratory methods such
as vital stain for reticulocytes, oxidase reaction, examination
of blood in a thick drop according to von Schilling's method,
determination of sedimentation rate and various micromethods.
The small volume covers in a concise, comprehensive manner

the field of the routine laboratory technic. The illustrations are instructive and the colored plates beautifully reproduced. Few omissions have been noticed. In the etiology of gas edema, *Bacillus perfringens* and the septic vibrio have not been mentioned. Only Lundsteiner-Moss's classification of blood groups is described, Jansky's being omitted. Himes' sugar test is missing. Among functional liver tests, only the galactose test could be found. No description of the several new methods of examination of gastric contents, such as the alcohol or the histamine test, has been offered. This handy little volume compares favorably with similar manuals in English and can be heartily recommended to all physicians who speak German.

Pathologie und Klinik der Granulosa-Zell-Tumoren. Von Dr. Walter Schiller, Assistent der II. Universitäts-Frauenklinik (Prof. Dr. Wilh. Welbel). In Wien. Cloth. Price 16 marks. Pp. 197, with 131 illustrations. Vienna: Wilhelm Maudrich, 1934.

The histologic interpretation, clinical evaluation, definition and description of granulosa cell tumors of the ovary are full of controversies; hence every gynecologist will welcome a critical review of the literature and detailed description of sixteen benign and eight malignant cases in addition to a report of experiments dealing with production of granulosa cell tumors by means of injections of a hormone combined with application of a carcinogenic agent. On the basis of clinical observations, histologic studies and results of experiments the author discusses the histogenesis of a normal granulosa as well as granulosa cell tumors, arriving at the conclusion that the tumors derive from undifferentiated residues of the mesenchymal nucleus of the ovary. He describes the clinical aspects of such tumors, including the age incidence, importance of ascites, frequency of malignant degeneration, production of hormones by the tumors with resulting hormonal effects such as amenorrhea, menorrhagia, postmenstrual hemorrhages, and feminization or masculinization. The monograph is profusely illustrated and represents the fruit of an exhaustive study of a problem that is not only of theoretical interest but also of great clinical importance.

Clinical Tests of the Function of the Heart. By Gustaf Nylin. Acta medica Scandinavica Supplementum III. Paper. Pp. 92, with 5 illustrations. Helsingfors: Mercator's Tryckeri Aktiebolag, 1933.

This volume consists of a brief review of the literature followed by a report of Nylin's own investigations. Half of the book is made up of a long table of his case material consisting of 143 subjects, some with normal hearts and some with diseased hearts. There is a bibliography of ninety-two references. The author begins by outlining his method of study. For the purpose of studying the effect of graduated work a special staircase was constructed, made in four sections and running in a circle when put together. Every section consisted of six steps. The total height of the staircase was 1 meter, so that every person experimented on had to raise and lower the weight of his body twice alternately during one round of the stairs. Even in severe decompensation cases Nylin found a rate of 88 steps per minute suitable, the number of rounds the patient had to make in such cases was five. Healthy persons and patients with slight decompensation had to perform the work at a rate up to 160 steps per minute, the number of rounds varied from five to ten or twenty, the last mentioned being, however, very considerable and suited only to the quite healthy. A rate of 88 steps per minute means that the patient alternately raised and lowered his own body weight 147 meters per minute. In the morning the oxygen consumption of the completely rested subject was determined first for which purpose a Krogh spirometer was used. Then the oxygen consumption was again determined after a fixed amount of work on the stairs timed with a metronome. On the conclusion of the work it usually took about fifteen seconds to fit the Krogh spirometer; the registration began immediately and was continued for varying periods though not less than five minutes after the cessation of work. On all the curves was marked the time during which the oxygen consumption was calculated beginning exactly at the second minute after the cessation of work and stopping exactly at the end of the fifth. In several cases the investigation of the oxygen consumption was continued for a further five to fifteen minutes. In determinations of

the utilization, the author employed Grollman's acetylene method. The investigations of minute volume during rest and after work covered a smaller material than those carried out for oxygen consumption, as the determinations were very slow, and the method was difficult to master. In a large number of cases, among both the healthy and the sick subjects, simultaneously with the investigations of oxygen consumption both during rest and after the cessation of work, determinations were made of the systolic and diastolic blood pressure and the pulse rate. On the basis of these determinations Liljestrand-Zander's product was calculated in the first place during rest and in the second after work of fixed intensity in the time periods mentioned. Then the increase of this product was calculated as a percentage of the resting value.

The results were as follows. Among healthy subjects, cases of heart insufficiency during rest, cases of compensated valvular trouble, myocardial degeneration, hypertonia, and some cases of exophthalmic goiter and cardiac neurosis, the oxygen consumption, the minute volume of the heart, ventilation, blood pressure and the pulse rate were investigated during rest and after work on the stairs. The author's conclusions were that: 1. The increase in oxygen consumption as a percentage of the resting value after a fixed amount of work on the stairs varies within fairly narrow limits in healthy individuals and is independent of body weight, provided the latter is within physiologic limits. 2. In cases of decompensated heart disease and cases of decompensated hypertonia, this increase is consistently greater than in the healthy subjects, so that it seems to be a reliable measure of pronounced heart insufficiency, though it is of more doubtful value with borderline cases. At the same time as the insufficiency yields to treatment, a reduction of the oxygen consumption after work often sets in. 3. The increase in ventilation after work is a far less reliable measure of the decompensation than the increase in oxygen consumption. 4. The pulse rate, utilization and standard metabolism are increased in many cases of decompensated heart disease and hypertonia during rest, but, on the other hand, the minute volume, the minute volume per square meter of body surface and the systolic output, are reduced. Determinations of these functions of the circulation cannot be used, however, as a method of functional heart diagnosis, as the values for healthy subjects and cases of decompensation partly overlap. 5. The systolic output per square meter of body surface in the decompensated cases appears to be considerably reduced, so that its determination is of greater importance than that of the functions mentioned in the fourth conclusion. 6. The utilization, i. e., the oxygen absorption, per liter of blood, after a fixed amount of work returns more quickly to the resting value in healthy persons than in cases of severe decompensation. 7. The return of the systolic blood pressure and pulse rate to the resting value, after a fixed amount of work, is slower in cases of decompensation than in healthy persons. Owing to the fact that the distribution of the values for healthy persons and cases of decompensation partly overlap, determinations of these functions severally cannot be used as measures of heart insufficiency. 8. The return of the Liljestrand-Zander product is retarded in cases of decompensation.

It seems somewhat doubtful in view both of the paucity of the material and of the results whether this functional test following Nylin's method is of practical value in determining the presence or absence of cardiac insufficiency. By the time any of the tests that have been noted in this volume show clear-cut deviations from the normal there are other simple clinical evidences of cardiac insufficiency. In the borderline cases these tests are not of great value.

Diagnosis and Treatment of Diseases of the Liver and Biliary Tract. By Various Contributors. Methods Employed in the Combined Medical and Surgical Clinic for Diseases of the Biliary Tract. New York Post Graduate Medical School, Columbia University. Paper. Pp. 41, with illustrations. New York, 1934.

This booklet enumerates in outline form the recognized procedures required for examinations in the medical and surgical clinic for diseases of the biliary tract. An outline of the plan of investigation indicates that complete histories and physical examinations are made and that roentgenologic studies of the gallbladder and if indicated of the gastro-intestinal tract, studies of the urine, blood and gastric contents, the bacteriology

cytology and crystallography of the bile obtained by drainage, and chemical studies of the blood for cholesterol, urea and sugar are carried out. The charts are comprehensive. Several pages are devoted to the technique of biliary drainage, with special stress laid on the manner of searching for typhoid carriers by the bacteriologic study of the bile. On the page enumerating the microscopic observations, no mention is made of animal parasites. This is probably an oversight. The techniques of the methods of chemical study are given in detail and the results discussed briefly. The authors use various diets adapted to a varying symptomatology, such as presence or absence of infection, the state of nutrition, association of liver disease, gastric or intestinal irritability, jaundice, fat indigestion, patency of the cystic duct, tonicity of the gallbladder, presence of calculi, and cholesteremia. Much might be disputed but as this is an outline of the procedure used by the authors and not offered as a definite contribution at this time, it would be out of place to enter into a discussion at present. The last two sections are devoted in more or less skeleton form to the indications for surgical treatment and the management of disease of the biliary tract in pregnancy. This outline is interesting and complete and would seem to be a usable framework for an excellent book on biliary tract disease.

The Effects of the Economic Depression on Education in Other Countries. By James F. Abel. Chief, Division of Foreign School Systems, Office of Education. Bulletin 193, No. 14. United States Department of the Interior, Office of Education. Paper. Price 5 cents. Pp. 37. Washington, D. C. Supt. of Doc. Government Printing Office, 1933.

This is a statistical survey of the effects of the economic crisis on education during the years 1929-1932. On such subjects as school budgets, capital outlays, teachers' salaries, unemployment attendance and school consolidation data have been accumulated from official reports. Condensed summaries have been prepared for a number of individual countries. Such a compilation may prove a useful guide for students of educational administration.

Medicolegal

Workmen's Compensation Acts. Duty of Employer to Supply Continuing Medical Care in Case of Permanent Disability.—In the course of his employment, in 1929 Nee fractured his spine. Paralysis from the hips downward followed. Since the accident he has been confined in a hospital, hopelessly bedridden and utterly unable to help himself. He requires special food and services that can be furnished only in a hospital. According to the evidence, no medical surgical or hospital care can reduce his disability or restore him to a gainful occupation. In 1931, the industrial commission awarded him compensation and directed his employer to pay hospital and medical bills amounting at that time to more than \$10,000 and to furnish such medical and hospital services in the future as Nee might require. On appeal the award was affirmed by the superior court Cook county and the employer appealed to the Supreme Court of Illinois.

Nee's employer raised no question as to its liability to pay compensation for permanent total disability but it asked for an adjustment of the claim for continued payment for medical and hospital services. The workmen's compensation act provides:

"The employer shall provide the necessary first aid medical and surgical services and all necessary medical, surgical and hospital services thereafter limited however to that which is reasonably required to cure or relieve from the effects of the injury." *Smith-Hurd's Illinois Revised Statutes 1931 c. 48 sec. 145 (a)*

Nee's employer contended that this does not require an employer to furnish medical and hospital services indefinitely but to furnish them only to such an extent as may be reasonably necessary to cure or relieve the injured employee from the effects of the injury. Cure and relieve the employer argued have essentially the same meaning and when it has been determined that disability cannot be cured, reduced or relieved then the employer cannot be required to continue to provide medical and hospital services. The burden of such

further care should fall on society through its publicly or privately endowed institutions.

The Supreme Court, however, was unable to construe the words "cure" and "relieve" as meaning the same thing. A workman who is cured is relieved from the effects of his injury, but one who cannot be cured may still need attention to relieve him of pain or other injurious effects by his injury. These are the only natural and usual meanings of these words. The workmen's compensation act is a humane law of a remedial nature, and wherever construction is permissible the act should be liberally construed. It would be nothing short of judicial legislation, in an exceptional case, to impose on the act the limitation contended for by Nee's employer. A reasonable interpretation of the act requires that the employer's liability continue as long as medical and hospital services are needed to relieve the injured employee from the effects of his injury. The award of the commission was accordingly affirmed.—*Accman Co v Industrial Commission (Ill.) 187 N. E. 137*

Workmen's Compensation Acts. Loss of Function of Testicles Compensable.—In the course of his employment, Gleason's clothing caught on a revolving shaft and everything except his shoes and a sleeve of his jacket was torn off. Half the body of his penis and the entire scrotum were pulled off and his testicles left hanging by elongated spermatic cords. He was taken to a hospital where a physician placed the right testicle in the anterior wall of the abdomen. The left testicle he placed above what remained of the penis, in an artificial sac of grafted skin taken from the inner surface of Gleason's thighs. There was no infection and Gleason left the hospital about seven weeks after the accident. He claimed compensation under the workmen's compensation act and sought to have the award based in part on the rating fixed by the act for the loss of both testicles. He was 29 years old but after the accident experienced no sexual sensations, had no normal desire for sexual intercourse and had no erection. His physician testified that because of the skin grafting he would never be able to have an erection or to have sexual intercourse, and he believed that the testicles would never be "usable." The industrial commission made an award in Gleason's favor, but on appeal the circuit court, Lee County, set aside the award for the loss of the testicles. Gleason thereupon appealed to the Supreme Court of Illinois.

The workmen's compensation act authorizes compensation for the loss of both testicles "50 percentum of the average weekly wage during one hundred fifty weeks." *Smith-Hurd Rev. St. 1933 c. 48 sec. 145, par. (c) subd. 163½*. Gleason's employer contended that this language was not sufficient to authorize compensation for the loss of use of testicles, but only for their loss. On behalf of the employer it was argued that since the testicles had been successfully grafted into Gleason's body, there had been no "loss" within the meaning of the act. This argument, said the Supreme Court, is without legal weight in Illinois. Incapacity to use need not be tantamount to an actual severance. The loss of a member is complete when its normal use has been taken away. In this case the testicles were not only lost from their usual and natural resting place and sewed up in separate compartments elsewhere but they were lost in the more serious sense that they never again could perform their normal function having to do with sexual intercourse and the propagation of offspring. Under any reasonable view an injury to an employee under the workmen's compensation act which renders his testicles useless for the performance of their normal function is compensable. The Supreme Court accordingly affirmed the award of the commission.—*Northwestern Barb Wire Co v Industrial Commission (Ill.) 187 N. E. 468*

Hospitals. Criteria of Charitable Character.—The city of Palo Alto owned the Palo Alto Hospital. It gave possession of the hospital and its equipment to the Leland Stanford Junior University which agreed to make an annual statement of the receipts and expenditures of the hospital and after deducting operating expenses and any working fund that might be agreed on to pay the balance to the city. The university from the tuition fees of each student paid a stated amount to a students' guild to pay the operating expenses of the hospital. A student

entering the hospital paid only a part of the expense of treatment, the balance being paid out of the funds of the guild. The hospital gave no free service to any one. There were no free beds for which the hospital itself bore the expense. When the hospital received a patient who was not able to pay, payment was made by a charitable organization, known as the Palo Alto Hospital Auxiliary.

Mrs. Baker, a patient in the hospital, undertook to turn on an electric lamp. When she touched it, she received an electric shock so severe that she could not release her hand until after a nurse had disconnected the lamp from the electric current. It was later discovered that a part of the insulation surrounding the key which served to turn the light off and on was broken. The accident caused a third degree burn of Mrs. Baker's right hand, necessitating the amputation of her little finger and the removal of some of the little bones of her hand. The shock caused, too, great pain and seriously affected her nervous system. She and her husband sued the hospital and were awarded \$10,000 and \$1,000, respectively, as damages. From the judgment the hospital appealed to the district court of appeal, first district, division 1.

The hospital contended, among other things, that it was a charitable institution and had exercised due care in the selection of its employees. The district court of appeal, however, was of a different opinion. The hospital was not formed and maintained for charitable purposes. No charity was dispensed by it. On the contrary, it charged rates usually and customarily charged by other hospitals. It made no pretense of receiving patients unable to pay for the service rendered except when payment was guaranteed by the Palo Alto Hospital Auxiliary, an independent organization. Moreover, in California a corporation organized for public charity might conduct also an enterprise for gain and be liable for the negligence of its employees in that enterprise, even though the profits derived from it were devoted to the general purposes of charity (*Stewart v. California Medical etc., Ass'n*, 178 Calif 418, 176 P 46). The court did not regard the damages awarded as excessive.

The judgments of the court below were affirmed—*Baker v. Board of Trustees of Leland Stanford Junior University* (Calif.) 23 P (2d) 1071.

Medical Practice Acts. Revocation of License Not Barred by Statute of Limitations.—The California board of medical examiners revoked Bold's license to practice medicine. In a review of the board's action by the district court of appeal second district, division 2, Bold contended that the proceedings against him were barred by the statute of limitations. The provisions of the California code of civil procedure relating to the commencement of civil actions, said the court, relate only to actions or civil proceedings in courts, not to hearings before boards. The board of medical examiners is not a "court," even though it exercises power of a judicial nature. The purpose of the medical practice act is to exclude undesirable persons from the medical profession. The staleness of a charge against a person does not necessarily make it reflect less on his character. The determination of the effect of staleness belongs exclusively to the board of medical examiners. No statutory bar is applicable.

Two charges against Bold were pending at the time of the hearing before the board. The board heard evidence tending to show that his license should be revoked. It decided that his license should be revoked on the basis of the evidence offered in support of one of the pending charges, in which it was alleged that he had performed a criminal abortion. It then voted to revoke his license on the basis of a second charge, alleging that he had performed an abortion in another case. The latter case formed the basis of the appeal here under consideration. Bold contended that the revocation in this case was not authorized, because when the board revoked his license on the basis of the first charge it lost jurisdiction and authority over him. The appellate court, however, could see no merit in Bold's contention. The board had jurisdiction over both charges. Its decisions could not be made simultaneously, however, but had to be made successively. The judgment of the superior court, Los Angeles county, affirming the action of the board of medical examiners was affirmed by the appellate court—*Bold v. Board of Medical Examiners* (Calif.), 23 P (2d) 826.

Society Proceedings

COMING MEETINGS

- American Medical Association Cleveland June 11-15 Dr. Olin West, 535 North Dearborn Street Chicago Secretary
- American Academy of Pediatrics Cleveland June 11-12 Dr. Clifford G. Grulee 636 Church Street Evanston Ill Secretary
- American Association for the Study of Gout Cleveland June 9 Dr. J. R. Yung 670 Cherry Street Terre Haute Ind Secretary
- American Association for the Study of Neoplastic Diseases Baltimore June 21-23 Dr. Eugene R. Whitmore, 2139 Wyoming Avenue N.W. Washington D.C. Secretary
- American Association of Genito-Urinary Surgeons Hot Springs Va. May 14-16 Dr. Henry L. Sanford 1621 Euclid Avenue Cleveland Secretary
- American Association of Medical Milk Commissions Cleveland June 11-12 Dr. Harris Moak 360 Park Place Brooklyn, Secretary
- American Association on Mental Deficiency New York May 26-29 Dr. Groves B. Smith Beverly Farms Godfrey Ill Secretary
- American Bronchoscopic Society Cleveland June 10 Dr. Louis H. Clerf 110 South 10th Street Philadelphia Acting Secretary
- American Clinical and Climatological Association, Toronto Canada May 21-23 Dr. Francis M. Rackemann, 263 Beacon Street Boston Secretary
- American Dermatological Association New York June 7-9 Dr. William H. Guy 500 Penn Avenue, Pittsburgh Secretary
- American Gastro-Enterological Association Atlantic City April 30-May 1 Dr. Russell S. Boles The Rittenhouse Plaza Philadelphia Secretary
- American Gynecological Society White Sulphur Springs W. Va. May 21-23 Dr. Otto H. Schwarz, 630 South Kingshighway, St. Louis Secretary
- American Heart Association Cleveland, June 12 Dr. Irvin C. Ruggen 50 West 50th Street New York Executive Secretary
- American Laryngological Association Cleveland June 7-9 Dr. William A. Mullin 9204 Euclid Avenue Cleveland Secretary
- American Neurological Association Atlantic City June 4-6 Dr. Henry Alsop Riley 117 East 72d Street New York Secretary
- American Orthopedic Association Rochester Minn. June 6-9 Dr. Ralph K. Gormley Mayo Clinic, Rochester, Minn. Secretary
- American Physiotherapy Association Cleveland June 13-16 Mrs. Bess Searls 1430 West 77th Place Chicago Secretary
- American Proctologic Society Cleveland June 11-12 Dr. Frank G. Kunzeon 1361 Erie Avenue Reading Pa. Secretary
- American Psychiatric Association New York May 28-June 2 Dr. William C. Sandy State Education Building, Harrisburg Pa. Secretary
- American Society for Clinical Investigation Atlantic City April 30-May 1 Dr. H. J. Blumgart 330 Brookline Avenue Boston Secretary
- American Society of Clinical Pathologists Cleveland June 8-11 Dr. A. S. Giordano 531 North Main Street South Bend Ind Secretary
- American Surgical Association, Toronto Canada June 4-6 Dr. Vernon C. David 59 East Madison Street Chicago Secretary
- American Therapeutic Society Cleveland June 8-9 Dr. Oscar B. Hunter 1835 Eye Street N.W. Washington D.C. Secretary
- American Urological Association Atlantic City May 27-29 Dr. Gilbert J. Thomas 1009 Nicollet Avenue Minneapolis Secretary
- Arizona State Medical Association Prescott June 7-9 Dr. D. F. Harbridge 822 Professional Building Phoenix Secretary
- Association for the Study of Internal Secretions Cleveland June 11-17 Dr. F. M. Pottenger, Pottenger Sanatorium Monrovia Calif Secretary
- Association of American Physicians Atlantic City May 12 Dr. James H. Means Massachusetts General Hospital Boston Secretary
- California Medical Association Riverside, April 30-May 3 Dr. Emma W. Pope 450 Sutter Street San Francisco Secretary
- Connecticut State Medical Society Bridgeport May 23-24 Dr. Charles W. Comfort Jr. 27 Elm Street New Haven Secretary
- District of Columbia Medical Society of the Washington May 2 Dr. C. B. Conklin 1718 M Street N.W. Washington Secretary
- Florida Medical Association Jacksonville April 30-May 2 Dr. Shaler Richardson 111 West Adams Street Jacksonville Secretary
- Georgia Medical Association of Augusta May 8-11 Dr. Allen H. Bunce 139 Forrest Avenue N.E. Atlanta Secretary
- Illinois State Medical Society Springfield May 15-17 Dr. Harold W. Camp Lahl Building Monmouth Secretary
- Iowa State Medical Society Des Moines May 9-11 Dr. Robert L. Parker 3510 Sixth Avenue Des Moines Secretary
- Kansas Medical Society Wichita May 9-11 Dr. J. F. Hassig 804 Huron Building Kansas City Secretary
- Maine Medical Association Bangor May 28-29 Miss Rebekah Gardner 22 Arsenal Street Portland Secretary
- Massachusetts Medical Society Worcester June 4-6 Dr. Walter L. Burrage 182 Walnut Street Brookline Secretary
- Medical Library Association Baltimore May 21-23 Miss Marjorie J. Darrach 645 Mullett Street Detroit Secretary
- Mississippi State Medical Association Natchez May 8-10 Dr. T. M. Dye McWilliams Building Clarksdale Secretary
- Missouri State Medical Association St. Joseph May 7-10 Dr. E. J. Goodwin 634 North Grand Boulevard St. Louis Secretary
- National Tuberculosis Association Cincinnati May 14-17 Dr. Charles J. Hatfield Henry Phipps Institute Philadelphia Secretary
- Nebraska State Medical Association Lincoln May 22-24 Dr. R. B. Adams Center McKinley Building Lincoln Secretary
- New Hampshire Medical Society Manchester May 15-16 Dr. C. R. Metcalf 5 South State Street Concord Secretary
- New Jersey Medical Society of Atlantic City June 5-8 Dr. J. B. Morrison 66 Milford Avenue Newark Secretary
- New York Medical Society of the State of New York May 14-16 Dr. D. S. Dougherty 2 East 103d Street New York Secretary
- North Carolina Medical Society of the State of Pinehurst April 30-May 2 Dr. L. B. McBrayer Southern Pines Secretary
- North Dakota State Medical Association Fargo May 28-29 Dr. Albert W. Skelsey 20 1/2 Broadway Fargo Secretary
- Oklahoma State Medical Association Tulsa May 21-23 Dr. L. S. Willour Ainsworth Building McAlester Secretary
- Pacific Northwest Medical Association Salt Lake City June 21-23 Dr. C. W. Countryman 407 Riverside Avenue, Spokane, Wash Secretary
- Rhode Island Medical Society Providence June 7 Dr. J. W. Leech 167 Angell Street Providence Secretary
- South Carolina Medical Association Charleston, May 13 Dr. E. A. Hines Seneca Secretary

South Dakota State Medical Association Mitchell May 14 16 Dr Jolin
F D Cook Langford Secretary
Texas State Medical Association of San Antonio May 14 17 Dr
Holman Taylor Medical Arts Building Fort Worth Secretary
Utah State Medical Association Salt Lake City June 21 23 Dr Leland
R Cowan 305 Medical Arts Building Salt Lake City Secretary
Western Branch Society American Urological Association Los Angeles
April 27 29 Dr George W Hartman 999 Sutter Street San
Francisco Secretary
West Virginia State Medical Association Huntington May 14 16 Mr
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AMERICAN

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Titles marked with an asterisk (*) are abstracted below

Alabama Medical Association Journal, Montgomery

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- Amebic Dysentery Report of Case with Discussion of Treatment
J H Watkins Montgomery—p 225
Injuries to the Head and Brain R E Semmes Memphis, Tenn
—p 231
Asthma Personal Observations on Fifty Four Cases C K Weil,
Montgomery—p 235
Acute Appendicitis Complicating Pregnancy and the Puerperium
N E Sellers Anniston—p 242
Conservative Treatment of Convulsive and Nonconvulsive Toxemia
A E Thomas Montgomery—p 245

Treatment of Convulsive and Nonconvulsive Toxemia

—Thomas institutes treatment immediately if, in spite of the hygienic rules laid down for the patient the symptoms of nonconvulsive toxemia develop if the blood pressure begins to rise and if there is a sudden increase in body weight due to water retention and a diminished urinary output with frequency albuminuria, slightly accelerated pulse, headaches, numbness and tingling of the fingers, lassitude and malaise. The patient is put to bed and must have absolute rest. Mental rest is imperative and is best secured by the proper application of sedatives. Sodium amytal may be given in doses of 3 grains (0.2 Gm), and may be repeated as often as necessary to produce rest. In order to relieve water retention in the tissues and to lessen the load on the kidneys intestinal excretion is to be encouraged. A salt-free, nonprotein diet is indicated until the symptoms subside. A diet rich in carbohydrates is essential; this is readily available in the form of fruit juices, cereals, custards, milk and vegetables, with dextrose added as required. The blood pressure curve, intake and output, pulse, body weight and any unusual subjective or objective symptoms that may develop should receive untiring attention. A twenty-four hour specimen of urine should be measured and examined. With improving conditions, the patient may gradually return to the normal diet containing not too much meat or fluids and little salt. From one to two days each week should be set aside as vegetable days. The patient who has once shown the slightest evidence of toxemia, regardless of how well she responds to treatment should be seen at frequent intervals and kept under close observation. If the course of the disease is slow but progressive with gradually increasing symptoms, chronic nephritis or low kidney reserve is suggested and treatment is to be intensified if possible.

American Journal of Cancer, New York

20 1 294 (Jan) 1934

- Malignant Disease of Thyroid Gland Clinicopathologic Analysis of
Fifty Four Cases of Thyroid Malignancy L W Smith E H Pool
and C T Olcott New York—p 1
Metastatic Tumors of the Heart E M Burke Buffalo—p 31
Some Effects Produced by Applying Estrin to the Skin of Mice H
Burrows and N M Kennaway London England—p 48
Comparison of Action of Some Polycyclic Aromatic Hydrocarbons in
Producing Tumors of Connective Tissue C Barr and J W Cook
London England—p 59

- Trial of Suggested Remedies for Cancer Note H Burrows London
England—p 70
Study of Spontaneous Tumors of the Mouse by Tissue Culture Method
Margaret Reed Lewis Washington D C and L C Strong Bar
Harbor Maine—p 72
*Study of Relationship of Internal Secretions to Metabolism of Malignant
Tumor Tissue O O Meyer and Claire McTiernan Boston—p 96
Influence of Various Preparations of Lactic Acid and Sugars on Growth
of Transplanted Tumors II Mouse Sarcoma 180 I A Parfentjev
V D Sintzeff and W K Devrient St Louis—p 117

Metastatic Tumors of the Heart—In a study of 327 necropsies on patients with known malignant manifestations, Burke found fourteen cases of metastatic involvement of the cardiac muscle. This constitutes approximately 4.3 per cent of routine necropsies made in such cases at the state institute for the study of malignant disease. While this proportion seems somewhat higher than a review of the literature would indicate, it can probably be explained by the fact that this series includes only cases in which malignant disease was definitely the cause of death.

Internal Secretions and Metabolism of Malignant Tumors—According to Meyer and McTiernan, the effect on the metabolism of transplanted mouse tumors of the bodily administration of various hormones is insignificant save for thyroxine and insulin. In a distinct majority of experiments thyroxine appreciably inhibits the oxygen consumption of the tumor, both sarcoma 180 and carcinoma 63 simultaneously, thyroxine strikingly stimulates the metabolism of isolated liver tissue. The aerobic and anaerobic glycolysis of sarcoma 180 is not increased after bodily administration of thyroxine. Microscopically, the sarcomas of thyrotoxic mice resemble the tumors of the normal mice. The administration of insulin brings about a decrease in the anaerobic glycolysis of mouse sarcoma 180. Several of the other hormones seem to have a depressing effect on liver metabolism, and that of theelin is most striking. The effects on tumor and liver following the removal of various glands of internal secretion are inconsistent. Only thyroidectomy appears to bring about a depression of the metabolism of both, and this is not striking and is hardly constant enough to appear significant. Further experiments after thyroidectomy are necessary. Thyroxine seems to inhibit tumor growth, but no other hormone has any demonstrable effect on the tumor development nor does removal of the glands of internal secretion prevent the usual rapid growth of the sarcoma.

American Journal of Medical Sciences, Philadelphia

187 1 148 (Jan) 1934

- Disease of Coronary Arteries with Consideration of Data on Increasing
Mortality of Heart Disease D Riesman and S E Harris Phila
delphia—p 1
Large Q Wave in Lead III of Electrocardiogram R France Balti
more—p 16
*Effect on Electrocardiograms of Patients with Regular Sinus Mechanism
of Quinidine Sulphate C C Maher C P Sullivan and C P
Scherbel Chicago—p 23
Clinical Significance of Bacillus Coli Hemolyticus W L Miles and
J C Torrey New York—p 30
*Formation of Hematopoietic Substance in Concentrated Human Gastric
Juice P J Fouts O M Helmer and L G Zerfas Indianapolis
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and Esther Bloomberg Boston—p 49
Photographic Suspension Stability (Sedimentation Rate) Apparatus
Preliminary Report H W Sulkowitch Boston—p 65
*Hematopoietic Response of Rat to Injections of Pentnucleotide and Its
Relation to Treatment of Agranulocytosis C Reich and Eleanor
Reich New York—p 71
Analysis of So Called Aplastic Anemia W P Thompson M N
Richter and Katharine S Edsall New York—p 77
Blood Cytology in Untreated and Treated Syphilis P D Rossign and
Louise Pearce New York—p 88
Involvement of Eighth Nerve in Syphilis with Especial Reference to
Results of Treatment A Ciocco and A Weinstein Baltimore—
p 100
Conjugal Syphilis Statistical Study H B Decker Camden N J
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Probable Allergic Nature of Cinchophen Poisoning with Especial Refer
ence to Arthus Phenomenon and with Precautions to Be Followed
in Cinchophen Administration A J Quick New York—p 115
Nexus Flammeus Nuchae Its Occurrence and Abnormalities F F
Corson Philadelphia—p 121

Quinidine Sulphate Electrocardiograms—Maher and his associates administered quinidine sulphate to nineteen patients; ten received 30 grains (2 Gm) and three 60 grains

(4 Gm) orally per day and six received intravenous injections of from 3 to 5 grains (0.2 to 0.3 Gm) without general toxic effects. The electrocardiograms of the majority of these patients showed changes only in regard to the T waves within from twenty-four to seventy-two hours if orally administered, and immediately if given intravenously. These changes varied from mild flattening to sharp inversion of the T waves. The duration of the effect varied from three to six days on oral administration and three hours on intravenous administration. Changes in the QRS and PR intervals are presumably effects produced by intoxicating doses. On the basis of their studies with doses of from 30 to 60 grains, administered orally over a period of from five to nineteen days, or intravenous injections of from 3 to 5 grains, it would not appear that the reported observations of changes in the P wave, PR interval or QRS complex were verified. The conclusions of T wave changes were sustained simply. In discussing these discrepancies it is the authors' opinion that changes in the contour of the P waves may normally occur in any series of electrocardiograms taken over a period of time. In another series of experiments of the effects of quinidine sulphate on the fibrillating auricle the reports of which have not as yet been published, they have found that when intoxication of the cardiac muscle appears with heavy doses such as intravenous injections of 5 grains every four hours for four doses or from 10 to 12 grains (0.65 to 0.78 Gm) in one injection in some cases there was lengthening of the QRS complex as well as marked notching and slurring and appearance of frequent extrasystoles as well as ventricular tachycardia.

Hematopoietic Substance in Gastric Juice.—To determine whether it was possible to separate the 'active principle' in the gastric juice from the known enzymes (pepsin and rennin), Fouts and his associates subjected human gastric juice to ultrafiltration. It was found impossible to separate the enzymes, pepsin and rennin, from the hematopoietic substance in human gastric juice except after concentration of the gastric juice by vacuum distillation. The process of concentration by vacuum distillation or storage in the icebox for two months was necessary before the presence of a substance capable of producing a reticulocyte response when injected into patients having pernicious anemia could be demonstrated. The authors discuss the possible mechanisms involved in this change in the gastric juice.

Pentnucleotide and the Treatment of Agranulocytosis.—The Reichs' experimental data reveal that in the case of the rat injections of pentnucleotide have little effect in stimulating or improving the maturation of the blood cells. The total white count, Schilling and lymphocytic indexes, reticulocyte percentage and bone marrow differential react about the same after injections of physiologic solution of sodium chloride as after pentnucleotide. Regeneration after benzene poisoning occurs just as quickly with injections of physiologic solution of sodium chloride as with pentnucleotide. The authors argue that, if x-rays act through the pentnucleotide mechanism, it seems logical that injections of pentnucleotide would improve the maturation of red cells as well as of polymorphonuclear neutrophils. This has not been the case in their work. The doses of pentnucleotide were large in proportion to the weight of the rats and should have been sufficient to cause the changes expected. The hematopoietic system of the rat is different from that of man but if the bone marrow of the rat was depressed by benzene just as in the case of man it ought to be stimulated by the same agents that are supposed to stimulate the human bone marrow. The authors further recognize that other possible variants prevent the deductions of the experiment from being applied unqualifiedly to the treatment of human agranulocytosis. Their observations emphasize the vital importance of adequate controls may help to throw light on some of the disappointing results obtained in the treatment of agranulocytosis with pentnucleotide, and may also lend support to those who believe that many patients having agranulocytosis recover by themselves and that a large percentage of the beneficial results attributed to the various forms of therapy for this condition may be just coincidental. The practically negative experimental results cast some doubt on the value of pentnucleotide in the treatment of agranulocytosis.

American Journal of Ophthalmology, St. Louis

17 198 (Jan) 1934

- Retinal Detachment. Technical Observations and New Devices for Treatment with Specially Arranged Diathermy Unit for General Ophthalmic Service. C. B. Walker, Los Angeles—p. 1.
- Preliminary Report on Orbital Tumors. G. Hardy and W. F. Hardy, St. Louis—p. 18.
- Conical Cornea Complicated by Acute Ectasia. Report of Case. G. E. Berner, Philadelphia—p. 22.
- Keratitis Bullosa. Report of Case Cured by X-Ray. W. T. Davis, Washington, D. C.—p. 24.
- Testing of Visual Acuity. I. Factors in Sensitive Use of Test for Detection of Errors of Refraction. C. E. Ferree and G. Rand, Baltimore—p. 29.
- Source of Staphylococci on Normal Conjunctiva of Human Eye. G. H. Gowen, Chicago—p. 36.
- The Mechanism of the Cross Cylinder. H. R. Hildreth, St. Louis—p. 39.
- Epithelial Cyst in Posterior Chamber. Clinical History and Microscopic Anatomy of the Frustrated Eye. C. W. Tooker, St. Louis—p. 41.
- Sarcoma of Choroid in a Shrunken Globe Exhibiting Fibrous Formation About the Tumor. B. Chance, Philadelphia—p. 48.

American Journal of Pathology, Boston

10 144 (Jan) 1934

- Carcinoma of Tubes and Ovaries Secondary to Carcinoma of Body of the Uterus. J. A. Sampson, Albany, N. Y.—p. 1.
- Studies on Mature and Immature Lymphoid Cells of Spleen Lymph Nodes and Thymus of Normal Rats and Rats Infected with Trypanosoma Brucei. C. H. Jiu, Peiping, China—p. 29.
- Studies on Mature and Immature Lymphoid Cells of Peripheral Blood of Normal Rats and Rats Infected with Trypanosoma Brucei. C. H. Hu and K. Y. Chin, Peiping, China—p. 43.
- Heart Valves and Muscle in Experimental Scurvy with Superimposed Infection with Notes on Similarity of Lesions to Those of Rheumatic Fever. J. F. Rinehart and S. R. Mettier, San Francisco—p. 61.
- Nonlipoid Histocytosis (Reticulo-Endotheliosis) with Autopsy Report of Case. N. C. Ford and C. T. Olcott, New York—p. 81.
- Multiple Branchiogenic Acanthoma. Report of Case. R. D. Little, Washington, D. C. O. H. Cox, Port Townsend, Wash. and W. C. Tawfel, Seattle—p. 97.
- Benzol Poisoning with Hyperplasia of Bone Marrow. Dorothy H. Andersen, New York—p. 101.
- Friedreich's Ataxia. Clinical and Pathologic Study. A. B. Baker, Minneapolis—p. 113.
- Primary Neurogenic Sarcoma of Bladder in an Infant One Month of Age. D. F. Harvey and R. Tennant, New Haven, Conn.—p. 123.
- Thrombosis and Pulmonary Embolism. T. H. Belt, Toronto—p. 129.

Secondary Carcinoma of Tubes.—Sampson studied fifteen cases of carcinoma of the tubes and ovaries. By continuous extension, carcinoma of the body of the uterus invades pelvic structures. Secondary carcinoma of the tubes and ovaries arises from the continuous permeation of the lymphatic canals and also from earlier emboli. By the continuous extension of carcinoma of the body of the uterus the mucosa is replaced by the growth, and when situated in a uterine horn it frequently extends through the uterine opening of the tube and replaces the mucosa of the uterine portion of the tube. Portions of cancer are broken off from the growing (advancing) portion of the growth in this situation and as emboli migrate into the tube beyond. Superficial carcinomas are found in the mucosa of the tubes, in their fimbriae and on the ovary and peritoneum of patients having carcinoma of the body of the uterus. They present the same histologic structure as recognized implantation carcinoma of the lining of lymph vessels and also on the peritoneum from ovarian carcinoma with evidence that particles of cancer from the primary uterine growth could have reached the site of these metastases through the lumens of the tubes. The author believes that their pathogenesis in many instances is the same, namely, the lodging of the cancer cells on the surface of their host, injury to that surface already present or created by the carcinoma, and the attempted repair of the injury with the continued growth of the carcinoma in this situation. In like manner, particles of uterine carcinoma become implanted in the uterine and cervical mucosa and in wounds of the vagina and of abdominal incisions.

The Heart in Experimental Scurvy with Superimposed Infection.—Rinehart and Mettier studied the effect of scurvy and scurvy combined with infection (beta streptococcus) on the valves of the heart and muscle in the guinea pig. Infection in animals maintained on an adequate diet usually produces no significant lesions in the valves of the heart. When they occur they are of an exudative rather than proliferative type. In uncomplicated scurvy, definite atrophic and degenerative changes occur in the collagenous stroma of the valves of the heart.

In scurvy with added infection, striking lesions of a combined degenerative and proliferative character develop in the valves with considerable frequency. The experimental endocarditis so produced was similar to that of acute rheumatic fever. Degenerative and proliferative lesions occur in the cardiac muscle and pericardium of the experimental animals subjected to combined scurvy and infection, which are considered similar in type to the Aschoff reaction. Organisms other than the beta streptococcus may, in the presence of scurvy, produce such lesions. Lesions resembling the "fibrinoid degeneration" of Klinge have been seen in various sites in animals subjected to combined scurvy and infection. Klinge considers this type of degeneration the characteristic and initial lesion of rheumatic fever. Evidence indicates that there is some factor other than simple infection that contributes to the development of rheumatic fever. Experimentally, infection alone or scurvy alone will not produce significant lesions but when scurvy and infection are combined striking lesions are produced, particularly in the valves of the heart. The authors advance the theory that a condition of vitamin C undernutrition may be a necessary background for the development of rheumatic fever when the result of infection is combined with the scorbutic state, the pathologic picture of rheumatic fever develops.

American Journal of Psychiatry, Baltimore

13 717 924 (Jan.) 1934

*Influence of Emotion in Precipitating Convulsions Preliminary Report
F. Fremont Smith Boston —p. 717

Respiratory Metabolism of Excised Brain Tissue I. Respiratory Quotient, Carbohydrate and Lactic Acid Utilization S. B. Wortis
New York —p. 725

Narcolepsies J. Notkin and S. E. Jelliffe New York —p. 733

Studies in Endocrine Therapy in Epilepsy C. Stein Palmer Mass.
—p. 739

Changes in Concentration of Inorganic Calcium and Phosphorus During Convulsions of Experimental Origin in Cats Before and After Thyroparathyroidectomy With and Without Bromide Therapy Helen C. Coombs, D. S. Searle and F. H. Pike New York —p. 761

Effect of Intercurrent Chronic Pulmonary Tuberculosis on the Convulsion Threshold in Epilepsy Study of One Hundred Cases I. J. Karlsberg Palmer Mass. —p. 799

Amolytic Activity of the Feces in Epileptics L. A. Damon Sonjea N. Y. —p. 817

Relation of Premature Birth and Underweight Condition at Birth to Mental Deficiency A. J. Rosanoff Los Angeles and Christine V. Inman Haue —p. 829

Experimental Analysis of Psychopathologic Effects of Intoxicating Drugs E. Lindenmann and W. Malamud Iowa City —p. 853

Histopathologic Findings in Two Cases Clinically Diagnosed Dementia Praecox A. Ferraro New York —p. 883

Influence of Emotion in Precipitating Convulsions —

To determine how frequently emotion acts as a precipitating factor in convulsions, Fremont-Smith has studied forty-two unselected private patients. All suffered from generalized convulsions with loss of consciousness. In thirty-one a direct relationship has been found between emotion and one or more of the major convulsions. In several instances all or nearly all the attacks have been immediately preceded by strong emotion, usually fear, guilt or frustration. That such emotion has causal relation to the convulsions is indicated by the fact that in eight cases major or minor attacks have been precipitated under observation by a discussion of the emotional difficulty. In three cases attacks apparently could be precipitated by the physician at will by such discussion. Psychotherapy has been of definite value in several of these cases not only by helping the patients to a better adjustment of their major conflicts but more specifically by bringing back to consciousness the suppressed emotion so that they may see clearly the relationship of the emotion to the attack. The theory that stimulation of the sympathetic nervous system by emotion plays an important part is supported by the fact that convulsions are occasionally precipitated by pain and by cold. Emotion, pain and cold are well known stimulators of the sympathetic nervous system. Moreover the onset of acute infections frequently precipitates convulsions in predisposed persons. Here again the sympathetic nervous system is strongly stimulated. Whether the stimulation of the sympathetic nervous system precipitates the convulsion by cerebral vasoconstriction or by some other mechanism is not known.

American Journal of Public Health, New York

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Permanent Value of Major Walter Reed's Work on Yellow Fever F. F. Russell New York —p. 1

\ Ray Mass Procedure Applicable for the Discovery of Early Tuberculosis in Industrial Groups Margaret Witter Barnard, New York. —p. 8

How Can Public Health Nursing Fit into a Budget? Alma C. Haupt, New York —p. 17

Precipitated Toxoid is an Immunizing Agent Against Diphtheria J. N. Baker and D. G. Gill Montgomery Ala. —p. 22

Recent Advances in Chemical Treatment of Sewage T. W. Mohlman Chicago —p. 25

Erysipeloid Condition Among Workers in a Bone Button Factory Due to Bacillus of Swine Erysipelas G. F. McGinnes and F. Spindle Richmond Va. —p. 32

Arsenic in Tobacco Smoke C. R. Gross and O. A. Nelson Washington D. C. —p. 36

Responsibility for the Health Program C. F. Wilinski Boston —p. 43

Rapid and Accurate Semaautomatic Delivery Pipet M. W. Jennison Cambridge Mass. —p. 59

Standards Anna W. Williams New York —p. 60

Am J Roentgenol & Rad Therapy, Springfield, Ill

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Roentgenologic Diagnosis of Intracardiac Calcifications P. A. Bishop and H. Roesler Philadelphia —p. 1

Pulmonary Tuberculosis in Childhood R. G. Allison and J. P. Medelmin Minneapolis —p. 16

Deformation of Sella Turcica in Tumors of Middle Cranial Fossa K. Kornblum Philadelphia —p. 23

Demonstration of Spontaneous Internal Biliary Fistula by Roentgen Examination Report of Case T. N. Sickels and C. L. Hudson Cleveland —p. 31

Roentgen Visualization of Placenta W. Snow and C. B. Powell New York —p. 37

Roentgenologic Examination of Chest in Lateral Decubitus S. Brown Cincinnati —p. 41

Roentgen Examination Repeated After Thirty Years Case Report of a Shell Shattered Bone with Roentgenograms Made in 1899 and 1929 A. H. Heald San Francisco —p. 44

Roentgen Irradiation in Treatment of Mammary Carcinoma U. V. Portmann Cleveland —p. 46

Irradiation in Treatment of Fibromyoma of the Uterus G. E. Pfahler and J. H. Vastine Philadelphia —p. 51

Some Problems in Radiation Therapy of Carcinoma of the Cervix W. P. Healy New York —p. 60

Direct Roentgen Irradiation of Intracavitary Neoplasms W. R. Stecher and T. P. Loughery Philadelphia —p. 64

Determination of Dosage for Long Radium or Radon Needles Edith H. Quimby New York —p. 74

American Journal of Tropical Medicine, Baltimore

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Atypical Yaws P. W. Wilson Panama —p. 1

Notes on Intestinal Flora in the Tropics L. O. Jordan and Josephine McBroom Chicago —p. 27

* Red Back Spider Bite and Magnesium Sulphate Treatment Clinical Study of Four Cases C. DeAsis Manila P. I. —p. 13

Quinine and Plasmodium Therapy in Infections with Plasmodium Circumflexum R. D. Maxwell Syracuse N. Y. —p. 45

Nutritional Studies of Foodstuffs Used in Puerto Rican Diet IV. Extract of Annatto Seed Bix Orellana Its Preparation and Physiologic Properties D. H. Cook and J. H. Altmayer San Juan P. R. —p. 61

Red Back Spider Bite and Magnesium Sulphate Treatment —DeAsis points out that the clinical manifestations resulting from the bite of *Latrodectus hasseltii*, or the red back spider, are elevated blood pressure, slow, often weak, pulse, rapid often labored respiration, profuse perspiration, general weakness and numbness, muscle pains and paralysis of the lower limbs. The poison may prove fatal. It seems to have a special predilection for the peripheral nerves and nerve endings. The central nervous system seems to be only slightly affected if at all. The poison travels by way of the lymph canals and is vasoconstrictor in action. A 25 per cent solution of magnesium sulphate if administered intravenously, is efficacious for the bite of the red back spider. Magnesium sulphate, administered intravenously, is worthy of trial for the bite of *Latrodectus mactans* (black widow) since the symptoms produced by this spider and those produced by the red back spider are in many respects similar if not identical. The black widow spider is common in parts of the United States, South America and Hawaii.

Annals of Internal Medicine, Lancaster, Pa

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- Thrombo Angitis Obliterans of Patients with Diabetes B T Horton and F N Allen, Rochester, Minn.—p 799
- Human Constitution Study of Correlations Between Physical Aspects of the Body and Susceptibility to Certain Diseases W Freeman, Washington D C—p 805
- *Paroxysmal Ventricular Tachycardia Etiologic Study with Especial Reference to the Type C J Lundy and L L McLellan Chicago—p 812
- Fatal Tetanus Review of Autopsied Cases with Report of Fatal Case L P Gundry and C G Warner, Baltimore—p 837
- Irrigations Ossium in Five Generations H Joachim and M G Wasch, Brooklyn—p 853
- Justification of Diagnosis of Chronic Nervous Exhaustion J W Macy and E V Allen, Rochester, Minn.—p 861
- *Irradiation Treatment of Hyperthyroidism G E Pfahler Philadelphia—p 868
- Cause of Death of Patients with Organic Heart Disease Subjected to Surgical Operation W K Parks, Boston—p 885
- Myeloid Insufficiency R Gottlieb, Montreal—p 895
- Importance of Bronchoscopy in Bronchiectasis H P Martin, Honolulu, Hawaii—p 903

Paroxysmal Ventricular Tachycardia—Lundy and McLellan agree that the basic mechanism underlying this arrhythmia (paroxysmal ventricular tachycardia) is laid down by disease of the ventricular musculature. Evidence is advanced which tends to show a relationship of different kinds of heart disease to different types of this arrhythmia. The mechanism involved in determining the type of this arrhythmia is considered to be heart disease which involves one ventricle more than the other, or a region of one ventricle more than the remainder of the same ventricle and thereby influences the type according to the ventricle, or its part which has the greater involvement. The two types (right and left) may arise from the same ventricle (the left) in different locations. Changed cardiodynamic balance between the two ventricles may be a factor in determining the type by exerting more wear on one ventricle. The basic causes of this arrhythmia are listed and are related to the types as follows: 1 Arteriosclerotic, hypertensive and syphilitic heart diseases are associated in the highest percentage of instances with the left ventricular type. 2 In coronary thrombosis the type is influenced by the location of the infarct. 3 Pulmonary disease, especially pneumonia, was of higher incidence in the right ventricular type. 4 The effect of valvular disease could not be determined. 5 Age exerted an influence. 6 The stage of heart disease was associated in a definite manner. 7 Men develop this arrhythmia twice as often as women. 8 Undetermined heart disease was found in 32 per cent of the reported cases and had a greater relationship to the right ventricular type. 9 No demonstrable heart disease was present in 14 per cent of the cases, most commonly in the right ventricular type. The exciting causes of this arrhythmia are listed and are related to excess digitalis administration, coronary thrombosis, exertion, decompensation, auricular fibrillation, flutter, and nervous and emotional factors. Paroxysmal ventricular tachycardia is seen most frequently in the fourth and fifth decades. The prognosis is utterly grave in the alternating bidirectional type and only relatively less so in the left ventricular, idioventricular and right ventricular in the order named. In the absence of demonstrable heart disease the prognosis is best in the right ventricular type. Death occurred during the period of observation in 47 per cent of the ninety-six patients whose histories were studied.

Radiation Treatment of Hyperthyroidism—Pfahler believes that radiation is indicated in all cases of hyperthyroidism in which the patient is not in crisis or is not suffering from definite pressure symptoms. He recommends operation in all simple or nontoxic goiters unless there is some contraindication, in which case a moderate amount of radiation may be used. At times good results are obtained even with large goiters of this type. After using radiation therapy in 533 cases of goiter the author states that irradiation with either x-rays or radium may be accepted as a useful method of treatment of hyperthyroidism, since the end-results are approximately equal to those obtained by surgery. The fear of operation or delays preceding operation are likely to lead to cardiac impairment. This delay can be eliminated by the use of radiation therapy, which does not involve pain, shock or great inconvenience. Associated medical care and general directions for the conservation of energy are essential. The author employs

x-rays, using 130 kilovolts, 5 milliamperes, at from 25 to 30 cm distance with the equivalent of 6 mm of aluminum filter. The cervical region is divided into four fields, approximately 5 by 15 cm in size. Two of these are anterior and two are posterolateral. The lower border extends down over the thyroid region. The larynx is protected with lead. The rays are directed medially and downward, so that a crossfiring effect is obtained in the region of the thyroid. The four areas constitute one series and they are usually given in one day, this series being repeated in three weeks and then in four weeks the interval being increased according to the improvement obtained. In simple or colloid goiters, from 30 or 40 per cent skin erythema doses may be given through the four fields without danger of producing hypothyroidism. These several small doses will often be sufficient to show a definite decrease in size. In adenomas, localized doses are usually employed the adenoma being cross-fired through two portals. In the mildly toxic cases in which 50 per cent skin erythema dose may be given through each of four portals. This is repeated in three weeks and then the amount is decreased and the interval is increased. In the severer cases it is better to begin with smaller doses not exceeding 40 per cent of the skin erythema dose at the first series. This may be increased at subsequent series. More than six series are rarely necessary. The author employs roentgen radiation as a routine procedure. Of his 533 patients 87.9 per cent were either cured or markedly improved.

Archives of Neurology and Psychiatry, Chicago

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- Study of Aphasia The Charles K Mills Memorial Lecture. T H Weisenburg, Philadelphia—p 1
- Analysis of Sensation in Terms of the Nerve Impulse P Heinbecker, G H Bishop and J O'Leary, St. Louis—p 34
- Role of Hypothalamus in Regulation of Blood Pressure Experimental Studies with Observations on Respiration L Leiter and R R Grinker, Chicago—p 54
- *Comparison of Viscosity of Muscles in Catatonic and Parkinsonian Rigidity I Finkelman, Elgin, Ill.—p 87
- Nature and Origin of Some Tumors of the Cerebellum Medulloblastoma L Stevenson and F Eehlin, New York—p 93
- *Cerebellum and Red Nucleus Preliminary Report on a New Method of Physiologic Investigation A T Mussen, Baltimore—p 110
- *Dissociation of Homologous Muscle Function in Stuttering L E Travis, Iowa City—p 127

Viscosity of Muscles in Catatonic and Parkinsonian Rigidity—Finkelman states that the muscles of patients suffering from catatonic dementia praecox possess a high degree of elasticity and but little internal friction (viscosity). Catatonic rigidity differs in this respect from the rigidity of chronic encephalitis. Pollock and Davis cite the fact that the muscles of patients suffering from parkinsonism possess both high internal resistance of so called viscosity and a large viscous elastic flow. The difference between the muscle tonus curves of chronic encephalitis and catatonia is evidence that the muscle rigidity in these two conditions is not due to physiologic interruption at the same levels.

Method of Investigation of Cerebellum and Red Nucleus—Mussen presents a method with which it is possible to see the reactions that are produced in a normal animal, the success of which depends on the correct insertion and fixation of a bipolar electrode into the region to be examined. The electrode is composed of two iridioplatinum wires fastened to terminals in a vulcanite base and insulated in glass tubes. The base fits into a metal cup, which is screwed into the bone. The cup directs the electrode while it is being inserted, and by means of a bayonet joint attachment holds it firmly. A cylinder with a flange screws over this to keep the tissues from the electrode, and about this the skin and muscles can be closed firmly. Finally a cap is screwed over the cup to protect the terminals. The size of the electrode is 1.5 mm. in diameter the length varying according to the depth from the surface of the bone of the structure to be investigated. The trephine is 5 mm. in diameter. The brain is not exposed, only the dura being punctured. The animal is anesthetized and the head fixed in the stereotaxic instrument. Measurements of the head are taken, the indicator is adjusted and the position of the structure to be examined is marked. The skull is then trephined and the cup of the electrode unit is screwed into the bone. The bipolar electrode is next inserted, the flange is screwed on and then the cap. The skin and muscle are closed

tightly about the unit, and the field of operation is bandaged. On the following day, when the animal has completely recovered from the effects of the operation, the bandages are removed, the animal is entirely unrestrained and the success of the examination depends on its cooperation. By gentle treatment the ordinary cat will respond normally by purring. The presence of the electrodes in the skull does not cause any pain or uneasiness. With the animal in a friendly mood it is put through a number of simple tests. The gait and righting reflexes are observed, and also its ability to jump from a table and walk backward on the hind legs when it is supported by the shoulders. The cat frequently purrs contentedly. The next event consists of attaching the plug from the faradic battery and testing the reactions. The author's report deals with the results obtained from the red nucleus, the anterior region of the thalamus and the cerebellum. The strength of the current is indicated by the sensation produced by the points of the electrode when applied to the tip of the tongue. With the secondary coil at 17 cm a slight tingling is felt at 13 cm, the sensation is painful, contraction begins at 12 cm and is marked at 8 cm.

Stuttering—Travis recorded action currents simultaneously from the two masseter muscles during stuttering and during free speech of both the stutterer and the normal speaker. Twenty-four adult stutterers and an equal number of normal speakers served as subjects. In general, during normal speech the action currents from the two masseter muscles were identical, while during stuttering those from one masseter muscle were strikingly different from those of the other. These observations indicated a unified control by the central nervous system of the two sides of the speech mechanism during normal speech and a lack of such control during stuttering.

Archives of Otolaryngology, Chicago

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- Inflammatory Tumors of the Bronchi. Experimental and Pathologic Consideration. A. Peroni. Milan, Italy.—p. 1.
Importance of Roentgenologic Examination of the Sinuses in Chronic Arthritis with Especial Reference to Cases in Which the Sinuses Are a Silent Focus of Infection. R. G. Snyder, S. Fineman and C. Traeger, New York.—p. 23.
New Intranasal Operation on Ethmoid Sinus. L. P. Monson. San Francisco.—p. 40.
Influence of Excitement on Duration of Postrotational Nystagmus. O. H. Mowrer. Evanston, Ill.—p. 46.
Effects of Drugs on Ciliary Activity of Mucosa of Upper Respiratory Tract. D. M. Lierle and P. M. Moore. Iowa City.—p. 55.

Intranasal Operation on Ethmoid Sinus—Monson describes a new method for the surgical care of the diseased ethmoid sinus. The patient is given a preliminary dose of sodium ethyl barbiturate (from 3 to 4½ grains [0.2 to 0.25 Gm.]) thirty minutes before being sent to the operating room. The mucous membranes are shrunk with tightly wound cotton on the end of wire applicators which have been dipped into a solution of equal parts of 20 per cent cocaine and 1,000 epinephrine hydrochloride. In most cases, a preliminary submucous resection is advisable to obtain more room and provide a better view for the ethmoid dissection. If polyps are present, they must be removed at this time. Then a linear incision is made along the anterior half of the lower border of the middle turbinate and a submucous resection of this structure is performed with a Freer septal elevator. This mucous membrane and the superior turbinate are carefully preserved. The remainder of the middle turbinate is then amputated throughout its length with a pair of curved nasal scissors. The Bulla cells are next broken into by an ethmoid forceps and the dissection is carried backward by successive bites until the anterior wall of the sphenoid sinus is reached. The remainder of the dissection of the ethmoid sinus is then continued by working carefully upward until the solid bone separating the nose from the anterior fossa is reached and cleared of bony partitions and sinus mucous membrane. Likewise, all the partitions are broken down laterally until the lamina papyracea is reached and cleared throughout its length. The agger cells are removed by means of a Pratt ethmoid curet. Halle's method of turning down the flap of mucous membrane in the agger region and chiseling away the cells should be used when there is considerable hypertrophy of the agger cells and the uncinate process. Loose spicules of bone and debris are carefully removed by the use of nasal

forceps. A nasal forceps is placed between the septum and the superior turbinate, and the latter is fractured laterally. Iodoform gauze or gauze containing compound tincture of benzoin is placed loosely in the space between the septum and the medial wall of the ethmoid capsule, in order to hold the latter in place. This is removed in twenty-four hours. The postoperative care consists in the use of mild antiseptic mentholated oily drops after the removal of the gauze. Care must be taken that synechiae are not allowed to form between the septum and the mucous membrane of the medial wall of the ethmoid capsule. These structures soon become adherent to the upper and lateral walls of the nose, providing most of that region with a normal mucous membrane covering.

Effects of Drugs on Ciliary Activity of Upper Respiratory Tract—Lierle and Moore determined the effects of certain drugs on the ciliary activity of strips of tissue mounted in a special microscope chamber and the effects of a larger number of drugs on the ciliary activity of the unbroken mucosa of the turbinates of freshly killed guinea-pigs. They observed that tap and distilled water when applied to the mucosa of the upper respiratory tract cause slowing of the ciliary beat. A 3 per cent solution of ephedrine hydrochloride is not detrimental to ciliary activity but at times increases it slightly. A 5 per cent solution of cocaine hydrochloride is not detrimental to ciliary activity, but 10 and 20 per cent solutions produce definite slowing, with good recovery. Mild silver protein in concentrations of 5, 10 and 20 per cent produces an initial speeding of ciliary activity. This is followed by a slowing, which may be due to the water solvent rather than to the drug. A 0.5 per cent solution of eucalyptol has no deleterious effect on ciliary activity. A 0.5 per cent menthol and, to a greater degree, 1 per cent menthol have a mildly depressing effect on ciliary activity. Thymol in 1 and 0.5 per cent concentrations and 1 per cent eucalyptol, in the order named, are definitely detrimental to ciliary activity. A 1,000 solution of epinephrine hydrochloride, 2 per cent zinc sulphate and 2 per cent mercurchrome in the order named, are definitely detrimental to ciliary activity. Silver nitrate in a 0.5 per cent concentration is immediately and fatally detrimental to ciliary activity. In no instance was it possible to start the cilia beating again after its application.

Archives of Surgery, Chicago

28 1222 (Jan) 1934

- *Teratoma Testis. Fifteen Cases Studied Microscopically and Biologically. C. W. Stelle. Brooklyn.—p. 1.
Experimental Lumbar Sympathectomy. I. Effects on Vascular Tree. Reactive Hyperemia and Temperature of Skin of Extremities. P. E. McMaster and N. W. Roome. Chicago.—p. 12.
*Tumors of Sympathetic Nervous System. Neuroblastoma. Paraganglioma. Ganglioneuroma. D. Lewis and C. F. Geschickter. Baltimore.—p. 16.
Congenital Cartilaginous Rests in the Neck. W. B. Matthews. Chicago.—p. 59.
*Ewing's Tumor (Primary Intracortical and Subperiosteal Lymphangio Endothelioma). Report of Case. D. A. De Santo. New York.—p. 66.
Osteomyelitis of the Ilium. C. E. Badgley. Detroit.—p. 83.
Pancreatic Tissue in the Wall of the Stomach. E. S. J. King and P. MacCallum. Melbourne, Australia.—p. 125.
Experimental Occlusion of the Pulmonary Artery. Anatomic Study. C. F. Horne and C. G. Warner. Baltimore.—p. 139.
Id. Pathologic Physiology. C. F. Horne and C. G. Warner. Baltimore.—p. 150.
Return of Gastric Acidity After Subtotal Gastrectomy and Double Vagotomy. P. F. Shapiro and B. N. Berg. New York.—p. 160.
Absorption of Urea from the Bladder. F. A. Fender. Boston.—p. 180.
*Treatment of Infected Wounds of the Brain with Bacterial Filtrates. J. R. B. Branch, A. A. Lempert and R. S. Lyman. Shanghai, China.—p. 189.
A Review of Urologic Surgery. A. J. Scholl. Los Angeles. F. S. Judd. Rochester, Minn. L. D. Keyser. Roanoke, Va. J. Verbrugge. Antwerp, Belgium. A. A. Kutzmann. Los Angeles. A. B. Hepler. Seattle. and R. Gutierrez. New York.—p. 199.

Teratoma of the Testicle—After a study of fifteen cases of malignant tumor of the testicle and a review of the literature Stelle is of the opinion that practically all malignant testicular growths are either embryonal carcinomas or embryonal adenocarcinomas of teratomatous origin. No other type of malignant disease of the testicle has been seen at the United States Naval Hospital since June 1930. That another type does occur has been pointed out by Stevens and Ewing and by Bell who described an adult teratoma. In the cases in which either the original tumor or active metastases were present prolan A could be detected in the urine biologically, by means

of the method of Aschheim and Zondek. The author gives the diagnosis, differential diagnosis and treatment of teratoma of the testicle and emphasizes the importance of making a quantitative test for prolan A in all cases that show a negative qualitative reaction. Only fifteen cases of teratoma of the testicle occurred in 14,381 general admissions to the hospital in a period of twenty-eight months. During the same period there were approximately 620 cases of cancer, in 0.024 per cent of which the growth was a teratoma. Teratoma of the testicle is relatively radiosensitive, and treatment by external radiation and by surgical intervention produces results varying from complete cures to palliative effects, assuring the patient months or years of life comparatively free from disease.

Tumors of Sympathetic Nervous System—The three types of tumors (neuroblastoma, paraganglioma and ganglioneuroma) that Lewis and Geschlechter discuss develop from cells that wander out from the neural crest during embryonic life. The undifferentiated cell may give rise to the neuroblastoma, and as differentiation proceeds the more adult types of paraganglioma and ganglioneuroma may develop. The occurrence of all these types of tissue in the same tumor indicates a common origin; different degrees of differentiation accounting for the occurrence of the more adult type of tissue. Recently Joergensen has reported a case of hypertension associated with a retroperitoneal ganglioneuroma. Softening in the brain and spinal cord was also noted. In discussing this case he stated that paraganglioma has been found associated with hypertension without other discoverable etiologic factors. Some paragangliomas are composed of epinephrine-bearing tissue while ganglioneuromas do not contain such elements. One may conclude therefore that 'in spite of the origin of these two tumors from the common primitive type of cell when hypertension is associated with ganglioneuroma it is merely incidental. It is believed that the hypertension in this case can best be explained on the basis of the renal and generalized vascular changes. No other ganglioneuromas have been reported in which hypertension was a part of the clinical picture.

Ewing's Tumor (Primary Intracortical and Subperiosteal Lymphangio-Endothelioma)—De Santo reports a case of primary intracortical and subperiosteal lymphangio-endothelioma so designated because the tumor could be traced to the perivascular lymphatics of the haversian canals and to those beneath the periosteum, and because the tumor cells secreted lymph. The clinical course and the gross and microscopic pathologic picture of this tumor satisfied every criterion of so-called Ewing's tumor. The conception that Ewing's tumor is a primary osteolytic tumor of the medullary cavity is erroneous. Probably in every true case Ewing's tumor is a lymphangio-endothelioma, originating in the lymphatic endothelium of the haversian canals and in that beneath the periosteum. Involvement of the medullary cavity while prominent, is probably secondary. This concept is in harmony with anatomic knowledge of the lymphatics of the bones, for lymphatics have never been demonstrated in the bone marrow, whereas perivascular lymphatics in the cortex and beneath the periosteum are well known. Even should the existence of lymphatic spaces in the bone marrow be demonstrated at a future date the validity of the concept would not be destroyed, since medullary involvement might readily occur by transformation of normal lymph endothelium into a neoplasm.

Treatment of Infected Brain Wounds with Bacterial Filtrates—Branch and his associates give the results they obtained in treating with bacterial filtrates eight patients with open infected wounds of the head involving the brain. Two patients with severely infected wounds on the surface of the brain showed marked improvement within four days following frequent applications of a polyvalent streptococcus staphylococcus filtrate to the dressings. Prior to treatment with the filtrate they had shown no improvement with irrigation and dressings with surgical solution of chlorinated soda. The authors stress the points that appear to be requisite for success with this type of treatment: 1. Exposure must be complete, so that the whole infected surface is brought in contact with the dressings. 2. The dressings should be moistened with the filtrate at frequent intervals. 3. The infection must be focal and limited to the surface of the wound. Theoretically this therapy should work with rapidity when the proper filtrate is

brought in good contact with bacterial growth in sufficient concentration to cause lysis of the organisms. Practically, the results seem to become apparent within about four days or less in cases with surface infection of thoroughly exposed wounds when the dressings are repeatedly moistened with the proper filtrate. Failure to obtain improvement within four days may be taken as an indication of improper contact or of insufficient concentration that is, of a poorly matched filtrate, inadequate exposure of the wound, a deep or disseminated infection or some other clinical complication.

Arkansas Medical Society Journal, Fort Smith

30 163 186 (Jan.) 1934

The Irritable Colon Clinically S. J. Wolfemann Fort Smith—p. 163
Id. A Result of Vitamin Deficiency J. S. Levy Little Rock—p. 167
Relationship Between Public Health and the Practicing Physician F. O. Mahony El Dorado—p. 173

California and Western Medicine, San Francisco

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Transurethral Prostatic Resection General Estimate and a Special Study of Twenty Physician Patients G. J. Thompson Rochester Minn.—p. 1
Anthraxis Clinical Summary A. C. Reed San Francisco—p. 6
Nonmalignant Lesions of Colon Their Roentgenologic Diagnosis R. G. Taylor Los Angeles—p. 11
Insulin Lethargy in Ambulatory Patient H. Clare Shepardson San Francisco—p. 14
Chronic Carbon Monoxide Poisoning Present Day Hazard P. Michael Oakland—p. 19
*Perineal Repair New Method H. S. Fist Los Angeles—p. 23
Surgery in Treatment of Pulmonary Tuberculosis A. L. Brown and S. R. Truman San Francisco—p. 25
Local Treatment of Eczema in Infancy and Childhood H. E. Miller San Francisco—p. 31
*Fractures at Lower End of Radius Rolling Pin Method for Their Reduction W. A. Clark Pasadena—p. 35
Nasal Sinuses Present Status of Their Treatment A. B. Wesch San Diego—p. 38

Perineal Repair Following Labor—Fist devised a simple technique that brings perineal muscle and fascia together in front of the rectum by means of interrupted buried, submucous, mattress eight sutures. Incision of the mucosa is not necessary. This procedure is especially advisable when assistance is scarce and sterilization uncertain. With the patient in the dorsal position and under anesthesia the vulva and vagina are cleansed. A gauze pack is placed in the vagina to keep the field clear of blood. Perineal sutures may be inserted while waiting for separation of the placenta but should not be tied before the uterus is emptied. The first suture is placed high in the vagina to catch the high levator fibers and each succeeding suture is placed a little lower. For perineal repair the right vulvar tissues are retracted and the needle is inserted on the left side of the vagina its point swept well laterally and posteriorly toward the spine of the ischium so as to secure a good wide bite of the left levator ani fibers then avoiding the rectum one brings the needle medially and finally anteriorly out through the mucosa. The needle is reinserted at the hole made by its exit. The point is kept just under the mucosa and brought across to the right side of the vagina and out and the needle is reinserted at the point of its exit and directed laterally and posteriorly, then medially and anteriorly, to encircle the right levator fibers and again brought out through the mucosa. At its last point of exit the needle is reinserted kept just under the mucosa and brought back across the vagina to the first point of insertion and out. The suture ends have now been brought together. Holding them taut with a hemostat, to keep the levator fibers together simplifies the insertion of the next suture. Before the sutures are tied, the perineum is relaxed by removing the vaginal pack and retractor and further extending the thighs. A finger is inserted into the rectum to feel for sutures and remove any that have penetrated. The sutures are tied from above downward snugly enough to coapt muscle and fascia but should not be pulled tight. The levator fibers of both sides are thus brought together between the rectum and vagina. The suture ends are cut at least one-fourth inch from the knot. After the repair has been completed the perineum is palpated to make certain that the united levator fibers may be felt as a firm, thick mass of muscle. When the mucous membrane is torn or after episiotomy, repair is completed in much the same manner except that the muscles may be more easily reached.

through mucosal openings. When the muscles have been sutured, the mucosa may be closed by the usual means.

Reduction of Fractures of Radius—Clark found that the most serviceable thing to use in reducing fractures of the lower end of the radius is a roller about 1 inch in diameter and 5 inches long, the ends being smaller than the middle so that it can be conveniently handled. With this simple instrument the force can be accurately placed and easily controlled. The patient should be lying down with the broken arm on a firm table. Adequate anesthesia is essential. The arm is laid palm down over a triangular wooden block which serves as a fulcrum under the anterior aspect of the radius about 2 cm proximal to the fracture. The assistant holds the elbow down firmly against the table and if there is excessive posterior displacement of the distal fragment he also holds the hand in hyperextension at the wrist. The operator, facing proximally with relation to the arm, places the roller across the dorsal aspect of the radius at a right angle to the shaft, just above the distal fragment. With one hand on each side of the patient's wrist the operator's thumbs are hooked over the handle of the roller. Firm pressure is made so that the roller is felt to be right down on the bone. This pressure is maintained as the instrument is rolled distally against the distal fragment. It first impinges on the posterior corner of this fragment the force thus being in a distal direction with relation to the fragment. As the roller continues on toward the wrist the force changes gradually from distal to anterior thus pushing the fragment into the normal position. This rolling process usually has to be repeated several times. If palpable deformity persists more force in the anterior direction should reduce it. Fractures of both radius and ulna from 3 to 5 cm above the wrist with complete posterior displacement and overriding of the distal fragment can be reduced by the roller method. For immobilization after reduction, anteroposterior wood splints are best. They can be accurately applied with felt pads to produce pressure at the proper places over the fragments. They also permit easy inspection of the skin for possible pressure sores.

Canadian Medical Association Journal, Montreal

30 1118 (Jan.) 1934

- Some Unusual Manifestations of Tuberculosis H Rolleston Haslemere Surrey England—p 2
Some Pitfalls in Diagnosis of Conditions Giving Rise to Chronic Abdominal Discomfort J S McEachern Calgary Alta—p 3
Weight Taking in Prenatal Care V J Harding and H B Van Wyck Toronto—p 14
Evolution of Cancer from Benign Cystic and Papillomatous Lesions of the Breast E M Eberts Montreal—p 17
Radium Treatment of Primary Carcinoma of the Breast G Keynes London Ont—p 24
Tuberculous Rheumatism A LeSage Montreal—p 30
Nasal Injuries J W Gerrie Montreal—p 37
Etiology and Medical Treatment of Diseases of Extrahepatic Biliary Tract C Hunter Winnipeg Manit—p 41
Cancer Research F J H Campbell London Ont—p 46
The Cancer Problem T A G Starr Toronto—p 48
Early Diagnosis of Cancer of Tongue and Lip W A Curry Halifax N S—p 50
Blood Pressure Normal and Abnormal J M Livingston Waterloo Ont—p 54
Skin Lesions of Face F Trow Toronto—p 57
Diverticulitis E H Shannon Toronto—p 59

Weight Taking in Prenatal Care—Harding and Van Wyck believe that gains up to 5 pounds (2.3 Kg.) a month in pregnancy can be considered normal. It will be rare to find toxemias developing in this group. Gains from 5 to 8 pounds (2.3 to 3.6 Kg.) a month should be regarded with suspicion. Such patients should be placed on a salt-poor diet and restricted in caloric intake. They should be watched more closely than the strictly normal woman. Gains of 8 pounds and more a month indicate a potential toxemia. The closest supervision should be exercised over such patients. The gains in weight have preceded the more usual signs of toxemia, i.e. albuminuria, edema and hyperpnea. If water retention can be prevented or controlled, the toxic process may be averted. The small number of toxemias in this series (about 1 per cent) justifies the practice of weight taking in prenatal care. Although definite signs of toxemia developed in a few cases not exhibiting convulsions the maternal mortality was zero. In view of their observations the authors urge every obstetrician and general practitioner to practice weight taking during pregnancy. The

use of scales should be general in every maternity and prenatal clinic. The taking and charting of the weight involves no expensive equipment or laboratory training. This duty could well be carried out by the nurse in charge, who would report any gains considered excessive.

Georgia Medical Association Journal, Atlanta

23 142 (Jan.) 1934

- Chronic Recurrent Migratory Ulcerative Colitis of (Baigen) Diplo streptococcus Infection Type H Joiner Gainesville—p 3
Collapse Treatment in Tuberculosis and Other Pulmonary Conditions H E Crow M F Haygood K N Joseph and F C Wheelchel Alto—p 7
Fistula in Ano G T Eubanks Atlanta—p 12
Thrombo Angitis Obliterans R L Kennedy Metter—p 17
Atabrine in the Treatment of Malaria R L Miller Waynesboro—p 23

Indiana State Medical Assn Journal, Indianapolis

27 152 (Jan.) 1934

- Brain Tumors E Sachs St Louis—p 1
Diagnosis of Maxillary Sinusitis by Use of Opaque Oils R C Becker and J N Collins Indianapolis—p 4
Amebic Dysentery P D Crimm J W Straver and D M Short Evansville—p 8
Office Treatment of Rectal Diseases H H Wheeler Indianapolis—p 10
What Shall We Teach the Public Concerning Health and Diseases? T B Rice Indianapolis—p 13
Early Days of Flower Mission Training School W A Wishard Indianapolis—p 21

Iowa State Medical Society Journal, Des Moines

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- Treatment of Functional Menstrual Irregularities of Young Women Della G Drips Rochester Minn—p 1
Diabetes and Its Complications E B Winnett Des Moines—p 7
Rheumatic Heart Infection in Childhood R Stahl Fort Dodge—p 12
Toxoid in Diphtheria Prevention B A Melgaard Sioux City—p 14
Nondiphtheritic Laryngitis D H Kelly Des Moines—p 15
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Journal of Allergy, St Louis

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- Studies on Pollen and Pollen Extracts VI Chemical Nature of Pollen Allergens L Unger Marjorie B Moore H W Cromwell and Constance H Seeler Chicago—p 115
Constitution and Allergic Manifestations I Age Sex Incidence of Allergic Conditions Preliminary Report T Nelson Chicago—p 124
Skin Reactions to Tobacco Antigen in Smokers and Nonsmokers J Harkavy New York—p 131
Evaluation of Skin Reactions in Food Sensitive Patients A H Rowe Oakland Calif—p 135
Importance of Adequate Tests and Their Proper Evaluations Zella White Stewart Iowa City—p 148
*Allergic Relations of Normal and Abnormal Floras of the Intestine R L Benson Portland Ore—p 152
Probable Etiology of Pollinosis in Gallup New Mexico A Watry and R W Irmson Los Angeles—p 166
Minor Allergy Its Distribution Clinical Aspects and Significance W T Vaughan Richmond Va—p 184
*Drinking Water as a Cause of Asthma S H Watson and C S Kubler Tuc on Ariz—p 197

Allergic Relations of Floras of Intestine—Benson states that the pathogenic gram positive cocci found in stool culture of asthmatic patients and other allergic subjects behave as allergens. Their action combines in varying degrees type specificity and species specificity. A bacterial allergen of the latter nature is reported. The group specificity of normal flora bacteria was studied and certain properties of the antigens are described. It is the author's belief that alterations in the integrity of the colonic mucosa make possible the absorption of products of the ordinary pathogens and likewise of the so called normal flora. The behavior of the two differs in marked degree but both must be considered as possible allergic factors in nonseasonal cases.

Drinking Water as a Cause of Asthma—Watson and Kubler report a case in which it was proved that drinking water was the cause of asthma and so called functional colitis. It is generally known that the chlorine radical of sodium hypochlorite is the effective part in making water safe for drinking. The sodium is inert. It therefore seems reasonable to believe that it was the chlorine radical which was responsible for the asthma in this case and not the sodium. As further corroboration

ration, the patient salts his food with sodium chloride and can take sodium bicarbonate without untoward effect. It seems possible, in view of this particular experience, that chlorine in drinking water may be the cause of persistent residual symptoms in a certain number of allergic patients not otherwise relieved by the present day rather exhaustive methods of treatment.

Journal of Biological Chemistry, Baltimore

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- Precipitation of Nitrogenous Substances by Alkaline Mercuric Reagents with Especial Reference to Urine M. R. Everett, Fay Shppard and Emma O. Johnson, Oklahoma City—p. 1
- *Improvement in Van Slyke Method for Blood Gas Analysis F. Rappaport and Klara Kock-Molnar, Vienna, Austria—p. 29
- Studies in Gastric Secretion V. Composition of Gastric Juice as a Function of Its Acidity F. Hollander, Cold Spring Harbor, N. Y.—p. 33
- Ultrafiltration of Malt Amylase Solutions Cornelia T. Snell, New York—p. 43
- Comparison of the Methods for the Collection of Blood to Be Used in the Determination of Glucose J. M. Looney and Hazel M. Childs, Worcester, Mass.—p. 53
- Metabolism of Sulphur XXI Comparative Studies of Metabolism of L-Cystine and α -Methionine in the Rabbit R. W. Virtue and H. B. Lewis, Ann Arbor, Mich.—p. 59
- Catalytic Effect of Ferrierythrin on Oxygen Absorption of Oleic Acid B. T. Chow and S. C. Kamerling, Cambridge, Mass.—p. 69
- Necessary Versus Optimal Intake of Vitamin G (B_{12}) H. C. Sherman and L. N. Ellis, New York—p. 91
- Method for Quantitative Estimation of Indoxyl Compounds in Blood H. Sharlit, New York—p. 115
- Creatinuria Among Adolescent Males A. B. Light and C. R. Warren, Lawrenceville, N. J.—p. 121
- Fluctuations of Blood Sugar in Vitro I. Newirth, New York—p. 129
- Method for Analysis of Tissues J. B. Graesser, J. E. Ginsberg and T. E. Friedemann, Chicago—p. 149
- Iron Content of the Whole Blood of Normal Individuals O. M. Helmer and C. P. Emerson, Jr., Indianapolis—p. 157
- Micro-method for Determination of Uronic Acids B. Burkhart, L. Baur and K. P. Link, Madison, Wis.—p. 171

Blood Gas Analysis.—By modifying the reagent used in the Van Slyke method for blood gas analysis, Rappaport and Kock-Molnar have found a way to avoid the clotting without making the analysis more difficult. Their reagent consists of 3.3 Gm. of potassium ferricyanide, 3.3 Gm. of saponin, 450 Gm. of urea, 5 cc. of octyl alcohol and enough distilled water to make 1,000 cc. The necessary quantity of lactic acid (0.66 cc. of normal lactic acid to 6 cc. of reagent) is put into the cup of the apparatus immediately before the reagent is made air free by evacuation. The authors state that this reagent may be used for macro analyses and micro-analyses of all blood gases in one sample and for the determination of carbon monoxide in the blood after the absorption of the oxygen with pyrogallol or hydrosulphite. They also succeeded in performing oxygen and carbon dioxide analyses in Van Slyke's volumetric micro-apparatus. Their analyses agreed exactly with those performed with the original reagent.

Journal of Experimental Medicine, New York

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- Investigation of the Etiology of Mumps C. D. Johnson and E. W. Goodpasture, Nashville, Tenn.—p. 1
- Studies on Nervous System in Deficiency Diseases II. Lesions Produced in the Dog by Diets Lacking the Water Soluble, Heat Stable Vitamin B₁ (G) H. M. Zimmerman and Ethel Burack, New Haven, Conn.—p. 21
- Nutritional Myopathy in Ducklings A. M. Pappenheimer and Marianne Goettsch, with assistance of Anna Alexieff, New York—p. 35
- An Investigation into the Significance of Hormone Factors in Experimental Poliomyelitis C. W. Jungblut and E. T. Engle, New York—p. 43
- Study on Bacterial Proteins with Especial Consideration of Gonococcus and Meningococcus A. K. Boor and C. P. Miller, Chicago—p. 63
- Carbohydrates of Gonococcus and Meningococcus I. The Alcohol Precipitable Fraction C. P. Miller and A. K. Boor, Chicago—p. 75
- Toxic Properties of Serum Extracts of Hemolytic Streptococci Julia T. Weld, New York—p. 83
- *Further Observations on Pathologic Similarities Between Experimental Scurvy Combined with Infection and Rheumatic Fever J. F. Rinehart, C. L. Connor and S. R. Mettler, San Francisco—p. 97

Similarities Between Experimental Scurvy Combined with Infection and Rheumatic Fever.—Rinehart and his associates observed that in the guinea-pig chronic scurvy with superimposed infection (beta streptococcus) and to a lesser extent chronic scurvy alone produces an arthropathy with striking pathologic similarities to that of rheumatic fever and the

closely allied condition of rheumatoid arthritis. Considerable significance is attached to the widespread occurrence in the experimental animal subjected to scurvy and infection, and to a lesser extent in scurvy alone, of lesions similar to if not identical with the fibrinoid degeneration that has been considered the fundamental lesion of rheumatic fever. A subcutaneous nodule essentially similar to the subcutaneous nodules of rheumatic fever was observed in one experimental animal. The authors call attention to a group of general pathologic changes frequently observed in rheumatic fever, which were also found in the experimental animals subjected to scurvy and infection. These include degenerative changes in skeletal muscle, focal necrosis in the liver, fibrosis of the malpighian bodies in the spleen, erythrophagocytosis in the lymph nodes and focal lymphocytic accumulations in the kidneys. They consider the problem of hemorrhage and suggest that a scorbutic state may be the basis of the hemorrhagic manifestations common to the acute phases of rheumatic fever. The unsatisfactory nature of previous experimental attempts to reproduce the pathologic changes of rheumatic fever is noted. The lesions produced by subjecting the guinea-pig to the combined influence of scurvy and infection are considered to be fundamentally similar in character and distribution to those of rheumatic fever. The pathologic observations recorded in this and a previous report are believed to offer evidence that the disease known as rheumatic fever may be the result of the combined influence of scurvy and infection. A subclinical degree of scurvy may constitute the rheumatic tendency in which the added factor of infection causes the development of rheumatic fever or possibly the closely allied condition of rheumatoid arthritis. Epidemiologic and clinical considerations appear to afford supportive evidence to this concept.

Journal of General Physiology, Baltimore

17 327-486 (Jan. 20) 1934 Partial Index

- Influence of Molecular Weight Antigen on Proportion of Antibody to Antigen in Precipitates W. C. Boyd and S. B. Hooker, Boston—p. 341
- Bacterial Cell Metabolism Under Anaerobic Conditions H. H. Walker, C. E. A. Winslow and M. Grace Mooney, New Haven, Conn.—p. 349
- Relation Between Toxicity, Resistance and Time of Survival and on Related Phenomena L. Reiner, Tuckahoe, N. Y.—p. 409
- Blair's Condenser Theory of Nerve Excitation W. A. H. Rushton, London, England—p. 481

Journal of Immunology, Baltimore

26 180 (Jan.) 1934

- Passive Sensitization of Guinea Pig with Rabbit and Horse Antipneumococcus Type I Serums Julia Mehlman and Beatrice Carrier, Seegal, New York—p. 1
- Studies on Antigenic Substances of Clostridium Parabotulinum II J. B. Gunnison, San Francisco—p. 17
- Study of Antigenic Properties of Lecithin and Cephalin A. Wadsworth, Elizabeth Maltaner and F. Maltaner, Albany, N. Y.—p. 25
- *Localization and Fate of Bacteria in Tissues F. L. Sullivan, E. F. Neckermann and P. R. Cannon, Chicago—p. 49
- Depression of Phagocytosis by Products of Staphylococci R. M. Pike—p. 69

Localization and Fate of Bacteria in Tissues.—Sullivan and his associates observed that living staphylococci and paratyphoid bacilli injected intravenously into rabbits are quickly removed from the circulating blood stream and are localized particularly in the liver and spleen, where they are ingested and destroyed by phagocytes. The lungs, bone marrow and omentum remove distinctly fewer numbers, and such organs as the kidney, suprarenal, striated muscle, brain, testicle and thyroid remove negligible numbers under comparable conditions. In other words, the primary localization occurs principally in the two organs containing many macrophages and a sinusoid type of blood flow, whereas practically no localization occurs in organs poorly supplied with macrophages and with a rapid blood flow through vessels lined with ordinary endothelium. Active immunization does not significantly affect the comparative degrees of localization for different organs of the same animal, although it leads to a more energetic removal of the bacteria from the blood stream by the liver and spleen. Bacteria are concentrated more quickly in the liver and spleen of immune than of normal animals but are also killed more rapidly within these organs. Active intravenous immunization leads to a stimulation of mesenchymal tissues, particularly in the liver and spleen, with a resulting elevation of the functional state of the system of macrophages.

Journal of Pediatrics, St Louis

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- Rickets E Gorter Leiden Holland—p 1
Hodgkin's Disease in Childhood Clinical Study with Resume of Literature to Date C A Smith Boston—p 12
Multiple Ulcers of Stomach in a New Born Infant with Staphylococcus Septicemia Ethel C Dunham and M T Shelton New Haven Conn—p 39
Rupture of Stomach in New Born Infants Report of Two Cases Ethel C Dunham and R M Goldstein New Haven Conn—p 44
Unusual Case of Esophageal Obstruction in a Child C S Chlotta and L N Claiborn New Haven Conn—p 51
Gonorrheal Peritonitis in Female Children E H Harris and R Berman Minneapolis—p 59
Limitations of Cerebral Milk Diets for Hemoglobin Formation C A Elvehjem E B Hart and W C Sherman Madison Wis—p 65
Neutralization of Schick Reaction by Human Blood H E Thelander San Francisco—p 75
Observations on Management and Treatment of Juvenile Diabetes G B Bader New York—p 77
Determination and Evaluation of Diets in Children with Chronic Heart Disease M M Maliner Brooklyn and Beatrice Bergman New York—p 87
Exstrophy of Bladder (Persistent Cloaca) Associated with Intestinal Fistulas Brief Analysis of Thirty Six Cases of Anal and Rectal Anomalies from Records of Charity Hospital in New Orleans J R Veal and Elizabeth M McFetridge New Orleans—p 95
Use of Lassar's Paste in Weeping Eczema of Infancy Note P J White St Louis—p 104
The Age of Choice for Operations of Choice in Infancy and Childhood T H Lanman, Boston—p 107

Management of Juvenile Diabetes—Bader chooses diets for feeding diabetic children as nearly similar to the diets fed normal children as possible. They are high in carbohydrates and low in fats. From 2 to 3 Gm of protein per kilogram of body weight is allowed unless the child is considerably underweight and undersized. An equal number of fat grams is given. The remainder of the total calories required is furnished as carbohydrates. The question of the amount of food in calories to be given to a particular diabetic child varies as in the normal child according to its individual needs. One must be guided by the child's response in growth and gain in weight. The advantages of such a diet are described. At least two daily doses of insulin are required, one before breakfast and the other before supper. Sometimes three daily doses of insulin are advantageous. A third dose of insulin has an economic advantage, because it reduces the total insulin required for twenty-four hours. It also reduces perceptibly the amount of insulin necessary per dose and thus reduces the likelihood and frequency, as well as the severity, of insulin reactions. A detailed account is given of a diabetic child on such a regimen. It includes a method of computing the diet and the insulin, the manner of dividing the diet and the insulin, a technique for desugarizing and stabilizing, and subsequent care. The importance of proper diabetic control is emphasized because it is the uncontrolled diabetic child who does not thrive.

Journal of Urology, Baltimore

31 1 120 (Jan) 1934

- Surgical Repair of Hydrophrosis, with Reference to Technical Points Favoring Relief C P Mathe and E de la Peña San Francisco—p 1
Lateral Pyelogram Investigation of Its Value in Urologic Diagnosis H O Mertz and H G Hamer Indianapolis—p 23
Carcinoma and Tuberculosis Occurring in the Same Kidney Review of Literature and Case Report E Rupel Indianapolis—p 57
Intrarenal Cystic Myxolipoma D R Melen and I Gaspar Rochester N Y—p 69
Embryoma of Kidney in an Infant with Osseous Metastases Report of Case E R Mintz Boston—p 79
Nonspecific Metastatic Epididymitis W W Buckingham Ann Arbor Mich—p 87
Nephrectomy Table N F Ockerblad Kansas City Kan—p 117

Value of Lateral Pyelograms in Urologic Diagnosis—Mertz and Hamer state that lateral pyelography is practical and can be easily performed on the ordinary x-ray cystoscopic table without added discomfort or risk to the patient. The renal pelvis and ureter can be satisfactorily visualized in the majority of cases. A study of the lateral pyelogram should include the vertical and anterior position of the kidney, the degree of horizontal and vertical rotation of the kidney, the outline of the pelvis as compared to that in the anteroposterior pyelogram and the course followed by the ureter. The authors' cases have been too few to establish general rules of interpretation, yet they feel that their experience is sufficient to justify a general report.

Kansas Medical Society Journal, Topeka

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- Problems of Chronic Arthritis R L Haden Cleveland—p 1
Congenital Hypertrophic Pyloric Stenosis E G Padfield Salina—p 6
Vincent's Infection J K Attwood La Crosse—p 10

Maine Medical Journal, Portland

25 1 20 (Jan) 1934

- My Guardian Angel J A Spalding Portland—p 5
Values in Diagnostic Errors C H Jameson Rockland—p 7
Deafness Frequency Classification and Some of the Common Causes S E Fisher Portland—p 11

Michigan State M Society Journal, Grand Rapids

33 1 48 (Jan) 1934

- Transurethral Electroresection of Bladder Neck Obstruction H L Kretschmer Chicago—p 1
Nasal Infection in Cataract J G Huizinga Holland—p 5
Report of Four Foreign Body Cases with Endoscopic Removal W K Slack Saginaw—p 10
Discussion of Gallbladder Disease and Its Management H J Vanden Berg Grand Rapids—p 12
Preventive Medicine as Cared for by the Family Physician C M Byington Battle Creek—p 15
Pulmonary Complications Following Anesthesia C Lemley Detroit—p 18
Lymphosarcoma Invading the Orbit R J Sisson Detroit—p 21
Practice of Medicine in Germany A H Mollmann Grand Rapids—p 22
Neosarsphenamine Treatment of Intestinal Protozoal Diseases in Man with Especial Reference to Amebic Dysentery W I Chandler Lansing—p 27

Neosarsphenamine Treatment of Intestinal Protozoal Diseases—Chandler treated several hundred infections involving eleven different species of intestinal protozoa of man with three intravenous injections of from 0.6 to 0.9 Gm of neosarsphenamine at intervals of five days. He presents protocols of seventeen cases of amebic dysentery, in all of which the organism was absent after three injections of neosarsphenamine. Two of these cases were observed over a period of ten years, during which time six stool examinations in one case and ten in the other one showed no *Endamoeba dysenteriae* organisms. The author believes that these organisms are more easily eliminated from the digestive tract by the use of intravenous injections of neosarsphenamine than some of the other intestinal protozoa. In the initial experiments on this organism, 0.6 Gm was used as a standard dose. Other organisms, especially the trichomonads and spirochetes, required as much as 0.9 Gm to bring about their complete elimination. Since the microscopic examination of a single stool or even the examination of a series of stools may fail to reveal all the intestinal protozoa that may be present in any given case, a maximal dose (0.9 Gm in the case of men and 0.75 in women patients) has been used by the author in all intestinal protozoal infections for the past thirteen years. Following the intravenous injection of 0.6 Gm of neosarsphenamine, the organisms were absent from the third consecutive stool. Often these were not found in the second stool. In one case in which 0.3 Gm was injected the organisms were absent from the second and third stools following the injection and from three consecutive stools examined one month after the injection but were found in stools examined nine months after the injection. In subsequent treatment three injections of 0.6 Gm were given at intervals of five days. No organisms were found in stools examined at intervals for several years. These seventeen cases represent data of the initial experimental cases. During the past fourteen years he has treated a large number of cases with three intravenous injections of from 0.6 to 0.9 Gm of neosarsphenamine. Symptoms rapidly disappeared, even in cases of liver abscesses and arthritis.

Missouri State Medical Assn Journal, St Louis

31 1 44 (Jan) 1934

- Development of the Tear Searing Operation Up to Date P C Krenfeld Chicago—p 1
Medico-sociologic Aspects of Chronic Glaucoma J Green St Louis—p 6
Relationship Between Diseases of the Nose and Throat and Pulmonary Diseases L W Dean St Louis—p 13
Anorectal Infection Its Relation to General Medicine F B Campbell Kansas City—p 15
Simplicity in the Treatment of Anorectal Disease P A Worley Kansas City—p 17
Referred Symptoms of Anorectal Diseases Their Probable Molecul Production C H Thiele Kansas City—p 20

- Pernicious Anemia with Neurologic Symptoms and Normal Blood Picture Report of Four Cases G W Robinson, Jr and P Shelton, Kansas City—p 25
- Epithelial Tumors of the Skin R I Sutton Jr Kansas City—p 28
- Surgical Treatment of Bleeding Duodenal Ulcer C J Hunt Kansas City—p 31

Nebraska State Medical Journal, Lincoln

10 140 (Jan) 1934

- Complications of Pulmonary Tuberculosis L A Conway Colorado Springs Colo—p 1
- Diverticulitis F I Wilson Stuart—p 6
- Nutritional Factor in Tuberculosis V F Levine Omaha—p 10
- Carcinoma of Rectum and Its Management I L Moon Omaha—p 13
- Use of Live Maggots in Treatment of Osteomyelitis S J Carrizzo Omaha—p 17
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- Thyroid Gland M Immert Omaha—p 21
- Migraine O C Nielsen Omaha—p 21

New England Journal of Medicine, Boston

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- Place of Iodine in Treatment of Cancer H M Clark and I S Pilcher 2d Boston—p 117
- Phases of Foreign Protein Sensitization in Human Beings T D Jones and J R Mote Boston—p 120
- Gastrointestinal Allergy Associated with Transient Intraventricular Block J C Herlihy D T Callison Boston and J Brudino Quincy Mass—p 123
- The Association of Diabetes and Tuberculosis III Clinical Features H I Root Boston—p 127
- Arthritis and Systemic Involvement as Exemplified in a Group of Dead Arthritics H A Dixon and K A Spencer Boston—p 147
- Neurofibromatosis in Children Report of Two Cases C C Stewart Hanover N H—p 150

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- Agranulocytic Angina Associated with the Menstrual Cycle H Jackson Jr and D Merrill Boston with assistance of Marion Dunne Boston—p 175
- Observations on Possible Relation Between Agranulocytosis and Menstruation with Further Studies on Case of Cyclic Neurotoxicity W P Thompson New York—p 176
- Mechanics and Reduction of Displaced Upper Femoral Epiphysis J D Adams Boston—p 178
- Junjunct in Arthritis Its Analgesic Action N Sidel and M I Abrams Boston—p 181
- George W Gray Lecture on Medical Ethics The Theology of Medicine R B Osgood Boston—p 182
- *The Association of Diabetes and Tuberculosis IV Treatment Prognosis and Prevention H I Root Boston—p 192
- Application of Psychoanalytic Concepts to General Psychotherapy M W Peck Boston—p 207

The Association of Diabetes and Tuberculosis—Root states that, in order to promote good nutrition and resistance to tuberculosis, the use of insulin should be begun immediately in all youthful diabetic patients. Considering age, weight and diet, the tuberculous diabetic patient requires about the same dose of insulin as the nontuberculous patient. The average daily dose in eighteen cases of tuberculosis and diabetes (between the ages of 15 and 29 years) was 39 units. Serious hypoglycemia must be guarded against by the cautious use of insulin in severely ill or emaciated tuberculous diabetic subjects. In sixty-nine fatal cases of tuberculosis and diabetes treated with insulin the patients lived 86 years, whereas in ninety fatal cases treated without insulin the patients lived only 54 years after the onset of diabetes. In the last ten cases of active tuberculosis and diabetes with fever, an average diet of 157 Gm of carbohydrate, 83 Gm of protein and 116 Gm of fat, totaling 2,004 calories, and 42 units of insulin were administered. Patients suffering from acidosis and coma who later develop tuberculosis should be followed up yearly by roentgen examination for the detection of developing tuberculosis. Eighteen patients alive in 1933 have survived active pulmonary tuberculosis for an average of nine years. The recognition of pulmonary tuberculosis in a truly incipient stage in a diabetic patient is almost unknown in the literature. Ten cases occurred among 245 in the author's series. Prognosis for the tuberculous diabetic subject depends on earlier diagnosis of the tuberculosis by more frequent physical and roentgen examination. The modern prolongation of life of the diabetic patient and his greater entrance into general activities expose him to tuberculosis and may result in a greater incidence of tuberculosis among diabetic patients. Uncontrolled diabetes increases the chance of developing tuberculosis, as indicated by the development of tuberculosis in persons who have had coma. Preventive measures include early diabetic treatment and hygiene.

New Orleans Medical and Surgical Journal

86 437 524 (Jan) 1934

- Relation of Practicing Physician to Control of Tuberculosis A E Keller Nashville Tenn—p 437
- Iodine and Its Relation to Health Review Margaret C Moore and H W Mosley New Orleans—p 449
- Some Surgical Aspects of Obstetrics M L Flynn, Meridian Miss—p 458
- Cervical Obstructions W F Hand Jackson Miss—p 467
- Neuritis Complicating Pregnancy G Y Gillespie Jr Greenwood Miss—p 466
- Carcinoma of the Colon M Q Ewing Amory, Miss—p 470
- Allergic Nasal Conditions Description of a Nasal Symptom Complex Suggesting Allergic Manifestations E H Jones, Vicksburg Miss—p 474
- Newer Methods in Treatment of Prostatic Obstructions R A Heintze and A D Mason Memphis Tenn—p 480

New York State Journal of Medicine, New York

31 41 84 (Jan 15) 1934

- Analysis of Three Hundred and Seventy Six Consecutive Oxygen Treated Cases from a Study Made at the Presbyterian Hospital New York, from 1929 to 1932 A I Barach New York—p 41
- Etiology Symptoms and Diagnosis of the Inflammatory Type of Hoarseness W A Krieger Poughkeepsie—p 47
- Neurologic Aspects of Hoarseness E D Friedman New York—p 48
- Indications for Thyrotomy and Laryngectomy in Carcinoma of the Larynx C J Imperatori New York—p 51
- Nonsurgical Treatment of Aphonia (Hoarseness) I W Voorhes New York—p 53
- Benign Neoplasms of the Larynx D S Cunning New York—p 6
- Tuberculous Malignant and Syphilitic Types of Hoarseness D H Jones New York—p 59
- Etiologic Factors of Mammary Cancer in Two Hundred Women Also a Control Study of One Hundred Normal American Women F E Adair New York—p 61

Etiologic Factors of Mammary Cancer—Adair studied 200 cases of cancer of the breast with the idea of evaluating the various factors of breast drainage and stagnation. Chemical analysis is made of the fluid and creamy material extracted from the breast by pumping. In these fluids both lactic and butyric acids are found. These acids are considered to be an important part of those irritating factors responsible for the tissue reactions resulting in hypertrophy, precancerous changes and eventually cancer. The breasts are pumped in order to abolish localized mastitis. Only 85 per cent of the cases in which mammary carcinoma developed gave a normal nursing history, a history entirely free from the various developmental or accidental incidents leading to at least one and sometimes two three or more of the various factors causing impaired drainage. In this cancer group every third pregnancy ended in miscarriage or abortion while in the control cases of 100 normal women there was only one miscarriage or abortion for every seven pregnancies. Of the women having cancer and bearing children 20 per cent nursed only a part of the children and 16 per cent did not nurse their children at all. Of the seventy eight mothers in the 100 control cases, sixty two gave a normal history of nursing. The clinical studies agree with the experimental studies of Baggs who produced artificial stagnation by breeding experiments and by ligating the nipples of the breasts.

Ohio State Medical Journal, Columbus

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- Serious Pain Its Clinical Significance A H Freiberg Cincinnati—p 21
- Status of Peptic Ulcer in 1933 J D Dunham Columbus—p 23
- The Eye in Relation to Modern Industry W H Snyder Toledo—p 29
- Mortality Rates of Obstetric Departments in General Hospitals A I Skeel Cleveland—p 31
- Encephalitis Letargica F L Rhodes Massillon—p 33

Oklahoma State Medical Assn Journal, Muskogee

27 136 (Jan) 1934

- Rheumatic Heart Disease A B Chase Oklahoma City—p 1
- Gonorrheal Endocarditis Case Report with Autopsy W W Rucks Jr Oklahoma City—p 3
- Nephritis As Seen in the Laboratory W J Dell McAlester—p 5
- Renal Pathology Seen in Toxemias of Pregnancy B A Hayes Oklahoma City—p 9
- Prevention of Endemic Gaster R M Howard and F M Ingenfelder Oklahoma City—p 11
- Blood Transfusion F A Hudson and E F Cary Eud—p 1

Philippine Journal of Science, Manila

52 219 348 (Nov.) 1933

- Bacteriologic Chemical and Biologic Studies of Reconstituted Milk R Randall Manila—p 219
- Sclerotium Seed Rot and Seedling Stem Rot of Mango M A Palo Manila—p 237
- Colobot Essential Oil from Citrus Hystrix De Var Torosa Simeona Santiago Tanchico and A P West Manila—p 265
- Identity of Anota Violacea and Rhynchosyllis Retusa E Quisumbing Manila—p 271
- Stability of a New Chlorine Product R H Aguilar and L Ocampo Manila—p 281
- Additions to Aphid Fauna of Formosa (Hemiptera) II R Takahashi Formosa—p 291
- New or Little Known Tipulidae from Eastern Asia (Diptera) VII C P Alexander Amherst Mass—p 305

Public Health Reports, Washington, D C

49 53 76 (Jan 12) 1934

- Sickness Among Male Industrial Employees During the Third Quarter of 1933 D K Brundage—p 53
- Use of Pure Strain Animals in Studies on Resistance to Transplantable Tumors H B Anderson—p 60

49 77 110 (Jan 19) 1934

- Physiologic Response of Peritoneal Tissue to Dusts Introduced as Foreign Bodies J W Miller and R R Sykes—p 80
- Sulphur Dioxide for Fumigation of Ships Methods of Use and Prospect of Improvement C L Williams—p 89

Southern Medical Journal, Birmingham, Ala

27 194 (Jan.) 1934

- Experimental Studies with Viable Muscle Grafts in Kidney Surgery V F Ockerblad Kansas City Mo—p 1
- Notes on Functional Activity of the Prefrontal Lobes R C Spurling Louisville Ky—p 4
- A High Fat Low Residue Diet in Treatment of Chronic Constipation R S Ledingham Atlanta Ga—p 9
- Metastatic Melanosarcoma of the Tonsils V K Hart Charlotte N C and R H Crawford Rutherfordton N C—p 12
- Diagnosis and Treatment of Functional Uterine Bleeding C Mazer and B R Katz Philadelphia—p 13
- Immunity in Infants to Infectious Diseases Placental Antibodies C F McKhann and Harriet Coady Boston—p 20
- Comparative Study of the Value of Tetrachlorethylene as a Means of Ultimate Control and Eradication of Hookworm Disease in Children H F Garrison Jackson Miss—p 24
- Peristent Occipitoposteriors E Speidel Louisville Ky—p 28
- Intestinal Obstruction Following Gynecologic Operations P H Wood Memphis Tenn—p 30
- A Study of Disease in the Negro I I Lemann New Orleans—p 33
- Glomerular Changes in Nephritis W G MacCallum Baltimore—p 39
- Backache W B Owen Louisville Ky—p 40
- Management of Nongonorrheal Prostatitis P S Pelouze Philadelphia—p 43
- Clinical Value of an Experimental Study of the Gallbladder D N Silverman New Orleans—p 46
- Medicolegal Pathology J A McIntosh Memphis Tenn—p 49
- Medical Indications for Sterilization and Contraceptive Measure F I King New Orleans—p 51
- Treatment of Sterile Contaminated and Infected Wounds E D Newell Chattanooga Tenn—p 53
- Possible Adjustments in County Health Department Program J W Mountain Washington D C—p 59
- An Open Safety Pin Swallowed and Passed by Rectum G T Tyler Jr Greenville S C—p 60

Value of Tetrachlorethylene in Hookworm Disease—According to Garrison, statistics from laboratories of departments of health of the South from physicians in private practice and from other well known authorities would indicate that although the percentage of hookworm infestation has been greatly reduced in the last twenty years it is evident that hookworm is still prevalent. The results obtained with tetrachlorethylene as compared with those of oil of chenopodium and carbon tetrachloride by all who have had an opportunity to make any comparison even under field conditions would indicate the absolute superiority of tetrachlorethylene. Studies of the pharmacology, toxicology and therapeutic effects of tetrachlorethylene indicate that it is the safest most economical and best known treatment for hookworm disease.

Tennessee State Medical Assn Journal, Nashville

27 132 (Jan.) 1934

- Some Practical Points on Treatment of Fracture R W Billington Nashville—p 1
- Don't Forget the Gallbladder C P Fox Greenville—p 6
- Refraction R H Newman Knoxville—p 10
- Open Treatment of Fractures of the Face I I Stein Memphis—p 15

United States Naval Med Bulletin, Washington, D C

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- Gonorrheal Epididymitis R P Parsons—p 1
- Treatment of the Chinese Wounded at a Base Hospital in Peiping China M D Willcuts—p 8
- Combined Medical and Surgical Treatment of Gastric Disorders L W Johnson and J F Finnegan—p 14
- Use of Plasmochin in Malaria to Prevent Relapse R Hayden—p 19
- The Friedman Hormone Test for Pregnancy W W Hall and E D McVories—p 20
- Fractures of the Mandible C H Mack and J H Connelly—p 31
- Spinal Anesthesia Report of One Hundred and Twenty Five Cases G B Creagh—p 36

Use of Plasmochin in Malaria—Hayden gave follow-up treatment to 125 men having histories of recent acute malaria. Seventy two were given quinine alone, 10 grains (0.65 Gm) daily except Sunday for a period of eight weeks. Of these, seventeen men, 23.6 per cent, had acute recurrence of their malaria either toward the end of their period of follow-up treatment or shortly after its completion. The remaining fifty-three men were given follow-up treatment of quinine and plasmochin. This treatment consisted of 10 grains of quinine daily for three weeks and 0.02 Gm of plasmochin daily for six consecutive days each week for the first and second weeks of this treatment. Of the fifty-three men, only three had relapses, 5.6 per cent. The malarial infections were of various types—tertian, quartan, malignant tertian and mixed. In view of his experience in this respect at Quantico and of reports from other places on the same subject the author is of the opinion that plasmochin should be regarded as an essential part of postmalarial follow-up treatment and should be administered in combination with quinine.

Virginia Medical Monthly, Richmond

60 581 644 (Jan.) 1934

- Mental Hygiene Program in the Making W F Drewry, Richmond—p 581
- Relation of Iodine with Especial Reference to Iodized Salt to the Incidence of Simple and Adenomatous Goiter W H Higgins Richmond—p 586
- Growing Old in Medicine O T Amory Newport News—p 589
- Cyclic Vomiting and Migraine in Children P S Smith Abingdon—p 591
- Influenza Some Observations H C Preston Harrisonburg—p 595
- Nasal Pathology as a Nonspecific Factor in Treatment of Inhalant Allergy W T Vaughan Richmond—p 598
- Management of Congenital Cataracts Report of Eleven Cases E C Gill and J A Pilcher Jr Roanoke—p 604
- The Maxillary Antrum and Its Dental Neighbor W A Well Washington D C—p 606
- Find Your Diabetes T J Tudor Norton—p 610
- Carcinoma of the Larynx Report of Cases F D Woodward University—p 613
- Pelvic Inflammation in Women C H Iupton Norfolk—p 617
- Necrobacillo is Clinical Entity F W Shaw Richmond—p 623
- Acute Mania A F Wood Parkley—p 627
- Ton if Electrocoagulation with the Bistatic Electrode J B H Waring Wilmington Ohio—p 630

Necrobacillo is—Shaw emphasizes the fact that necrobacillo is is a disease widespread in nature and that only a few infections have been reported in man but these have been of such a variety of clinical manifestations and geographic distribution as to lead one to infer that the disease is of more common occurrence than the reports would indicate. The difficulty of isolation of anaerobes in general and of Actinomyces necrophorus in particular is probably responsible for the low record. Few anaerobic cultures are made in general. From Cunningham's report anaerobic cultures should be made of blood in all cases of infectious jaundice. Some of the tuberculous hips are in all probability, necrophorus infections. The treatment of necrobacillo is is local and systemic—potassium iodide (or arphenamine in van Wiering's case) internally and the use of antiseptics in the cutaneous cases.

West Virginia Medical Journal, Charleston

30 145 (Jan.) 1934

- Coronary Thrombosis J P Mullen Wellburg—p 1
- Fetal Birth Injury with Special Reference to Intracranial Hemorrhage B Bland Philadelphia—p 9
- Influenza D N Butler Charleston—p 18
- Immunizations and Vaccines R C Farrier Morgantown—p 20
- Osteoporosis Following Trauma I M Moore Logan—p 22
- Arterial Hypertension T J Smith Baltimore—p 28

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

18 164 (Jan) 1934

- Retinal Detachment and Its Treatment by Surgical Methods. Review of Four Hundred and Twenty Five Cases. C. D. Shapland—p. 1
Vascularization of the Whole Vitreous in Case of Hemorrhagic Retinitis with Retention of Normal Acuity of Vision. D. V. Ciri—p. 24
New Vessel Formation in the Vitreous. G. Flint and D. Harrington—p. 27
Lead Poisoning in the First Century. W. J. Rutherford—p. 36
Persistence of Circulation in Posterior Vascular Sheath of the Lens in the Right Eye of a Girl Aged Fourteen Years. H. Tomkin—p. 39

British Journal of Physical Medicine, London

8 117 132 (Dec) 1933

- Diathermy. Short Diathermy and Ultra Diathermy. I. Nagel elmundi—p. 117
Some Investigations of the Properties of Short Waves. T. Reiter—p. 119
Carpal Conditions in the Nose Treated by Ionization. J. S. Crabbe—p. 122
Ozone Therapy. Problems, Theories and Facts. Sheila Macpherson—p. 123
Diathermy in Dermatology. C. B. Dowling—p. 125

8 133 148 (Jan) 1934

- *Diathermy in Treatment of Pneumonia. H. F. Stewart—p. 133
Physical Medicine in the Treatment of Digestive Disorders. A. P. (Crawford)—p. 135
Physiotherapy in Ophthalmology. P. Huwens—p. 138

Diathermy in Treatment of Pneumonia—Stewart believes that the patient who does not respond favorably in any clinical sign after three or four diathermy treatments presents an almost fatal prognosis. Large increase in diathermy dosage is indicated when the patient is improved temporarily by treatment. No other indicated measure in the treatment of the disease need be omitted because of the use of diathermy. It is one of the safest measures known to medical practice, as far as is known no accident or untoward effect has followed the administration of some 20,000 individual treatments. The use of diathermy in pneumonia is advocated by all who have had an opportunity for clinical study of its effects. The method has a sound physiologic basis, gives the patient a measure of relief which alone would justify its use, reduces the average mortality some 70 per cent and is well worth further clinical application and study.

British Journal of Radiology, London

7 164 (Jan) 1934

- X-Ray and Radium Therapy in the Future. N. S. Izumi—p. 9
Modern X-Ray Development. A. Bouwers—p. 21
*Improved Technique for Examination of the Shoulder. J. N. Ierfusson—p. 33

Roentgen Examination of the Shoulder—Ierfusson describes a technique for obtaining a lateral view of the shoulder. The patient is placed supine on the Potter-Bucky diaphragm and the sound shoulder is elevated by pads so as to cause 30 or 40 degrees of rotation of the body. The head is supported by a cushion and turned sideways toward the damaged side, which brings the scapula forward and more nearly parallel with the film. The curved type of Potter-Bucky diaphragm has advantages for this work. The film must be suitably decentered. The patient is now helped to turn over and to lie nearly prone with the sound shoulder elevated and the damaged one in contact with the diaphragm top. In this instance it is allowed to slide a little to one side of the center line. The scapula is inclined slightly from the vertical angle and in the path of the oblique ray. Judgment of the correct angle comes with experience. It helps if the arm can lie along the side of the chest and somewhat behind. This oblique prone position sounds uncomfortable, but many patients manage it. One of its advantages is that the body weight is utilized; it helps to keep the scapula a little way from the thorax. Muscular relaxation also helps. Sometimes the bone stands out like a wing. The author generally uses a kilovoltage of about 65 for the first position and 80 for the second. Some discrimination is required in selecting cases suitable for the positions described, especially the prone position.

British Journal of Surgery, Bristol

21 381 556 (Jan) 1934

- Some Early Surgical Cases. II. The Edwin Smith Papyrus. D. Power—p. 385
Carcinoma of the Kidney. G. Simpson—p. 388
Right Para-aortic Hernia. A. C. Halliwell—p. 398
*Ossification in Internal Semilunar Cartilage. Two Cases. H. J. Burrows—p. 404
Fallacy of Expectant Treatment in Acute Appendicitis. H. C. W. Nuttall—p. 411
Pathology, Diagnosis and Treatment of Congenital Diaphragmatic Hernia in Infants. N. R. Barrett and C. E. W. Wheaton—p. 470
Prostatectomy with Closure. Five Years Experience. S. H. Harris—p. 434
Infringement of Anterior Portion of Prostate Gland. B. S. Cran—p. 453
Inquiry into Results of Surgical Treatment of Genital Tuberculosis in the Male. R. O. Lee and K. Bowes—p. 456
Calcification, Decalcification and Ossification. R. W. Jones and R. E. Roberts—p. 461
*Hyperparathyroidism with Certain Unusual Features. Case. T. W. Mumpriss and R. W. Butler—p. 500
Occurrence of Scrotal Hernia in Mice Under Treatment with Estrin. H. Burrows—p. 507
Benign Giant Cell Tumor of Third Cervical Vertebra. Case Report. J. A. Macfarlane and E. A. Inell—p. 513
Adenopapilloma of Stomach Associated with Lymphoid Hyperplasia of Duodenum. A. E. Webb Johnson and E. G. Muir—p. 519
Spontaneous Dislocation of the Hip in Childhood. P. N. Ray—p. 525
Keloid Formation with Comments. Two Cases. C. E. L. Burman—p. 527
Acute Infective Osteomyelitis of Tibia. Use of Winnett Orr Technique. M. G. O. Malley—p. 530

Ossification in Internal Semilunar Cartilage—Burrows reports two cases of ossification in the internal semilunar cartilage. Histologic examination in the first case shows that the hard nodule contained bone. The fibrocartilage immediately surrounding this is in places clearly demarcated from the trabeculae, in other parts there is some tendency to a blending or transition. It shows patches of calcification and its cells are increased in number and hypertrophied. Many of them are surrounded by chondrin bills. While this tissue retains the essential characters of fibrocartilage, its appearance approximates that of hyaline cartilage. The portion immediately contiguous to the main nodule of bone contains spaces occupied by loose connective tissue and blood vessels. Some of these are surrounded or partly surrounded by a thin lamella of bone. Osteoclasts are inconspicuous. The sections suggest 1 Hyperplasia of the fibrocartilage with deposition of calcium, the cells multiply and enlarge and the proportion of matrix to fibers increases. 2 Replacement of areas of cartilage by loose vascular connective tissue. 3 Formation of true bone in the walls of the cavities so formed. The appearances in the other case resemble those in the first in that the fibrocartilage contiguous to the bone has undergone hyperplasia. They differ in that the vascular connective tissue spaces are relatively absent from the zone of hyperplastic cartilage. In parts the cells are particularly numerous and may tend to become arranged in rows at right angles to the zone of ossification. The nodule of bone contains several small islands of hyaline cartilage and there is a thin shell of this overlying a part of the surface. Both patients are young men who had received an injury at football a few years previously. Each had been troubled by a return of symptoms from time to time with apparent complete recovery in the intervals. Locking had been absent. Roentgenograms showed an opaque body of about the same size in about the same position (the postero-internal part of the patella) in each instance. These points might assist a correct preoperative diagnosis on another occasion and might be thought to justify an initial antero-internal incision, through which all that is required could be done. It would be much safer, however, as such a diagnosis must always be a tentative one to proceed in the manner customary for a loose body in the situation named. Whether an antero-internal incision should subsequently be made and the anterior part of the cartilage removed is a matter of opinion. As yet, it is too soon to know whether the fact that this step was omitted in the second case will give rise to trouble. The author prefers to do the more complete operation.

Hyperparathyroidism with Unusual Features—Mumpriss and Butler describe the occurrence of hyperparathyroidism with a parathyroid tumor and changes in the bones in a boy of 17 in whom growth is still taking place rapidly and in whom therefore the bone changes are somewhat atypical. The unusual roentgenographic appearance of a well defined transverse band

of increased density at the metaphyses as an early bone change is probably associated with the presence of active epiphyseal growth. This metaphyseal change does not appear to have been recorded as a manifestation of hyperparathyroidism with a parathyroid tumor, although Duken has reported similar changes and published reproductions of the roentgenograms in the case of a girl aged 14, diagnosed as late rickets which subsequently showed the changes of osteitis fibrosa. In his case the blood calcium showed a progressive rise and the plasma phosphorus was low, but at the time of reporting the case no suggestion had apparently been made of the presence of a parathyroid tumor. Another unusual feature of the authors' case is the failure of renal function with the progress of the disease, and its recovery on the removal of the tumor. This failure of renal function was not associated with the formation of renal calculi, which has frequently been recorded in hyperparathyroidism. No exact explanation of this failure can be put forward, but it is of interest to note that Hunter and Aub have reported a marked rise of the nonprotein nitrogen of the blood following the administration of large doses of parathyroid extract in human beings. The patient recovered completely after operation, in spite of his extremely precarious preoperative state. There are no permanent skeletal changes.

British Medical Journal, London

2 1197 1240 (Dec 30) 1933

Poliomyelitis F M R Walshe—p 1197

Bearing of Recent Work on Certain Aspects of Poliomyelitis J P Martin—p 1200

Method of Closed Anesthesia T A B Harris—p 1203

Protective Goggles for Mountaineering and Industry J D M Cardell—p 1205

*Prognosis of Symptomless Glycosuria P J Cammidge—p 1208

Prognosis of Symptomless Glycosuria—According to Cammidge, the more thoroughly the family history of cases of glycosuria is investigated the more evident does it become that heredity plays an important part in the etiology of the condition, and it would seem probable that the way in which the abnormality is inherited as a familial or direct character, has some bearing on its severity and therefore on the prognosis. In a series of 800 cases of diabetes mellitus, 28 per cent were found to give an ancestral or family history of the disease, but in the present series the proportion is 38 per cent taking the cases of classic diabetes alone or, including the cases of symptomless glycosuria 36.5 per cent. Considering the 420 cases of symptomless glycosuria separately a history of glycosuria in a blood relation was obtained in 142 (33 per cent). Of the 248 who showed a hyperglycemic curve after a test meal of dextrose, 88 (35 per cent) gave a family history of glycosuria while a positive history was obtained in 54 out of 172 (31 per cent) of those who gave a normal or subnormal blood sugar curve. A dominant or direct history was found in 126 (16 per cent) and a recessive or familial history in 171 (22 per cent) of the classic diabetic cases but in the symptomless glycosurias there were 124 (29 per cent) dominant and only eighteen (4 per cent) recessive. Of the eighteen symptomless cases with a recessive family history fifteen were of the severe persistent type and gave a hyperglycemic curve after a test meal of dextrose. All required treatment with insulin—although not until after the lapse of some years in most instances—and two patients have died, one from malignant disease of the colon twenty-two years later, and the other from heart disease after six years treatment. The other three gave hypoglycemic blood sugar curves with a moderate amount of urinary sugar and are now living normal lives.

1 144 (Jan 6) 1934

Food Values and Their Practical Application in Dietetics J A Nixon—p 1

The Acute Ear in General Practice D Cuthrie—p 4

*Ovulation and Menstruation W Shaw—p 7

Contribution to Genetic Study of Mental Deficiency L S Penrose—p 10

Continuous Intravenous Saline H Bailey and J M Carnon—p 11

Cysticercosis in Twin Brothers Aged Thirteen Years with Radiologic Study of Calcified Cysticercus in Twelve Cases W K Morrison—p 13

Artificial Pneumothorax in Three Cases of Pulmonary Tuberculosis in Children W Stobie—p 14

Ovulation and Menstruation—Shaw attempted to observe the relation between ovulation and menstruation in women who menstruate regularly with a normal rhythm and has shown in

other reports that irregular bleeding is characterized by departures from the normal relations. The time relations of ovulation and menstruation have been reinvestigated with the use of the method of identifying recently ruptured follicles in the ovaries of women who give reliable histories. It has been shown that ovulation is restricted to about the fourteenth day of the cycle. There is some variation in the time of ovulation, but the variation is probably not more than two days from the fourteenth day. A study of the condition of the corpora lutea at other stages of the cycle confirms this view. Indirect proof as to the time of ovulation can also be obtained by an examination of specimens of the endometrium of the uterus. It has been shown that the secretory phase of the endometrium develops after the fourteenth day of the cycle. The specific features of the secretory phase are never seen before the fourteenth day. Seventeen specimens of the menstruating endometrium have been examined. In all cases there was evidence of previous premenstrual hypertrophy. In the material examined, no parallel was found to the anovular cyclic bleeding of the macaque monkey.

1 45 88 (Jan 13) 1934

Treatment of Cardiac Cases M A Cassidy—p 45

The Mineral Basis of Life J H Sheldon—p 47

Carcinoma of Maxilla and Ethmoid Survey of Notes of Fifty Cases E D D Davis—p 53

*Laboratory Diagnosis of Enteric Infection Remarks on Persistence of Infection A W Downie and R W Fairbrother—p 55

*Collapse Therapy in Bronchiectasis A Warning H P Nelson—p 58

Laboratory Diagnosis of Typhoid Infection—Downie and Fairbrother emphasize that, toward the end of the first week examination of the blood by cultural methods and agglutination tests with the serum will in the majority of cases afford evidence of the nature of the disease. The evidence obtained by the agglutination test should be confirmed by isolation of the infecting organism from the feces or urine whenever possible. Later in the course of the illness agglutination tests with the patient's serum generally give more marked reactions and while blood cultures are less frequently positive, the isolation of the causal organism from the urine and feces is more readily effected especially during the second and third weeks. In the detection of carriers, examination during convalescence is of the utmost importance. The carrier state may be merely temporary, the organisms being excreted for some weeks or months after the febrile period. Such cases tend to clear up spontaneously but, in order to prevent the spread of infection from these adequate methods of testing for freedom from infection during convalescence must be employed. At least three successive negative reports on feces and urine should be received at weekly or fortnightly intervals before a person can be considered probably free from infection. In the permanent carrier excretion of the organisms in feces or urine, sometimes intermittent, persists indefinitely and this presents a much more difficult problem. The only satisfactory method for removing the source of infection appears to be operation.

Collapse Therapy in Bronchiectasis—Nelson cites two cases that demonstrate the point that, when collapse therapy is applied to cases of bronchiectasis, it must be appreciated that such therapy may exclude the possibility of a subsequent lobectomy, should it become necessary. After a phrenic division for a basal bronchiectasis there may be a temporary improvement but subsequently, when the diaphragm has completely atrophied the patients return to the same or a worse condition. Artificial pneumothorax frequently fails owing to extensive pleural adhesions but when a complete collapse is obtained the symptoms may disappear as in the cases quoted by Chandler and referred to by Beaumont in the *British Medical Journal* of Oct 14, 1933. Thoracoplasty for basal bronchiectasis has on the whole given extremely bad results and involves the sacrifice of a whole lung for a basal lesion which is obviously wrong. But this operation still has a place in the treatment of unilateral bronchiectasis when all the lobes are grossly affected and there is a large quantity of sputum. By means of an extensive resection it is possible to reduce the sputum in these cases from say 20 ounces to 1 or 2 ounces occasionally they may even be sputum free but in the majority it recurs again—although never of course to the same extent as before operation. Thus the choice of therapy in basal bronchiectasis seems to be between (1) posture and bronchoscopy and (2) lobectomy with a mortality of 8 to 10 per cent.

East African Medical Journal, Nairobi

10 285-316 (Jan.) 1934

High Blood Pressure A. J. Jex Blake—p. 286
Rupture of the Spleen Case J. A. Carran—p. 300**Edinburgh Medical Journal**

41 1-60 (Jan.) 1934

Scarlet Fever G. F. Dick and Gladys H. Dick—p. 1
Mental Element in Crime and Criminals R. A. Fleming—p. 14
*Adrenogenital Syndrome Illustrative Case with Especial Reference to Its Relation to Cushing's New Pituitary Syndrome W. L. Jorgie and G. I. Montgomery—p. 29
Clinical Studies in Pathology of Bone D. M. Greig—p. 43

Suprarenogenital Syndrome—Foggie and Montgomery report the case of a woman of 36 who became gradually changed in both physical and mental characteristics after the birth of a stillborn child. Adiposity, hirsuties and amenorrhea with added pigmentation became evident. Further, there was a change in her voice. At first there was an overactivity of body and mind with special mental and psychosexual phenomena, but later there was a physical wasting with marked mental degeneration before complete dissolution set in. The whole process lasted two and a half years. Pathologically there was bilateral hyperplasia in the cortices of the suprarenals with some adenomatous formations. There was also advanced renal sclerosis of vascular origin. The clinical picture represented the assemblage of symptoms that directs attention to the suprarenal. Apart from the underlying cause this patient exhibited what is recognized as the corticogenital or suprarenogenital syndrome. Cook was one of the first to associate such a condition with a lesion of the suprarenal cortex, while Apert and Gillis did much to help in the elucidation of the clinical side. It is now recognized that there are various types of this condition: embryonic with resulting hermaphroditism, early life with precocity, exaggerated muscularity and secondary sex characteristics, puberty and after with adiposity and secondary sex phenomena, occurring especially in women and associated with the reproductive period of life and postmenstrual type, with less marked changes. The present case belongs to the third group and is marked by all the signs and symptoms usually associated with it. The three cardinal signs are amenorrhea or, better, sexual dystrophy, as men may be affected, hypertrichosis and adiposity. In the present case menstruation was irregular at first, but there was amenorrhea for the last six months of the patient's life. The pathologic evidence was not considered conclusive as the suprarenal lesion did not appear to be sufficient to account for the gross changes that occurred and the case had obviously many points of resemblance with the bronchial type described by Cushing, but in the absence of a report on the hypophysis one can only leave the final diagnosis an open one. Such a case with pluriglandular suggestion would be unlikely to benefit by operative treatment directed to the suprarenal. If Cushing is right in his generalization the logical thing would be to concentrate on the hypophysis either by operation or by roentgen therapy. In some cases of suprarenal tumors of local origin, roentgen therapy has been reported as beneficial.

Indian Medical Gazette, Calcutta

69 1-60 (Jan.) 1934

Treatment of Typhoid Fever in Children E. H. Vere Hodge—p. 1
Etiology and Treatment of Retinal Detachment E. O. Kirwan—p. 4
Primary Carcinoma of Gallbladder V. Nath—p. 7
Nephrolithiasis of Horseshoe Kidney P. N. Ray—p. 9
Postpuerperal Polyneuritis V. Iswariah and P. Kutumbiah—p. 13
*Studies in Untreated Malaria J. Lowe—p. 16
Conjunctivitis Produced by Ground Beetle R. N. Chopra—p. 23

Untreated Malaria—Lowe made a study of thirty-seven untreated cases of malaria due to fresh (but probably not primary) infection with *Plasmodium vivax*. Twenty-seven of them showed a quotidian intermittent fever. The rigors occurred usually after midday. Relapsed cases showed a tertian intermittent fever. The quotidian fever in fresh infections is found to be due to the parasites maturing in two main crops on alternate days. Most of the observations of James (1926) in experimentally induced malaria are verified in this series of cases of naturally acquired malaria. Eleven cases kept entirely

without quinine showed spontaneous arrest or fever within two weeks, and in only two of these was there a relapse, these relapses subsided spontaneously. The author also observed twenty-one cases of malaria due to fresh (but probably not primary) infection with *Plasmodium falciparum*. In eight quinine was withheld for a time. Four of these showed a quotidian remittent fever and four showed a tertian remittent fever. The fever was not intermittent, because there was some sporulation of the parasites occurring all the time, but in addition there was sporulation of either one or two main crops of parasites about midday, causing either a tertian or a quotidian periodicity.

Journal of Anatomy, London

68 157-288 (Jan.) 1934

Cerebral Hemispheres of *Lacerta Viridis* F. Goldhy—p. 157
Brain of Kenya Native F. W. Amlin—p. 216
Discontinuities in Normal Field of Vision F. W. Lancaster—p. 224
Some Observations on Development of Vagina in the Pig J. S. Baxter—p. 239
Rhythmic Periodicity in the Mitotic Division of Animal Cells A. H. Carleton—p. 251
Heterocel Junction R. H. Hunter—p. 264
Coalesced Kidneys in a Rabbit and Associated Anomalies in Circulatory and Nervous Systems Catherine Lucas—p. 270**Journal of Tropical Medicine and Hygiene, London**

37 1-16 (Jan.) 1934

Pathologic Lesions in Natives of Central Australia (Mount Liebig Area) J. B. Cleland and J. H. Gray—p. 1
Human Anthrax Its Effective Treatment with Organic Arsenic Preparations H. A. Spencer—p. 9
Follicular Infection of *Trypanosoma Brucei* in a White Rat J. F. Corcoran—p. 11
37 17-30 (Jan.) 1934
Critical Diagnosis of Infection by *Trypanosoma Gambiense* A. MacTherson—p. 17
Testing of Treatments for Bilharzia Disease F. G. Cawston—p. 22**Lancet, London**

1 1-64 (Jan.) 1934

The Prevention of Cancer W. Cramer—p. 1
*Poisoning by Barbitone and Allied Drugs Its Treatment by Lumbar and Cisternal Drainage J. Purves Stewart and W. H. Wilcox—p. 6
*Craniocaudal Head Injury Cause Auricular Fibrillation? C. Bramwell—p. 9
The Mechanics of Appendicitis B. W. Williams and R. H. Boggon—p. 9
The Mechanics of the Digestive Tract A. E. Barclay—p. 11
Selective Action of Atabrin and Plasmogonine on Subtertian Malaria Parasite (*Plasmodium falciparum*) P. H. Manson-Bahr and A. H. Walters—p. 15
Diagnosis of Meningococcal Meningitis from the Spinal Fluid B. C. Macgrath—p. 17
Pathologic Results of Cesarean Section D. Lindsay—p. 19

Poisoning by Barbituric Acid Compounds—Purves Stewart and Wilcox state that barbituric acid compounds after administration are excreted rapidly in the urine (with the exception of dial, much of which appears to undergo decomposition in the body). They are found in appreciable quantities in the cerebrospinal fluid. In the treatment of poisoning by barbituric acid compounds, every effort should be made to hasten elimination of the poison from the body, thus the stomach should be washed out with warm water immediately and this may be repeated at intervals of from four to six hours for two or three times. Colon lavage should be given at once and repeated every twelve hours for two or three times. Since the coma is prolonged, food should be given by stomach tube at intervals of six hours, e.g., coffee, dextrose and peptonized milk in quantities of from 15 to 20 ounces. From 15 to 20 ounces of saline solution and dextrose should be given by rectum every twelve hours. Repeated hypodermic injections of strychnine in full doses are also valuable. Lumbar or cisternal puncture and drainage are carried out at intervals of from twelve to twenty-four hours, according to the symptoms and severity of the case. The application of cerebrospinal drainage removes the poison directly from the brain, on which the main toxic effect is manifested. Rapid improvement is frequently observed after each drainage as shown by return of the tendon reflexes and improvement in the general symptoms. Cerebrospinal drainage appears to be the only form of treatment that gives a hope of recovery when pneumonia (barbital pneumonia) has commenced.

Head Injury Causing Auricular Fibrillation—Bramwell reports a case in which auricular fibrillation appeared to have been produced by an injury to the head in an otherwise healthy young coal miner. Though the evidence in this particular case strongly suggests that the arrhythmia was due to the trauma the fact that such a relation has not previously been reported makes one hesitate to accept this hypothesis. The fibrillation persisted for four weeks and then promptly yielded to treatment with quinine and has shown no tendency to recur. Although it is possible that fibrillation might be initiated by an injury to the brain, it is difficult to accept this hypothesis in view of the strong circumstantial evidence to the contrary. Jefferson states that in a series of several hundred head injuries he has never encountered auricular fibrillation as an isolated phenomenon. Nor is tachycardia a recognized sequel to such injuries, though occasionally it does occur.

Diagnosis of Meningitis from Spinal Fluid—Macgrath remarks that the laboratory diagnosis of meningococcal meningitis from the examination of the spinal fluid can be performed in a few hours by the use of the precipitin or complement fixation tests. The causal organism can be typed by the precipitin method if strong monovalent serums are available. The growth of the isolated organism on immune serum agar plates may permit the early diagnosis of type I and III meningococci. Slide agglutination is sometimes of value in diagnosis. English monovalent serums are not satisfactory for the diagnosis of type by precipitation, and until better serums are available a combination of the polyvalent precipitin reaction and the growth of the organism on immune serum agar plates seems to be the quickest method of diagnosis of meningococcal infections from the examination of spinal fluids.

1 65 116 (Jan 13) 1934

- Cancer of the Colon. Its Surgical Treatment. D P D Wilkie—p 65
- Neurologic Effects of Lightning and of Electricity. M Critchley—p 68
- Treatment of Arthritis and Rheumatism with Gold. G Slot and P M Deville. Clinical notes by N G Hill, B Williams and M H Fridjohn—p 73
- Production of Serum Inhibitory to Thyrotropic Hormone. J B Collip and Evelyn M Anderson—p 76
- Acute Extrarenal Azotemia. M Rachmilewitz—p 78
- *Complete Closure of Urinary Bladder in Cystotomy Cases. M Whitby—p 81
- Chronic Cholecystitis in a Boy Aged Ten Years. W Sheldon and H Edwards—p 82
- Stricture of the Ureter. W McKissock—p 83

Complete Closure of Bladder in Suprapubic Prostatectomy—Whitby describes a method, more especially for prostatectomy, whereby he believes that the bladder can be closed with safety at the operation. When renal function tests are poor or there is any form of infection of the bladder, drainage by a two way catheter and continuous irrigation with 1:5000 silver nitrate solution at 110 F for a few days or longer is essential to the success of the operation. The reduction of the blood urea will be further assisted by an intravenous injection of 40 cc. of a 25 per cent solution of dextrose in saline solution. The two-way catheter, of a size to suit the urethra is soaked in petrolatum and inserted into the bladder through the urethra. Continuous full irrigation is carried out for a few minutes with a solution of 1:8000 silver nitrate at body temperature, until the bladder is clean. The bladder is allowed to fill with the same solution and the outlet and inlet of the catheter are clamped. The patient is placed in a slight Trendelenburg position. As soon as the bladder incision is made the assistant drains the bladder through the outlet of the catheter. The prostatic cavity is viewed. Hemorrhage is dealt with by ligation of all bleeding points, and two ligatures are passed through the mucous membrane of the bladder and the sphincter, passing out through the prostatic cavity one on each side of the midline. The edges of the cavity are trimmed and a continuous ligature is passed round the edges. At this stage if the anesthetist gives the patient pure oxygen for a few minutes any obvious bleeding points requiring ligation will be seen. Ordinary venous oozing can be coagulated by light diathermy for a few seconds at about 7 milliamperes with a suitable electrode. After this a swab soaked in pure glycerin can be pressed into the cavity for a few moments which will check evadation. The bladder is completely closed and then irrigated until the return fluid is clear with hot silver nitrate solution of 1:5000 through the two way catheter which is

arranged so that the two terminal eyelets lie in the bladder cavity and the other eyelet in the prostatic cavity. Some of the solution is left in the bladder and the catheter is clamped until the patient returns to the ward, where continuous irrigation is instituted with a thermoflask retainer. The catheter is held in position by a collodion dressing round the entire penis, and this dressing should not require to be removed until the catheter is ready for removal. The projecting portion of the catheter should be cleansed with an antiseptic daily. Pain and sleeplessness should be relieved by means other than morphine. The head of the bed should be raised on blocks. Injection of 40 cc of a 25 per cent solution of dextrose in saline solution is given intravenously and repeated every six hours if necessary. Drainage should be inspected every half hour to see that it is effective and that the bladder is not filling too quickly. The rate of flow should be about 8 cc a minute. The catheter should be removed on the tenth day and reinserted only if the patient does not pass urine satisfactorily. A medium sized bougie should always be passed later to prevent postoperative stricture.

Practitioner, London

132 1 128 (Jan) 1934

- History of Dietetics. R Hutchison—p 1
- Vitamins in Clinical Medicine. S J Cowell—p 15
- Adequate Diets in Diabetes Mellitus. A New Approach. J A Nixon—p 25
- Diet in Treatment of Infections of Urinary Tract. A L Clark—p 34
- Therapeutic Use of Ketogenic Diet. H Gainsborough—p 45
- Some Considerations of Dietary Treatment of Obesity. E C Dodds—p 54
- Diet in Rheumatic Disease. A H Douthwaite—p 65
- Diet and Disease in Childhood. A Moncrieff—p 72
- Diet in Diseases of the Colon. S W Patterson—p 82
- *Diet and Endocrine Deficiency. H Gardiner Hill—p 92
- Diet in Treatment of Lupus. J Dundas Grant—p 101
- Medicolegal Problems in General Practice. J Medicolegal Responsibility of the General Practitioner. W Willcox—p 109

Diet and Endocrine Deficiency—Gardiner-Hill believes that a close relationship exists between dietetic problems and endocrine deficiency. This is well illustrated by observations on iodine in simple goiter, and vitamin A deficiency in lymphadenoid goiter. Calcium supplies, vitamin D and parathyroid extract are intimately associated in the metabolism of calcium while insulin is the controlling factor in carbohydrate metabolism. In some instances obesity and cachexia are due to endocrine deficiency, though the part played by diet in these conditions is at least equally important. As regards general principles of treatment of the series of conditions under consideration, the essentials seem to be replacement of the defective glandular secretion, with reorganization of the metabolic disturbance by appropriate dietetic measures.

South African Medical Journal, Cape Town

S 1 40 (Jan 13) 1934

- Diet in Relation to Health in South Africa. Biochemical Aspect. F W Fox—p 3
- Diet in Health in South Africa. I I Braun—p 15
- Diet in Relation to Public Health in South Africa. E H Cluver—p 19

Japanese Journal of Gastroenterology, Kyoto

S 115 162 (Dec) 1933

- Significance of Liver in the Metabolism of Lipoid Bodies. I Change in Amounts of Lipoid Bodies in the Blood and Bile in Parenteral Administration of Lecithin to Normal Rabbits. Y Asoda—p 115
- Id II Metabolism of Lipoid Bodies in Hepatic Disturbance in Rabbit. Y Asoda—p 124

Journal of Oriental Medicine, South Manchuria

19 75-86 (Dec) 1933

- Dietetic Therapy of Gallstone. S Saki—p 75
- Biochemical Study on Nitric Compound II. Behavior of Sulphur Against Formation of Rhodan. C Tsuru—p 80
- Hydrogen Ion Concentration of Histocyte by Vital Staining with Indicator Dyes. Part II. S Hatano and S Iwata—p 81
- Statistical Observations of Diarrhetic Patients in Mukden. T Kaji and Y Hiamochi—p 82
- Agglutinin Production After Intradermal and Subcutaneous Injections. M Yato—p 84
- Natural Increase of Japanese in Manchuria. U Miura and S Kawahito—p 85
- Digestibility of Chief Food Products of Manchuria in Relation to Nutrition of Japanese Farmer. A Aburatsubo, T O Ueno, M Elitara and Y Yokota—p 86

Presse Medicale, Paris

12 265 288 (Feb 17) 1934

Rocky Mountain Spotted Fever Observed in Paris Case A Jemmerre —p 265

*Chronology and Phenomenology of Morbid Alterations in Black Cardiacs of Ayerza Fundamental and Accessory Lesions M R Cristex and E I Capdehourat —p 268

Unity or Plurality of Internal Leishmaniasis P Giraud —p 272

Arrest of Active Varicose Phlebitis by Sclerosing Injections G Delanter and M Chivilly —p 274

Ayerza's Disease—Cristex and Capdehourat believe that the morbid alterations in Ayerza's disease can be divided into fundamental and accessory lesions. They consider as the fundamental ones all the chronic changes of the respiratory apparatus resulting from long continued bronchitis with or without peribronchial sclerosis and bronchiectasis, loss of elasticity and pulmonary fibrosclerosis, and chronic emphysema. The accessory lesions are those which do not enter actively into the development of the disease. Long continued bronchitis is, then, the prime factor in the development of the disease. Sclerosis of the pulmonary artery may or may not be present. Sclerotic lesions of the vessels of the lesser circulation, however, play an important part in increasing the work of the heart. Persons in whom the hemtopoietic system is incapable of reacting to the chronic bronchopulmonic process and anoxemia cannot develop the clinical picture of Ayerza's disease. This explains why the disease usually begins in youth, is less frequently seen in adult life, and is rarely encountered in old age. It is also the reason why, in spite of the frequency of the occurrence of chronic bronchopulmonic processes in old age, the pathologic picture of Ayerza's disease is so rarely seen.

Pediatria, Naples

12 225 344 (March 1) 1934

Importance of Diagnostic Help in Pediatric Clinic L Auricchio —p 225

*Hemato-Encephalic Barrier in Nursing B Pincherle and G Salom —p 239

Contribution to Study of Involvement of Heart in Scarlet Fever with Particular Attention to Myocardium W Schwarz —p 267

Iodine Therapy in Lymphatism G Marcelli —p 284

Postdiphtheric Hemiplegia and Consecutive Bulbar Paralysis A Celenzano —p 290

White Angina Due to Streptococcus I Bibiani —p 295

Hemato-Encephalic Barrier in Nursing—Pincherle and Salom review the total literature on the blood-cerebrospinal fluid barrier, with especial reference to its function in early infancy. The authors have studied the permeability of the barrier to acid fuchsin in fifty-six infants not older than 13 months. They found that permeability was present in all cases in the first three months of life; it decreased during the next six months, until at the end of the first year the barrier acts as in adults. The authors maintain that the increased physiologic permeability of the barrier is probably due to immaturity of the anatomic elements at birth. They think that this permeability does not produce the tendency of infants to convulsions and to meningitis but that it may be one of the causes of alteration of the cerebrospinal fluid in congenital syphilis and of cerebral complications in intestinal intoxication.

Anales de la Soc Med-Quir del Guayas, Guayaquil

13 783 816 (Sept) 1933

Hemoglobinuric Fever J A O Daly and G de la Plaza —p 785

Technic for Operation of Pterygium to Avoid Its Recurrence J F Rubio —p 799

*Painful Spot in Shoulder in Acute Malaria A Pareja Coronel —p 805

Painful Spot in Shoulder in Acute Malaria—Pareja Coronel states that the presence of a painful spot in front of the scapula muscle corresponding to the area of the right phrenic nerve, is a diagnostic sign of acute malaria. The pain may coexist (although with less frequency and less intensity) in the left shoulder. In the blood of patients having this sign, *Plasmodium praecox* is usually found. The sign is characteristic of the first acute malarial infection. Patients with chronic or recurrent malaria do not present it. The author believes that the pain is a reflex manifestation of the hepatosplenic syndrome of acute malaria. Fifteen cases of acute malaria in which the sign was observed are reported.

Beitrage zur klinischen Chirurgie, Berlin

159 111 222 (Feb 14) 1934

Operative Treatment of Urethral Tears J Planz —p 111

Severe Injuries in Skunk II J von Brandis —p 117

Treatment of Vascular and Lymph Vessel Tumors G Gerlach —p 119

Cholecystogastic Fistula Following Perforation by Stone H Pohlandt —p 138

Healing of Severe Unreduced Fracture Dislocation of Thoracic Vertebrae H Hanke —p 148

*Intussusception and Intra-Abdominal Pressure in Childhood W Ohndorck —p 160

Aut to Roentgen Study of Cervical and Upper Thoracic Vertebrae T Ritschony and E Koppstein —p 170

Injuries Caused by Passage of Sounds into Rectum W Dick —p 174

Intussusception and Intra-Abdominal Pressure in Childhood—Ohndorck believes that sudden increase in the intra-abdominal pressure is in many instances the determining factor in intussusception of children. He reports a case in a girl who suffered from colicky pains about the navel for some time and in whom severe symptoms of invagination followed immediately a fit of severe paroxysmal cough. In a second case, symptoms of invagination followed straining at stool. At operation in this case there were found polyps in the small intestine. In both cases local spasms were present but appeared in themselves insufficient to cause intussusception. This was precipitated by a sudden increase in the intra-abdominal pressure. A local spasm of the intestine causes pain, which provokes in a child a fit of crying, which in its turn increases the intra-abdominal pressure. The latter may be of accidental nature, resulting from straining at stool, coughing or trauma. The author explains his failure to produce experimental invagination in animals by the absence in them of the factor of considerable intra-abdominal pressure. The peculiar predilection to invagination, so far as the age, the sex and the state of muscular development are concerned, is best explained by the part played by the intra-abdominal pressure.

Dermatologische Wochenschrift, Leipzig

98 229 256 (Feb 24) 1934

*Therapeutic Experiments with Living Spirochetes in Cases of Early Syphilis E Neuber —p 229

*Etiology and General Treatment of Acne Vulgaris D von Kerner —p 237

Ventricular Ulcers in Patients with Leprosy A Faldorck —p 241

Spirochete Vaccine in Treatment of Syphilis—That the immunotherapy has been given so little attention Neuber ascribes to two factors: (1) the difficulties encountered in the culture of *Spirochaeta pallida* and (2) the progress in chemotherapy. The first factor has been overcome by Hilgermann who, after years of effort has succeeded in finding a way to put *Spirochaeta pallida* through several passages, reduce its pathogenicity and even produce avirulent spirochetes that are suitable for active immunization. In the author's clinic, 215 syphilitic patients were treated with Hilgermann's spirochete vaccine. Forty-two were treated in the beginning only with the vaccine (three times with intervals of two weeks), but in the further course the vaccinations were combined with injections of bismuth compounds and neoarsphenamine. In the other 173 patients the specific and chemotherapeutic treatments were combined from the beginning. The total number of vaccinations varied in different cases between one and ten; the majority of patients receiving three or four. The initial dose was generally 1 or 15 cc and this amount was gradually reduced to 0.1 cc and less. As a rule, the administration of the vaccine was done subcutaneously (upper arm), rarely intramuscularly, and only a few times intracutaneously. The reactions following the injections of vaccine usually became slighter after the later injections. Severe focal reactions were noted in fifty-six out of the 215 patients. General reactions were noted particularly after the larger doses of vaccine. The author reaches the conclusion that the treatment with spirochete vaccine influences the immunobiologic apparatus of the organism, but he thinks that in early syphilis it is not sufficient to free the organism from the spirochetes. He relates the results obtained with the vaccine in ninety-six cases of neurosyphilis. A comparison of the results in these cases with those obtained with malarial therapy or with recurrent fever therapy reveals that the vaccinations with spirochetes were superior in regard to complete remissions.

but inferior in regard to slighter improvements. The mortality rate was higher after treatment with the spirochetal vaccine, but this may be due to the fact that more of these patients were in an extremely weak and marantic condition. The number of progressive cases was larger after treatment with spirochetal vaccine than after malaria therapy, but only about half as large as after treatment with recurrent fever.

Etiology and Treatment of Acne Vulgaris—In fifty-two patients with acne vulgaris, von Kerner observed pyogenic foci, positive Pirquet reactions and pulmonary changes. Following removal of the pyogenic foci, the cutaneous changes disappeared spontaneously in twenty-two patients and in the others the pyogenic character suffered a surprising change. Thirty patients were subjected to tuberculin treatment following removal of the foci. The result was that twenty-seven were completely cured and two considerably improved, while one showed an exacerbation of the cutaneous symptoms. Other favorable effects noted in connection with the treatment were improvement of the appetite, increase in weight and cessation of gastro intestinal and menstrual disturbances. The author considers acne vulgaris a symptom of a combined tuberculous and pyogenic focal infection. He ascribes the chronicity of the disorder to the tuberculosis and the acute pyogenic eruptions to the internal pyogenic focus. The activity of the pulmonary foci is proved by auscultation, percussion and, eventually, roentgenoscopy, but cutaneous symptoms likewise may indicate it.

Deutsche medizinische Wochenschrift, Leipzig

60 271 308 (Feb 23) 1934

Problem of Old Trouble in Individual Sick Insurance R Schoen —p 271

Gastritis H Kalk —p 276

Schüller's Syndrome F von Doleschall and L von Udvary —p 281

Cure of Botulism by Means of Serum G D Koehler —p 283

Complement Fixation Reaction in Gonorrhea H Saufferlin —p 285

Operative Cure of Cerebral Abscesses J Pogacnik —p 287

Conservative Treatment of Lithiasis A Durand —p 288

Devices for Performing Intravenous Injection H Mappes —p 289

Sutureless Union of Cutaneous Wounds E Dujardin —p 289

Cure of Botulism by Means of Antitoxin—Koehler relates the histories of two unusually severe cases of botulism, in which the first disease symptoms, disturbances of accommodation, were noticeable nine days before admission to the clinic. Both patients had been unable to sleep during eight nights. The oculomotor nerve was severely affected, particularly in the older patient. The vagus was involved as far as it innervates the pharynx, the larynx and the gastro intestinal tract, and the impairment of the muscles active in deglutition indicates involvement of the glossopharyngeal nerve. That important centers of the spinal cord were impaired was indicated by the cessation of salivation and of secretion of sweat, by ptosis in the smooth portion of the superior palpebral levator, by vesical disturbances, and by the temporary absence of the cremasteric and the abdominal reflexes. The sensorimotor paresis of the left side of the body (in the girl) indicated a unilateral involvement of the right cerebral cortex with its central convolutions. The two cases are noteworthy particularly because of the favorable and rapid action of botulism antitoxin. The action of the antitoxin serum was especially prompt in the girl in whom 100 cc, half of it intravenously and half intramuscularly was given at the first administration. Considerable improvement could be noted after half an hour for the left side of the body and the vision in the left eye improved and a beneficial warm sweat covered the body. The patient was again able to sleep, and on the following day she could swallow solid food. An additional 50 cc of the antitoxin serum was given by intramuscular injection on the subsequent day and as a result the function of the bowel became normal. Three weeks later the girl had completely recovered. The author deplores that in the older patient, the man, the initial dose of serum had not been sufficiently large for only 25 cc was given intravenously. He thinks that the cardiac complications could perhaps have been avoided if a larger dose had been given at once. This patient received in all 275 cc in the course of four days. After four weeks the patient was discharged completely cured except for a slight weakness in accommodation.

Complement Fixation Reaction in Gonorrhea—Saufferlin investigated whether the complement fixation reaction of gon-

orrhea can be made more sensitive by means of the quantitative evaluation combined with three different readings. The fact that in syphilis the evaluation with graduated amounts of serum may indicate slight inhibitions that are not perceptible with the original method induced the author to investigate whether the percentage of positive complement fixation reactions in gonorrhea can be increased by the same method. The evaluation upward is done in the usual manner with 0.3 cc and 0.5 cc of serum. The differentiated readings are taken the first after the dilution of the normal blood, the second twenty minutes later and the third after two hours. The author employed this method with 150 serums. He concludes that, in regard to diagnostic sensitivity, the quantitative evaluation is superior to the original method.

Klinische Wochenschrift, Berlin

13 241 280 (Feb 17) 1934

Susceptibility of Blood Pressure Centers to Stimuli and Experimental

Production of Hypertension of Central Origin H Heller —p 241

Diagnostic Utilization of Roentgen Kymography W Menzel —p 245

Relationship of Pathogenic Hereditary Units to Clinically Defined Types

of Hereditary Disorders F Lenz —p 249

*Diagnosis on Dried Cerebrospinal Fluid N Henning and A Beck —

p 251

Chloride Secretion of Stomach R Jurgens —p 253

Problem of Silver Pigmentation of Kayser Fleischer's Corneal Ring

B Fleischer and W Gerlach —p 255

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Serology of Tuberculosis E Meinicke —p 258

Conglobation Reaction in Tuberculosis F E Haag and Ellen Nigge

meyer —p 260

*Treatment of Syphilis in Man and Animals by Means of Antimony

Derivatives J L Kritschewski M A Wein and A I Pines —

p 261

Behavior of Alkali Reserve in Exophthalmic Goiter E Pulay —p 264

Influence of Suprarenals on Function of Muscle Particularly Its

Metabolism G Kuschinsky and D Nachmansohn —p 265

Influence of Pineal Extracts on Action of Hormones of Anterior

Hypophysis P Engel —p 266

Diagnosis on Dried Cerebrospinal Fluid—The technic of the examination of the dried drop of cerebrospinal fluid, which Henning and Beck employ, is simple. After all formed elements have been removed from the fluid by means of filtration and centrifugation, a drop is put on a slide and is left to dry in an even temperature (incubator). Normal cerebrospinal fluid presents to the naked eye a fairly homogeneous, gray veil. Microscopy reveals peculiar sodium chloride skeletons, the configuration of which is characteristic for cerebrospinal fluid. Most typical is a cross figure formed by two beams that meet at an angle of approximately 90 degrees. The cross beams are rather plump and frequently oval the point of the egg being directed toward the center. The outlines are either smooth or serrated. Sometimes the beams are almost square so that the interstices are filled out. The size of the crosses varies according to their location in the circular preparation. In addition to these relatively large, plump and elevated formations there are also regularly rather delicate forms of plantlike appearance. The dry preparations of the normal fluid show no marginal zones, for the crystallization products begin immediately at the periphery. Since the preparations are hygroscopic they should be kept in closed containers with calcium chloride. The authors also examined pathologic specimens of cerebrospinal fluid and found that a slight increase in the protein content becomes manifest in a peripheral ring zone. The protein nature of this zone was demonstrated. The width of the ring zone goes parallel with the protein content. The widening of the marginal zone is accompanied by changes in the morphology of the crystallization figures. As the width of the marginal zone increases the cross figures become rarer and smaller the more delicate formations predominate and the background becomes more dense. The authors give photomicrographs of the normal fluid and also of several pathologic specimens.

Antimony Derivative in Treatment of Syphilis—Kritschewski and his associates relate their studies on the antisyphilitic action of antimony preparation in animals and human subjects. They found that the preparation destroyed the spirochetes not only in rabbits but also in mice and in human beings. The preparation sterilized the central nervous system of syphilitic mice. In human subjects the antisyphilitic action of the

antimony preparation was not inferior but rather superior to that of bismuth compounds. The authors conclude that antimony preparations deserve a place in the combination therapy of human syphilis.

Medizinische Klinik, Berlin

30 217-252 (Feb. 16) 1934

- Hereditary Factors in Personality W. Enke—p. 217
Observations in Examination of Medicaments H. Stendel—p. 220
*Observations on Sodium Chloride Exchange in Amyloid Kidney W. Nonnenbruch—p. 223
Observations on Sporadic Cases of Weil's Disease E. Zimmermann—p. 224
Unification of Dosage in Combined Röntgen and Radium Treatment T. C. Neefz—p. 226
Action of Antigonorrheal Preparation on Deeper Tissues A. Perutz and G. Halpern—p. 228
*Magnesium Chloride Test: New Reaction for Serum Proteins R. Bauer—p. 230
New Reliable Micromethod for Determination of Sedimentation of Erythrocytes According to Raskin H. Reichel—p. 233
Dietary Treatment in Gynecology and Obstetrics A. Bauer—p. 234

Sodium Chloride Exchange in Amyloid Kidney—Nonnenbruch noted in healthy persons that a dry diet with high sodium chloride content is one of the strongest diuretics. He decided to try this diet on patients with hydropic nephrosis or with amyloid kidneys in order to discover whether the sodium chloride would exert its diuretic action and produce an increase in the sodium chloride content of the urine. In one patient, in whom the specific gravity of the scant urine did not exceed 1.020, the sodium chloride values of the urine remained below the blood values and there was hardly any diuresis. In another case, however, diuresis and sodium chloride concentration resulted. This patient had a chronic suppurative pulmonary process, bronchiectasis, empyema and amyloidosis. Death occurred eight months later and the necropsy revealed the presence of amyloid in the internal organs. The author wished to illustrate in this case that even in case of edema with oliguria and with low sodium chloride concentration of the urine in the course of an amyloid nephrosis it is possible to produce the strong diuretic action of the sodium chloride with simultaneously decreased fluid intake, provided the kidney is capable of reacting to the sodium chloride. If hyponatremia exists, the administration of sodium chloride is advisable even though renal disease is present. This rule is followed in case of poisoning with corrosive mercuric chloride and also in true uremias in chronic renal diseases. In these cases the vomiting is often promptly checked by the intravenous administration of sodium chloride.

Magnesium Chloride Test: Reaction for Serum Proteins—Bauer describes a test for the determination of the protein quotient in the serum, which is based on the investigations of Pauli, Neuberg and Willheim who proved that heat flocculation of protein solutions can be prevented by the addition of saturated solutions of hydrotropic salts. After many preliminary tests the author found that the use of an exactly one third saturated solution of magnesium chloride (15.68 per cent), which is prepared by titration with silver solution, is the most suitable for this purpose. A dilution series of serum and physiologic solution of sodium chloride is set up in six tubes, the first containing 1 cc. of a 1:2 serum solution. To the 1 cc. of serum solution in each tube, 1 cc. of the solution of magnesium chloride is added. The tubes are heated for fifteen minutes in the boiling water bath. Under normal conditions, flocculation takes place only in the first two tubes, but if the globulin is increased, it takes place also in the third and the following tubes. As a rule, flocculation is noted only if the globulin content exceeds 40 per cent but, if the euglobulin factor predominates, flocculation may set in when the total globulin amounts to only 30 per cent. The author made tests on 652 serums and his observations convinced him that the test is always negative in normal persons and also in the majority of patients. The eighty-five persons (13 per cent) in whom the test was positive had various disorders, some having hepatic diseases and others pernicious anemia. The third group in whom it was positive, had tuberculosis, but only seventeen of sixty-nine gave the positive reaction. Of thirty-five patients with a positive Wassermann reaction, twenty-five gave a negative magnesium chloride test. Patients with carcinoma also

gave mostly negative reactions, but out of twenty-four were strongly positive and two weakly positive. The sixth group in which the test was found positive embraced patients with diverse disorders, such as poisoning with barbitals, hernia, tonsillar abscess, facial paresis and pneumonia; positive results were seen also after milk injection, after injections of tetanus serum and during malaria therapy. The author thinks that in diseases of the liver and in pernicious anemia the test has a certain diagnostic value.

Wiener Archiv für innere Medizin, Vienna

24 321-480 (Feb. 10) 1934

- *Significance of Weltmann's Coagulation Band for Diagnosis of Hepatic Diseases O. Weltmann and B. Sieder—p. 321
Clinical Diagnosis of Compression of Left Auricle: Symptomatology of Bronchial Carcinomas H. Kahler—p. 363
*Difference in Blood Pressure in Upper and Lower Extremities A. Edelmänn and A. Kahan—p. 377
*Acute Cardiac Pulmonary Edema and Its Reflex Mechanism S. Wassermann—p. 387
Noteworthy Concurrence of Uric Arthritis, Vaquez's Erythremia and Malignant Hypernephroma C. V. Medved—p. 411
Clinical Observations in Lymphogranulomatosis A. Herz—p. 477
Insulin Action on Acelone Bodies A. Low and A. Krcma—p. 455
Fate of Resorbed Carbohydrates in Organism H. Schur, A. Low and A. Krcma—p. 463

Coagulation Test in Diagnosis of Hepatic Diseases—Weltmann and Sieder made the coagulation test on patients with liver disease. The width of the so-called band is expressed in the number of tubes that show coagulation. Since in the series of ten tubes the critical zone often lies between the seventh and eighth tube, and additional tube is intercalated here (7½). On the basis of observations in hepatic disorders the authors conclude that the coagulation test is helpful in the diagnosis of liver diseases. The behavior of the coagulation band in simple icterus and in acute yellow atrophy of the liver indicates that parenchymal damage of the liver produces changes in the serum protein. The extreme width of the coagulation band in acute yellow atrophy of the liver, which exceeds that of simple icterus, indicates that the width of the coagulation band is largely determined by the intensity of the impairment of the liver cells. In cirrhoses of the liver a widening of the band is likewise an almost constant occurrence. However, in these cases a connection between the greater width of the band and the degree of parenchymal damage is not so unequivocal since here a second factor is involved, namely, the fibrous tendency. In this connection, the authors call attention to their experiences with the coagulation test in tuberculosis, in which they found that the coagulation band was narrowed in the exudative forms while it was widened in fibrous processes. The primary parenchymal diseases of the liver are the ones in which the coagulation band is particularly valuable. In these the coagulation reaction is more sensitive than the galactose test but somewhat less sensitive than urobilinuria. A disadvantage of the coagulation test lies in the fact that the nongenuine secondary alterations of the parenchyma, such as may be observed after prolonged biliary engorgement and in extensive destruction of the liver tissue by carcinoma, may also lead to a widening of the band. The identical outcome of the galactose and of the coagulation tests, whether positive or negative, is an unequivocal indication of the presence or absence of parenchymal impairment. However, a divergence between the two, negative galactose test and wider coagulation band, may be interpreted in various ways. It is possible that parenchymal impairment exists, in which the galactose test fails, or there may be a biliary stasis that secondarily leads to functional damage of the liver. A positive galactose test with no widening of the galactose band is rare, but if it occurs it indicates an impairment of the liver cells accompanied by an exudative inflammatory process.

Blood Pressure in Upper and Lower Extremities—Edelmänn and Kahan point out that Hill first studied the causes of the difference in the blood pressure between the upper and lower extremities in aortic insufficiency. Even in normal persons, differences in pressure exist between the arms and legs, the systolic pressure in the latter exceeding that in the arms by from 10 to 14 mm. of mercury. However, in aortic insufficiency, Hill found differences of from 50 to 100 mm. of mercury. Several other investigators have corroborated Hill's

observations, but there is still disagreement as to the causes of this phenomenon. The authors show that the stenosis of the aortic isthmus throws light on the mechanism of the pressure difference. They show that the difference between the blood pressure in the upper and lower extremities is dependent on the obstacles that the blood stream encounters on its way. Of especial significance is the right-angled branching off of the artery of the arm. Moreover, syphilitic changes of the aorta causing distortion and stenosis at the site where the artery of the arm branches off, lead to differences in the blood pressure by increasing the resistance. Hill's symptom has practical significance in that it indicates a syphilitic lesion at the beginning portion of the aorta, but arteriosclerotic changes of the smaller vessels, such as the subclavian, brachial femoral and popliteal arteries, which cause a narrowing of the lumens, likewise may lead to differences in the pressure.

Acute Cardiac Pulmonary Edema and Its Reflex Mechanism—Wassermann shows that acute cardiac pulmonary edema presents in certain cases a reflex syndrome of the cardiac pulmonary sympathetic nervous system with radiations into other regions. It can be improved or entirely suppressed by pressure on the carotid sinus. The attack of pulmonary edema generally occurs spontaneously with cardiac acceleration, increase of the blood pressure and symptoms of irritation of the sympathetic. The objective symptoms are dyspnea, moist rales and serohemorrhagic sputum. The author thinks that the condition is produced by a cardiac central pulmonary reflex in the region of the pulmonary capillaries (spasm) with exudation of serum into the alveoli. At the height of the attack there is danger of primary respiratory death or of secondary heart failure. Pressure on the carotid sinus presents a complex counter reflex. The spontaneous attack of pulmonary edema is not an exclusive nocturnal phenomenon but occurs almost as frequently diurnally. Frequent diurnal attacks of asthma should be carefully investigated in order to determine whether they are not atypical forms of pulmonary edema. During the attack the following measures may be taken: compression of the carotid sinus, quieting of the central apparatus of the respiration and deviation of the reflex by hot hand and foot baths or hot fomentations on the precordial region and by administration of spasmolytic remedies. Helpful supplementary measures are oxygen inhalation, venesection and in case of cardiac insufficiency, digitalis. If the asphyxia increases, restoratives may be given or remedies that stimulate the respiratory center. During the interval, the irritability should be reduced by the use of sedatives. The water exchange should be regulated by limiting the fluid intake. The cardiac insufficiency and the coronary circulation should be improved by chronic intermittent digitalization. This would reduce the coronary irritability, effect a better blood perfusion of the nervous centers and thereby reduce the predisposition to attacks.

Zeitschrift f Geburtshulfe u. Gynakologie, Stuttgart

107 165 280 (Feb 9) 1934

- Studies on Ovaries of Macaques G Frommolt—p 165
Pulmonary Ventilation and Respiration During Pregnancy Pulmonary Volume After Cessation of Lactation A Metzler—p 178
Id Pulmonary Ventilation A J Anthony and R Hansen—p 186
Id Character of Respiration A J Anthony and R Hansen—p 195
Id Distribution of Respiratory Air in Lung A J Anthony and R Hansen—p 199
Present Status of Inflammatory Genital Hemorrhages and Their Treatment E Hoevelmann—p 203
Trichomonas Problem and Remarks on Nonspecific Leukorrhea M Rodecurt—p 217
Clinical Aspect of Cystic Mole and of Chorio Epithelioma E W Winter—p 243
Facial and Frontal Presentations Caused by Umbilical Cord Surrounding Neck of Fetus G Steinitz—p 255

The Trichomonas Problem—Rodecurt evaluates the various staining methods of trichomonads. The demonstration by means of stains is not superior to the fresh preparation. For practical purposes the fresh preparation is the best. The author describes his experiences with trichomonas cultures. He produced pure cultures of trichomonads and observed that they survived several freezing processes and drying. He succeeded in producing trichomonas vaginitis by introducing the trichomonads from a pure culture. He discusses the biology of trichomonads. Eighty-eight per cent of his leukorrhea cases

were caused by trichomonads. He evaluates various therapeutic measures and shows that besides the local ones those that aim at a general improvement (calcium, iron, viosterol and so on) should not be overlooked.

Cystic Mole and Chorio-Epithelioma—In 8,000 deliveries Winter observed twenty cases of cystic mole and three cases of chorio epithelioma. Expulsion of the mole always took place between the second and seventh month of pregnancy and retention was never observed. He states that the discharge of the characteristic cysts is the most reliable basis for the diagnosis of cystic mole, but this proof is relatively rare. Excessive size of the uterus is a further sign, but this is not always present. A peculiar consistency of the uterus, namely, a softness and yet a sort of tight elasticity that gives the impression of a cyst, is a characteristic aspect of cystic mole. Hemorrhages and the impossibility of demonstrating a fetus are also symptoms that may indicate a cystic mole. Some authors have observed toxicosis of pregnancy in women with cystic mole, but the author maintains that eclampsia as well as severe nephropathy are rare concomitants, although hyperemesis is somewhat more frequent. He considers the occurrence in the urine of an excessive amount of the hormone of the anterior hypophysis the most important symptom. Another sign he observed in nearly all cases is excessive mammary secretion. The treatment should aim at removal of the growth. Evacuation of the uterus is usually spontaneous but occasionally the discharge has to be assisted by the administration of echolics. However, after the cystic mole has been expelled the patient cannot be considered completely cured for now begins the prophylaxis of chorio epithelioma. The causal connection between cystic mole and chorio epithelioma is not completely understood, but chorio epithelioma is frequently preceded by a cystic mole and both disorders are accompanied by hormonal disturbances. Of the three cases of chorio-epithelioma observed by the author, one developed following a cystic mole and two developed after delivery. He emphasizes that if hemorrhages develop shortly after a delivery not only the possibility of a placental polyp should be considered but also the existence of a chorio-epithelioma. Women who have had a cystic mole should be kept under observation, that is, the urine should be examined from time to time for its hormone content. If the hormone test remains positive for longer periods, the woman should be examined.

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- *Gas Gangrene Bacilli in Vaginal Secretion J von Khreninger Guggenberger—p 434
Simultaneous Occurrence of Coiling and True Knotting of Umbilical Cord S von Wachenfeldt—p 438
Function of Stomach During Normal and Pathologic Pregnancy E W Winter—p 443
Eupan (Sodium Salt of a Barbituric Acid Derivative) in Gynecologic Clinic and in Private Practice T Meder—p 447

Gas Gangrene Bacilli in Vaginal Secretion—Von Khreninger-Guggenberger examined the vaginal secretions of twenty pregnant women, two puerperal women and seventy-five nonpregnant women. By means of cotton swabs he secures secretion from the posterior vaginal vault. The swabs are placed in a liver-liver broth (liver broth containing pieces of the organ). In this medium the gas gangrene bacilli develop faster than any other gas formation being noticeable after a few hours. As soon as gas formation is noted the fluid culture is transferred to Zeissler's blood plates. These blood plates are then placed in the incubator for anaerobes. Then, in order to determine the pathogenicity for animals a twenty-four hour bouillon culture is prepared from the pure culture and 0.5 cc of this is injected into the pectoral muscle of guinea pigs. If the reaction is positive a typical gas gangrene phlegmon appears and most of the animals die within twenty-four hours, while others survive but show necrosis formation. The tests revealed that in approximately one third of the pregnant women the upper portion of the vagina contained gas gangrene bacilli. One of the two puerperal women and eight of the seventy-five nonpregnant women had gas gangrene bacilli in the vaginal secretion. The author shows that the pathogenic microorganisms of the vagina are kept in check by the vaginal secretion but a dilution of this secretion removes the growth.

inhibiting power. He maintains that the growth-inhibiting power of the vaginal secretion decreases as the duration of the delivery is prolonged and, if delivery lasts too long, sepsis sets in. For this reason he advises that prolonged birth should be accelerated by the administration of hormones, or, if complications may be expected, operative measures should be taken early enough, for the earlier the intervention, the better the results.

Vrachebnoe Delo, Kharkov

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*Liver Function Determination in Prevention of Neorarsphenamine Complications. I. M. Markus and B. B. Gelfand—p. 749

*Functional Capacity of Stomach in Pulmonary Tuberculosis. I. I. Moshkovskiy—p. 755

Gastrointestinal Ulcer Associated with Biliary Tract Disease. B. A. Krivoglaiz—p. 763

Clinical Evaluation of Retrograde Pyelography as Diagnostic Method in Renal Tuberculosis. D. O. Altshieyn—p. 771

Liver Function Determination in Prevention of Neorarsphenamine Complications.—Markus and Gelfand consider that the more functional the tests the more accurate will be the determination of the liver function as regards not only the icterus but also the complications due to neorarsphenamine in a broader sense. The following factors play an important part in the pathogenesis of secondary effects of neorarsphenamine, particularly of icterus after neorarsphenamine: 1. Latent infections (streptococci, paratyphoid, *Bacillus subtilis* and so on). Here the neorarsphenamine because of its hepatotropic effect, can activate the bacteria by lowering the functional status of the liver. 2. Dietetic errors, in the form of insufficient carbohydrate content. To reduce the incidence of these complications, the authors recommend that the following measures be carried out before and during the course of the mixed treatment: 1. Careful anamnesis and observation of the patient should be done, with particular attention to the general state, rises in temperature, attacks of malaise, headaches and rheumatic pains. 2. Proper evaluation should be given to even the mildest gastro-intestinal disturbances in the present and the past. 3. The importance of the diet should be emphasized, with elimination of alcohol and seasoned foods, and a sufficient amount of carbohydrates. 4. In addition to the investigation of the cardiovascular and the nervous system, and urinalysis, it is obligatory to examine the liver in all syphilitic patients by palpation and percussion paying attention to pain below the ribs, a sense of weight in the epigastrium, icteric and subicteric manifestations, itching, bradycardia and enlargement of the liver and the spleen. 5. Infectious processes both in the present and in the past must be carefully estimated. 6. Strict adherence should be observed to established dosage and intervals in the administration of neorarsphenamine. 7. The functional state of the liver should be estimated, based on several tests, some of which, such as the icterus index and the urobilinogen reaction, may be carried out in ambulatory practice. The authors emphasize that positive tests indicating liver insufficiency do not exclude the specific mixed treatment but make it imperative to observe strictly the precautions mentioned and to repeat the study of the functional state of the liver.

Functional Capacity of the Stomach in Pulmonary Tuberculosis.—From a study of the gastric secretion in 124 patients with pulmonary tuberculosis, Moshkovskiy makes the following deductions: 1. Most of the patients with pulmonary tuberculosis display disturbances of the secretory function of the stomach. 2. Inactive and mild types of the disease generally show hyperacidity, while active and toxic types are inclined toward subacidity. 3. Strict parallelism between the toxicity of the process and the disturbance of the gastric secretion was not observed. The alterations in gastric secretion did not seem related to the subjective complaints of the patient. 4. In most cases, secretion reached its maximum during the second hour after the test meal. Nevertheless there is no reason to consider the delayed secretion as characteristic of a tuberculous intoxication. 5. Definite types of gastric secretion characteristic for tuberculosis could not be established either with the method of double stimulation of Zimnitskiy or with the fractional method of Katsch. 6. In 88 per cent of the total cases the empty stomach was found to contain gastric juice. Tuberculous toxemia has a depressing effect on the functional activity of the empty stomach. The more severe the tuberculous process,

the rarer the finding of free hydrochloric acid and the lower the general acidity. 7. Evacuation of contents was found to proceed normally after the test meal. 8. Lack of regularity is the most characteristic feature of the gastric secretion in tuberculosis. Repeated observations demonstrated that subacidity frequently alternated with normal amounts and even hyperacidity. 9. The frequent heterochylia proves that the depression of the secretory function is caused not by an organic insufficiency of the secretory mechanism but by a certain lack of stability of the vegetative system. 10. The alkali reserve of the blood was not found to depend on the acidity of the gastric juice.

Hospitalstidende, Copenhagen

77 85 128 (Jan. 23) 1934

*1. Roentgenologic Investigations on Development and Course of Juvenile Kyphosis. 2. Some Investigations on Vertebral Epiphyseal in Animals and Man. H. Scheuermann—p. 85

Roentgenologic Investigations of Juvenile Kyphosis.—Scheuermann's discussion of the pathogenesis and development of juvenile kyphosis is based on eighteen cases, in thirteen boys and five girls. Detailed report of the cases is given. Usually, he says, two or three vertebrae are affected, the most marked changes appearing in the body from the ninth to the eleventh dorsal vertebra. As a rule the changes coincide with the development of the vertebral limb, and a wedge shape of the vertebra results assumed to be caused by pressure into the spongy substance of the cartilaginous layer of the body, probably together with reduction in growth. The irregular vertebral contour is regarded as due to the irregularly developed border of the vertebra in connection with possible nucleus prolapse. Fixation of the kyphosis may occur in the course of half a year, and the wedge shape corresponds to the degree of kyphosis. Prognosis cannot be made at the start of the disturbance.

77 129 156 (Jan. 30) 1934

*Zoster and Chickenpox. Use of Fixation of the Complement in Determination of Question Concerning Identity of Zoster and Chickenpox Virus. O. Thomsen—p. 129

*Investigations on Cholesterol in Serum During Pregnancy. G. Teilum—p. 140
Pellagra. New Case. H. Boas—p. 153

Fixation of the Complement in Identity of Zoster and Chickenpox Virus.—Thomsen reviews the relation between zoster and chickenpox. The results were negative in his personal investigations on the fixation of the complement (analogous to those of Netter and Urbain) with application of serums from eighty-eight cases of zoster and extract of zoster and chickenpox crusts as antigen and of serums from fourteen cases of chickenpox and zoster antigen.

Cholesterol in Serum During Pregnancy.—Teilum says that pregnancy is accompanied by a hypercholesterolemia, often found in the third month and seldom absent later. He assumes that when the ovum has reached a certain stage of development (about the third or fourth month) a retention of cholesterol occurs in the mother, probably from the mother's organism (corpus luteum, reticulo-endothelial apparatus, suprarenals), and only to a slight degree from the food. Cholesterolemia has been considered necessary for the development of tissue in the fetus, but at least part of the fetal cholesterol may come from the placenta or endogenously from the suprarenals. Whether the mother's cholesterolemia is to be considered in connection with the cholesterol needs of the fetus is therefore doubtful. The cholesterol during pregnancy is believed to protect the mother's organism in different ways. Low cholesterol values in hyperemesis have been shown by other investigations.

77 157 184 (Feb. 6) 1934

For and Against Loewenstein's Establishment of Tubercle Bacilli in Blood in Certain Tuberculosis and in Infections of More Doubtful Origin. Review. O. Thomsen—p. 160

Angeworm. Detail Study of Popular Medicine. A. Garboe—p. 172

*Treatment of Lymphogranulomatosis with Specific Serum. G. Alsted—p. 177

Lymphogranulomatosis.—In the case of lymphogranulomatosis treated recently in the Rigshospital with serum prepared in the State Serum Institute, according to Utz and Keatinge, the "specific" therapy was without effect. Alsted sees a danger in the treatment if because of it roentgen therapy is withheld.

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CHRONIC NONSPECIFIC ARTHRITIS

ETIOLOGY AND TREATMENT, WITH SPECIAL REFERENCE TO VACCINE THERAPY

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NEW YORK

In a recent communication dealing with the progress that has been made in the knowledge of chronic arthritis, Cecil¹ enumerates the following milestones

- 1 The recognition of the two great types of chronic non-specific arthritis
- 2 The theory of focal infection
- 3 The modern bacteriology and serology of arthritis
- 4 Investigations into carbohydrate metabolism and the more recent studies in vitamins
- 5 New methods in the application of physical therapy and climatology
- 6 Advances in the surgical and orthopedic treatment of chronic joint disorders

The object of this study is to evaluate some of these advances in the light of an experience during the past ten years with the care and investigation of more than 2,000 cases of chronic nonspecific arthritis²

CLASSIFICATION

The recognition by Garrod³ of the two great types of chronic nonspecific arthritis was a definite advance in the classification of the disease, truly as distinctive as the separation of gout from other joint disorders. To describe the two forms of the disease Garrod employed the terms rheumatoid arthritis and osteo-arthritis. The pathologic studies of Nichols and Richardson⁴ in a measure substantiated this division. These authors found that rheumatoid arthritis is primarily a proliferative and osteo-arthritis essentially a degenerative process. Allison and Ghormley⁵ have corroborated these observations and in addition have described a cellular disturbance in rheumatoid arthritis which they failed to encounter in osteo-arthritis. Cecil has stated that "these fundamental differences between rheumatoid arthritis and osteo-arthritis suggest that they are independent disease entities of different etiology and such indeed appears to be the case." Dawson, Sia and Boots⁶ are

in essential agreement with this point of view and emphasize the distinction between the infectious nature of rheumatoid arthritis and the noninfectious character of osteo-arthritis.

On the other hand, clinical experience has led many students of the subject to the conclusion that no such arbitrary division can be made. Too many cases show characteristics of both forms of the disease. There is definitely a mixed form of chronic arthritis. Combined types do occur frequently enough to upset any dogmatic classification. In a series of 1,459 cases of chronic arthritis reported two years ago, I⁷ found fifty instances in which rheumatoid arthritis and osteo-arthritis could be demonstrated in the same patient, frequently in the same finger. More recently Rigler and Wetherby⁸ in a roentgen study of sixty cases of chronic arthritis found that only 37 per cent showed a uniform type of pathologic change in all the joints. About two thirds of the patients had a mixed type of reaction in various joints. According to Kulowski,⁹ quoting Knaggs, the osteo-arthritic and the rheumatoid forms of chronic arthritis are opposite ends of the same scale of a single disease. Fisher¹⁰ declares that the two conditions may be present in the same patient but affecting different joints. McCrae¹¹ has stated that certain cases show features that seem to suggest distinct entities but others seem to belong to both groups or to lie between them. He feels that there are so many examples of these mixed cases that they offer a great objection to the adoption of the view that two diseases can be distinguished. He adds that in all chronic joint changes it is well to keep in mind that different results may come from the same cause and that the same result may be due to different causes. It is interesting to note that Nichols and Richardson,⁴ whose description of the pathologic changes of this disease is classic, held the same opinion regarding the causation of chronic arthritis. According to Dawson and Boots,¹² the changes initiated by infection may be followed by secondary degenerative alterations in such a way that the essential picture may closely resemble that of osteo-arthritis. Klinge and Fricke¹³ have given experimental proof of this contention. They have shown in rabbits that inflammatory arthritis becomes

7 Archer B H. A Mixed Form of Chronic Arthritis. *M J & Rec* 134: 344 (Oct 7) 1931.

8 Rigler Leo and Wetherby Macmiller. Roentgen Findings in Chronic Polyarticular Arthritis. *Am J Roentgenol* 20: 766 (June) 1932.

9 Kulow L. Jacob. Chondromalacia of the Patella. *J A M A* 100: 1837 (June 10) 1933.

10 Fisher A G T. Chronic (Nontuberculous) Arthritis. *New York Macmillan Company* 1929 p 36.

11 McCrae Thomas in Osler William. *Modern Medicine Philadelphia Lea & Febiger* 803 1927.

12 Dawson M H and Boots R H. Recent Studies in Rheumatoid (Chronic Infectious) Arthritis. *New England J Med* 108: 1030 (May 18) 1933.

13 Klinge F and Fricke G. Experimentelle Untersuchungen über anaphylaktische Entzündung der Gelenke. *Krankheitsforschung* 9: 81 (April) 1931.

1 Cecil R L. Rheumatoid Arthritis. *J A M A* 100: 1220 (April 22) 1933.

2 This material was seen chiefly in the arthritis section of the Cornell Clinic the arthritis service of the Mount Sinai Hospital and the medical division of the Lincoln Hospital, New York.

3 Garrod A E. in Allbutt and Rolleston's System of Medicine. London Macmillan Company 3: 1 1907.

4 Nichols E H and Richardson F L. Arthritis Deformans. *J M Research* 21: 149 (Sept.) 1909.

5 Allison Nathaniel and Ghormley R K. Diagnosis in Joint Disease. New York William Wood & Co 1931.

6 Dawson M H Sia R H F and Boots R H. The Differential Diagnosis of Rheumatoid and Osteo Arthritis. The Sedimentation Reaction and Its Value. *J Lab & Clin Med* 15: 1065 (Aug) 1930.

degenerative arthritis if followed for a period of from one to three years Pemberton¹⁴ maintains that "whatever the criteria we accept the two great types of arthritis cannot definitely and finally be wholly divided one from the other. Allowing these two types their most specific features, they still in some part overlap and furthermore there is a group of cases which by common consent of students of arthritis throughout the world cannot surely be placed under either head."

An interesting suggestion is made by Richard and Joseph Kovacs¹⁵ that the type of nonspecific arthritis present in any given case depends on the anthropometric measurements of the patient, the rheumatoid form developing in persons of the asthenic type and osteo-arthritis coming on in individuals of the so-called pyknic or sthenic build. Boyd's¹⁶ conception of the disease is one of varying responses to a single cause. Rigler and Wetherby⁸ believe that the age of the patient, the joints involved and the duration of the disease are more important in determining the type of arthritis present in any given case than any causative factor or group of factors.

While it is true that in the early stages most cases of chronic nonspecific arthritis are either predominantly of the rheumatoid or predominantly of the osteo-arthritic type, as the disease progresses this distinction tends to become less marked. In the really mixed forms it is often impossible to say where the rheumatoid arthritis ends and the osteo-arthritis begins. In such cases the patient may present fusiform enlargement of the proximal phalangeal joints and Heberden's nodes of the terminal phalangeal joints. These are considered respectively, to be the characteristic clinical signs of rheumatoid arthritis and osteo-arthritis. To ascribe these lesions, which may be found in adjacent finger joints, to two different diseases requires a unique conception. It seems much more logical to assume that the synovial proliferation in the proximal phalangeal joints and the cartilaginous erosion in the terminal phalangeal joints are different manifestations of the same disease.

When one stops to consider the protean clinical and pathologic manifestations of other chronic diseases such as tuberculosis or syphilis, one is less apt to seek different etiologic agents to explain the synovial and cartilaginous changes in chronic nonspecific arthritis. It may be recalled in this connection that until the inflammatory lesion of the chancre and the degenerative cord lesions of tabes dorsalis were known to be due to a single etiologic agent, it was felt by most investigators that these were two different diseases with diverse etiologies.¹⁷ In the osseous system, it is well to remember that syphilis may manifest itself as a proliferative arthritis or as a degenerative process of the Charcot type. The pathologic changes of the proliferative form are quite similar to those of rheumatoid arthritis, and Boyd¹⁶ has pointed out the resemblance between the early degenerative lesions of the Charcot joint and osteo-arthritis.

There would thus appear to be a basis for the concept that both rheumatoid arthritis and osteo-arthritis are due to the same etiologic agent or group of agents and

that the proliferative and degenerative pathologic changes by which the two types manifest themselves are the result of other factors than those of causation. While age and the duration of the disease appear to be important factors, trauma, foci of infection, the involutional changes of the menopause, and the habitus of the patient seem to play a significant role in determining the type of nonspecific arthritis present in any given case.

BACTERIOLOGY

In the realm of bacteriology some interesting contributions have been made in recent years that in a measure corroborate the earlier work of Rosenow.¹⁸ In 1928, Forkner, Shands and Poston¹⁹ published their observations on the study of the synovial fluid in sixty-three cases of chronic arthritis. Positive cultures were obtained from the joint fluid in 22 per cent of the total number of cases. In 1929 Mary Poston,²⁰ one of the collaborators in this work, reported the results of taking cultures of 120 glands removed from patients with "chronic infectious" (rheumatoid) arthritis. Using Rosenow's technic, she obtained positive growths in 60 per cent of the cases. The predominant organism recovered in both investigations was a green streptococcus. In the same year Cecil, Nichols and Stainsby²¹ reported the isolation of an attenuated hemolytic streptococcus from the blood and joints of patients with rheumatoid arthritis. These authors studied seventy-eight cases and isolated a streptococcus from the blood in forty-eight instances. In forty of the positive cases they found a "typical strain" of streptococcus. Of the eight remaining strains, six were classified as viridans and two as indifferents. In addition to these organisms, they isolated diphtheroid bacilli in four cases and *Micrococcus zymogenes* on two occasions. A group of control cases, including nineteen instances of osteo-arthritis, gave negative results on blood culture. Cecil is disposed to pry but little attention to the isolation of any of the organisms but the streptococci and believes that the "typical strain" is the specific etiologic agent of rheumatoid arthritis. In their last series of 154 cases, Cecil, Nichols and Stainsby²² recovered streptococci from the blood in ninety-six cases (62.3 per cent) and from the joints in thirty-three of forty-nine cases (67.3 per cent). Since this work was originally published, streptococci have been isolated from the blood and joints of patients with chronic arthritis in a high percentage of the cases by Gray, Fendrick and Gowen,²³ Wetherby and Clawson,²⁴ Ashworth,²⁵ and Klugh.²⁶ Other observers²⁷ have found streptococci in the blood and joints of

14 Pemberton Ralph. Arthritis and Rheumatoid Conditions. Their Nature and Treatment. Philadelphia: Lea & Febiger, 1929, p. 163.
15 Kovacs Richard and Kovacs Joseph. Physical and Constitutional Measures in Chronic Arthritis. New York State J. Med. 33: 1148 (Oct. 1) 1933.
16 Boyd W. Surgical Pathology. Philadelphia: W. B. Saunders Company, 1925, p. 762.
17 Jelliffe S. E., and White W. A. Diseases of the Nervous System. Philadelphia: Lea & Febiger, 1929, p. 843.

18 Rosenow E. C. The Etiology of Arthritis Deformans. J. A. M. A. 62: 1146 (April 11) 1914.
19 Forkner C. E., Shands A. R. and Poston Mary A. Synovial Fluid in Chronic Arthritis. Arch. Int. Med. 42: 675 (Nov.) 1928.
20 Poston Mary A. Gland Cultures in Infectious Arthritis. J. A. M. A. 93: 692 (Aug. 31) 1929.
21 Cecil R. L., Nichols E. E. and Stainsby W. J. The Bacteriology of the Blood and Joints in Chronic Infectious Arthritis. Arch. Int. Med. 43: 571 (May) 1929.
22 Cecil R. L., Nichols E. E. and Stainsby W. J. The Etiology of Rheumatoid Arthritis. Am. J. M. Sc. 181: 12 (Jan.) 1931.
23 Gray J. W., Fendrick Edward and Gowen C. H. Rheumatic Fever and Rheumatoid Arthritis from the Laboratory Point of View. Texas State J. Med. 28: 317 (Sept.) 1932.
24 Wetherby Macnider, and Clawson, B. J. Chronic Arthritis with Special Reference to Vaccine Therapy. Arch. Int. Med. 49: 303 (Feb.) 1932.
25 Ashworth O. O. Bacteriology and Treatment of Rheumatoid Arthritis. Virginia M. Monthly 59: 452 (Nov.) 1932.
26 Klugh F. G. Streptococci from Blood Cultures in Arthritis. South. M. J. 24: 706 (Aug.) 1931.
27 Strauss Aubrey. Problems in the Relation of Streptococci and Diphtheroid Bacilli to Chronic Infectious Arthritis. Virginia M. Monthly 55: 801 (March) 1932. Margolis H. M. and Dorsey Anna H. E. Bacteriology of the Blood in Chronic Infectious Arthritis. J. Infect. Dis. 46: 442 (June) 1930. Kracke R. R. and Teasley H. E. The Efficiency of Blood Cultures. J. Lab. & Clin. Med. 16: 169 (Nov.) 1930.

arthritis patients but in a lower percentage of the cases (from 5 to 15)

On the other hand, a number of investigators have failed to corroborate the results of Cecil, Nichols and Stainsby Nye and Waxelbaum²⁸ in a very careful study found only one positive blood culture in a series of thirty-three rheumatic cases. They are inclined to regard the streptococci recovered from the blood and tissues of patients with rheumatoid arthritis as contaminants. These authors point out that the organisms now being found in arthritis cases are quite similar to those which were isolated twenty years ago from the lymph nodes of patients with Hodgkin's disease. Bernhardt and Hensch²⁹ found no streptococci in a series of twenty cases of rheumatoid arthritis in which eighty blood cultures were taken. Dawson, Olmstead and Boots³⁰ found only three positive streptococcus cultures in a series of eighty cases of rheumatoid arthritis, a little less than 3.7 per cent. It is noteworthy that these investigators isolated streptococci in two instances from the culture mediums, samples of sterile agar which were used as controls and were subjected to the same manipulations of the Cecil technic as were the blood cultures. Jordan³¹ failed to isolate any streptococci from the blood of thirty-two patients with acute forms of arthritis. He recovered some gram-negative and gram-positive bacilli but questioned their importance.

Numerous observers²⁷ have found streptococci in from 5 to 15 per cent of the blood cultures in arthritis cases. It must be emphasized in this connection that Lichtman and Gross,³² in a study of 5,233 consecutive blood cultures performed at the Mount Sinai Hospital in New York, reported a regular yearly incidence of from 5 to 15 per cent of cases positive for streptococcus in nonrheumatic diseases, such as pernicious anemia, leukemia, meningococcal meningitis and aplastic anemia. It follows, then, that the finding of this percentage of positive streptococcus blood cultures in rheumatic cases has no special significance.

The results of those investigators who reported a high percentage of positive blood and joint cultures in chronic arthritis show no uniformity. Cecil, Nichols and Stainsby²¹ have isolated an attenuated hemolytic streptococcus from the blood and tissues of rheumatoid cases but report negative results in their cases of osteoarthritis, used as controls. On the other hand, Wetherby and Clawson²⁴ report the isolation of indifferent and viridans strains of streptococci and find these organisms in the blood of osteo-arthritis as well as rheumatoid patients. Klugh²⁶ recovered a green streptococcus from the blood of arthritis patients and asserts that this organism bears a marked resemblance to the streptococcus which Small has isolated from cases of rheumatic fever. Ashworth²⁵ found gram-positive diplococci as well as streptococci in his blood cultures. The streptococci isolated by this author differ in their reaction toward the gram stain, only a few show hemolysis, most do not, and the fermentation reactions are irregular. Gray and his associates²³ have found viridans as well

as attenuated hemolytic streptococci in blood and joint cultures of rheumatoid cases. It is also of interest to note that Shands, who collaborated with Forkner and Poston in the cultivation of streptococci from the synovial fluid and glands of patients with rheumatoid arthritis, has later reported the finding of streptococci in two of ten Charcot joints and in one gonorrheal arthritis joint (with gonococci).³³

In view of the foregoing data it would appear that there is ample ground for skepticism regarding the actual presence of streptococci in the blood and joints of patients with chronic nonspecific arthritis. The probability of contamination must be borne in mind, because the colonies of the "typical strain" resemble very closely those which Olitzsky and Long³⁴ have isolated as contaminants in their work on the relationship of streptococci to encephalitis and poliomyelitis. These investigators found that the streptococci that were isolated were derived from ground meat particles. The colonies of these organisms had a greenish tinge and were surrounded by a narrow zone of hemolysis on blood agar plates corresponding very closely to the colonies of Cecil, Nichols and Stainsby's "typical strain." Long, Olitzsky and Stewart³⁵ have definitely shown that even under the most rigorous Carrel technic streptococci may appear in Petri dishes exposed to the air. Seven times as many colonies appeared under the usual conditions of sterility (under a hood) as were found under the more rigorous aseptic conditions of Dr. Carrel's tissue-culture room. These authors found a correlation between the number of positive cultures and the number of bacteria in the air. They further showed that these streptococci are introduced into the cultures during the process of grinding tissues. The streptococci were isolated from the air of the places where cultures were made.

VACCINE THERAPY

In recent years the treatment of arthritis patients with vaccines has attracted considerable attention and discussion. This form of therapy has been based for the most part on the assumption that the streptococcus is the etiologic factor in the production of chronic arthritis. It is principally used in the rheumatoid type of the disease but is also employed quite extensively in the treatment of osteo-arthritis.

Most observers report unsatisfactory results with this therapeutic agent. Pemberton states that when he needs a case suitable for vaccine therapy to demonstrate to his students he must search far and wide. He agrees with Kolmer that the results with vaccine therapy in chronic arthritis have not been encouraging and stresses the psychologic factor in the use of injections.³⁴ Osgood³⁶ has expressed his doubts of the value of this therapy. Kinsella³⁷ reports that the use of streptococcus vaccines in his experience has not been followed by encouraging improvement. Boots and Dawson¹⁷ state that it is their feeling that the results of vaccine therapy vary with the enthusiasm of the user.

Cecil¹ is noncommittal about his results with vaccine therapy and reports that at the present time he usually

²⁸ Nye R. N. and Waxelbaum E. A. Streptococci in Infections (Atrophic) Arthritis and Rheumatic Fever. *J. Exper. Med.* 52: 885 (Dec.) 1930.

²⁹ Bernhardt H. and Hensch, P. S. Bacteriology of the Blood in Chronic Infectious Arthritis. *I. Infect. Dis.* 49: 459 (Dec.) 1931.

³⁰ Dawson M. H., Olmstead Miriam and Boots R. H. Bacteriologic Investigations on the Blood, Synovial Fluid and Subcutaneous Nodules in Rheumatoid Arthritis. *Arch. Int. Med.* 49: 173 (Feb.) 1932.

³¹ Jordan E. P. and Boland J. P. Results of Blood Culture in Acute Polyarthritides. *J. Infect. Dis.* 46: 145 (Feb.) 1930.

³² Lichtman S. S. and Gross Louis. Streptococci in the Blood in Rheumatic Fever, Rheumatoid Arthritis and Other Diseases. *Arch. Int. Med.* 49: 1078 (June) 1932.

³³ Shands A. R. Synovial Fluid in Infectious and Neuropathic Arthritis. *South. M. J.* 23: 818 (Sept.) 1910.

³⁴ Olitzky P. K. and Long P. H. The Relation of Streptococci to Herpes Virus Encephalitis. *J. Exper. Med.* 48: 199 (Aug.) 1928.

³⁵ Long I. H., Olitzky P. K. and Stewart I. W. The Role of Streptococci in Experimental Poliomyelitis of the Monkey. *J. Exper. Med.* 45: 431 (Sept.) 1928.

³⁶ Osgood R. L. Second Conference on Rheumatic Diseases. *J. A. M. A.* 101: 1266 (Oct. 14) 1933.

³⁷ Kinsella R. A. Types of Chronic Pneumonia. *J. A. M. A.* 101: 345 (July 29) 1933.

tries intravenous injections of streptococcus vaccine for three or four months. If it fails to help, he discontinues this therapy. The "typical strain" of streptococcus vaccine is the one employed. In a recent communication, Stansby and Nichols³⁸ report that their results with this particular vaccine have been extremely disappointing. They feel that even "the low percentage of improvement in their series of cases may well represent the natural tendency of some patients to improve regardless of treatment, rather than any inherent value in streptococcus vaccine therapy." These authors report better results with other forms of streptococcus vaccine than with the use of the "typical strain." Furthermore, their patients do better with subcutaneous than with intravenous injections in contrast to Cecil's experience. Most difficult to explain is the fact that their moderately severe cases do better than their mild ones on this therapy. When one can improve relatively severe instances of a disease and fails to check mild cases with the same remedy, it tends to bespeak some other factor than the agent employed as the cause of the improvement. Nichols and Stansby apparently realize this and stress the importance of the psychologic effect on the patients of vaccine inoculations.

Personal experience with the "typical strain" vaccine at the Cornell Clinic and in private practice corroborates the results obtained by Stansby and Nichols. Whether this vaccine was given parenterally or intravenously in minute doses with the idea of desensitization, I have failed to observe satisfactory results. More recently, Wetherby and Clawson's vaccine³⁴ was tried intravenously. The acute cases were treated in the wards of Lincoln Hospital and the chronic cases were selected from private practice. I have failed to note any changes in the patients with the use of this vaccine. Prior to 1929, Cecil and I used vaccine of *Streptococcus hemolyticus* and *Streptococcus viridans* of autogenous and stock strains in a series of cases of rheumatoid arthritis. The effects were admittedly poor and were so reported.³⁹ Vaccines prepared from single organisms other than the streptococcus, such as *B. coli* isolated from the stool, or grouped with streptococci recovered from the nose and throat or other foci, also gave negative results in this type of arthritis.

In 1931 Burbank and Christensen⁴⁰ reported on the "specific vaccine therapy of 1,000 cases of chronic arthritis." The vaccine employed was the polyvalent mixed type consisting of autogenous and stock strains of streptococci, staphylococci, *B. coli* and at times gonococci. The authors assert that favorable results were obtained with this therapeutic agent, and its use is quite extensive at the present time. In their communication, Burbank and Christensen state that the basis for their method of treatment is the fact that "there is sufficient evidence of streptococcal culpability in all types to warrant considering both the atrophic (rheumatoid) and hypertrophic (osteo-arthritis) infective." The isolation of streptococci from the blood in fifteen of 145 cases (10 per cent) of chronic arthritis is cited⁴¹ as direct proof of this contention. As already noted, this

finding has no special significance, since it has been reported in nonrheumatic as well as rheumatic cases. Furthermore, it must be borne in mind that both types of nonspecific arthritis have been produced experimentally by aseptic processes, such as ligation of the blood supply to the patella⁴² or the intra-articular injection of horse serum.⁴³ It is difficult to reconcile such evidence with the view that all forms of arthritis are the result of streptococcal infection.

Neither this vaccine nor any other of the streptococcus or mixed vaccines used at the present time in the treatment of chronic nonspecific arthritis have been included in the last edition of New and Nonofficial Remedies (1933). It might be well at this point to emphasize the following statement of the Council on Pharmacy and Chemistry: "The employment of bacterial vaccines should be based either on the discovery of the causative micro-organism by careful bacteriologic examination of the patient under treatment or on well established clinical knowledge which has shown the disease present to be regularly due to the activity of a definite germ."⁴⁴

CARBOHYDRATE METABOLISM AND VITAMINS

Investigations into carbohydrate metabolism and studies on vitamins have been included as advances in the study of chronic arthritis. In 1920 Pemberton and Foster⁴⁵ reported a diminished sugar tolerance in most cases of "chronic infectious" (rheumatoid) arthritis. This work received corroboration from Fletcher⁴⁶ and served as a basis for a marked restriction of carbohydrate intake to sufferers from rheumatoid arthritis. A careful analytic study⁴⁷ was conducted at the Cornell Clinic in 1929 to check Pemberton's results. Two parallel series of cases of "chronic infectious" (rheumatoid) and "menopause" (osteo) arthritis were submitted to sugar tolerance tests. In the typical cases of rheumatoid arthritis no evidence of a diminished sugar tolerance was demonstrable. In the osteo-arthritis group it was found that 70 per cent showed a lowered tolerance for dextrose. However, most of the cases showing this lowered tolerance had associated conditions such as hypertension, obesity and endocrine disturbances. As it has been demonstrated repeatedly that either hypertension⁴⁸ or obesity⁴⁹ or endocrine disturbance⁵⁰ may cause a lowering of the sugar tolerance, it was concluded from these studies that it was impossible to say that the diminished sugar tolerance found in the cases of "menopause" osteo-arthritis was related to the chronic disease of the joints.

I had discontinued the use of a low carbohydrate diet in badly nourished patients with rheumatoid arthritis

38 Stansby W J and Nichols E E. Results of Treatment in Rheumatoid Arthritis with Reference to Foci of Infection and Streptococcus Vaccine. *J. Lab. & Clin. Med.* 18: 881 (June) 1933.

39 Cecil R L and Archer B H. Chronic Infectious Arthritis. *Am. J. M. Sc.* 173: 258 (Feb.) 1927.

40 Burbank R and Christensen B E. Specific Vaccine Treatment of One Thousand Cases of Chronic Arthritis with Results and Clinical Observations. *J. Bone & Joint Surg.* 13: 246 (April) 1931.

41 Hadjopoulos, L G and Burbank R. A Preliminary Study Bearing on the Specific Causative Factors of Multiple Infective Arthritis. *J. Bone & Joint Surg.* 9: 278 (April) 1927.

42 Pemberton⁴⁴ Goldhaft A D Wright L M, and Pemberton Ralph. The Influence of Age in the Experimental Production of Hypertrophic Arthritis. *Ann. Int. Med.* 6: 1591 (June) 1933.

43 Klinge and Fricke⁴³ Klinge F. Experimentelle Erzeugung von Arthritis Deformans. *Verhandl. d. deutsch. path. Gesellsch.* 26: 216 1931.

44 New and Nonofficial Remedies. Chicago: American Medical Association 1933, p. 396.

45 Pemberton Ralph and Foster G L. Studies on Arthritis in the Army Based on Four Hundred Cases. *Arch. Int. Med.* 25: 243 (March) 1920.

46 Fletcher A A. Dietetic Treatment of Chronic Arthritis and Its Relationship to the Sugar Tolerance. *Arch. Int. Med.* 30: 106 (July) 1922.

47 Archer B H. Sugar Tolerance in Arthritis. I. Chronic Infectious Arthritis. *Arch. Int. Med.* 44: 37 (July) 1929. II. Arthritis of the Menopause. *ibid.* 44: 238 (Aug.) 1929.

48 O'Hare J P. Glucose Tolerance Test in Chronic Vascular Hypertension. *Am. J. M. Sc.* 159: 369 (March) 1920. Herrick W W. Hypertension and Hyperglycemia. *J. A. M. A.* 81: 1942 (Dec.) 1923.

49 John H J. The Relationship of Obesity to Carbohydrate Metabolism. *Am. J. M. Sc.* 173: 184 (Feb.) 1927.

50 Janney N W and Isaacson V I. The Blood Sugar and Thyroid and Other Endocrine Diseases. *Arch. Int. Med.* 22: 160 (Aug.) 1918.

even prior to investigating carbohydrate metabolism, because it had become manifest clinically that these patients became definitely worse on reduction of their caloric intake. However, following the investigations of Fletcher⁵¹ and his advocacy of a vegetable diet plus a liberal supply of vitamins, I returned to this regimen for a time. In his studies on the colon in arthritis, Fletcher found a high percentage of abnormalities. He further reported that with the use of a "green" diet and a liberal supply of vitamins this pathologic condition could be corrected and the arthritis improved.

To check these results, a series of patients with rheumatoid arthritis were given barium enemas at the arthritis clinic of the Mount Sinai Hospital. It was found that many of the roentgenograms showed reduplication of the colon and incompetence of the ileocecal valve. However, inquiry from the gastro-enterologists at the hospital drew from them the reply that any parallel series of nonrheumatic cases would show the same percentage of colonic abnormalities which had been obtained in the arthritic cases, and that it was futile on the basis of such evidence to postulate any specific relationship between the changes in the colon and the disease under consideration. Recently Haft⁵² has published his results regarding colon changes in a series of rheumatic and nonrheumatic cases. He found the same high incidence of reduplications, ileocecal valve incompetence and lack of haustral markings in his control group as he did in his group of arthritis cases. He concludes that the expression of the abnormalities in the colon in the arthritis cases as well as in the control cases is a manifestation of chronic disease states rather than a condition that is peculiar to chronic arthritis. Clinically, the use of vitamins of all kinds, singly and in combination as also the use of any special dietary, has completely failed in my experience to exercise any specific effect on the joint manifestations of patients with nonspecific arthritis. It seems important to add that those patients who are poorly nourished should receive a well balanced, high calory diet to increase their general resistance. On the other hand, in robust individuals with painful weight bearing joints, a reduction in weight is often beneficial for purely mechanical reasons.

FOCAL INFECTION

The theory of focal infection still holds an important place in any consideration of chronic arthritis. With the years has come a more accurate appraisal of its undoubted benefits and its equally definite limitations. On the positive side it has been shown that in the mild forms of rheumatoid arthritis, in the early stages, removal of foci, especially diseased tonsils, will in a high percentage of the cases produce a prompt remission and in a smaller number, lasting recovery. In this connection it seems well to recall the frequency of remissions in this disease and to emphasize the fact that no case of arthritis can be considered as cured by any procedure unless followed up for at least two or three years, possibly longer. On such a basis the early mild cases represent the only form of rheumatoid arthritis that I have seen cured, and it was effected by the application of the theory of focal infection within six months of the onset of the disease.

Whether these mild cases of "periarticular arthritis" should be placed in the same category with the relentless form of "primary progressive polyarthritis" that goes on inexorably to bony ankylosis, in spite of the removal of foci, is a question that might very well form the basis of a separate report. It may suffice to state at this time that some observers⁵³ believe that the mild form of "periarticular arthritis," which is so frequently improved or cured by the removal of foci of infection, is not the same entity as "primary progressive polyarthritis." On the other hand, some keen students⁵⁴ of the subject believe the mild type to be the "anlage" of the malignant form of the disease and that the two differ only in duration, extent and severity. Since it is impossible to forecast whether an incipient case of rheumatoid arthritis is going to be benign or malignant in its later manifestations, it seems wise to search for and promptly remove diseased foci early in the course of the disease.

It should be emphasized that the tonsils are not the only possible source of infection. Abscessed teeth and severe pyorrhea come next in the order of frequency. More rarely the prostate, the colon, the sinuses, the gall-bladder and the cervix may act as a focus of infection in any given case. It has been my experience that extraction of teeth and treatment directed toward the less common foci do not produce the dramatic results of tonsillectomy. However, this is not intended to disparage the value of such procedures when indicated.

TREATMENT OF ADVANCED CASES

Rheumatoid arthritis in its fully developed and advanced form seems to be an incurable disease. Neither diet, nor vaccine, nor the removal of foci will cure this condition. As McLester⁵⁵ aptly puts it, there is only one thing left to do, and that is to treat the patient and not the disease. Kinsella⁵⁷ is of the same opinion, and Bauer⁵⁶ states that there is no specific therapy for rheumatoid arthritis and that every one treating these patients should study them carefully, correct all abnormalities, treat the patient as a whole and observe the effect on the course of the disease. This seems to be the consensus of the American Committee for the Control of Rheumatism, as voiced by Pemberton⁵⁸ on numerous occasions.

If this is true, what should be done to treat the patient with an advanced case of rheumatoid arthritis? Kinsella⁵⁷ advises that some "reasonable" measures be used. In my opinion these measures are (1) the use of orthopedic procedures, first to combat and secondly to overcome joint deformities, (2) the application of physical therapy, in its approved and accepted forms, (3) the administration of drugs to relieve pain, and (4) a climatic change from the humid and cold north to the warm and dry south.

A pitfall one should avoid in the present-day treatment of rheumatoid arthritis would seem to be undue concentration on one particular form of therapy. If the physician focuses his attention on a "fad" he may forget to treat the patient along more sound and more logical lines. Securing favorable results in a few cases, he may attribute specificity to a particular remedy and is apt to minimize his failures. The absence of a specific

⁵¹ Fletcher A. A. and Graham Duncan. The Large Bowel in Chronic Arthritis. *Am J M Sc* 179 91 (Jan) 1930. Fletcher A. A. The Nutritional Factor in Chronic Arthritis. *J Lab & Clin Med* 15 1149 (Aug) 1930.
⁵² Haft H. H. The Colon Changes in Chronic Arthritis Compared with Other Chronic Diseases. *Am J M Sc* 185 811 (June) 1933.

⁵³ McCrae H. Barler L. F. Differentiation of the Diseases Included Under Chronic Arthritis. *Am J M Sc* 117 1 (Jan) 1914.

⁵⁴ Dawson and Poole. Cecil Nichols and Stainby.

⁵⁵ In discussion on Kinsella.

⁵⁶ Pemberton Ralph. Arthritis. *Am J M Sc* 178 593 (Nov) 1929.

remedial agent seems to promote this tendency to overestimate the importance of some favored form of treatment. This in turn may lead to the exclusion of other well tried and valuable procedures. It would be well to bear in mind that in the present state of knowledge dogmatic views on therapy (as well as etiology) are not warranted by the facts. It seems to me that, pending further investigation, a broad point of view and an open minded attitude are essential for progress both in the study and in the treatment of patients with rheumatoid arthritis.

TREATMENT OF OSTEO-ARTHRITIS

It was formerly my custom to make a sharp distinction between rheumatoid arthritis and osteo-arthritis and to treat the former as an infectious and the latter as a noninfectious process. I have come to realize that this practice proceeds too much from an "a priori conviction as to what should be the case" and is based on limited premises. At the present time I examine and treat each case of arthritis solely on its own individual merits without necessary regard to its classification. Present knowledge of the subject does not seem to warrant the view that certain measures should be applied to certain types, since "there is no unequivocal evidence that the same measures do not apply to both types or that they always apply to either type." In the words of Pemberton,¹¹ "the time may come, and it is to be greatly hoped that it may, when the various forms of treatment can cluster with sharp definition around the two or more types of arthritis which may finally and permanently emerge. Until this time has arrived we should make ourselves familiar with the general principles and measures which may and often do apply to all types."

SUMMARY

1 There appears to be a basis for the concept that both rheumatoid arthritis and osteo-arthritis are due to the same etiologic agent or group of agents and that the proliferative and degenerative pathologic changes by which the two types manifest themselves are the result of other factors than those of erosion.

2 There seems to be no conclusive evidence of the presence of streptococci in the blood and joints of patients with chronic arthritis.

3 None of the vaccines employed at the present time in the treatment of chronic arthritis have been accepted by the Council on Pharmacy and Chemistry. There is no evidence at hand that they exercise any specific effect on the course of the disease.

4 Dietary regulations and vitamin therapy apparently exercise no specific effect on the joint manifestations of patients with this disease.

5 In those cases associated with foci of infection it seems wise to search for and remove this factor early in the course of the disease.

6 In advanced cases the measures I have found to be of greatest benefit to the patient are orthopedic procedures, physical therapy, the administration of drugs to allay pain, and a change of climate.

7 Present knowledge of the subject does not seem to warrant the view that certain definite measures should be applied only to certain definite types of arthritis. There is no conclusive evidence that the same measures do not apply at some time to all forms of nonspecific arthritis.

1964 Grand Concourse

VERIFIED BRAIN TUMORS

END RESULTS OF ONE HUNDRED AND FORTY NINE CASES EIGHT YEARS AFTER OPERATION

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In Dr Cushing's recent monograph on intracranial tumors a statement appears to the effect that what is more important than the mere statistical enumeration of the dead and the living is to know what has happened to the survivors. Toward this end, the present inquiry was undertaken.

During the summer of 1932 an opportunity presented itself to be associated again for a few weeks with the surgical service of the Peter Bent Brigham Hospital. With it came the privilege of reporting on the follow up of a group of Dr Cushing's patients seen during my term as resident in the neurologic service, now some eight years ago. The group selected for study comprised the "verified" tumors of the brain, 149 in number.

Scarcely is a person admitted to the hospital with a diagnosis of a brain tumor than one is beset with a whole train of queries by the family physician and the patient's relatives. Will he be able to return to work or former mode of living, and for how long? Will he be handicapped, will the tumor recur if removed, what is the probable length of life? All too hard pressed is one to answer these questions, and naturally some of them cannot be answered. The question most often asked is that of the patient's ability to return to work.

Every privilege naturally implies a responsibility, and in this instance the responsibility of making this report is a many sided one. The relatively small number of cases must be taken into consideration and too sweeping conclusions must not be drawn from them. A larger series would undoubtedly be of greater value and probably more accurate. The fact that the period of "useful activity" of this group, operated on now some eight years ago, may not represent end results possible today, must be borne in mind. Neurosurgical technique has improved in the last eight years. The electrosurgical devices now so commonplace were in their beginning at that time. The use of ether anesthesia was commonplace at the time these patients were operated on. Now it is rare. The fresh tissue diagnosis of tumors was almost unknown at that time and the gliomas were just being classified. The extent of operative procedures and of roentgen treatment is now guided considerably by such information. Diagnosis and localization are also more accurate than formerly, owing to the better understanding and greater use of ventriculography. Should each succeeding resident in this neurosurgical service tell a similar follow-up story of the people he saw during his year, each undoubtedly would have a still better account to render. This may be shown by one thing alone, namely, that the primary mortality has been reduced in the intervening eight years from 14.5 per cent to 6.8 per cent—a truly remarkable figure. Then too, the intangible nature of the data on which an opinion of "useful activity" is based must be taken into consideration. The follow-up reports on these patients have been remarkably good. Only one of the 149 patients has been lost track of entirely. The others have been reported on at least seven years after operation.

and most of them eight years. The information on deceased patients is 100 per cent complete. The period of survival and useful living is calculated from the date of the first operation. If, for example, a patient was operated on first in 1920 and was admitted for reoperation in 1924, the period of survival or useful living would date from 1920.

The term "economic worth" or "useful activity" must have some definition, even though it may not be a sharp one. What I or any one else, as a casual observer, might term a period of useless and unfruitful existence might be differently evaluated by the patient, particularly if he has gained freedom from violent bouts of headache, vomiting, the threat of oncoming blindness and convulsive seizures. Such relief of symptoms is an item that can never be quantitated or charted. There comes to mind the instance of a bright young reporter on the staff of one of the country's leading newspapers who had been irreparably incapacitated by an acoustic neuroma. His follow-up letters, however, are nothing but a flow of gratitude for the relief from headaches, vomiting and the threat of oncoming blindness. In any such report as this his eight year period of life must be listed as void of "useful activity" though to him it has not been so. However, as a working basis the ability to return, in a major part, to former duties or mode of living or educational projects has been taken as useful activity.

During the past twenty-five years or more a small group of men by an enormous amount of energy and labor have shown their confreres the value of neurosurgical measures in prolonging life. Whether it is incumbent on a younger surgeon, even though urged, to attempt to pass judgment on the worthwhileness of such a prolongation of life is indeed a very real question. Obviously the responsibility of such a report as this is to do justice not only to the person who has taken all the responsibility of the care of these persons but also to the general practitioner of medicine who honestly asks what his patient may expect and how the results of intracranial surgery compare with those of the surgery of tumors of the stomach, rectum, esophagus, breast, thyroid, long bones, and the like.

The 149 verified tumors are classified in table 1.

TABLE 1—Classification of Verified Tumors

Gliomas	80
Pituitary adenomas	26
Meningiomas cerebral	16
Acoustic neuromas	11
Congenital cysts	6
Metastatic carcinomas	4
Blood vessel tumors	4
Pinealomas	1
Heterotopia of cerebellum	1
	149

TYPES OF TUMORS

Gliomas—As a result of the work of Bailey, Cushing and others, this group of tumors is no longer one great undifferentiated mass, to either the pathologist, the surgeon or the radiologist. As they have pointed out since my year in the neurologic service, the life history and prognosis of the various groups of gliomas vary greatly. Some are practically benign and some are as rapidly growing as malignant tumors elsewhere in the body. The more primitive the cell structure, the more rapid the growth and spread seems to be. They have also pointed out favorite sites for the occurrence of certain

tumors, such for example as the medulloblastomas in the midline of the cerebellum. There were in this list of 149 verified tumors 80 gliomas which have subsequently been classified (table 2).

Much to my surprise, the best showing of any group in this entire list of tumors is made not by some of the so-called benign encapsulated tumors but by a group of gliomas, the cerebellar astrocytomas.

Of the eighty patients listed under gliomas, sixteen are now living and sixty-four are dead. The average

TABLE 2—Classification of Eighty Gliomas

Glioblastomas	21
Medulloblastomas	17
Cerebellar astrocytomas fibrillary and protoplasmic	11
Cerebral astrocytomas	
Protoplasmic	5
Fibrillary	3
Oligodendrogliomas	4
Cerebral astroblastomas	1
Ependymomas	3
Glioma optic chiasm	1
Cranioneuroma	1
Verified by cyst fluid only	5
Unclassified	1
	80

length of life of the group is 38.8 months. The estimated period of usefulness is 24.4 months. However, one needs to look further to comprehend this figure better, and each subgroup will be considered separately.

Glioblastomas and Medulloblastomas—What are now proved to be glioblastomas and medulloblastomas may be grouped together as a most unfavorable lot. The former are invariably cerebral tumors of brief history and rapid growth occurring in people of middle life. Fulminating symptoms of headache, vomiting and palsies were the rule. Extensive extirpations were usually followed by prompt recurrence. Roentgen therapy seemed to change the course of the disease little, if any. While operative procedures failed to allow any of the patients to return to work, it did afford many of them an enormous amount of comfort. A number were prominent business people who were able to put their affairs in order and, for the first time in years, really spend a few weeks with their families. What amounted to practically a demand for secondary operations because of the relief afforded by an original operation occurred in several instances. The length of life of twenty-one patients with glioblastomas averaged twelve months from the date of operation. All are now dead. None actually returned to work and only one to any semblance of the former mode of living.

The medulloblastomas, seventeen in number, were all, as usual, midline cerebellar tumors. They were practically all in young subjects. The survival period was 14.5 months. "Livableness" was estimated at about six months and consisted largely in the ability to return to school work. All members of this group are now dead. Nowhere, however, is the relief of symptoms more sought or more appreciated. Like the glioblastomas there is often a fulminating onset, severe bouts of headache and vomiting, and a rapid onset of disability. Decompressive measures, extirpation and roentgen treatment relieve these symptoms temporarily and allow the patients to live out the six and twelve month period of life in relative comfort. In a few instances a good survival period of from two to five years is recorded. Recurrence both locally and in the subarachnoid bed of the spinal cord and over the base of the cerebrum is the rule in spite of roentgen therapy and wide excision.

These two groups of tumors, in particular, most urgently need some adjunct to the treatment by excision and radiation

Cerebellar Astrocytomas—These cases, eleven in number, are a most hopeful group. When one considers both the total length of life after a first operation and the ability to return to former usefulness, they represent the best of all groups in the entire series. These tumors are relatively benign and if widely extirpated do not tend to recur with any great frequency. They are slow growing, tend to become cystic, and are usually found in the midline of the cerebellum or near it. The average length of life from the date of operation in the year 1924-1925 was ninety-one months. The average period of useful living was estimated at eighty months. However, if the survival period of all these patients is calculated from the date of the original operation, the average survival is 108 months, and the average useful living period is 97.2 months. M. F., for example, was first operated on in 1907 and again in 1924. He was reported well in 1933 and the total survival period is 300 months. Eight of the eleven in this group are still living. Had the principle of excision of mural nodules of these cystic tumors been in constant practice from the start, i. e., 1905-1906 the period of life as well as of useful activity would be still greater. One interesting fact stands out in considering the types of tumor associated with blindness. Practically all instances of it were associated with the cerebellar astrocytomas and the acoustic neurinomas. The slow growth and slowly developing hydrocephalus probably account for such a coincidence.

Oligodendrogliomas—Another more favorable group is that consisting of the oligodendrogliomas. There were four such tumors—all cerebral and all frontal lobe with a life span of seventy-four months and a livable period of fifty-four months. None of the patients, however, are alive at the present time.

Cerebral Astrocytomas—The cerebral astrocytomas, both fibrillary and protoplasmic, are far less favorable in the field of this survey than the cerebellar because of the accompanying palsies and the surgeon's hesitancy to do wide extirpations, which lead to palsies not already present. The percentage of such cerebral tumors, which become cystic and have mural nodules, is less than in the cerebellum. The five patients with fibrillary cerebral astrocytomas lived twenty-five months following operation, with a "well period" of twelve months. The eight patients with protoplasmic astrocytomas lived 32.5 months, with a "well period" of twelve months. None of this group have survived the eight years.

Astroblastomas—There were three patients with cerebral astroblastomas. Their survival period averaged twenty-four months. The useful period averaged twelve months. None are now living.

Ependymomas—Three ependymal tumors, all cerebral, proved to be a favorable group with a life span of seventy-eight months. Two of the three are now living and about their duties, although one has an occasional epileptic seizure. The third lived four and one-half years. The useful period for the group averaged fifty-four months.

Optic Chiasmal Glioma—One patient suffering from a glioma of the optic chiasm on last report was alive eight years after operation and has taught school for seven years.

Ganglioneuroma—One patient in this group lived thirty-six months, during which time he had about twelve months of ability to carry on his business.

Pinealomas—One example of this tumor was seen. A boy aged 7 years entered with an extreme hydrocephalus. Death occurred following an operation for its removal.

Miscellaneous—One patient with a tumor apparently arising from the lateral aspect of the medulla is still living and able to be about a good share of the time. The type of tumor is uncertain. The period of useful activity is estimated at about twenty-four months. Five cerebral tumors verified by cyst fluid only were probably astrocytomas from which the mural nodule was not identified and removed. The patients in this group lived thirty-seven months, with a period of useful activity of 9.4 months. None are now living (11, table 3).

The Encapsulated Tumors of the Nervous System—These tumors are made up of the pituitary adenomas, the congenital suprasellar cysts, the meningiomas and

TABLE 3—The Period of Survival and the Period of 'Useful Living' of 149 Patients with Brain Tumor Eight Years After Operation

Disease	Period of Useful Living Months	Average Survival Period Months	Number of Cases of Each Type
1 Cerebellar astrocytoma	97.2	103	11
2 Unencapsulated pontile tumor	24	96	1
3 Glioma optic chiasm	84	96	1
4 Pituitary adenoma	76.4	87	26
5 Meningioma suprasellar	62.5	84	4
6 Acoustic neurinoma	61	83.4	11
7 Ependymoma	54	73	3
8 Meningioma cerebral	50	74	19
9 Oligodendroglioma	54	74	4
10 Blood vessel tumor	38	63	4
11 Verified by cyst fluid	9.4	37	5
12 Ganglioneurinoma	12	26	1
13 Astrocytoma protoplasmic	12	39.8	8
14 Astrocytoma fibrillary	12	25	5
15 Astroblastoma	12	24	3
16 Congenital cysts	12	17	6
17 Medulloblastoma	6	14.5	17
18 Metastatic tumors	3	13	4
19 Glioblastoma	0	19	1
20 Pinealoma	0	0	1
21 Heterotopia of cerebellum			1
Total cases			149

the acoustic neurinomas. In any large series of cerebral tumors they constitute about 50 per cent of the whole.

The Pituitary Adenomas—This type represents a particularly favorable group. As a rule, patients with pituitary adenomas do not suffer gross palsies and, if a working degree of vision can be preserved, a return to their former mode of living is assured. A few patients suffering from pituitary adenomas with acromegaly are incapacitated from concomitant heart disease, diabetes, arthritis or generalized weakness. The period of useful activity for the twenty-six patients comprising this group is estimated at 76.4 months. The average length of life is eighty-seven months.

Twenty-two of the twenty-six patients are known to be living. Three have died. One death occurred a few hours after operation. A second patient died some twelve months after and a third some thirty months after operation. The fourth could never be traced and is counted as having a zero survival and "useful living" period.

Congenital Cysts—I feel certain that the suprasellar or congenital cysts observed, six in number, do not represent the average of a large series. One patient of the group proved to have a carcinoma of the wall of

a cyst, which had spread to the temporal lobe and the region of the gasserian ganglion. This patient lived eight months after operation. The period of livability was nil. A second and third were of unusual age for this malady to manifest itself, one being 62 and the other 59. The former was transferred from a psychopathic hospital for treatment. Even though the suprasellar cyst was adequately dealt with, the mental state of the patient was unaffected. The other person died following operation, of a thrombosis of a lateral and longitudinal sinus. The fourth, a man aged 21, had a few months of relief from headache, vomiting and incontinence after partial removal of a solid portion of a cyst wall. He then died following a secondary operation for removal of further extensions of the growth. The fifth is a brilliant result in the case of a 10 year old boy who is now alive eight years after operation. Aside from the preoperative loss of vision of one eye, he is well. The sixth had a period of useful activity for some eighteen months. The average period of useful activity of this group is twelve months. The average survival period is seventeen months.

Cerebral Meningiomas—These are divided into two groups: those associated with the convexity of the cerebrum and those found in the suprasellar region. The former will be considered first. Of the twelve patients with cerebral meningiomas, five are still living. Of the five now living, four consider themselves "well" and carry on their usual duties. One is incapacitated by a hemiplegia that was present before operation and did not clear up following the removal of the growth.

Seven of those having cerebral meningiomas have died. Four deaths occurred following removal of recurrent growths. Three others died at home. Their period of activity averages fifteen months of the thirty-seven months life span.

An average of this group, both living and dead, shows a period of useful activity of fifty months and an average life span of seventy-four months.

All told, the meningiomas probably represent one of the most difficult of all tumors to deal with surgically. To be able to add fifty months to the useful life of a person past middle age who is suffering from a neoplasm in any part of the body is an accomplishment of no small magnitude. Especially is this so when lack of intervention would mean either a continuance of an existing total disability or the early onset of one.

Suprasellar Meningiomas—The suprasellar meningiomas are four in number. Three of the four patients are still living. Three were about their usual duties. One patient, who was nearly blind on admission has not had any return of vision but is otherwise "well". The average period of usefulness is sixty-two and a half months. The average life span is eighty-four months. If cerebral and suprasellar meningiomas are considered together, the average length of life is seventy-six and one-half months and the average period of usefulness is fifty-three months.

Acoustic Neuromas—These cases, eleven in number, are a particularly difficult group to evaluate. Seven of the eleven patients are alive and four have died. Of the seven living, four are in "excellent condition and able to go about their usual duties. Two others are able to do house work," although remaining blind. Both had practically total loss of vision on entry. The remaining one is able to be about and enjoys life, though handicapped by ataxia and cranial nerve palsies. The

average of useful life is estimated at sixty-one months. The average length of life is 83.4 months.

Blood Vessel Tumors—Four cases comprise this group, in which the patients lived an average of sixty-five months, with a useful period of thirty-eight months. One of the four is now living.

If one considers the encapsulated tumors of the brain and the blood vessel tumors as a group, the average length of life following operation is 76.4 months. The average period of useful activity is 59.3 months.

Metastatic Carcinomas of the Brain—Four patients in this group lived an average of thirteen months. The period of useful living was about three months.

Heterotopia of Cerebellar Tonsil—One instance of a congenital enlargement of a cerebellar tonsil was seen. This anomalous tonsil of the cerebellum extended down the spinal cord to about the level of the third cervical body. Apparently the enlarged cerebellar tonsil was only one of a number of congenital defects. The symptoms for which she came to the hospital, i.e., vertigo and fainting spells, have persisted following the removal of this accessory tissue, the period of useful living is considered nil. The survival period is at least seven years.

COMMENT

A half century or so hence the picture of the surgery of brain tumors, as formulated by the review of the foregoing cases, may well be looked on in much the same light that brain surgery of fifty years ago is looked on today. During the past twenty-five years the surgical technique of various procedures has been fairly well standardized. Much, however, remains yet undone.

A new form of treatment for the rapidly growing primitive cell type of glioma typified by the glioblastomas and medulloblastomas must be sought for and found if the period of "useful activity" is to be of a reasonable duration. The end result of the treatment of the encapsulated tumors—the congenital cysts, the meningiomas and the acoustic neuromas—is almost in direct proportion to the promptness and diagnosis and treatment after the first symptoms. With competent surgical measures a very considerable period of "useful activity" is assured and undoubtedly will be increased as years go by. The cerebellar gliomas, astrocytomas, are very favorable and, in fact, lead the list in this report. While there will always be a certain group of cerebral gliomas which, by right of their location or inaccessibility or growth potentialities will carry with them a very short period of "useful activity," their number should be constantly diminishing. If one is inclined to comparisons, I believe it may fairly be said that surgery of brain tumors suffers not at all, and in fact stands out, as compared to that of tumors of the long bones, breast, stomach, esophagus and rectum. In view of the fact that twenty-five years ago brain tumors were almost universally considered a hopeless lot the periods of "useful activity" here recorded lend a great deal of encouragement and hope for what may be accomplished during the next twenty-five years.

SUMMARY

In this series of 149 brain tumors there were eighty cases of glioma. These patients lived an average of 38.8 months following operation. The period of useful activity of the group is estimated to be 24.4 months.

There were fifty-nine examples of encapsulated tumors of the brain and four instances of blood vessel

tumors This group of sixty-three cases has a survival period of 76.4 months and a period of useful activity of 59.3 months

Four patients with a metastatic brain tumor lived an average of thirteen months, with a useful period average of three months

One patient with a congenital heterotopia of the cerebellum has lived eight years, with a useful period estimated as nil

One patient with a pinealoma died following an operation directed toward its removal

NOTE—I particularly would like to emphasize the fact that any such report as this has depended almost entirely on the very complete follow up of cases. This has meant an immense amount of labor for Dr. Louise Eisenhardt and the staff of the record room of the Peter Bent Brigham Hospital. The patients were a scattered lot from all over this country and Canada with changing addresses. In spite of this only one patient has been lost track of and that through the refusal of relatives to answer inquiries.

I am indebted to Dr. Harvey Cushing for permission to make this report and for the suggestion that I do so.

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THE SURGICAL TREATMENT OF INGROWN TOENAILS

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Two impressions are gained from this study of the operative treatment of ingrown toenails: first, that the rate of recurrence of ingrowth of the nail following operation is unduly high, and, second, that the rate of healing of many of the operative wounds is unduly prolonged. The rate of recurrence was 13.6 per cent in 110 operations. The operative wounds required on the average, nineteen days to heal.

This survey seems to be a fair index of current operative treatment of ingrown toenails, since it comprises 110 operations performed by twenty-six different surgeons in three affiliated institutions in St. Louis. My private cases also are included.

Recurrences were attributed either to the performances of an operation inadequate in type or to failure at operation to remove the necessary amount of nail-bearing matrix¹ or of nail wall. No recurrence could be ascribed to growth of new nail from eponychium. Since the eponychium ordinarily was not excised at operation, this structure would seem to lack the nail-forming function attributed to it by some authors.²

A comparison has been made in the accompanying table between the results of operations of various types.

The usual³ type of operation A, consisted in excising a strip of nail about 0.5 cm. (one-fourth inch) wide and as long as the remaining nail, together with the entire underlying nail bed and nail matrix. Usually some of the nail wall and the ulcer of the nail wall caused by the ingrowing spike of nail were included in this wedge of tissues excised. The wedge was carried down to the periosteum of the terminal phalanx and included all nail, matrix and surrounding soft tissues

beneath the eponychium. The wedge ended proximally very near the interphalangeal joint.

This operation was based on the principle of permanently removing all the ingrowing portion of nail and the redundant nail wall as well. It was founded on the assumption that nail ingrowth was caused by excessive width or convexity of the toenail and by hypertrophy of the nail wall. Recurrences took the form of thin new nail growing again in the old position, or of horns or islands of new nail piercing the old eponychium at one side of the toe. Such new nail grew from cells of the nail matrix the removal of which had not been accomplished.

Sixty operations of type A yielded three recurrences. Only one other type of operation, that of permanent excision of the entire nail and matrix (D) showed better results, and the latter operation was performed only three times because it was considered unnecessarily radical.

The average time for healing of the operative wounds following operation A was sixteen days. This time was one day more than was required by operation B. However, three of the wounds following operation A healed by primary union and required dressing for only six days.

Relief of pain followed operation A in two and one half days on the average, whether the wound healed

Results of Operations for Ingrown Toenails

Type of Operation	Number of Operations	Number of Recurrences	Percent age of Recurrences	Number of Known Cures	Time for Wound Healing Days	Time Until Pain Was Relieved Days
A Usual	60	3	5.0	25	16*	9½
B Winograd	34	4	11.8	9	15	7
C Nail excision	0	7	77.8	1	31	Unknown
D Complete nail and matrix excision	7	0	0	2	23	Unknown
E Plastic procedure on nail wall	4	1	25.0	1	Unknown	Unknown
Total	110	15	13.6	38	19	0

* Primary union was obtained in three of these cases. These wounds were dressed only for six days and pain disappeared from them in two and one half days.

by primary or by secondary intention. Operation B required seven days for relief of pain.

The Winograd⁴ operation, here called operation B, consisted in excising or curetting away the nail-forming matrix. A small incision through the eponychium furnished the necessary exposure. A strip of ingrowing nail was removed, similar in size to the strip removed in operation A. The ulcer of the nail wall was usually left intact but sometimes was curetted or excised.

This operation was based on the principle of permanently removing all the ingrowing portion of nail. It was founded on the assumption that ingrowth of the toenail was caused only by excessive width or convexity of the nail, and not at all by overgrowth of the nail wall. Recurrences following operations of this type were of the same character as those following operations of type A. They were due to failure to remove enough nail matrix, and possibly also to a heaping up of the remaining nail wall.

Thirty-four operations of type B yielded four recurrences, a recurrence rate more than double that of operation A. The average time for the healing of operative wounds following this operation was fifteen days, one

From the Department of Surgery, Washington University School of Medicine, the Barnes Hospital and the St. Louis Children's Hospital.
1. Maximow, A. A. *A Text Book of Histology*. Philadelphia: W. B. Saunders Company, 1930, p. 425.
2. Graham, H. F. *Ingrown Toe Nail*. *Am. J. Surg.* 6: 411-413 (April) 1929.
3. Foote, E. M. and Livingston, E. M. *The Principles and Practice of Minor Surgery*. ed. 6. New York: D. Appleton & Co., 1930, pp. 740-744.

4. Winograd, A. M. *Modification in Technique of Operation for Ingrown Toe Nail*. *J. A. M. A.* 82: 229-230 (Jan. 19) 1929.

day less than the time for operation A. Relief of pain occurred on the average seven days after operation.

The operation of nail avulsion, C, consisted in stripping off all the toenail or merely its ingrowing portion. The nail matrix was not touched, so that an entire new toenail grew in within two or three months. The basic principle of this operation was that the ulcer of the nail wall would completely heal during the time required for new growth of the nail and that subsequent ingrowth and ulceration either would not occur or might be prevented. It was here assumed that minor corrective procedures could inhibit ingrowth of the new nail and that excessive width and convexity of the nail and hypertrophy of the nail wall had no part in causing the ingrown toenail in the first place. Ingrowth of the toenail following operations of this type indicated the fallacy of this assumption.

Nine operations of type C were performed and were followed by seven recurrences. The wounds of two toes that were cured by this method required over a month to heal. At least one patient was made worse by this operation. On her toe the new nail that formed following operation grew in not only at the original site but also all along the advancing edge of the nail. The entire tip of the toe became enlarged and was made worse by an unsuccessful attempt at cure by nail avulsion. It was then necessary to resect a wedge from the tip of the toe in order to restore the normal size, in addition to performing the usual operation at the site of original nail ingrowth.

Complete excision of the toenail and matrix, operation D, is self explanatory. By it the nail was permanently removed. Three operations of this type were performed without a recurrence.

Operation E denotes plastic procedures on the nail wall. In one type of operation the ingrown portion of the nail together with the ulcer and some of the nail wall was excised by one slice of the knife.⁵ The principle of this operation was the permanent removal of the ulcer and of sufficient nail wall to allow the new nail to grow freely. The one operation of this type proved a failure. In the other type of operation⁶ a wedge was resected from that part of the nail wall to one side of the ulcer. The wedge was cut from tissues not actively infected, and primary union was obtained. The ingrowing nail, ulcer and nail wall were not touched. This operation was based on the principle that a decrease in the size of the nail wall would subsequently allow free growth of the nail. It was assumed that ingrowth of the nail was due chiefly to hypertrophy of the nail wall and in small part to excessive width and convexity of the nail. The three operations of this type were successful, but the patients were observed only for a few weeks.

All the recurrences of this series required another operation for cure.

The theoretical basis for recurrence of ingrown toenails has been discussed. In actual practice recurrences were often due to difficulties of technical procedures. Chief among these difficulties were insufficient local anesthesia and inadequate hemostasis.

Insufficient local anesthesia allowed painful stimuli to reach the patient and rendered the careful performance of a thorough operation difficult. Of course general anesthesia was often used in this series but local anesthesia was employed much more frequently. Inadequate

local anesthesia usually resulted from failure to anesthetize the two plantar digital nerves of the toe. These nerves, the plantar digital and not the dorsal digital as is so often believed, are the sensory nerves of the entire nail, nail walls, nail bed, nail matrix and eponychium. Proper anesthesia of the plantar digital nerves always produced satisfactory anesthesia. These nerves were best blocked by injection along the body and flexor aspect of the proximal phalanx. In a few instances a little additional procaine hydrochloride solution (or an appropriate substitute) was injected into the skin between the eponychium and the joint to block off the ramifications of the dorsal digital nerves, which end at a varying distance just beyond the interphalangeal joint.

Inadequate hemostasis obscured structural details in the operative field and consequently rendered identification and excision of the necessary amount of nail matrix more difficult. Some authors⁷ believe that the application of a tourniquet to the base of the toe is unnecessarily painful. This was not found to be the case when local anesthesia was adequate and when it was injected before the tourniquet was applied. In applying a tourniquet, care should be exercised to prevent the occurrence after operation of gangrene of the digit.⁸ This may be done by using a broad tourniquet such as a broad elastic band, placed over a strip of sterile gauze about 1 cm (one-half inch) wide, which has previously been wrapped around the base of the proximal phalanx of the great toe. Such a tourniquet should not be left on for more than half an hour at a time without loosening. The usual operation, even if performed on the two sides of the same nail, rarely required more than half an hour to perform.

It is not my aim in this paper to advocate any particular type of operation. Rather an attempt has been made to point out some principles underlying various operations. An understanding of principles, together with personal preference and experience, will be the sure guides followed by the individual surgeon for the individual case. Better results than these may be expected in the future, up to now, reports of a followed series of cases could not be found in the recent literature.

A means of diminishing the period of convalescence was suggested by this study. One means was the performance of the Winograd operation strictly according to directions.⁴ Another was the attainment of primary union following the usual operation.

Primary union often followed bold clean excision *en bloc* of the necessary tissues, cutting well away from the ulcer and, as far as possible, keeping the ulcer as the center of tissue excision. By properly planning the lines of incision, one could accurately coapt the edges of the wound, leaving no raw surfaces exposed. The lips of the wound were retained by a superficial (not buried) silk mattress suture passing from the nail wall to the soft tissues beneath the nail. Another suture approximated the eponychium, and both sutures were left in place for at least five days before removal.

One important detail for insuring primary union was the prevention, as far as possible, of bleeding or exudation into the wound. This was best accomplished by avoiding attempts to clamp and ligate bleeding points and by securing hemostasis by pressure instead. For this purpose the wound was sutured and a tight sterile gauze pressure bandage applied to the toe before the

⁵ Keen, W. W. *Surgery*. Philadelphia: W. B. Saunders Company, 1916.
⁶ This operation was suggested by Dr. Willard Bartlett and Livingston.²

⁷ Christopher Frederick Minor. *Surgery*, ed. 2. Philadelphia: W. B. Saunders Company, 1932, p. 485.
⁸ Garlock, J. H. *Gangrene of the Finger Following Digital Nerve Block Anesthesia*. *Ann. Surg.* 94: 1103-1107 (Dec.) 1931.

tourniquet was removed. The toe, bandaged in this fashion, was left elevated on two pillows while the patient lay supine for some thirty minutes directly following operation. The blood soaked dressings were then carefully removed with sterile dressing forceps and discarded. A small square of sterile petrolatum gauze was fitted over the incision and the toe bandaged fairly snugly with fresh sterile gauze. This dressing was left undisturbed for at least three days, unless signs of infection appeared. At that time the gauze superficial to the petrolatum gauze was replaced (painlessly!) by some sterile gauze and left until time for removal of the sutures. By avoiding wet soaks and ointment dressings postoperatively, much secondary infection, both pyogenic and fungous, as pointed out by Dr. Warren H. Cole, was prevented. By not packing the operative wound, healing was hastened, pain minimized and primary union encouraged. By the interposition of the small square of petrolatum gauze between the incision and the dry dressing gauze, much of the discomfort and sticking of the first dressing was avoided. Rest in bed for the first two or three days following operation promoted primary union. Careful antiseptic preparation of the toe the night before operation followed by the application to the toe of a sterile dressing also promoted primary union after operation.

It was surprising how little postoperative reaction followed operations through fields that seemed highly infected. Rarely did the temperature after operation exceed 100 F by mouth, and systemic reactions were absent except in one patient. In a man, aged 70 with diabetes, cellulitis of the toe and foot developed following incision and drainage of an abscess of the wall about an ingrown toenail. The cellulitis subsided following hospitalization for four weeks, with rest and hot soaks and regulation of diet supplemented by the administration of insulin. In most instances, however, it appeared that enough local tissue immunity had been initiated by a chronic local cellulitis to allow for a fair chance of postoperative primary union. The rich blood supply of the toe was a great aid in this.

Complications other than cellulitis did not occur in this series. Osteomyelitis or septic arthritis was never observed, and there were no deaths. Debility, dirt and diabetes initiated and maintained a number of the ulcers of the nail walls.

Women comprised three fourths of the patients of this series. Their tight shoes and high heels thrusting the body weight forward and down into the toes were obvious factors causing ingrowth of toenails. Obesity and pregnancy caused contributory causes, as did occupations involving much walking. However, the toes of many patients were observed to be unusually wide, with thickened nails. These may have resulted from congenital influences or have represented mere end results of chronic irritation and inflammation.

The average age of the patients of this series was 25 years, and the youngest was 6 years old.

The great toe was the site of ingrowth except in one instance, in which the second toe was affected. Unilateral involvement exceeded bilateral as two to one. Ingrowth on the right toe exceeded ingrowth on the left as four to three. Ingrowth of one margin was more common than ingrowth of both margins. Two patients became so absorbed by the pain of the preponderating ulcer as to overlook ingrowth of a toenail elsewhere. The relief of pain consequent to operation

led to a subsequent request for operation on the remaining ingrown nail in each instance.

Some ingrown nails caused by bone tumors and soft tissue tumors were not included in this series.

In severe cases, the immediate performance of an operation at the time the patient was first seen was often possible, and usually advisable. Sometimes a few days' delay with rest, hot soaks and the like ameliorated a severe cellulitis. Operation, however, was performed only when the usual palliative measures, attempted for a week or two, had failed. Few patients required hospitalization.

Beaumont Medical Building

ASEPTIC MENINGITIS FOLLOWING DIAGNOSTIC LUMBAR PUNCTURE

INDICATIONS FOR LUMBAR PUNCTURE AND COMPLICATIONS SECONDARY TO IT

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The examination of the spinal fluid has become almost as routine a procedure in the diagnosis of neuropsychiatric problems as that of the blood in internal medicine. When the great amount of valuable information made available to the diagnostician is considered, an occasional unfortunate sequel may be forgiven, especially if an effort is made to prevent its recurrence. The most common disabling event, the result of a lumbar puncture, is the headache, neck ache and vertigo that frequently ensue, particularly if a large needle is used and the patient is permitted to go about his business in a few hours. Temporary meningitic signs are sometimes observed, probably resulting from an outpouring of the cells into the subarachnoid space. It is known that a second lumbar puncture performed some hours after a diagnostic tap will show an increase of lymphocytes and albumin in the spinal fluid. Furthermore, if the tap has resulted in the puncture of a vessel, the resulting blood in the subarachnoid space may cause an outpouring of white cells, and meningitic signs. For example, blood in the spinal fluid the result of spontaneous subarachnoid hemorrhage produces stiff neck and Kernig's sign.

The danger of lumbar puncture in a patient suspected of harboring a cerebral neoplasm has been greatly overestimated, particularly in that group lacking roentgen evidence of increased pressure and presenting normal eyegrounds. In the ordinary case of brain tumor with headache, choked disk and the other symptoms there is no occasion to do a spinal tap. Sudden death, respiratory failure, stupor and convulsions have been known to occur after a spinal tap in a patient with a brain tumor, especially if it is located in the posterior fossa, but the same things may happen when no puncture has been done. Nevertheless, a tap should not be done in a patient with a posterior fossa neoplasm or in a cerebral abscess when a real danger exists, in that a meningitis may be produced and even rupture of an incompletely walled off abscess occur.

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From the Philadelphia General Hospital and from the Neurological Department of the University of Pennsylvania School of Medicine.

Ayer and Felton and others have shown in experimental animals infected with various organisms that meningitis may be produced by the mere withdrawal of spinal fluid. One should be very loathe, therefore, to do a diagnostic tap on patients ill with acute infections, such as scarlet fever or pneumonia, who present meningitic symptoms.

It is usually unnecessary to withdraw fluid for study in the ordinary patient with a cerebral accident, but if the relative youth of such an individual might lead to the suspicion of syphilis, enough fluid may be taken to permit laboratory tests. Occasionally a slight cerebral hemorrhage is made to rupture into the ventricles by the removal of fluid.

We have never observed any aggravation of neurosyphilis by a spinal tap, although others have. On one occasion we gave a patient with cerebral syphilis a note admitting him to a hospital for examination of the spinal fluid. Before he reached the hospital he had an attack of cerebral thrombosis which resulted in permanent hemiplegia, had this been delayed twenty-four hours, the spinal tap would have been blamed and a possible medicolegal complication would have been in the offing.

An unusual result which we saw a few years ago was death an hour after a spinal tap, Queckenstedt test and the removal of a few cubic centimeters of fluid from a patient who had an extradural abscess in the thoracic region secondary to pneumonia and empyema. This may have been a cardiac death, but it occurred shortly after a spinal tap.

The advisability of drawing off spinal fluid in a traumatic case with subarachnoid blood has been questioned, as has it also in spontaneous subarachnoid bleeding. Our own practice has been to do it especially in the spontaneous bleeding case. We¹ have reported a series of such cases in which good results ensued. A contraindication would exist if the subarachnoid bleeding should be due to a leaking aneurysm, although even then a temporary cure may be effected. In a colored woman taken acutely ill and brought to our service at Blockley, Weber's syndrome with signs of meningitis existed. The tap revealed bloody fluid, the punctures were repeated daily until it was thought that no fresh bleeding was occurring, the patient recovered the use of the paralyzed side and partly that of the third nerve. She worked around the ward for some weeks, had a recurrence and died within a few hours. Necropsy showed a ruptured aneurysm of the circle of Willis. Blood in the subarachnoid space acts as an irritant, may produce adhesions and "arachnoiditis," may cause stupor, fever and signs of meningitis, and in our opinion should be removed whether the result of trauma or of spontaneous bleeding.

If lumbar puncture is performed under aseptic technique with the patient on his side, a small bored needle used, a local anesthetic given, and a sedative if the patient is "nervous," and obvious cases of brain tumor and abscess avoided, very few accidents will happen. A syringe should never be used to aspirate the fluid. The breaking off of a needle in the patient's back may occur, if he moves suddenly and (or) if the needle is defective and partially rusted through. The needle should be tested by bending before it is inserted. The patient should always rest in bed for from twelve to twenty-four hours after a tap, although many physicians per-

form lumbar punctures in the office and send the patient out in a short time.

We have had three cases in which lumbar puncture was followed by fever, stiff neck, Kernig's sign, stupor, delirium and a pronounced increase of cells in the spinal fluid, without the discovery of organisms in the fluid by smear and culture, and without a reduction in the amount of sugar normally present. Spiller and Payne reported a case similar to these in 1924, after a puncture in a case of epilepsy. The diagnoses in our cases were cerebral syphilis, chronic encephalitis, and a fibroblastoma in the frontal region without the general symptoms of a tumor. Such a complication is unique, and we report our observations.

REPORT OF CASES

CASE 1—B. R., white woman, aged 47, was admitted to the neurologic service of the Philadelphia General Hospital, Jan. 24, 1934. A lumbar puncture was performed on January 29 with

TABLE 1—Cerebrospinal Fluid Examinations in Case 1

Date	Color	Cell Count	Smear	Culture	Sugar
1/30/34	Cloudy	2,900 95% poly morphonuclears	Negative for organisms	No growth	59
1/31/34	Cloudy	459 80% poly morphonuclears	Negative for organisms	No growth	Not done
2/1/34	Cloudy	100 60% poly morphonuclears	Negative for organisms	No growth	60
2/2/34	Cloudy	290 80% poly morphonuclears	Negative for organisms	No growth	Not done
2/3/34	Clear	No examinations made			
2/4/34	Clear	120 16% poly morphonuclears	Negative for organisms	No growth	60

TABLE 2—Cerebrospinal Fluid Examinations in Case 2

Date	Color	Cell Count	Smear	Culture	Sugar
1/30/34	Cloudy	3,780 90% poly morphonuclears	Negative for organisms	No growth	Not done
1/31/34	Cloudy	2,610 90% poly morphonuclears	Negative for organisms	No growth	64
2/1/34	Cloudy	360 50% poly morphonuclears	Negative for organisms	No growth	67
2/2/34	Cloudy	236 50% poly morphonuclears	Negative for organisms	No growth	62
2/3/34	Clear	17 50% poly morphonuclears	Negative for organisms	No growth	49
2/4/34	Clear	14 All lymphocytes	Negative for organisms	No growth	Not done

the following results: cell count, none; globulin trace; Wassermann reaction, 4 plus; colloidal gold curve, 5444433100. Twelve hours later she became delirious, was semistuporous, complained of headache, and had a temperature of 104.5. The neck showed extreme rigidity with some retraction of the head. A bilateral Kernig sign was present. The white count was 6,800. The examination otherwise was negative. Spinal punctures were done on six succeeding days with the results given in table 1.

The temperature gradually came down to normal by the fourth day, the meningitic symptoms had disappeared by this time. The patient said two weeks after the original puncture that she had improved greatly since her admission.

CASE 2—A. Negress, aged 35, was admitted to the neurologic service of the Philadelphia General Hospital Jan. 8, 1934, ill with a far advanced state of parkinsonism, the result of chronic

¹ Meltzer, Joseph, and Wilson, George. Spontaneous Subarachnoid Hemorrhage. J. A. M. A. 93: 89-93 (July 13) 1929.

epidemic encephalitis. A diagnostic lumbar puncture was done January 29 by the same intern who performed it in case 1 and immediately thereafter, but with a different needle. About ten hours later she was delirious, had well marked signs of meningitis, and the temperature was 102.4 F. The white count the following day was 5,400.

The diagnostic tap revealed a normal spinal fluid. The fluid examinations for the succeeding six days were as shown in table 2.

The patient recovered more slowly than patient 1 but within a week had fully recovered from the effects of the meningitic reaction. She died three weeks later as the result of chronic encephalitis.

CASE 3—A white man aged 43, was seen by us as a private patient, Sept. 2, 1926. A diagnostic tap was done on September 5 at 9:45 a. m. At 5:45 p. m. he complained of headache, neckache and vomiting. At 11:30 p. m. he had rigidity of the neck, spastic extremities and a temperature of 103 F. He developed herpes labialis. The white cell count was 13,840. The results of subsequent examinations of the spinal fluid are given in table 3.

The man recovered completely from the meningitic state within four days. He later had a benign tumor removed successfully from the left frontal region.

TABLE 3—Cerebrospinal Fluid Examinations in Case 3

Date	Color	Cell Count	Smear	Culture	Sugar
9/ 6/26	Turbid	2,610	Negative for organisms	No growth	Not done
9/ 7/26	Turbid	17,670 87% poly morphonuclears	Negative for organisms	No growth	Not done
9/ 8/26	Turbid	10,500	Negative for organisms	No growth	Not done
9/ 9/26	Less turbid	3,020	Negative for organisms	No growth	Not done
9/10/26	Slightly cloudy	203	Negative for organisms	No growth	Not done

COMMENT

The term aseptic meningitis seems justified because no organisms were found, and the spinal fluid sugar, which practically always decreases in amount or actually disappears in ordinary meningitis, remained normal in the two cases tested. All three patients, as also the patient cited by Spiller and Payne, recovered. The patient with brain tumor was subsequently operated on successfully, the woman with cerebral neurosyphilis was actually benefited by the experience, and the patient with chronic encephalitis was not permanently affected but died later of chronic encephalitis.

The manner in which the picture is produced is uncertain. Perhaps some particulate matter left in the needle after "cleaning" may bring forth an outpouring of cells and in that way produce the condition. Spiller and Payne² thought that in their case the meningeal vessels were congested from repeatedly occurring fits (the patient had epilepsy) and that, as the result of relief or pressure, cells escaped into the subarachnoid space. Any foreign substance introduced into the spinal fluid may bring about an aseptic meningitis. Thus, serum or even improperly prepared salt solution or drugs may induce a train of meningitic signs when injected into the spinal subarachnoid space. Drainage of the spinal fluid on two or three successive days seemed to be curative in our patients, perhaps they would have recovered without the taps.

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² Spiller W. G. and Payne F. L. Meningitic Symptoms Rapidly Following Lumbar Puncture and Rapidly Disappearing. *J. A. M. A.* 82: 106 (Jan. 12) 1924.

BROMIDE INTOXICATION

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As a clinical entity, bromide intoxication has been recognized for some time by the psychiatrists. However, it is not infrequently observed in a general medical service and may give rise to some very puzzling diagnostic problems.

Bromides were discovered by Balard in 1826 and introduced later into therapy by Graf in 1840.¹ The first case of bromide intoxication was reported by Huette² in 1850. In 1901, Landenheimer³ was the first to recognize the important influence of the intake of chlorides on the retention of bromides. More recently Wuth,⁴ in a six months period at the Henry Phipps Psychiatric Clinic of the Johns Hopkins Hospital, reported twenty cases of bromide intoxication that occurred among 238 admissions. Wagner and Bunburg⁵ stated that in 1,000 consecutive patients admitted to the Colorado Psychopathic Hospital, forty-four showed the presence of bromides in the blood, and in seventeen of these the mental symptoms were due solely to bromidism. In a series of seventy-seven patients with a blood bromide above 75 mg. per hundred cubic centimeters, for 48 per cent the drug was prescribed by a physician and in 18 per cent the source was a proprietary medicine. Their patients were for the most part "that type of individual who is unable to make an adequate social adjustment and who resorts to alcohol and drugs as an escape from situations in life which he considers intolerable." Among those who had an underlying psychosis, the largest group were psychoneurotic patients and the next largest group were manic depressive patients. Doane and Weiner,⁶ reported four cases of bromide intoxication admitted to a general medical ward. Harris and Hauser⁷ considered that bromide intoxication must be thought of in the diagnosis of any patient who shows an acute organic type of reaction, and that the symptoms of the condition will vary with the personality make up and with toxic factors. Sippi and Bostock⁸ reported recently nine more cases and emphasized the fact that only one was associated with a dermal eruption. Diethelm,⁹ in an excellent and comprehensive review of the literature, described nine cases of his own and stated that 40 per cent of the patients admitted to the Phipps Psychiatric Clinic during the course of a year had taken bromide, but only 2 per cent showed toxic symptoms (0.5 per cent simple intoxications, and 1.5 per cent delirious reactions). Wainwright¹⁰ reported five cases of bromide intoxication and concluded that these untoward effects make bromides no less valuable

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¹ Graf. De kalni bromati effecacitate. *Internat. Diss. inaug.* 1838.

² Huette. Recherches sur les propriétés physiologiques et thérapeutiques du bromure de potassium. *Mém. Soc. de biol.* 2: 19, 1850.

³ Landenheimer. R. Wanderversammlung suedwestdeutscher Irrenärzte. *Berl. klin. Wchnschr.* 36: 1901.

⁴ Wuth. Otto. Rational Bromide Therapy. *New Methods for Its Control.* *J. A. M. A.* 88: 2013-2017 (June 25) 1927.

⁵ Wagner C. P. and Bunburg D. Elizabeth. Incidence of Bromide Intoxication Among Psychotic Patients. *J. A. M. A.* 95: 1725-1728 (Dec. 6) 1930.

⁶ Doane J. C. and Weiner J. G. Bromide Intoxication. *M. J. & Rec.* 134: 585-588 (Dec. 16) 1931.

⁷ Harris T. H. and Hauser Abe. Bromide Intoxication. Its Significance in Toxic and Delirious States. *J. A. M. A.* 95: 94-96 (July 12) 1930.

⁸ Sippi C. H. and Bostock J. Some Observations on Bromide Therapy and Intoxication. *M. J. Australia* 1: 85-90 (Jan. 16) 1932.

⁹ Diethelm Oskar. Bromide Intoxication. *J. Nerv. & Ment. Dis.* 71: 151-165 (Feb.) 278-292 (March) 1930.

¹⁰ Wainwright C. W. Bromide Intoxication. *Internat. Clin.* 1: 78-95 (March) 1933.

as therapeutic agents but do stress the importance of their intelligent use, without which the distressing and often bewildering manifestations of intoxication appear.

Solomon¹¹ described the pharmacologic action of the bromides as follows. They depress the entire central nervous system, with the exception of the medulla, depressing the psychic functions, the motor cortex and the spinal cord—lowering its reflex excitability. The muscle tone is lowered throughout the entire body. Ordinary doses have no effect on the circulation, but larger doses depress the heart and vasoconstrictor center. They lessen arterial tension and lower body temperature, depress sexual appetite and power, and cause pallor, acne on the face and extremities, coated tongue, disordered digestion, emaciation, somnolence, sluggish reflexes and defective coordination. They may be responsible for impairment of the mental faculties, with hallucinations and delusions, or cause melancholia or maniacal excitement.

Bromides are not excreted by the kidney as rapidly as chlorides, but they tend to be retained in the blood, replacing partially the chloride ion. Symptoms of intoxication generally appear when from 25 to 30 per cent of the chloride ion is replaced by the bromide. According to Bernoulli¹² a replacement of more than 40 per cent of the chlorides of the blood by the bromides is fatal. There seems to be a great variability in the individual susceptibility to bromide. The amount of chloride intake in the diet may account for some of this variability. In addition, arteriosclerosis, alcoholism, anemia, cachexia and syphilis seem to predispose to retention of bromide.

Clinically, the picture of bromide intoxication is protean. Anorexia, constipation and loss of weight may be the first symptoms. Sleep may be disturbed. Bromoderma and conjunctivitis may develop. Symptoms of mental dulness, confusion, disorientation and defective memory for recent events are common and may progress to stupor and coma. Now and again there may be a delirious state characterized by delusions and hallucinations, the latter especially of the visual type and characteristically of colored animals. Ideas of persecution or marked fear may predominate. The patient may be depressed, irritable or even maniacal.

The temperature may vary from normal to 103 F. Usually the pulse is rapid. An eruption may or may not develop. The pupils may be unequal and react to light only sluggishly. The speech is thick and unintelligible, the tongue is coated, and swallowing may be difficult. There may be a coarse tremor of the lips and hands. Difficulty in walking may be the chief complaint and there may be gross ataxia. The deep reflexes may be diminished or absent, and sensibility to touch and pain may be lost.

During a period of three years, ten patients suffering from the symptoms of intoxication from bromides have been admitted to the private medical service of the Johns Hopkins Hospital. In each it was difficult to determine the exact nature of the syndrome that was responsible for the admission of the patient until a blood bromide determination gave the clue as to the true type of reaction. A history of taking bromides may be difficult to elicit because of the patient's mental confusion or because of his ignorance of the presence of bromides in the medicine he has taken.

REPORT OF CASES

The following abstracts give only the salient points in each case.

CASE 1—F. W., a married housewife, aged 38, entered the hospital because of severe, recurrent attacks of bronchial asthma. She had sought relief at a number of clinics and had taken morphine, epinephrine and ephedrine with no improvement. On admission she presented the typical signs and symptoms of bronchial asthma. In addition, her face was flushed, her tongue was heavily coated, and her speech was thick and difficult to understand. She was somewhat disoriented as to time and place, wept occasionally and at times was somewhat delirious. Three days after she entered the hospital an acute maniacal reaction developed. She cried "I must be losing my mind" and "I cannot think straight," and on one occasion she was heard to say that she was really not a Negro. The psychiatric consultant discovered that she had been taking daily 15 grams (1 Gm.) of triple bromides every two hours for three weeks before admission, and examination of the blood showed the presence of 300 mg of bromide per hundred cubic centimeters. She was given 9 Gm of sodium chloride a day and her mental state improved promptly. She was discharged after three weeks in the hospital at which time the blood bromides were 50 mg per hundred cubic centimeters.

CASE 2¹³—R. M., a man aged 46, a dentist, entered the hospital with a preliminary diagnosis of an atypical encephalitis. He had had a chronic arthritis for twenty years, but in spite of his deformity he had carried on his work in a satisfactory manner. A month before admission the patient had taken to bed because of progressive weakness. Three weeks before admission a lumbar puncture had been done because of some vague neurologic signs following which the patient became completely disorientated, muttered unintelligibly and became uncooperative and at times violent. He was brought to the hospital for diagnostic study. His temperature ranged from 100 to 102. The general physical examination was essentially negative except for an erythematous eruption over the face and back that had been present for several months. The neurologic examination showed hyperactive reflexes and some spasticity of the lower extremities. The speech was slow, thick and rambling. A lumbar puncture yielded a perfectly normal spinal fluid. Again following this procedure he became acutely delirious. Further inquiry indicated that he had been addicted to the use of Bromo Seltzer for several years and had been taking a great deal in recent weeks. The blood bromides were 300 mg per hundred cubic centimeters, and spectroscopic examination for methemoglobin was negative. Sodium chloride therapy was instituted and four days later the temperature became normal and there was marked clearing of the mental state. He was discharged one month after admission. The blood bromides were 50 mg per hundred cubic centimeters.

CASE 3¹³—A. W., a married housewife, aged 58, entered the hospital in an unconscious state. The preliminary diagnosis was a metastatic brain tumor. Six years previously a radical amputation of the left breast had been performed for cancer. A year before admission the patient had received minor lacerations of the scalp as the result of an automobile accident. The present illness began five weeks prior to entrance with a constant dull suboccipital headache, dimness of vision, diplopia and difficulty in walking. For four days she became increasingly drowsy and uncooperative. The speech was thick, the tongue was furred and she complained of difficulty in swallowing. There was slight bilateral papilledema, diminished reflexes of the leg and a positive Babinski reflex on the left side. A ventricular tap was done and bloody fluid was obtained under normal pressure. Because of the poor condition of the patient she was sent back to the ward and saline infusions were given. A lumbar puncture revealed a normal spinal fluid. It was learned from the patient's Negro maid that the family physician had prescribed a bromide mixture to be taken one teaspoonful four times a day because of nervousness that had developed following the automobile accident a year previously.

¹¹ Solomon, R. A. Bromide Therapy and Intoxication. *J. Indiana M. A.* 26: 424-427 (Sept.) 1913.

¹² Bernoulli, E. Zur Dosierung der Bromsalze bei Epilepsie und Depressionen. *Cor. Bl. f. Schweiz. Aerzte* 47: 102 (Aug. 11) 1917.

¹³ Cases 2 and 3 were previously reported by Wainwright.¹⁴

The patient had taken the bromide mixture regularly as directed. On account of some vague hallucinations and delusions two months before admission, the physician had increased the dose to every three hours. A blood bromide determination was 250 mg per hundred cubic centimeters. The saline infusions were continued, clinical improvement followed rapidly, and recovery was established within a month with complete disappearance of the neurologic signs and a decrease of the bromides of the blood to 25 mg per hundred cubic centimeters.

CASE 4—C T, a married housewife aged 61 entered the hospital in a confused disoriented state with a preliminary diagnosis of bulbar disturbances and peripheral neuritis. Six months before entrance she had suffered an attack of "phlebitis" and was required to spend several weeks in bed. During her convalescence she had fallen and twisted her ankle, following which she noted difficulty in walking, numbness and tingling of the hands and feet and extreme weakness. Her physician prescribed some medicine containing bromide to be taken three times a day. Two months before admission the patient's family noted that she was somewhat confused, that her memory was poor and that her speech was indistinct. Incontinence of urine and feces developed gradually and the patient sank slowly into a stuporous condition. On examination she was markedly undernourished and stuporous, she was picking at the bedclothes muttering incoherently. There was a coarse tremor of the head, lips and hands. The reflexes of the upper extremities were barely elicited and those of the lower ones were absent. There was considerable tenderness of the calf muscles. The blood showed a macrocytic type of anemia of marked degree that was characteristic of pernicious anemia. There was no free acid in the gastric contents even after stimulation with histamine. The spinal fluid was normal. The blood bromides were 175 mg per hundred cubic centimeters. She was given daily intramuscular injections of liver extract and infusions of physiologic solution of sodium chloride and in spite of bronchopneumonia that developed in both lower lobes she improved rapidly, becoming oriented and mentally clear within twenty-four hours. However, following the excretion of the retained bromides she was found to have signs of combined degeneration of the spinal cord and was kept in the hospital for two months. Although she received intensive liver therapy only moderate improvement of the neurologic signs was noted.

CASE 5—S W, an army officer, aged 53 entered the hospital in a very confused state of mind giving a long history of "adhesions," constipation, and pain in the lower left part of the abdomen. In 1921 carcinoma of the colon developed, which was resected, and thereafter several operations had been performed for the release of adhesions. The temperature was 100.4. He was somewhat disoriented, irritable, and at times unresponsive. His speech was low, thick and unintelligible. The skin had a muddy appearance. The tongue was heavily coated and swallowing was difficult. There were facial twitchings and a coarse tremor of the lips and hands. All the deep and superficial reflexes were diminished. At times there were definite auditory hallucinations. He admitted taking bromidin for a long time in increasing doses. The blood bromides were 325 mg per hundred cubic centimeters and intravenous and subcutaneous injections of saline solution were started. Bronchopneumonia developed, but in spite of this the confusion was lessened within three days. Two weeks later, the bromides were 75 mg per hundred cubic centimeters and all signs of the intoxication had disappeared.

CASE 6—M B, a married housewife aged 61, entered the hospital in a semistuporous condition. The initial impression was that the symptom was due to a generalized and cerebral arteriosclerosis associated with a senile psychosis. The history was given by her aged husband and was vague. For eighteen months he had noticed that the patient had some difficulty in walking, that her memory was impaired and that her speech was indistinct. All the symptoms became much more pronounced three weeks before admission with the development of disorientation, emotional instability and finally semistupor. On examination the patient was irritable, and her speech was only a mumble. All her mental reactions were slowed. Her pupils were unequal, the right one reacted to light and the

left pupil was fixed. The tongue was smooth and clean. The deep reflexes were all hyperactive. A bilateral Hoffman's sign, and a positive Oppenheim's reaction on the right side were noted. The station and gait were unsteady. It was found that a practical nurse had instructed the patient to take "Nervine" and for four weeks before admission she had taken three bottles of that preparation. The blood bromides were 300 mg per hundred cubic centimeters. After the oral administration of chloride she improved rapidly and on the fifth day insisted on leaving the hospital, against advice.

CASE 7—R R, a man, aged 50, a railway official, came to the hospital in apparently a profound alcoholic intoxication. It was known that he had been addicted to the use of alcoholic beverages for many years. Because of increased restlessness and nervousness he had consulted a physician three months before admission and had been given some medicine (bromides) to take. A short time later, anorexia and mild, intermittent epigastric pain had developed, and his family had noticed that he was confused at times and often forgetful and that his personality was becoming altered so that he was forced to give up his work. He was semistuporous, confused and disoriented. There was only moderate arteriosclerosis. Articulation was difficult. The movements of the hands were slow and clumsy owing to a coarse tremor. The pupils were contracted and reacted incompletely to light. All the deep and superficial reflexes were diminished. There was tenderness of the calf muscles. The blood bromides were 375 mg per hundred cubic centimeters. He was given daily doses of 6 Gm of sodium chloride by mouth and two weeks later the blood bromides had fallen to 50 mg per hundred cubic centimeters, concomitantly with remarkable improvement of the confusion and neurologic signs.

CASE 8—H M, a man, aged 48, a hose manufacturer, entered the hospital in what was thought to be an acute alcoholic state. He had been a confirmed alcoholic addict for many years, and because of persistent headaches, he had recently taken large amounts of allonal (allylisopropylbarbituric acid with imidopyrine) and "other medicines" for the relief of them. During the four weeks prior to admission there had been a gradual slowing of the mental processes, indistinct speech, unsteady station and gait, and also inability to remember recent events. When he entered the hospital, he was belligerent. The tongue was tremulous and thickly coated. There was a coarse tremor of the fingers. All the reflexes were normally active, and muscle tenderness was noted in the lower extremities. The blood bromides were 325 mg per hundred cubic centimeters. Chloride therapy was started, but because of motor restlessness, hallucinations, ideas of persecution and the generally maniacal reaction that disturbed other patients in the ward he was transferred to a private nursing home, where he made an uneventful recovery in two weeks.

CASE 9—H A, a man, aged 70, the head master of a girl's school, entered the hospital with a preliminary diagnosis of senile dementia. During the preceding few months he had suffered financial losses and had business worries. A few weeks before admission his wife had noted his loss of interest in his business, a tendency to repeat, confusion, disorientation, depression and intense emotional outbursts. There was an increasing unsteadiness of his gait. He slept most of the day but would walk the floor during the night moaning because of vague, fleeting abdominal pains. The physical examination revealed masklike facies, a somewhat rigid, stooped gait, a monotonous tone of voice, and a slight tremor of the extended fingers—manifestations that suggested an early parkinsonian syndrome. The mental confusion and depression were obvious. He admitted that he had been taking bromides on his own initiative for the past few months. The blood bromides were 274 mg per hundred cubic centimeters. He insisted on leaving the hospital after ten days, but during that time his mental faculties improved remarkably, his drowsiness disappeared, and the strength of his legs returned. On discharge, the bromides were 150 mg per hundred cubic centimeters.

CASE 10—M W, a woman, aged 34, entered the hospital with the chief complaints of difficulty in walking and spells of depression. She gave a long, dramatic history, characteristic of an unstable emotional, inferior personality. She had been a chronic alcoholic for years and smoked at least three pack

ages of cigarets a day. The symptoms had become manifest about six weeks before admission, at which time she had consulted her physician for nervousness. He had prescribed bromides, but her nervousness increased in spite of the administration of as much as from 25 to 35 Gm a day. In addition, her sleep was disturbed, she had become unsteady in walking and had fallen several times because of weakness of the legs, she had become confused, disorientated and unable to think clearly, and she had developed spells of depression with uncontrollable weeping. The examination was quite negative except that she was very restless, talked constantly and had a coarse tremor of the hands and lips. The initial bromide determination was only 350 mg per hundred cubic centimeters in spite of the tremendous doses that she had taken. With chloride therapy she improved rapidly, and a week later the bromides had decreased to 175 mg per hundred cubic centimeters.

COMMENT

In review, it is obvious that bizarre symptoms may develop in any given case of bromide intoxication. Ten such cases were admitted to the general medical service. To diagnose the syndrome correctly required the consideration of many states, among them acute or chronic alcoholism, Korsakoff's syndrome, encephalitis, brain tumor, senile psychosis, uremia and dementia paralytica or dementia paralytica with tabes. Of the ten patients in our series, five were men and five were women. The ages varied from 34 to 70 years. The administration of the bromides was initiated in six patients by a physician, in one by self medication, in one by the advice of a nurse, and in two by the use of "patent medicines." Five of the patients had marked delirious reactions, in case 2, on two different occasions, the delirious reaction was precipitated by lumbar puncture. Five presented symptoms of a profound intoxication. Only one patient developed a skin eruption. The other usual symptoms included difficulty in swallowing, a heavily coated tongue, mumbling speech, coarse tremor of the extremities, difficulty in walking, and tenderness of the calf muscles. The initial level of the bromide content of the blood varied from 175 mg to 375 mg per hundred cubic centimeters and in seven instances they were above 300 mg. The discovery of a positive blood bromide reaction in a case of acute delirium or deep stupor modifies considerably what might otherwise be a grave prognosis. Each case showed a remarkable, rapid improvement following the institution of suitable therapy.

The diagnosis is simple. In all suspected cases a test of bromide excretion in the urine is made rapidly and simply and is of sufficient reliability to rule out bromide intoxication. Wuth⁴ describes the procedure as follows: To 25 cc of urine, add 10 Gm of animal charcoal, mix well, allow to stand for a few minutes, and filter. To 5 cc of the filtrate, add 1 cc of 30 per cent trichloroacetic acid and 1 cc of 0.5 per cent gold chloride solution. A brown shade denotes a positive reaction. For the quantitative determination of the blood bromides, the Walter modification of the Hauptmann method is used, which involves the use of blood serum with the addition of gold chloride, producing a color change corresponding to the bromide concentration, varying from a yellowish greenish brown to a red brown. The reaction is specific for bromides except for iodides. According to Wagner and Bunburg, determination of bromide in the spinal fluid is not sufficiently reliable to warrant utilization of that test.

The treatment is supportive and eliminative. All medication containing bromide should be discontinued immediately. If the patient is stuporous or if it is difficult for him to swallow physiologic solution of

sodium chloride should be administered parenterally. However, if this procedure is not necessary, the daily administration of from 6 to 8 Gm of sodium chloride by mouth is indicated. Some authors⁸ warn that it is best not to begin chloride replacement during the first twenty-four to forty-eight hours, as the symptoms may be aggravated by driving the bromides from the tissues with a resultant increased concentration of them in the blood. Fluids given in liberal amounts and a high caloric diet are helpful adjuvants. Following the elimination of the bromides from the system, a study of the underlying personality should be made in order that prophylaxis directed toward the prevention of a recurrence of the syndrome or of the addiction to other drugs may be prevented.

SUMMARY

1 Ten cases of bromide intoxication were observed during a period of three years in a general medical service.

2 Because of the possibility of manifestations of bromide intoxication following the administration of the drug, physicians should be cautious in prescribing bromides for any length of time. This is particularly true of patients with impaired excretory or circulatory functions. The drug should be discontinued immediately with the onset of any unusual symptoms.

3 In patients presenting profound stupor, acute delirium or obscure neurologic symptoms, the presence or absence of bromide intoxication should be determined by simple tests of the urine and blood.

SCIATIC NEURALGIA: A CLINICAL ENTITY

ITS SYMPTOMS, DIAGNOSIS AND TREATMENT,
WITH A REPORT OF SIXTY CASES

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Sciatica is a reflex neuralgia or a referred pain along the distribution of the sciatic nerve; it should be distinguished from sciatic neuritis, which is an inflammation of the sciatic nerve. The modern attitude, expressed by Feilng,¹ is to think of sciatica as signifying sciatic pain without connoting any particular pathogenesis. DaCosta² states that true sciatica is not a neuritis. Moersch³ believes that differentiation of neuralgia from neuritis of the sciatic nerve is of clinical importance. The usual classification of sciatica into primary, secondary and idiopathic groups is inaccurate and, in view of present knowledge, inadequate. More correctly, one may classify, first, sciatic neuritis or a true inflammation of the nerve, secondly, a reflex sciatic neuralgia or essential sciatica. Before the essential reflex neuralgias are described, it is necessary to classify and discuss sciatic neuritis.

An inflammation of the sciatic nerve may be either primary or secondary. Primary sciatic neuritis is due to a generalized toxemia, as from alcoholism, lead or arsenic poisoning or it may be the result of a systemic disease such as diabetes or syphilis. The secondary

From the Orthopedic Department, Pavaant Memorial Hospital.
1 Feilng, Anthony. Sciatica. Its Varieties and Treatment. Brit. J. 2, 386-390 (March 10) 1928.
2 DaCosta, J. C. Modern Surgery, ed. 10. Philadelphia: W. B. Saunders Company, 1931, p. 648.
3 Moersch, A. P. Sciatica. Canad. M. A. J. 22, 452-459 (April) 1930.

group is likewise a peripheral neuritis but is due to pressure on the nerve usually before it leaves the pelvis as from spinal cord tumors that exert pressure within the canal, or metastatic tumors that press on the sciatic root, plexus or trunk, pelvic tumors may give unilateral pressure on the plexus or nerve.

Putti,⁴ in his description of sciatica, demonstrated a narrowing of the intervertebral foramina due to anomalous articular facets, and arthritis with a resulting impingement on the nerve roots. Craig and Ghormley⁵ have referred to this condition as "facet syndrome." In a similar manner Williams⁶ ascribed a sciatic irritation to a reduction of the lumbosacral space. The reflex neuralgias, however, are of much more frequent occurrence than these two recognized groups of primary and secondary neuritis combined.

Before a reflex sciatica can be diagnosed, sciatic neuritis must be excluded. Unlike sciatic neuritis, the neurologic manifestations in reflex neuralgia are normal. The roentgenogram of the lumbosacral spine and pelvis is negative. Toxemias and constitutional diseases must be ruled out. The diagnosis does not depend exclusively on differentiation from neuritis. There are positive symptoms and observations, the presence of which is certainly suggestive if not conclusive. The sciatica is preceded by symptoms of muscular insufficiency in the lumbar and sacro-iliac region—intermittent ache and tiredness, stiffness and soreness, constant ache, localized boring pain over the lumbosacral angle or over one or both sacro-iliac joints and signs of inflammatory reaction in these joints. At the same time, physical examination during an acute attack shows muscle spasm in the lumbar area, a protective list is present, Lasgue's sign is positive on the side of the affected nerve, the posture, particularly between acute attacks, is poor, the normal curves of the back are increased. In about one half of the cases there are signs of a generalized nervous fatigue and irritability, in some instances this reaches such a degree that neurasthenia is diagnosed. The frequency with which weak feet and varicose veins accompany the neuralgias is regarded as further proof of the presence of physical strain.

A study of these neuralgias and a review of sixty cases led to several interesting conclusions: first, that this condition is not a true neuritis but an essential reflex sciatic neuralgia, second, that the referred pain is not confined to the sciatic nerve, third, that the origin of these pains may be attributed to muscular insufficiency or physical strain and, fourth, that any environmental condition which strains the nervous system acts as a contributing factor.

The following three examples of the cases reviewed show a reflex sciatic neuralgia with typical symptoms and a cure by treatment of the muscular insufficiency.

CASE 1—Sciatica muscular insufficiency. J. H. L., a man, aged 40, a sales manager, was referred for relief from pain over the right sciatic nerve, which had been present for three and one-half months. The pain over the thigh started insidiously and grew progressively worse. Gradually the calf of the leg and finally the ankle and foot were involved. He described the pain as a constant ache with periods of exacerbation. The pain was more severe after prolonged sitting. Five days previous to his examination he drove 100 miles in his car. The

pain became so severe, as a result, that he was unable to sleep. The muscles in the leg cramped periodically. He also complained of low backache. He had had this ache for many months previous to the pain in the leg. There was some stiffness and soreness in the lumbar area. He felt tired even in the morning. Just previous to the onset of the pain in the thigh he was under unusual stress as a result of great business reverses.

Examination revealed that the patient walked with a careful gait. He sat on the edge of his chair. Every few minutes he altered his position. Flexion of the back was slightly limited. The Lasgue sign was positive. The posture of the back was altered so that there was a slight list and some loss of lumbar curve. The laboratory observations were negative. No foci of infection were found.

The patient was hospitalized for six days. Buck's extension was applied. An electric pad was used over the lower part of the back. A reinforced corset was fitted and applied to support the lumbosacral area. Periodic rest was carried out systematically. Graded exercises were prescribed and supervised. The corset was discarded. He was relieved of the symptoms and back at work in two weeks. He remained well and when seen a year later stated that he had had no trouble since the treatment and that he had never felt better.

CASE 2—Sciatica, muscular insufficiency. H. F., a business man, aged 43, who entered Passavant Memorial Hospital May 31, 1932, complained of pain in the right leg. The pain was first noted in January 1932. Previous to that time fatigue had been noticed in the lower part of the back and sacro-iliac region, particularly after driving a car on long trips. The back felt tired and ached, there was a localized spot of pain in the region of the right sacro-iliac joint. There was pain in the lateral aspect of the hip, radiating down the posterior surface of the right thigh and down the lateral aspect of the leg. Stiffness was felt on getting up in the morning. Usually the pain was not severe in the morning but grew worse during the day. He could scarcely walk at the time of examination. There was no history of rheumatism or trauma. In an effort to cure the illness an abscessed tooth had been extracted. He felt generally tired and was unusually irritable. He had used heat, rest and salicylates for relief.

The patient was thin and stood bent forward with a marked list to the left. There was a loss of lumbar curve and marked lumbar muscle spasm. There was localized tenderness over the right sacro-iliac joint, there was also a tender area over the right greater trochanter. Lumbar motion was limited in all directions. Lasgue's sign was positive, markedly so on the right.

Prostatic examination was negative. The urine, stool and blood were normal and the Wassermann test was negative. Blood urea was 15 mg., uric acid 48 mg., and blood sugar 80 mg. The phenolsulphonphthalein test showed from 45 to 50 per cent of the dye excreted in the first hour. A fractional meal revealed free acid, maximum 29, total acid 53. A roentgenogram of the sinuses was negative except for slight clouding of the sphenoids not characteristic of infection. A roentgenogram of the lumbar spine and sacro-iliac region revealed very little lumbar curve, and nothing abnormal was reported.

The patient was put at rest in bed with bilateral Buck's extension, with local heat to the back. In a short time he could rest comfortably on his back. The muscle spasm subsided in five or six days after which a light supportive body cast was applied with the patient in full extension. After three days he became accustomed to the cast so that he could walk around the room, after which he progressed rapidly. The patient was apt in grasping his condition and method of treatment. He left the hospital much improved, able to walk several blocks but he continued to have some pain over the right sacro-iliac joint after exercise. Exercise was gradually increased and periodic rests were slowly decreased. He continued to improve and as he grew stronger the pain disappeared entirely.

Four weeks after treatment he had lost all sense of fatigue. There was no pain in the lower extremity. He has remained well and after a period of two and one half years states that he has never felt better.

4. Putti, Vittorio. Sciatica. Its Cause and Treatment. Brit. M. J. 1 522 (March 19) 1927.

5. Craig, W. M. and Ghormley, R. K. Significance and Treatment of Sciatic Pain. J. A. M. A. 100 1143 1148 (April 15) 1933.

6. Williams, P. C. Reduced Lumbosacral Joint Space. Its Relation to Sciatic Irritation. J. A. M. A. 99 1677 1681 (Nov. 12) 1932.

CASE 3—*Sciatica and lateral cutaneous neuralgia, muscular insufficiency* Miss H. N., aged 34, a school teacher, nervous, slightly eccentric, entered Passavant Memorial Hospital complaining of an acute sciatica. The pain was intense and coursed down the lateral side of the right thigh and leg. She also complained of intermittent lumbago and low backache, which had been present for four years. She was irritable and worried and seemed tired all the time. The back was stiff on getting up. She obtained relief from backache by rest and the wearing of a support. The pain in the legs, when first noticed, felt like threads of pain going down the lateral side of the right limb. The pain grew worse and became continuous, finally becoming so severe that the patient could not walk. She obtained relief only with constant rest and continued local heat.

The patient was evidently suffering pain. She could not stand erect, when she tried to stand she bent forward and listed markedly to the left. The right leg and thigh showed slight atrophy. There was some lumbar muscle spasm. The outer side of the thigh seemed to be tender to pressure. A mitral regurgitation was present. The Lasègue sign was positive. The blood count and urine were normal, the blood Wassermann reaction was negative. A roentgenogram of the lumbosacral area showed no abnormal changes.

The patient was put to bed with bilateral Buck's extension. Local heat and salicylates were also used. She improved rapidly and was placed in a body cast in a corrected position. She left the hospital in excellent condition, the sciatica having disappeared. Supports, periodic rest and graduated exercises were prescribed and supervised, and a change of environment was advised.

She remained under observation for six weeks, during which time the functional insufficiency was relieved. She has been well for three years, without any recurrence of pain.

These three cases are typical of the sixty cases reviewed, both as to symptoms and observations and as to the response to treatment. Pain down the lower extremity was present in every case, the pain followed the course of a nerve, usually the sciatic distribution but occasionally a gluteal or lateral cutaneous distribution. Backache and a feeling of fatigue preceded and accompanied the sciatic pain; a localized pain was present usually either over the lumbosacral angle or over the sacro-iliac joint. The concomitant occurrence of static strain in the feet was frequently observed. Expressions of nervous strain such as irritability and insomnia were commonly present.

An explanation of the pathogenesis rests on an interpretation of the symptoms and observations. Osler states that sciatica may in some instances be a functional neurosis or neuralgia and that reflex irritation and an enfeebled nervous system may cause neuralgia. The ache in the back is a fatigue pain due to muscular insufficiency, the pain along the nerves is a referred pain. There were no objective signs that an organic lesion was present in any of these cases. The roentgenograms of the lumbar and sacro-iliac area were consistently normal. (Only such cases as presented negative roentgenograms were included in this series.) Osteoarthritis was carefully excluded. Many patients have an arthritis of the spine plus a muscle strain and sciatica. They may have a reflex sciatica as well as a true sciatic neuritis. Much of the back pain in arthritis of the spine is due to muscle spasm and secondary reflex neuralgia and only part of the pain is due to pressure on the nerve. The relief of muscular insufficiency gives distinct improvement in cases of arthritis of the spine with sciatica. Further arthritic treatment such as the careful elimination of foci of infection and the discriminate use of vaccines, is essential to establish a

cure. The latter is particularly true when the arthritic changes in the spine are part of a generalized or a chronic infectious arthritis. On the other hand, it is possible to have secondary arthritic changes limited to the lumbosacral and sacro-iliac joints as the result of continued irritation secondary to prolonged strain on these joints from muscular insufficiency of long standing. The cure of the muscular insufficiency in these cases assures permanent relief of all symptoms. The few instances in which the nerve came to the neuropathologist showed no sign of degeneration or inflammation, nor any abnormal change. In each case there was a definite relationship between the presence of static disturbance and the development of sciatic symptoms. Foci of infection, whenever present, were eradicated, since infection tends to increase the functional insufficiency and to make the irritation more persistent.

How can these static strains give rise to a reflex neuralgia? A reflex neuralgia occurs when a normal stimulus steps over the threshold of sensitivity to form an irritation. A persistent or repeated stimulus acts as a peripheral nerve irritant. Muscular fatigue or strain gives rise to such stimuli. The threshold of susceptibility of the nervous system may be lowered as a result of constitutional weakness or nervous fatigue. Thus all things that cause a strain, either physical or nervous, have a predisposing tendency toward a neuralgia. In many cases an injury or nervous shock precipitates a neuralgia. On the other hand, a mild stimulus repeated over a long period of time, as in the case of chronic muscular insufficiency of the back, gives rise to an accumulative effect, which finally expresses itself as a sciatic or some related form of neuralgia. All evidence indicates that sciatica is due to a disturbance in function. The muscle strains act as repeated stimuli and result in a peripheral irritation. These peripheral irritants give rise to reflex pain that radiates along the course of the peripheral sensory nerve. It is to these neuralgias or referred pains along the sciatic nerve that Goldthwait⁸ refers as some reflex mechanism. The explanation for relief from sciatica following a fusion of the sacro-iliac joint is simply that the procedure removes the sacro-iliac irritation and establishes a functional compensation.

These ideas are in accord with Linstedt's⁹ views that chronic irritations result from functional fatigue, that functional fatigue, in his cases, was secondary to organic alteration of normal body statics, that the irritation of chronic fatigue may make the nerve of the involved part hypersensitive and produce pain along the course of the nerve. When such pains occur in the region of the sciatic distribution they are called sciatica. These views were confirmed by Haglund's¹⁰ vast experience; he also found that the removal of functional insufficiency by means of orthopedic measures cured the sciatica. A detailed description of the treatment of muscular decompensation is not within the scope of this article. In the sixty cases reviewed, relief was obtained in each case as soon as a functional compensation was reestablished. These observations cover a period of seven years, during which time the patients have remained well.

8 South Michigan Avenue

⁸ Goldthwait, quoted by Danforth, M. S. and Wilson, I. D. *The Anatomy of the Lumbosacral Region in Relation to Sciatic Pain*, J. Bone & Joint Surg. 23: 109-155 (Jan.) 1924.

⁹ Linstedt, Folke. *Ueber die Aetologie und Pathogenese der Ichiia*, Acta med. Scandinavica 53: 218-380, 1921.

¹⁰ Haglund, Patrick. *Concerning So Called Sciatic Sciho*, with Special Reference to Linstedt's Theory with regard to Sciatica and Kindred Diseases, Acta med. Scandinavica 56: 68-67, 1922.

⁷ Osler, William. *The Principles and Practice of Medicine*, ed. 6. New York: D. Appleton & Co. 1912. pp. 1059-1090.

METASTATIC SPINAL EPIDURAL
ABSCESSREPORT OF A CASE WITH RECOVERY FOLLOWING
OPERATIONR FRANK SLAUGHTER MD
FRANK FREMONT-SMITH, MD
AND
DONALD MUNRO, MD
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This paper deals with a case of metastatic spinal epidural abscess due to an infection with *Staphylococcus aureus* in which the diagnosis was made and drainage provided before the appearance of signs or symptoms suggesting a compression of the spinal cord. We believe this case to be one of the first reported in which treatment has been instituted at such an early date, especially in the absence of meningitis. The outcome emphasizes the value of such a procedure.

Eleanor M., a well developed and nourished Italian school-girl aged 16 years admitted to the Second Medical Service at the Boston City Hospital, March 17, 1933 complained of pain in the lower part of the back which had been present for the preceding forty-six hours. It was stated that until the onset of her present illness she had been in perfect health with the exception of having had four subcutaneous abscesses during the previous year. The last one in the scapula had been healed for only ten days prior to her admission. Two days before admission at 10 p. m. she had suddenly felt a severe pain in the region of the lumbar spine. This had been accompanied by a chill and had radiated into both flanks. She slept that night and went to school in the morning, though the pain was still present. It grew progressively worse during the day and at 5 p. m. she went to bed feeling chilly and the next morning had a temperature of 101 F. She remained in bed that day, the pain becoming progressively more severe and the temperature rising to 102. She was brought to the hospital at 8 p. m. and transferred the following morning (March 18) to the neurologic service for special study.

At this time and at frequent intervals thereafter until she was operated on she was conscious and rational but slightly drowsy and complained of severe subjective and objective pain in the region of the upper part of the lumbar spine. On the scalp was the scar of a recently healed abscess of the right temporal region. There was a stiff neck and local tenderness over the twelfth thoracic and first lumbar vertebrae. The general physical examination was otherwise negative. Neurologic examination demonstrated a suspicious Kernig sign on the right and pain in the lumbodorsal spine with radiation to the flanks following forward flexion of the neck. Otherwise the motor and sensory systems and cranial nerves were entirely normal. The temperature remained below 101, and the pulse and respirations were normal. The urine was normal and roentgenograms of the spine were negative. Blood culture showed no growth and there was no anemia. On admission the white blood cell count was 19,000. This reached 20,000 the day before and 22,000 the day of operation. In the last count were 76 per cent of polymorphonuclear leukocytes.

Two lumbar punctures were done. The first on admission, showed an initial pressure of 170 mm of cerebrospinal fluid which fell to 50 mm following the removal of 5 cc of cerebrospinal fluid. There was a complete block, as evidenced by the failure of the lumbar cerebrospinal fluid pressure to rise following jugular compression. The collected fluid was clear and xanthochromic and had a slight clot. There were 200 leukocytes per cubic centimeter, 85 per cent of which were polymorphonuclear leukocytes. Ross-Jones and Pandey tests were strongly positive. The protein content was 420, the sugar 58 and the chloride 649 mg per hundred cubic centimeters. A smear showed no organisms. Because of the desire to rule

out tuberculous meningitis, one of the consultants suggested a second lumbar puncture. This was done the day of operation. The initial pressure was 320 mm of cerebrospinal fluid which fell to 0 after the removal of 10 cc. The spinal subarachnoid block was complete. The removed fluid was clear and xanthochromic and formed a solid clot almost at once. The cell count was 64 per cubic centimeter, all polymorphonuclear leukocytes. The protein was 770 the sugar 45 and the chloride 649 mg per hundred cubic centimeters. Coincidental serum sugar was 153 and serum chloride 575 mg per hundred cubic centimeters. The colloidal gold curve was 0000012333.

On this evidence the diagnosis of epidural abscess secondary to osteomyelitis of the twelfth thoracic and first lumbar vertebrae made by one of us (F. F.-S.) the day after admission was concurred in and the patient was transferred to the Neurosurgical Service and operated on, March 20, sixty-six hours following admission and five days after the onset of the disease.

At operation the laminae from the ninth dorsal through the second lumbar vertebrae were exposed through a midline vertical incision and after subperiosteal separation and lateral retraction of the muscles. The spinous processes were divided at their respective bases and instead of being removed were retracted to the right. The exposed laminae were then removed, a protruding soft mass of tissue being exposed at the level of the twelfth dorsal vertebra. This ruptured, exuding creamy pus followed the removal of the laminae of the eleventh dorsal vertebra. Cultures of this pus grew *Staphylococcus aureus*. After the exposure was completed it was evident that the epidural fat from the level of the ninth dorsal to the second lumbar vertebra was replaced by granulation tissue containing multiple small foci of pus. This infected tissue was removed with the aid of the "sucker" and a dural elevator, leaving the dura everywhere free and uninjured. A drain was inserted upward in the epidural space below the laminae of the eighth dorsal vertebra, and the wound closed loosely in layers around it.

Following the operation the patient's condition was satisfactory for two days. The third day, however, the temperature rose to 104. In addition she complained again of stiffness of the neck and pain in the back. All sutures were promptly removed from the wound down to the dura, the walls were picked widely apart with iodoform gauze and rubber dams and two hourly hot wet dressings were started. The temperature subsided the next day and the symptoms completely disappeared at the same time. In the course of a week the wet dressings were stopped, after which the pack was gradually decreased in amount and the wound allowed to heal from the bottom by granulation without further complications. She was discharged with a solidly healed wound and free of signs and symptoms May 10, less than two months from the date of admission.

LITERATURE

Acute spinal epidural infections, which should not be confused with the chronic granulomatous form,¹ are of two types. There are the metastatic or "primary" type, in which the vertebra is not involved, and the secondary type, which follows and results from osteomyelitis locally. The case reported herewith is of the metastatic or first type and the following discussion is therefore confined to this group. Pincoffs,² Craig and Doyle,³ Allen and Kahn,⁴ Chassierini,⁵ Mixer and Smithwick,⁶ Bellerose and Amyot,⁷ Klein⁸ and Rosa-

- 1 Dandy, W. E. Abscesses and Inflammatory Tumors in Spinal Epidural Space (So Called Pachymeningitis Externa). *Arch. Surg.* 15: 477 (Oct.) 1926.
- 2 Pincoffs, M. C. Purulent Spinal Perimeningitis. *Tr. A. Am. Physicians* 41: 247 1926.
- 3 Craig, W. M. and Doyle, J. B. Metastatic Epidural Abscess of the Spinal Cord. *Ann. Surg.* 95: 58 (Jan.) 1932.
- 4 Allen, S. S. and Kahn, E. A. Acute Pyogenic Infection of Spinal Epidural Space. *J. A. M. A.* 98: 875 (March 12) 1932.
- 5 Chassierini, A. Sugli accessi spinali epidurali. *Policlinico (ez prat.)* 39: 1237 (Aug. 8) 1932.
- 6 Mixer, W. J. and Smithwick, R. H. Acute Intraspinal Epidural Abscess. *New England J. Med.* 207: 126 (July 21) 1932.
- 7 Bellerose, A. and Amyot, R. Metastatic Epidural Abscess of Spinal Marrow. *Canad. M. A. J.* 27: 629 (Dec.) 1932.
- 8 Klein, H. M. Acute Osteomyelitis of Vertebrae. *Arch. Surg.* 26: 169 (Feb.) 1933.

mond⁹ have all covered the literature and have reported cases of both types of acute spinal epidural infection. Twenty-nine of these were primary, of which the largest personal series is a group of six reported by Mixer and Smithwick. Of these twenty-nine patients, only six recovered. Recovery in each case followed operation. In one case reviewed by Dandy¹ the outcome is not stated. The other twenty-two patients died. Of the six that recovered, two had residual paralysis of the lower extremities. All operations followed the onset of meningitis or cord compression, as evidenced by paralysis or anesthesia of the lower extremities or interference with the bladder function.

DIAGNOSIS

In the presence of the complete syndrome the diagnosis of acute, metastatic epidural spinal abscess should not be difficult, provided it is considered as a possibility. There will be evidence of the source of the infectious metastasis by the presence of either recently healed or active staphylococcal infection elsewhere in the body. Localized pain and tenderness with muscle spasm as evidenced by stiffness of the neck as well as the aggravation of the symptoms following forced flexion of the cervical spine will be suggestive. General symptoms of an acute inflammatory disease, such as malaise, fever and leukocytosis, will serve to confirm one's opinion. Finally, the demonstration of the signs and symptoms of compression of the spinal cord with or without meningitis will make the diagnosis extremely probable.

The final determining factor, however, and the one which, if successfully demonstrated, indicates the treatment to be followed, is the determination of the presence of a spinal subarachnoid block. This may be present for several days before the clinical signs of compression of the cord are manifest and will almost certainly antedate the onset of meningitis. It may be demonstrated either by chemical changes in the cerebrospinal fluid below the level of the block or by interference with the transmission of a pressure wave from the ventricles down the spinal subarachnoid space and into a manometer. Lumbar puncture was performed in fifteen of the twenty-nine cases reported in the literature. In seven of these sufficient information was given so that it is apparent that a block was present. Six of these seven presented a yellow fluid which clotted with a pleocytosis in one and normal cell count in three. Such observations are pathognomonic of subarachnoid block at a level higher than the insertion of the needle. In the earliest stages, however, the cerebrospinal fluid may be normal and the demonstration of the block must depend on mechanical rather than chemical means. One patient was subjected to two punctures with an interval between. In this instance Craig and Doyle³ found a normal fluid without block six days after the onset of the symptoms. Nine days later, after paralysis had set in, a complete block with yellow cerebrospinal fluid which clotted, was demonstrated. This patient recovered following operation. Our patient showed complete block with yellow fluid and pleocytosis at both examinations. She also recovered following operation.

Such data can be determined with certainty only with the aid of a lumbar puncture. Under the circumstances, however, as Mixer and Smithwick have emphasized this procedure is fraught with particular danger.

To reach the subarachnoid space it is necessary to cross a possibly infected epidural space. If the latter region is actually infected, the needle becomes contaminated and mechanically deposits bacteria into the previously sterile subarachnoid cavity. That this may result in meningitis is only too obvious. Death or permanent disability does not necessarily follow, however. Rosamond⁹ and Mixer and Smithwick⁶ each report a case in which recovery followed the development of such a complication, while Pincoffs² obtained pus from the epidural space in one case, inserted the needle still farther and withdrew cerebrospinal fluid and found that the infection was strictly limited to its original site at subsequent observation. On the other hand, to delay laminectomy, through failure to do an early lumbar puncture, until classic signs of cord compression have manifested themselves in itself greatly increases the chances of a complete recovery, with the elimination of residual paralyses of the cord and bladder. We feel that the danger from a properly performed lumbar puncture is no greater than that that accrues from delay in making the diagnosis and that fear of causing a meningitis which would not otherwise develop should not prevent the operator from obtaining these essential diagnostic data, which can be obtained in no other way. If the diagnosis is suspected, aspiration should be made on the needle at intervals during the puncture and particularly after the interspinous ligament has been traversed. If pus is obtained before the subarachnoid space has been entered, the needle should be promptly withdrawn and operative drainage instituted at the earliest possible moment. We believe that the value of this point of view is well illustrated by the case reported herewith.

TREATMENT

Once the diagnosis is made, only one type of treatment is permissible. This must conform to the fundamental requirement of complete and adequate drainage of the abscess. This is not as simple as it sounds, for the abscess cavity in these cases may include the entire spinal epidural space. In any event, a laminectomy centered over the point of greatest tenderness should be performed. The epidural fat will be found to be studded with multiple small collections of pus, and laminae should be removed in both directions sufficiently far to uncover the maximum amount of this infected tissue and at the same time produce only a reasonable amount of weakening to the spinal column. If the extent of the infection is too great to permit of its complete exposure, drains should be inserted upward and downward in the epidural space. In addition, the dura should be left unopened and as clean as it is possible to get it. It is of even greater importance, however, to leave the operative wound completely unsutured. Recovery followed in our case only when inadequate partial drainage of the abscess through a "loosely sutured wound" was changed to adequate drainage through a wound packed widely open. If gauze is used to pack the wound open it must be replaced every day and in the interval kept wet by the application of large very wet sterile dressings. The wound must be made to granulate from the bottom and great care must be exercised to prevent pocketing particularly at the ends. The necessity for postoperative support of the back will depend entirely on how many laminae have been removed.

SUMMARY

Acute spinal epidural abscess is a definite clinical entity that can be recognized before the onset of com-

⁹ Rosamond E. Epidural Abscess Complicated by Staphylococcal Meningitis. Report of Case with Complete Recovery Following Operation. *J. Pediatr.* 1: 210 (Aug.) 1932.

pression of the spinal cord. The diagnosis must be confirmed by the demonstration of a subarachnoid block by means of a lumbar puncture. The mortality from meningitis brought on by this procedure is certainly no greater and may well be less than the inherent mortality of the disease plus the mortality that results from delayed treatment.

The onset of the disease is characterized by the occurrence of a sudden severe pain in the back, which tends to radiate into nerve root fields. There is a varying degree of systemic toxemia such as accompanies any undrained major infection of soft tissues. A history of either a recent healed or an active unhealed staphylococcal infection is confirmatory evidence. The diagnosis is established and treatment indicated following the demonstration of pus in the epidural space or spinal subarachnoid block. These data can be ascertained only by a properly performed lumbar puncture together with an adequate chemical examination of the cerebrospinal fluid. Signs of meningitis and paralysis resulting from unrecognized cord compression or destruction are late manifestations, and their presence is not essential to the diagnosis.

Treatment is surgical. It should provide complete and adequate drainage of the abscess if at all possible. The operative wound should be left completely open and without sutures.

A case in which complete recovery followed early and adequate drainage of the spinal epidural space illustrates these points.

818 Harrison Avenue

Clinical Notes, Suggestions and New Instruments

PORTAL CIRRHOSIS IN A CHILD, WITH SUCCESSFUL PALLIATION BY OMENTOPEXY FOR TWO YEARS

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The usual conception of cirrhosis of the liver denotes any type of sclerosis in which there is destruction of liver cells associated with a real or apparent increase of connective tissue. The terms "atrophic" and "hypertrophic" referring to the size of the liver should be abandoned, since they do not indicate any definite disease entity but more a description of the stage of the disease. Early in the hypertrophic stages of the disease exudation and necrosis of liver cells are the prominent features and replacement by the healing process is yet in the background. Later, when a large proportion of the necrotic liver cells have become replaced by scar tissue through a process of healing, the liver is decreased in size, this is usually designated as "atrophic" cirrhosis.

Any type of cirrhosis of the liver in childhood is a rare disease, but the portal or Laennec type is especially uncommon as judged from the report by Bridgeman and Robertson¹ of only fourteen such cases which they were able to collect from the literature. They noted a definite familial tendency in the cases of this type which they reviewed. Considering all types of hepatic cirrhosis in the literature, they found most commonly the multilobular alcoholic, the biliary obstructive and the syphilitic varieties, with the latter two types predominant.

The case described here is reported not alone from the standpoint of its rarity but, in addition to emphasize and recommend a form of treatment that was successful in bringing about complete symptomatic relief. Although this therapy probably did not alter the eventual outcome of the disease, the patient enjoyed two years of normal health, in addition, many interest-

ing and difficult diagnostic features were encountered in this case, so that it seems worthy of report.

REPORT OF CASE

A white girl, aged 6 years, was first admitted to the hospital, Nov. 17, 1931, with complaints of painless, gradually deepening jaundice, acholic stools, dark urine, and slight loss of weight and weakness for the past four or five months. The onset of her illness was very insidious and the progression of her symptoms was very slow. There had been at no time any fever, chills or abdominal pain, although she had occasional periods of a few days in which the stools were normal in color. Her past history as well as that of her family was entirely negative for any tendencies.

The child was rather well developed and well nourished. Jaundice was graded 3 plus on a basis of 4. The tonsils had been removed previously but otherwise no abnormalities of the head, neck or chest were found. The liver was palpable 4 cm. below the costal margin and its margins were smooth but tender. The spleen was slightly enlarged and its anterior margin could be barely palpated on deep inspiration.

Examination of the blood showed a hemoglobin concentration of 78 per cent by the Darc method. The red cells numbered 4.2 million and the white cells 13,375 per cubic millimeter of blood. The urine contained sugar graded 3 plus on the basis of 4 and also a faint trace of albumin but no acetone or pus. A negative serologic reaction on the blood was obtained for syphilis. The van den Bergh test gave both the direct and indirect reactions and the value for the serum bilirubin was estimated to be 10.2 mg. for each hundred cubic centimeters of blood. The coagulation time of the blood was found to be seven minutes and thirty seconds. Blood sugar determinations varied between 62 and 104 mg. for each hundred cubic centimeters of blood.

Since the possibility of an obstructing lesion of the common duct could not be excluded, it was decided that exploratory laparotomy was advisable. Preoperatively, 20 cc. of 10 per cent calcium gluconate was given by vein, as well as large amounts of fluid and dextrose parenterally. At operation the liver was found to be almost twice its normal size, with many irregular hard nodules involving especially the left lobe, the largest of which were about 3 cm. in diameter. The gallbladder was markedly distended, seemingly from the obstruction caused by the presence of a number of enlarged lymph nodes surrounding and compressing both the common and cystic ducts. Ascites measuring a liter or more was present in the abdominal cavity. Removal of a small section of hepatic tissue and of a nearby gland for biopsy was done, and pathologic report by the frozen section method was immediately returned as a marked cirrhosis of the Laennec type, and chronic inflammation of the lymph node. The mass of glands about the bile ducts was removed as extensively as possible and a Talma Morrison omentopexy was then done. Convalescence was essentially without incident. In about two weeks the jaundice had completely disappeared, and the child began to gain weight and strength and soon appeared to be entirely normal in every respect. She went to school, was always very active, and for almost two years there were no symptoms whatever referable to her previous trouble. In October 1933 a few days after a fairly severe "take" from a smallpox vaccination, she again became jaundiced, her abdomen became distended and in spite of a strict limitation of diet, the symptoms progressed. A week later the child rather suddenly became comatose and died in twenty-four hours. A van den Bergh test taken just before death gave both a direct and an indirect reaction and the serum bilirubin value of the blood was 19.9 mg. for each hundred cubic centimeters.

At necropsy the body appeared well developed and nourished, measuring 130 cm. in length and weighing about 100 pounds (45.4 Kg.). There was deep generalized jaundice. The peritoneal cavity contained about 200 cc. of bile-stained ascitic fluid. The omentum was extensively attached to the anterior surface of the liver, and to the parietal peritoneum over almost the entire anterior abdominal wall. The spleen weighed 260 Gm. and its content of fibrous tissue was only slightly increased over that of the normal. The weight of the liver was 520 Gm. Its surface was rough and nodular, owing to the presence of many adenomas varying in size up to 4 cm. in diameter. The

¹ Bridgeman, M. L. and Robertson, T. D. Familial Juvenile Cirrhosis of the Liver. *Am. J. Dis. Child.* 43: 1155 (May) 1932.

liver on section was very firm and in its substance practically nothing but scar tissue could be made out, although islands of hepatic parenchyma were visible, the latter no doubt represented the remnants of preexisting lobules. These nodules were much more prominent in the left lobe than the right.

The gallbladder was thin walled and slightly distended with light colored bile. The ducts of the biliary tract were normal and patent throughout. Examination of the remainder of the gastro intestinal tract and also of the organs of the genito-urinary and the cardiorespiratory systems gave negative results.

Microscopically, there was considerable hypertrophy and hyperplasia of the liver cells, which was no doubt the source of regeneration of hepatic tissue. The liver stroma was contracted by a large increase of connective tissue, compressing the sinusoids and periportal biliary ducts. There were numerous lymphocytic collections in the periportal connective tissue, completing the picture of a typical portal cirrhosis.

COMMENT

Perusal of the available literature gave unsuccessful results in finding a description of a similar case. In adults, comparable situations have been frequently described, in children, treatment of this disease in the manner indicated apparently is of great rarity. Decompression of the portal hypertension by shunting blood from this system over to the systemic circulation afforded relief from the ascites, jaundice and glycosuria led to a decrease in evidences of collateral circulation, and brought about symptomatic cure for almost two years. A rapidly fatal issue finally occurred from almost total hepatic insufficiency a mode of death frequently seen in this disease.² There is doubt as to the role played by the reaction to vaccination in the precipitation of the fatal issue, from the degree of liver damage present there is no question that death was imminent at any time and the smallest disturbance in the physiologic equilibrium would have resulted fatally. From observations in this case it would seem that omentopexy is of as much value in the treatment of portal obstruction in children as it is in adults.

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BARIUM CHLORIDE POISONING

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A recent query in THE JOURNAL as to the toxicity of barium carbonate¹ prompts the report of a case of poisoning by barium chloride in an amount well beyond the commonly fatal dose.

A woman, aged 25, a stenographer in a chemical laboratory, asked one of the chemists for a teaspoonful of salt to relieve slight gastric distress. The chemist took a bottle out of the chemical cabinet under the impression that it contained sodium chloride and, glancing only at the "ium chloride" of the label gave her about a teaspoonful of barium chloride which she immediately washed down with a glass of water.

The peculiar taste caused the error to be discovered at once but as the young woman felt no immediate ill effects nothing was done at the time. After a few minutes she began to have some gastric pain which increased to such a degree that she took a little sodium bicarbonate for relief. As this did no good she went home an hour after taking the barium salt and was almost prostrated by abdominal pain. About two and a half hours after the accident she was given 2 teaspoonfuls of anhydrous sodium sulphate by the chemist and I was called.

When she was seen about three hours after the ingestion of the salt she was almost in collapse with a weak thready pulse of a rate of 120 and complained of agonizing abdominal pain crampy in character and general over the whole abdomen. There was no abdominal rigidity and pressure did not increase the pain to any extent. The systolic blood pressure was 140. Without further examination 4 teaspoonfuls of crystalline sodium sulphate was at once given in water followed by a hypodermic injection of $\frac{1}{100}$ grain (0.00065 Gm.) of atropine sulphate and $\frac{1}{4}$ grain (0.016 Gm.) of morphine sulphate. The pain was relieved at once and the next day the patient felt as well as usual.

² Chapman, C. B., Snell, A. M., and Rowntree, L. G., Decompensated Portal Cirrhosis. Report of One Hundred and Twelve Cases. *J. A. M. A.* 97: 237-244 (July 25) 1931.
¹ Poisoning with Barium Carbonate. Queries and Mirror Note. *J. A. M. A.* 101: 625 (Aug. 19) 1933.

Later the patient was asked to measure out in a teaspoon the amount of barium chloride she had swallowed, and the weight of the quantity she indicated was found to be 7 Gm., or about 108 grains. Reference to textbooks of pharmacology shows that much smaller doses have been fatal. Witthaus² states that death has been reported from 4 Gm. of barium chloride, while recovery has occurred after the ingestion of 24 Gm. Sollmann³ refers to the fatal dose as from 0.8 to 0.9 Gm. Barium chloride is now rarely used in medicine and is not mentioned in the twenty-first edition of the Dispensatory of the United States. The National Dispensatory of 1916 gives the dose as from $\frac{1}{10}$ to $\frac{1}{2}$ grain (0.0065 to 0.032 Gm.), while Merck's Index for 1907 indicates a dose of from $\frac{1}{2}$ to $1\frac{1}{2}$ grains (0.032 to 0.096 Gm.), with a maximum single dose of 3 grains (0.194 Gm.) and a total daily dose of 10 grains (0.648 Gm.).

Sodium sulphate reacts with barium chloride according to the equation $\text{BaCl}_2 + \text{Na}_2\text{SO}_4 \rightarrow \text{BaSO}_4 + 2\text{NaCl}$. In this reaction sodium sulphate is a perfect chemical antidote for the barium chloride. It is readily soluble in water, it can be given in a dose as large as 30 Gm., and the end-products are non-toxic. Ordinary barium chloride contains two molecules of water of crystallization, and crystalline sodium sulphate ten molecules, so that 1 Gm. of barium chloride is fully converted into the insoluble sulphate by 1.31 Gm. of sodium sulphate in crystal form.

Sodium thiosulphate, commonly used as an antidote to the heavy metal poisons precipitates barium thiosulphate from a solution of barium chloride. The barium, however, is not completely thrown down even by a saturated solution of the thiosulphate, and the addition of sodium sulphate causes a further precipitation. Sodium sulphate, therefore, is a more efficient antidote to barium chloride than sodium thiosulphate.

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THE PREPARATION OF BACILLUS PERTUSSIS VACCINE FOR IMMUNIZATION

LOUIS W. SAUER, M.D., EVANSTON, ILL.

For immunization against whooping cough to be free from unnecessary hazards the recently isolated strains of Bordet-Gengou bacilli should be grown only on Bordet medium, made with 20 per cent fresh, defibrinated human blood. A total of from 7 to 8 cc. of such vaccine containing 10,000 million bacilli, is necessary to confer prolonged immunity.¹ Because the amount of culture medium blood protein that is unavoidably carried over when the forty-eight hour growth is harvested is not negligible, the growth is scraped off. To flood off the harvest would carry over appreciably more, at times sufficient to give the product a pink tinge. To rid the vaccine of such transferred blood protein by washing, centrifugation and replacement of the supernatant fluid would weaken, i. e., decrease the antigenic content of the vaccine. I have found the original supernatant fluid to contain an appreciable amount of soluble toxin.

The use of animal (horse, sheep or goat) blood would add an unnecessary hazard when such quantities of vaccine are administered. Clinicians are familiar with the systemic and cutaneous reactions that promptly follow the use of antitoxin (tetanus or scarlet fever) in children who have previously been immunized against diphtheria with toxin antitoxin. Because the trace of animal serum in the latter sensitizes the young child to oxoid or alum toxoid is rapidly replacing toxin-antitoxin as an immunizing agent. To avoid similar sensitization only vaccine made with human blood should be used in the immunization of infants and young children against whooping cough.

Furthermore from accumulated evidence I have cause to believe that medium made with human blood is most likely to conserve the pathogenic (Leslie and Gardner's phase I) phase of the bacillus.

636 Church Street

² Witthaus, R. A., Manual of Toxicology, ed. 2, New York, William Wood & Co., 1911.

³ Sollmann, Torald, A Manual of Pharmacology, ed. 4, Philadelphia, W. B. Saunders Company, 1932.

¹ Sauer, L. W., Whooping Cough. *J. A. M. A.* 100: 239 (Jan. 24) 1933. Immunization with Bacillus Pertussis Vaccine. *ibid.* 101: 144 (Nov. 4) 1933.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT
II A CARTER Secretary

ARIZON ACCEPTABLE

The Arizon is an electrically heated vapor inhalator manufactured by the Detroit Cover Company, 3420 West Fort Street, Detroit. It is recommended as an adjunct in the treatment of nasal or respiratory disturbances and for inhalations of vapor or medicated vapor as prescribed by the physician. The unit weighs about 4 pounds and operates on either alternating or direct current with electric consumption of about 150 watts. A tight mask with compensating valves fits over the nose and mouth. A flexible breathing tube serves as a connection between the mask and the vapor chamber.



Arizon Respirator

Ventilators are drilled in the base of the instrument so that the free ingress of air is available for inspiration. An outlet valve in the mask provides for expiration and the arrangement of valves prevents expired air from being inhaled again. The intake of air, after passing through the ventilators is drawn through and over an electric heating element thence passing into a spherical vapor chamber measuring seven inches in diameter. Wiring of the instrument provides for three heat stages in the basin of the Arizon. Sufficient hot water is placed in the basin to provide adequate vapor. The treatment consists simply of normal breathing. If the Arizon is to be used by several people, one after the other, for example in a family, the mask and the breathing tube should be thoroughly sterilized in boiling water for fifteen minutes. The unit should not be passed around in a community from one family to another. One unit was examined in a clinic acceptable to the Council. It was found to be a satisfactory means of conveying vapor either medicated or not to the patient. The Arizon therefore, is eligible for inclusion in the list of acceptable devices.

Committee on Foods

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT
RAYMOND HERTWIG Secretary

NOT ACCEPTABLE

COMMANDER FANCY SHORT PATENT FLOUR
FAIRYLITE FANCY PATENT FLOUR
MISS MINNEAPOLIS FANCY SHORT PATENT FLOUR

The Commander Milling Company, Minneapolis and its subsidiaries the Buffalo Flour Mills Corporation, Buffalo and the Minneapolis Milling Company Minneapolis respectively submitted to the Committee on Foods the following hard spring wheat patent flours intended for commercial bakeries and family use Commander Fancy Short Patent Flour, Fairylite Fancy Patent Flour and Miss Minneapolis Fancy Short Patent Flour.

Analysis (submitted by manufacturer) —

Moisture
Ash
Protein (N × 5.7)

per cent
13.0 - 14.5
0.38 - 0.42
10.5 - 12.0

Discussion of Names—The designations fancy patent and 'fancy short patent' are not recognized by the milling trade or by the public as defining any specific flour grade. The term fancy implies at least that the flour grades are superior to those generally recognized as 'patent' or 'short patent'. The submitted information would classify the flours as 'patent' only. Variety of grade names without recognized significance

COMMITTEE ON FOODS

JOUR. A. M. A.
MAY 5 1934

for flours leads to confusion and deceptive advertising. There fore the grade names 'fancy patent' and 'fancy short patent' are considered inappropriate, first, because the names do not have trade recognition and secondly, because they connote that the flours are lower percentage patents than reported and consequently have superior baking values. The company was advised of the Committee's recommendations but is unwilling to change the names for business reasons. Acceptance of flours with inappropriate grade designations would militate for their more general adoption and extend this misinformative practice. These products will therefore not be listed among the Committee's accepted foods.

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMOTION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.
RAYMOND HERTWIG Secretary

HEINZ STRAINED PRUNES WITH LEMON JUICE

Manufacturer—H. J. Heinz Company, Pittsburgh
Description—Strained prunes retaining in high degree their natural vitamin and mineral content, added lemon juice.
Manufacture—Dried prunes are inspected, washed, cooked in boiling water in closed kettles, and automatically pitted. The pulp with sufficient fresh lemon juice to add 0.5 per cent of citric acid, is sieved in an atmosphere of steam vacuumized to remove air filled into lacquer lined cans, sealed under vacuum and processed.

Analysis (submitted by manufacturer) —

Moisture	per cent
Total solids	69.0
Ash	31.0
Fat (ether extract)	0.7
Protein (N × 6.25)	0.2
Reducing sugars as invert sugar	1.1
Sucrose (copper reduction method)	21.0
Crude fiber	0.0
Carbohydrates other than crude fiber (by difference)	0.8
Acidity as citric acid	27.5
Calcium (Ca)	0.7
Phosphorus (P)	0.03
Iron (Fe)	0.03
Copper (Cu)	0.0018
Calories—12 per gram	34 per ounce

Claims of Manufacturer—Gently laxative. Good source of vitamin G. Specially intended for infants, children, and for special smooth diets. Only warming is required for serving.

JELKE'S GOOD LUCK SALAD DRESSING

Manufacturer—John F. Jelke Company, Chicago
Description—Salad dressing containing water cottonseed oil, sucrose, distilled vinegar, starch eggs salt and mustard.
Manufacture—The eggs, spices and a small amount of the distilled vinegar and water are mixed at a slow speed, the oil is beaten in at high speed and then the balance of the distilled vinegar and water. The resulting emulsion is mixed with a heated mixture of water sugar, distilled vinegar, starch and salt producing the salad dressing which is cooled and automatically packed in jars.

Analysis (submitted by manufacturer) —

Moisture	per cent
Total ash	38.9
Sodium chloride	3.8
Fat (ether extract)	3.7
Protein (N × 6.25)	39.8
Reducing sugars as invert sugar	1.0
Sucrose (copper reduction method)	trace
Carbohydrates (by difference)	11.1
Titrate acidity as acetic acid	15.7
Lipoid phosphoric acid (P ₂ O ₅)	0.8
Total phosphoric acid (P ₂ O ₅)	0.036
Added color	0.04
Calories—4.3 per gram	122 per ounce

REPORTS OF OFFICERS

NOTE—At the 1925 session of the Association, the House of Delegates suggested that all reports of officers, committees, etc., and resolutions to be brought before the House, if available, be published in advance of the session so as to permit careful consideration and discussion—Ed

REPORT OF THE SECRETARY

To the Members of the House of Delegates of the American Medical Association

The following report of the Secretary is respectfully submitted

MEMBERSHIP

On April 1, 1934, the number of members enrolled was 98,041. The names of 1,537 deceased members were removed during the year. Because of a typographical error in the report submitted at the last Annual Session the number of members as of April 1, 1933, was incorrectly stated. The number reported for Missouri should have been 3,212 and the total 98,111, rather than 2,212 and 97,111, respectively.

FELLOWSHIP

The number of Fellows as shown by the roster on April 1, 1934, was 60,714, as compared with 62,495 on the same date in the preceding year. During the year 5,563 names were removed from the roster, while 3,782 were added. The net loss for the year was 1,781. Of those removed the names of 789 were those of deceased Fellows. 1,202 had become ineligible for various reasons, 1,903 had failed to pay dues, 1,669 resigned. In most instances resignations were based on expressed desire to be relieved of the payment of Fellowship dues and subscription because of the unfavorable economic situation. A few resignations were submitted with statements indicating dissatisfaction with existing conditions in component and constituent societies or disapproval of the announced policies of the Association. A slightly larger number of resignations were submitted without any accompanying statements of the reasons therefor.

In accordance with instructions issued by the Board of Trustees and approved by the House of Delegates at the Milwaukee session, the names of Fellows who could not make immediate remittance for Fellowship dues have been retained on the roster when they have indicated intention to remit within a specified time.

The number of counties in each state and territory, the number of component county societies as shown by the records of the Secretary's office, the number of members enrolled at the time the count was made, and the number of Fellows including Honorary Fellows and commissioned officers of government services, are shown in an accompanying table.

FIELD WORK

The Secretary has attended meetings of state associations and district medical societies in twelve states during the year and has appeared before eight county societies. He has also attended meetings of councils and other official bodies in several states and has accompanied committees of the Association on official visits to Washington and elsewhere. The number of official visits made by other representatives of the Association to the meetings of state, district and county medical societies and the number of appearances of such representatives before lay audiences have been far larger than in any previous year.

REAPPORTIONMENT OF DELEGATES

Under the provisions of section 3, chapter 1 of the By-Laws it is required that a reapportionment of delegates shall be made every third year. The last reapportionment was made at the Philadelphia session in 1931 and it will therefore be necessary to make a new reapportionment at this session.

COUNTY SOCIETIES

The need for efficient and militant organization in the individual counties has been demonstrated in truly remarkable

manner during the last year. It has been clearly shown in numerous instances that where such organization has been lacking the medical profession has been placed at serious disadvantage. It has been just as clearly demonstrated that well

Organization of Constituent State Associations

	Number of Counties in State	Number of Com- ponent Societies in State	Organization of Constituent State Associations						Number of Fellows in State
			Number of Counties Organized		No of Physicians in State 12th Ed A M A Directory	Number of Members of State Associations			
			1933	1934		1933	1934		
Alabama	67	67			2 907	1 484	1 462	46	
Arizona	14	12	1	1	494	340	246	194	
Arkansas	75	62	9	9	1 977	815	880	306	
California	58	39	14	12	10 109	5 123	5 167	3 561	
Colorado	64	28	2	2	1 898	1 064	1 069	660	
Connecticut	5	8			2 163	1 462	1 472	931	
Delaware	3	3			2 68	193	105	112	
Dist Columbia					1 827	672	676	548	
Florida	67	34	19	20	1 762	965	971	555	
Georgia	161	95	49	48	2 588	1 477	1 689	574	
Idaho	44	10	2		383	148	194	110	
Illinois	102	95	6	6	11 382	7 962	6 879	4 591	
Indiana	92	82	2	2	4 073	2 808	2 807	1 665	
Iowa	99	97			3 125	2 221	2 191	1 336	
Kansas	105	63	32	30	2 168	1 392	1 536	770	
Kentucky	120	115	3	3	2 567	1 733	1 698	698	
Louisiana	64	44	20	18	2 076	1 182	1 169	695	
Maine	16	15	1	1	809	715	718	381	
Maryland	23	22	1	1	2 480	1 599	1 432	707	
Massachusetts	14	18			6 395	4 614	4 610	3 055	
Michigan	83	53	5	4	5 589	3 545	3 218	2 019	
Minnesota	87	33	2	2	3 075	2 220	2 212	1 441	
Mississippi	82	21	4	4	1 567	881	1 218	309	
Missouri	114	89	16	8	1 440	3 291	3 212	1 741	
Montana	56	16	27	23	484	307	311	189	
Nebraska	98	43	23	20	1 781	1 124	1 058	600	
Nevada	17	4	12	13	111	93	102	59	
New Hampshire	10	10			467	483	499	249	
New Jersey	21	21			4 507	3 014	2 899	2 001	
New Mexico	31	12	10	19	74	203	206	101	
New York	62	60	1	1	21 005	17 056	13 074	8 820	
North Carolina	100	87	2	2	2 711	1 535	1 416	704	
North Dakota	58	15	10	10	611	376	368	263	
Ohio	77	86	2	1	8 651	6 321	5 168	3 158	
Oklahoma	77	64	12	12	2 454	1 528	1 511	899	
Oregon	36	23	3	3	1 211	605	706	416	
Pennsylvania	67	60	5	6	12 051	8 024	7 831	5 188	
Rhode Island	5	6	1	1	844	497	491	360	
South Carolina	46	39	1		1 292	861	891	301	
South Dakota	69	12	11	12	505	240	266	188	
Tennessee	95	66	20	19	2 962	1 473	1 497	809	
Texas	254	157	68	13	6 471	3 695	3 879	1 848	
Utah	29	9	20	15	489	41	319	211	
Vermont	14	10			499	342	350	188	
Virginia	100	91	12	12	2 384	1 811	1 823	846	
Washington	79	23	15	14	1 920	1 354	1 311	701	
West Virginia	55	29	5	5	1 752	1 134	1 196	650	
Wisconsin	71	52	1	1	1 014	2 067	2 121	1 071	
Wyoming	24	10	13	12	24	129	111	91	
Alaska					47	11	14	14	
Hawaii	5	4	1	1	25	297	251	10	
Canal Zone									
Guam									
Panama									
Samoa									
Virgin Islands					91	153	105	1	
Philippine Islands									
(Provinces)									
Puerto Rico (Dist.)		11	4	4	1 521	461	666	41	
Foreign						714	711	11	
Total	3 134	2 067	34	43	1 130 000	711 000	701 000	310 000	
Commissioned Medical Officers and Honorary Fellows								10 000	

organized and viable county societies have many times been able to stem adverse tides and to render valiant service for medicine and for the people of their own communities.

Several entirely new county societies have been organized during the year. Colorado having taken the lead as we are informed with three. There is a continuing tendency to the organization of the province of two or more counties in a single component society.

STATE ASSOCIATIONS

There has been a marked increase in the efficiency and in the scope of the activities of most of the constituent state associations

RESOLUTION TO BE SUBMITTED BY DELEGATES OF
THE MICHIGAN STATE MEDICAL SOCIETY

WHEREAS There is substantial evidence that powerful forces and agencies are working toward the development of health insurance in the United States and

WHEREAS During the course of its studies of medical economic problems the Michigan State Medical Society after a conference with officials of the American Medical Association found it necessary to send a commission to England to inquire into the subject of health insurance and

WHEREAS The commission presented the following report
[This report is not reproduced because of its length. The Secretary is informed that it appears in full in the *Journal of the Michigan State Medical Society* May 1934] and

WHEREAS The report of the commission raises certain grave questions concerning the policy of the officials of the American Medical Association toward health insurance and the effects of this policy on the practicing membership of the American Medical Association and

WHEREAS The report of the commission was transmitted to the Board of Trustees of the American Medical Association through the chairman in February 1934 and

WHEREAS The Michigan State Medical Society has received no word nor has it any other evidence that the Board of Trustees of the American Medical Association has considered or acted on the report transmitted in February 1934 therefore be it

Resolved That in order to avert a repetition in the United States of the disastrous consequences that attended the adoption of health insurance in England the Speaker of the House of Delegates of the American Medical Association appoint a committee to investigate and consider the policy of the Association toward health insurance and present a report to the House of Delegates

To the secretaries and other officers of county societies and state associations to the officers and members of official bodies of the American Medical Association to members of this House of Delegates and to many others from whom assistance has been received including his office assistants, a most sincere expression of grateful appreciation is hereby offered by the Secretary

Respectfully submitted

OLIN WIST, Secretary

REPORT OF THE BOARD OF TRUSTEES

To the Members of the House of Delegates of the American Medical Association

The hours of work in the various departments of the Association have been curtailed and the requirements of the law with respect to wages have been strictly met in compliance with the provisions of the National Recovery Act and with the rulings of the National Recovery Administration promulgated under that act, and with the desire to cooperate as fully as possible with the President and other official agencies of the federal government. The reduction of the number of working hours has, naturally, created a necessity for adding to the working personnel in some departments and has increased the labors of a very considerable number of the employees of the Association.

An examination of that part of the Auditors' Report dealing with the general operating expenses will show that practically all operating costs were less in 1933. Expenditures for wages and salaries paid in 1933 were less than in the preceding year by the sum of \$39,211.85. Expenses incurred in carrying on the general activities of the Association, including field work and the operation of various bureaus and councils were less during the year covered by this report than in the preceding year by approximately \$10,000, while the total expenditures of a miscellaneous nature were less by a sum slightly in excess of \$55,000.

The total operating income for the year 1933 was \$1,375,337.99, as compared with \$1,534,609.98 in the preceding year. There was a decrease in the amount of income received from rents and sundry publications of approximately \$11,000. Interest received from investments amounted to \$77,402.83, as compared with \$74,967.03.

The net income for the year covered by this report was \$88,465.04, as compared with \$93,842.75 in the year 1932. Of the entire net income, \$77,402.83 was derived through interest paid on investments, while the sum of \$5,929.38 represented miscellaneous income secured through several minor sources. The actual net operating income, therefore, amounted to slightly more than \$5,000.

There were very significant decreases in the amount of various cost items, including wages and salaries, paper, postage, discounts and factory supplies, while the increases in operating expenses applied only to a few minor items.

The value of real estate owned by the Association was written down to the extent of \$40,000. It is possible that this represents a somewhat ultraconservative figure, since it is undoubtedly true that on the basis of present conditions in the real estate market the depreciation of the Association's holdings may be considerably larger. The Board of Trustees, in fixing the amount of depreciation on real estate as shown in the Auditors' Report, felt that it was best to adopt a conservative attitude about the matter and to avoid the necessity of presenting figures in a later report which might be construed as showing undue appreciation in value.

Recently, it has become necessary to employ additional personnel in several departments because of constantly increasing demands and because of curtailment of office hours required by the National Recovery Act. If pending legislation is enacted into law, working hours will be further shortened, and it will then be necessary to employ additional personnel. Since it is contemplated, under the proposed law, that present salary and wage scales shall be maintained even though working hours are shortened, it is apparent that expenditures required for the payment of salaries and wages during the current year will be considerably increased.

The cost of paper and various other commodities is now considerably higher, and this fact will be reflected in the operating costs in 1934.

The Journal

In addition to publishing the usual scientific material and the well established special issues during 1933, THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION devoted particular attention to the question of medical economics. The subject was covered not only in the department devoted to the Bureau of Medical Economics but also in editorials, news items and special articles.

The high standards of THE JOURNAL in the field of medical science have been constantly maintained, and the response of the profession has been sustained as in previous years. THE JOURNAL has been devoted to the interest of the medical profession and to its policies as set forth by the House of Delegates and the Board of Trustees of the American Medical Association.

More and more the value of THE JOURNAL as a spokesman for American medicine is being recognized by the medical profession, by government officials and by organizations representing other professions. These have sought constantly the cooperation of THE JOURNAL in representing the medical profession and in promoting various official matters.

The most significant aspect of the work of THE JOURNAL during 1933 has been the continued development of the department of Queries and Minor Notes. A great many letters have been received in the headquarters office testifying to the appreciation of physicians for the practical and clinical service rendered in this way. Hundreds of competent authorities throughout the country have cooperated in preparing the replies, and the appreciation of the Board of Trustees is tendered to them for their work.

The approximate count of Fellows and subscribers carried on the mailing list of THE JOURNAL is shown by states in table 1, in which the gain or loss of Fellows and subscribers in each state is indicated.

A second table shows the number of physicians receiving THE JOURNAL in each state.

The total number of copies of THE JOURNAL printed in 1933 was 4,427,974, while the average number of copies printed weekly was 85,153. There was a decrease of 3,412 in the number of subscribers in 1933 as compared with the preceding year.

The Special Journals

The periodicals devoted to the specialties which are published by the American Medical Association are recognized throughout the world as leaders in their fields. The high standards set in previous years have been constantly maintained during 1933, notwithstanding the fact that the economic depression raised costs of publication and lowered somewhat the total numbers of subscriptions. Nevertheless, the interest manifested has been more than sufficient to indicate the manner in which the groups concerned depend on these periodicals for their scientific pubalium.

The boards of editors have labored assiduously in their attempts to select only material of the highest quality and to eliminate unnecessary illustrations, charts and tabular matter, which add greatly to the costs of publication.

Again the Board of Trustees wishes to tender its appreciation to various research institutions and to various individual physi-

TABLE 1—Approximate Count of Fellows and Subscribers on The Journal Mailing List Jan 1, 1934, Also Gains or Loss During 1933

State	Fellows	Subscribers	Totals	Gain for Year	Loss for Year
Alabama	424	177	601		39
Arizona	193	87	280		6
Arkansas	319	129	448		16
California	3,359	1,960	5,319		245
Colorado	603	200	803		00
Connecticut	913	515	1,428		
Delaware	106	55	161	8	
Dist of Columbia	329	442	971		55
Florida	543	276	819	43	
Georgia	529	259	818		79
Idaho	108	73	181		1
Illinois	4,301	2,275	6,576		407
Indiana	1,474	493	1,969		109
Iowa	1,210	425	1,635		51
Kansas	720	255	975		65
Kentucky	642	304	946		8
Louisiana	629	200	829		73
Maine	368	104	472		11
Maryland	767	440	1,213		20
Massachusetts	2,801	1,173	3,974		129
Michigan	1,971	858	2,829		200
Minnesota	1,289	480	1,769		108
Mississippi	260	103	363		13
Missouri	1,643	684	2,327		99
Montana	161	96	257		27
Nebraska	591	290	881		121
Nevada	57	19	76		10
New Hampshire	248	70	318		7
New Jersey	1,918	1,900	3,818	57	
New Mexico	148	60	208	6	
New York	8,978	4,810	13,788		175
North Carolina	634	285	929		6
North Dakota	210	72	282		33
Ohio	2,946	1,354	4,300		162
Oklahoma	585	195	781		52
Oregon	399	234	633		46
Pennsylvania	4,941	2,200	7,141		185
Rhode Island	342	169	511		1
South Carolina	295	152	447		23
South Dakota	165	120	285		26
Tennessee	679	810	1,489		43
Texas	1,583	682	2,265		148
Utah	170	91	261	4	
Vermont	181	85	266		23
Virginia	795	335	1,130		61
Washington	707	273	980		70
West Virginia	551	232	783		4
Wisconsin	1,387	531	1,918		37
Wyoming	89	44	133		7
U S Army		169	169		5
U S Navy		204	204		1
Alaska	15	14	29	1	
Canada	14	685	712		61
Cuba	3	40	43		14
Hawaii	92	64	156	3	
Mexico	7	73	80		12
Panama	15	30	45		
Philippine Islands	46	151	197	26	
Puerto Rico	65	37	102	5	
Virgin Islands		4	4		1
Foreign	191	1,946	2,072		223

ciens who have aided the publication of special articles in these periodicals by bearing portions of the costs of publication.

The special periodicals are of great importance in the advancement of medical science. It is significant that no other medical organization in the world has been able to perform a comparable task in so efficient a manner.

Three of this group of journals produced incomes larger than the costs of publication—the ARCHIVES OF OTOLARYNGOLOGY

the ARCHIVES OF OPHTHALMOLOGY and the AMERICAN JOURNAL OF DISEASES OF CHILDREN.

The total circulation of all the special journals, Dec 31 1933 was 19,346. The costs of publication exceeded income by the sum of \$10,471.56. This represents a very considerable decrease as compared with the loss sustained in the preceding year.

The Quarterly Cumulative Index Medicus

This monumental contribution to medical bibliography is one of the works of the Association in which the Board of Trustees takes great pride. All of the editorial preparation for this

TABLE 2—Physicians Receiving The Journal*

State	Number Receiving Journal	Physicians in State 12th A. M. A. Directory	Approximate Percentage Receiving Journal
Alabama	601	2,207	27
Arizona	280	494	57
Arkansas	448	1,077	23
California	5,319	10,109	53
Colorado	803	1,898	45
Connecticut	1,428	2,167	65
Delaware	161	278	59
Dist of Columbia	971	1,827	54
Florida	819	1,762	46
Georgia	818	1,885	30
Idaho	181	383	48
Illinois	6,576	11,382	59
Indiana	1,969	4,073	49
Iowa	1,635	3,125	53
Kansas	975	2,168	47
Kentucky	946	2,867	37
Louisiana	829	2,016	40
Maine	472	897	43
Maryland	1,213	2,480	50
Massachusetts	3,974	6,597	60
Michigan	2,829	6,589	51
Minnesota	1,769	3,075	58
Mississippi	363	1,567	27
Missouri	2,327	5,640	41
Montana	257	434	54
Nebraska	881	1,785	49
Nevada	76	181	60
New Hampshire	318	567	57
New Jersey	3,818	4,357	74
New Mexico	208	374	56
New York	13,788	21,008	62
North Carolina	929	2,272	39
North Dakota	282	515	55
Ohio	4,300	8,650	50
Oklahoma	781	2,434	31
Oregon	633	1,275	50
Pennsylvania	7,141	19,011	39
Rhode Island	511	844	60
South Carolina	447	1,292	37
South Dakota	285	535	50
Tennessee	1,489	2,962	52
Texas	2,265	6,475	37
Utah	261	469	57
Vermont	266	499	54
Virginia	1,130	2,584	41
Washington	980	1,990	51
West Virginia	783	1,782	47
Wisconsin	1,918	3,104	63
Wyoming	133	244	60

This table gives the number of physicians (based on the Twelfth Edition of the American Medical Directory) in the United States, the number receiving THE JOURNAL and the approximate percentage in each state. Copies to physicians in the United States Army and Navy are not included.

periodical is now carried on in the library of the American Medical Association. The adaptation of the work of the Association to the new federal code made it necessary to add additional personnel in this department.

The total number of periodicals now regularly indexed approximately 1,200. These publications represent all the important medical literature of the world but do not include health bulletins, small hospital bulletins, bulletins of county medical societies or similar publications. The development of an index in the field of veterinary medicine and in the field of social and biologic science enables the QUARTERLY CUMULATIVE INDEX MEDICUS to diminish somewhat its efforts in these departments which bear a definite relationship to medical science.

The medical librarians of the United States met in Chicago in their annual session and were unanimous in their praise of this undertaking. The total subscription does not begin to indicate the usefulness of the index. In libraries throughout the country it is almost constantly in use by medical students, physicians and research investigators.

The number of copies of the *QUARTERLY CUMULATIVE INDEX MEDICUS* distributed in 1933 was 1,932, as compared with 2,048 in 1932. The loss incurred in publication of the index was \$44,759.78.

Hygeia

Notwithstanding the severe financial depression, extraordinary efforts by the circulation department of *HYGEIA* maintained its circulation list during 1933. However, the expenditure necessary for this purpose obliterated the usual small profit yielded by this publication during the past decade, so that for the first time in some years it presented a financial loss. Nevertheless, the large advance payments of subscriptions for the future indicate that the periodical should return to the profit side as soon as financial conditions are stabilized.

Today *HYGEIA* reaches hundreds of schools, many great industries, public and medical libraries and a large number of individuals who are interested in receiving sound material in the field of medicine and public health. It has been a source from which many other smaller publications, such as the bulletins of hospitals, sanatoriums, schools and other institutions, have drawn. In numerous educational institutions, *HYGEIA* has formed the projects for study by young people, who are now getting a type of education in health in their adolescent years not available in a previous generation.

Typographically, *HYGEIA* has been maintained at an exceedingly high level, and numerous letters of commendation have been received from readers commenting on the attractiveness of the publication.

A series of articles on the care of the eyes, one on plastic surgery, and especially an extended series on the subject of education in sex have been highly endorsed by hundreds of leaders and have indicated again the many phases of application of a publication of this kind to the welfare of mankind.

Both the subscription and the advertising income were seriously affected by the unfavorably economic situation, so that for the first time in several years the costs involved in the publication of *HYGEIA* were larger than income received. The total loss recorded for the year amounted to \$30,127.54. It was only through the practice of rigid economies that a much larger loss was averted. It is extremely gratifying to report to the House of Delegates that there has been a considerable increase in circulation during the early months of the current year. It is hoped that through intensive and persistent effort and with the cooperation of the members of the Association and of other agencies, the circulation of *HYGEIA* will be greatly extended.

While *HYGEIA* is published for the purpose of providing information to the public from authentic sources, it is entirely reasonable to expect that it will receive the cordial support of the medical profession through subscription. The fact is, however, that only 14,296 physicians in the United States subscribed to *HYGEIA* during the year 1933.

The Library

The package library service furnished by the American Medical Association is now recognized among physicians as one of the most practical and useful services offered by the headquarters office. The physicians who have availed themselves of these packages have written by hundreds to commend the quality of the material received and the manner of the service.

In comparison with similar services rendered by other organizations both mutual and commercial, the standards are exceedingly high. Especially commended has been the promptness with which the service is rendered and the diversity of the material included.

During 1933, 2,325 physicians availed themselves of these packages. It is testimony to their appreciation of the service that only two packages were lost during the year and that the vast majority of the physicians who used the service complied fully with the rules regulating the service. A tabulation of the requests indicates that physicians in smaller communities who do not have other access to competent medical library service are especially appreciative of this work of the American Medical Association.

The gradual development of similar medical package library services by state medical societies and by other organizations

indicates that the Association has here pioneered in a field of the greatest importance.

The periodical lending service, which supplements the package library service, sent out 6,903 periodicals to physicians in response to individual requests during 1933. All the periodicals regularly listed and abstracted in *THE JOURNAL* and all those regularly received by the *QUARTERLY CUMULATIVE INDEX MEDICUS* are available for such loans.

The library of the Association also supplied bibliographic material in response to approximately 5,000 individual requests made during 1933. The circulating library maintained for employees issued over 6,330 books, or a daily average of 23 to the employees of the headquarters office.

Any physician who visits Chicago should avail himself of the opportunity to visit the headquarters office and particularly to see at first hand the service rendered by the library department. It has gradually expanded so as to occupy a new space in the headquarters office, and the need for facilities that would permit better organization and working conditions in this phase of the Association's work is obvious.

Cooperative Medical Advertising Bureau

Because of poor business conditions, the net earnings of the Cooperative Medical Advertising Bureau for 1933 were considerably less than in any of several preceding years, amounting to \$19,266.25, approximately \$5,000 less than in 1932. Of this amount, the sum of \$5,000 was distributed among the thirty-two journals of constituent state medical associations that are now being served by the Bureau, this distribution having been made in proportion to the total amount of advertising secured for each of the journals. The operating costs of the Bureau amounted to \$14,266.25.

Mailing and Order Department

The total number of orders handled by this department was 71,794, the largest ever recorded. The total number of units distributed was 237,596.

More than two million pieces of first and third class mail were sent out during the year, and 149 tons of mail other than first and third class matter were handled through the mailing department.

American Medical Directory

The publication of the Thirteenth Edition of the American Medical Directory was postponed for one year because of unfavorable business conditions. The continuance of the Directory is so essential that the work of compiling the necessary data had to be pursued without interruption, and the Thirteenth Edition has recently come from the press. This new edition contains about 10,000 new names, and it was necessary to record approximately 70,000 changes of local addresses.

Extension of Credit

The Board of Trustees, fully realizing the untoward effects of the depression on the incomes of physicians, has continued the policy of extending credit, to Fellows and subscribers who have found it difficult or impossible to make prompt payment for subscription and Fellowship dues, to the fullest possible limit permitted under the provisions of the postal regulations or the By-Laws of the American Medical Association. It has been necessary to secure statements indicating intention to pay all sums in arrears.

It is a matter of keen regret that it has been unavoidably necessary to remove names from the Fellowship roster and to terminate subscriptions.

Council on Pharmacy and Chemistry

Probably there has been no year in the history of the Council when its work has increased more rapidly than in 1933. The amount of work which the members of the Council were called on to do increased by approximately 25 per cent, whereas the work done by the office personnel was still somewhat greater. It is difficult to determine all the reasons for this increase. Certain it is that physicians are becoming more "Council minded" and inquire more uniformly of detail men who importune them to use new drugs, "Has the product been accepted by the Council?" Representatives of manufacturers have stated frankly that the greatest sales resistance with which their detail men

come in contact when introducing an unaccepted drug is that found when the physician asks that question. Furthermore the progressive manufacturer really values the advice and opinion of the Council. Increasingly the Council has become an aid to those manufacturers who wish to promote drugs honestly. There are, to be sure, some less progressive and less conscientious manufacturers who still find it possible to sell drugs to the medical profession. A number of these concerns have endeavored to submit one or two of their products in order to gain the prestige of acceptance. While a few products of these manufacturers may meet the requirements of the Council's rules their general propaganda is in such conflict with its ideals and principles that the Council has been obliged to apply rule 11, whereby no product of such concerns may be accepted unless rectification of unacceptable practices is made. During 1933 it was necessary to apply rule 11 in practically as many cases as in the combined time of the several preceding years. That this procedure has its good effects is not to be doubted, because some of the manufacturers are apparently making sincere efforts to clean house in order that they may be able to obtain the Council's action on products which they submit.

Compliance with the National Recovery Act has shortened office hours. All of this has caused such increased work for the Council office that it was necessary, notwithstanding the depression, to increase the personnel and further additions must soon be made. The office of the Council has been reorganized completely, so that under the Secretary there are three divisions, small in size but each a nucleus for further growth: (1) Editorial Department, the function of which is to edit the reports of the Council, its various books and other publications, (2) Department of Records, the chief purpose of which, as its name indicates, is to maintain the files and to abstract the various actions of the Council for future reference, (3) Department of Medicine, through which a number of well qualified physicians aid the Council members in the preparation of reports, (4) the general Administrative Department.

PUBLICATIONS OF THE COUNCIL

New and Nonofficial Remedies—New and Nonofficial Remedies, an annual publication containing the lists of products accepted by the Council, has continued to make its influence felt. Practically all class A colleges now request copies in order that their students of materia medica may become familiar with this important contribution to medical progress. New and Nonofficial Remedies is revised each year. At the close of 1933 the number of revisions due to the advance in therapeutics was relatively large. The new volume will contain many additions. Some of the older drugs that have not proved to be of much value today have been omitted. The omitted drugs at one time were considered promising but newer advances have rendered them obsolete. The Supplement to New and Nonofficial Remedies was published twice during the year, with descriptions of those products which had been found acceptable after Jan. 1, 1933. New and Nonofficial Remedies may be looked on as the only up-to-date reference book for everyday use by physicians who are interested in an unbiased statement of drugs honestly promoted, particularly proprietary products.

Few physicians realize how carefully a drug is examined by the Council before it is admitted to N. N. R. Nonbiological products must pass the most exacting tests of the A. M. A. Chemical Laboratory, and the manufacturer must agree to abide by standards mutually satisfactory to the Laboratory and the manufacturer. A number of interesting new drugs were accepted by the Council during the year such as Aminophyllin Neo Iopa, Benzadrine, Pneumococcus Serum Types I and II, Autolyzed Liver Concentrate, Extralin, Metycaine and Sodium Morrhuate.

Council Reports—The Council issues three types of reports: (a) those presenting a statement of the Council's consideration of a product rejected or omitted from New and Nonofficial Remedies; (b) those giving preliminary statements of the status of products which show promise of being useful but which are not at the time ready for acceptance and in which it is attempted to outline proper standards for products under consideration and to indicate the evidence needed to establish their usefulness in medicine; (c) those concerned with general questions of current interest to the medical profession.

The Council reports on the consideration of articles that have been submitted by manufacturers and found unacceptable are always referred to the manufacturers concerned before publication. Reports on articles that have not been submitted for consideration by the Council and that are not believed to be meritorious or that are thought to be harmful are also published, but these are not submitted to the manufacturers before publication. Reports are also issued on rejected articles, including those omitted from New and Nonofficial Remedies and those which have not borne out the promise of therapeutic usefulness under which they may have been accepted.

During the year a number of reports were published dealing with the products of relatively recent discovery. The article on estrogenic substances attracted considerable attention, being an epitomized survey of the work that has been done on female sex hormones, showing the lack of clinical evidence to warrant widespread use of these substances in pathologic conditions. The Council has given further consideration to *Bacillus bulgaricus* and *Bacillus acidophilus* preparations. An extensive examination of market specimens of these preparations is now under way. In case of *Bacillus bulgaricus* preparations, the Council felt that further inclusion in N. N. R. of such products is not warranted. The Council has reaffirmed its previous position, after extensive investigations against the intravenous use of barbitals except in certain specified conditions. The Council has also published a number of preliminary reports on new drugs, the most comprehensive being those on Dilaudid, a new morphine derivative, and on Dimitrophenol, proposed as a remedy for obesity. In the case of Dimitrophenol, inquiries on this product alone are being received in the Council office, at the time of this report at the rate of about thirty a week. Other preliminary reports were on Fuadin, a promising new antimony compound, Hipuran, a new agent for excretion urography, Vinyl Ether, a new anesthetic agent, and Kharasch Arsenical "No. 16".

Much time has been given to the consideration of antiseptics and to the further clarification of the status of Mercurochrome. During the year the Council completed its consideration of Pyridium, which was subjected to extensive investigations both by the Council and by the manufacturer, whose cooperation was commended. It was felt that the evidence did not justify the inclusion of this product in New and Nonofficial Remedies. The Council also published a comprehensive report on Clavipurin rejecting the product because of the inadequacy of its standardization and the product has been withdrawn from the American market, thus showing again the usefulness of the Council and the Laboratory in protecting the American public. There was also published under the auspices of the Council an article on the "Hospital Formulary" by Hatcher and Stainsby, which deals with methods for rational prescribing and lower costs for hospitals. This has attracted many favorable comments.

The situation in regard to the use of numbers in names of products became so acute that the Council was forced to define more explicitly the rules in reference to such names. Numbers are now entirely omitted as part of the name (title) of the drug, except when they refer to percentage or some suitably similar relationship. If this had not been done a most chaotic condition would have arisen from the confusion of numbers as means of prescribing. In some instances the Council's enforcement of this decision worked some hardship on the manufacturer, but in most instances this step was welcomed. Practically every manufacturer having dealings with the Council has been revising his labels during the past year in accordance with the Council's ruling. In enforcing this rule the Council has been lenient and the manufacturers have been given ample time to use up old stocks of labels. It is believed that therapeutics will be benefited in future years by this step.

On many occasions the Council has been called on to coin names for products which originally had unsatisfactory or therapeutically suggestive names. Whenever the manufacturer was willing to cooperate fully with the Council the Council was glad to be of service in this connection.

In the matter of removing numbers from names there arose the particular example of Hexylene. Original Solution S. T. 37. When the product was originally submitted to the Council, the Council maintained that S. T. 37 should not be preempted because it simply designated a physical property of the solution (i. e. 37 dynes per centimeter) and was no more deserving of

preemption than would be a percentage statement or a statement of specific gravity. The product was found acceptable and the firm agreed that the expression "S T 37" would not be used as a name but that the product would be known as Hexylresorcinol Solution S T 37. During this time the product was widely advertised to both physicians and the public as an antiseptic. The term "S T 37" became more widely known by the public than the name Hexylresorcinol Solution. Repeatedly it was necessary to remind the manufacturer of infractions of its agreement. When the Council decided that the rule against numbers as part of the name must be more definitely enforced, this necessitated the application of the rule to Hexylresorcinol Solution S T 37. The manufacturer could not see its way clear to accept the Council's ruling and therefore the Council was obliged to omit Hexylresorcinol Solution S T 37 from New and Nonofficial Remedies. At the time this action was considered the concern had been requested to make numerous other revisions in the advertising claims. It agreed to do this only on condition that the Council permitted the retention of the expression "S T 37" in the name. In view of the Council's refusal and the omission of the product from N N R, the manufacturer has not felt duty bound to abide by the Council's decision with reference to other claims. This simply shows some of the difficulties that confront the Council in its endeavor to protect the medical profession against unfortunate forms of drug promotion.

During the year the book "Hospital Practice for Interns" (sponsored by the Council in collaboration with the Council on Medical Education and Hospitals) has been reprinted. The Council has also collaborated with the Council on Physical Therapy in the publication of a report on oxygen therapy. Other Council publications have maintained their position in the medical profession particularly "Useful Drugs" the sale of which is encouraging. The "Epitome of the U S Pharmacopoeia and National Formulary" also finds ready use by those practicing physicians who desire information concerning drugs listed in the U S Pharmacopoeia and the National Formulary.

COUNCIL MEMBERSHIP

No new members were elected. The members whose terms expired last year were reelected.

On Dec 5, 1933, the Council lost by death one of its most valued members, Dr Alfred Fabian Hess. Dr Hess had served on the Council since 1932 and had been most devoted to this phase of the Association's activities. His wise counsel on matters that affected new advances in the vitamin field and calcium therapy was most helpful.

The Chemical Laboratory

Because of the increasing number of products submitted to the Council on Pharmacy and Chemistry, the work of the Chemical Laboratory has been correspondingly larger. There was no original investigative work undertaken during the year, because the personnel of the Laboratory was overtaxed with current problems.

WORK FOR THE COUNCIL

The Laboratory has examined and elaborated standards for a comparatively large number of new additions to modern *materia medica*, such as Neo Iopon, a new contrast medium; new barbitol preparations, such as sodium alurate and oral sodium, and also for various brands of sodium morrhuate. It has also continued its study of phenobarbital and phenobarbital sodium. The difficulties of fixing standards are in some instances greatly increased because of the nature of the products concerned, as in the case of benzedrine, somewhat similar to ephedrine, but differing physically in that certain of its salts are volatile. Beta-lactose, which differs from alpha-lactose (a common milk sugar) was standardized and definite crystalline optical properties as means of differentiation were determined. As was the case last year, the investigation of bismuth compounds used in syphilis required considerable time on the part of one chemist. The examination of new local anesthetics and new glucosides for use in treating ailments of the heart has been continued. The Laboratory has also examined sandalwood oil and elaborated standards for halibut liver oil as well as for triethanolamine. As usual, a number of products were

rejected by the Council on account of adverse findings of the Laboratory.

OTHER WORK

The Laboratory has continued to cooperate with the Bureau of Investigation in investigating certain nostrums sold to the public. It has also continued to serve the other departments of the Association, particularly the editorial department and the *QUARTERLY CUMULATIVE INDEX MEDICUS*. The members of the staff have published articles in leading scientific publications and have delivered addresses dealing with medicinal chemistry before a number of scientific organizations, universities and schools.

Council on Physical Therapy

The value of physical therapy in the everyday practice of medicine is being more generally recognized and the proper application of its methods is becoming better understood as the observant experience of physicians has been developed and the research in this important field has been extended. Many of the best hospitals are now adequately equipped in their departments of physical therapy, and through the work of these departments a most valuable contribution is being made to the store of scientific knowledge. The Council on Physical Therapy is engaged in earnest efforts to evaluate properly the therapeutic influences, both helpful and harmful, emanating from the application of physical forces.

In ultraviolet therapy the Council has made a careful review of medical literature and has invited research by specialists on controversial questions to determine its efficacy. Some of the important results of the Council's investigations have been incorporated in its revised "Regulations to Govern Advertising of Ultraviolet Generators to the Profession," which have been published in *THE JOURNAL*. Cooperation has been secured from the Council on Dental Therapeutics of the American Dental Association in an attempt to determine the therapeutic efficacy of ultraviolet therapy in dental conditions. Research both clinical and scientific, has been sponsored under the direction of both councils. An abstract of this report, of interest to physicians as well as dentists, has appeared in *THE JOURNAL*. In the matter of standardization, the Council has cooperated with the International Congress on Light by adopting its suggested standard unit of dosage for therapeutic practice.

Much time and effort have been given to investigations of diathermy apparatus. Because of the lack of critical research on the therapeutic effects of heat generated by diathermy, it has been difficult to evaluate the claims made for the equipment. The Council has stimulated and has assisted in carefully conducted clinical investigations and research designed to lead to a better understanding of this method. The publication of the articles "Diathermy—A Preliminary Statement to Acceptance of Diathermy Apparatus" and "The Examination of Diathermy Machines for Local Diathermy Treatments and Requirements for Acceptance of these Machines by the Council on Physical Therapy of the American Medical Association" has led to a saner interpretation of the value of diathermy. In the fields of electrocoagulation and surgical cutting currents, substantial progress has been made.

The Council has investigated resuscitation equipment and oxygen tents and has published reports concerning these products and has thus developed much needed information.

During the past year the Council has investigated and considered sixty eight devices and pieces of apparatus, of which one fifth have been reported on in *THE JOURNAL*. The others are still under consideration. In many instances these investigations have required more than a year to complete. This time is necessary because of the complexity of the problems involved. The Council cannot afford to accept an electrical apparatus until it has been thoroughly tested with reference to insulation, safety and efficiency. Some of the investigations have terminated in reports of nonacceptance and these reports have been submitted to the manufacturers prior to publication in accordance with the method of procedure of the Council. In most instances the manufacturers asked that the reports be held in abeyance until the objectionable features could be corrected and the rules of the Council met. Ethical firms generally appreciate the educational value of these reports.

Under the existing rules there are a large number of devices that might be considered to come within the purview of the Council. To facilitate the work with due efficiency and dispatch, two lists of devices have been formulated. One is a list of apparatus and devices that the Council will consider and report on as soon as possible, and the other contains the names of articles that cannot be given immediate consideration. The Council's refusal to consider any product should never be considered as a condemnation.

One of the important activities of the Council is in connection with the promotion of sound education in physical therapy. Exhibits and demonstrations of physical therapy at the annual session have been used to promote better physical therapy practice among the profession. These exhibits appear to have accomplished a useful purpose. Exhibits have been made at several scientific meetings of other professional societies. The cooperation of several societies interested in physical therapy has been enlisted in the formulation of essentials of educational requirements for schools of physical therapy and occupational therapy technicians. The Council on Medical Education and Hospitals is cooperating with this council in the formulation of essentials for physical therapy and occupational therapy schools.

The cordial cooperation extended by many of the producers of physical therapy apparatus in bringing advertising and descriptive literature more in line with statements of fact is most gratifying. The objectionable practice of manufacturers holding clinics, which for the most part are 25 per cent, more or less, instruction and 75 per cent sales promotion, has been largely discontinued. To aid manufacturers in the accumulation of acceptable evidence with reference to the value of the products, the Council has adopted the article "Evaluation of Methods Used In Physical Therapy," which has been published in *THE JOURNAL*.

Greater emphasis on education is scheduled for the coming year. The Council is planning to assist state associations interested in creating special committees within the societies. It is the hope of the Council that these committees will hold seminars for the postgraduate instruction in physical therapy for the practicing physician. At the present time the need of physical equipment in offices and clinics is not so important as dissemination of information, among the practicing physicians concerning the proper application of acceptable physical therapy methods that are readily available to all physicians. The desire of physicians to obtain more information about physical therapy agents is clearly shown by the fact that the correspondence of the Council has constantly increased.

Through an annual appropriation made by the Board of Trustees, the Council has awarded grants to a number of critical investigators. These grants have all been relatively small in amount and have been used for the purchase of needed materials. Money is not available for the salaries of the workers. The results of the work done under these grants have been encouraging.

Bureau of Medical Economics

An increased interest and activity in the field of medical economics has been observed in many sections of the United States throughout the past year. Although many lay interests have continued their activities in medical economics there has been a marked increase in the number of proposals and schemes offered by individuals and groups within the medical profession to modify the established form of medical practice. Some of these new proposals involve types of organization and methods of practice that are contrary to the generally accepted views of the profession on the corporate practice of medicine and contrary to the principles of medical ethics governing solicitation. In some instances it appears that the methods adopted are those of desperation. In these instances one is justified in raising the question whether a temporary expedient will bring to the public and to the medical profession greater benefits than are represented by the social values in medicine which some of these plans are sure to destroy.

CONTRACT PRACTICE

The study of contract practice schemes has continued through the year. In the files of the Bureau 570 contract practice plans are on record representing proposals that have never

been placed in operation, schemes that have been operated for only a short period, and plans that seem to have assumed a more or less permanent status. The greatest activity in the field of contract practice during 1933 was found in group hospitalization. During the year, about forty different proposals from widely separated sections of the country were prepared. Many of these schemes were never placed in operation, but there appears to have been a gradually increasing movement in this direction.

This movement has been encouraged by the action of the American Hospital Association and by certain individuals and foundations having no official connection with the medical profession.

An analysis and criticism of hospital insurance schemes has appeared in two articles in *THE JOURNAL*, and one article in the *BULLETIN*.

THE PRACTICE OF MEDICINE IN CUBA

In compliance with the desire of the House of Delegates to secure detailed first-hand information concerning the conditions surrounding the practice of medicine in Cuba, a study was made in March 1933 of the Cuban medical organization and of the Mutualist Societies in Cuba.

An abbreviated report of that study was published in June in *THE BULLETIN*.

WORKMEN'S COMPENSATION

Until recently the largest system involving the practice of medicine with legally established benefits was the system of workmen's compensation. In many of the states the methods used to provide medical care for injured workmen closely resembled sickness insurance. During the period over which workmen's compensation laws were enacted in the forty-four states in which it now operates, comparatively little attention was paid to the medical phases of compensation. In the past two decades the medical phase of workmen's compensation has constantly increased in importance. The report on "Medical Relations Under Workmen's Compensation," published in March 1933 is an analysis of the development of the medical services under workmen's compensation laws.

GROUP PRACTICE

The Committee on the Costs of Medical Care prepared a report entitled "Private Group Clinics," publication 8. In this publication an attempt was made to describe the administrative and economic aspects of group medical practices as represented in the policies and procedures of fifty-five private associations of medical practitioners. This report was issued in January 1931.

Soon after the organization of the Bureau of Medical Economics, schedules on various topics were sent to the secretaries of county medical societies. Among these schedules was one asking for information on group practice. Based on the information received on these schedules a second questionnaire was sent to all those secretaries who reported the existence of one or more groups within the jurisdiction of their societies. The data supplied by county medical society secretaries provided a list of more than 500 organizations thought to be medical groups. Additional lists from other sources raised the number to 724.

One of the chief difficulties in the early part of this study was to prepare a definition of group medical practice. Letters and questionnaires brought information showing that about one half of the 724 reported groups did not conform to a sufficient number of the standards that had been set up to define group medical practice to entitle them to inclusion in this study, although many of these called themselves clinics and were so considered in their localities.

From all the information received it was determined that there were more than 300 groups within the United States that would come within the classifications set up for the study. Of these 239 filled out a special questionnaire in a sufficiently complete form to provide data suitable for study. These groups were located in thirty-seven states and in communities varying in population from less than a thousand to a million and over. The report of this study was reprinted with additions from the issues of *THE JOURNAL* of May 20, May 27 and June 3, 1933.

COLLECTION AGENCIES AND METHODS

The consideration given to collection agencies and methods is a continuous process of study and investigation. The number of collection agencies that deal with medical accounts now on record in the Bureau is 1110.

Early in 1933 the Bureau undertook a study of collection agencies and credit bureaus owned and operated by county medical societies. It appears from information gained in this study that more satisfactory results are obtained by the collection agencies and credit bureaus owned and operated by medical societies than by the use of the ordinary commercial collection agencies and methods. The report of this study appeared in *THE JOURNAL*, June 17, 1933.

MEDICAL FEES

Information is now being compiled concerning the fee schedules of county medical societies. The data, from 372 counties in forty-four states, is being assembled to show the minimum and maximum fees as reported by these county medical societies.

INSTRUCTION IN MEDICAL ECONOMICS

One of the objectives sought by the Bureau of Medical Economics ever since its organization has been to make available to medical students, as well as to practicing physicians, a statement of the principles that should govern the economics of the practice of medicine. The economic methods involved in the practice of medicine are too often likely to be changed to satisfy a temporary or emergency situation. Modification of the methods of medical practice must conform to certain definite principles if they are to preserve the social values in medical service that have required thousands of years to establish. The responsibility of the medical profession does not end with the correction of medical economic abuses when they are found. The medical profession must assume the further responsibility of informing the oncoming generations of young physicians in the correct principles of medical economics.

An "Introduction to Medical Economics" was prepared and issued in October 1933. This publication for the first time set forth the principles surrounding the economics of the profession and endeavored to differentiate between the economics of industry, commerce and business, and the economics of professional services.

HEALTH AND ACCIDENT INSURANCE PRACTICES

At the last session of the House of Delegates, the proposed short form for reporting health and accident insurance claims was approved. At the annual meeting of the International Claim Association during the middle of September 1933 the short forms prepared by the International Claim Association Committee on Attending Physicians' Claim Statements, with which this bureau has been working, were presented for consideration. These forms were approved and adopted by the International Claim Association. The Claim Association Committee was continued by that association, with power to act. The committee is now proceeding with authority to bring about the adoption of these new short forms by the individual companies that participated in the study.

The work of the Committee on Attending Physician's Claim Statements has been of no less importance to the medical profession than to the insurance companies. The cooperation between that committee and this bureau has been at all times most harmonious. There are many questions of mutual interest and importance pertaining to insurance practices that may profitably be studied jointly by the International Claim Association and the Bureau of Medical Economics, and it seems probable that a much more intelligent understanding of the motives and desires of both associations may result from this working agreement.

CARE OF THE INDIGENT SICK

At present the Bureau of Medical Economics is engaged in a study of the history, development and current practices in the medical care of the indigent. The response by the secretaries of state medical associations and others to requests for information on this subject has been gratifying. This study will require several months more to complete.

No little confusion has resulted throughout the United States among the members of medical societies over the regulations,

agreements, changes of policy and reversals of plans connected with the Federal Emergency Relief Administration, the Civil Works Administration and the Federal Transients Bureau program. This bureau has endeavored to offer such assistance as it could to state and county medical societies in the preparation of agreements to provide medical service under federal regulations so safeguarded that the fundamental values of medical service might not be destroyed and that dangerous precedents might not be established.

A REPORT ON HEALTH INSURANCE

Sources. All literature available in the medical magazines especially of the last three years, and in the Crerar and University of Chicago libraries has been consulted. In addition practically all works reviewed or advertised in German medical publications during the last two years were purchased. A special mass of material consisting of laws, reports and pamphlets was collected by a special representative in Austria. There was also available all the material that was collected as the basis of writing "The Way of Health Insurance." Not much use was made of this material, however, since an effort was made to avoid duplication of any part of that work and especially to emphasize developments since that was written. Questionnaires were sent to all the correspondents of *THE JOURNAL* requesting information as to the working of sickness insurance in the various countries. A copy of that questionnaire is appended. Considerable use was made of this information not only in some direct quotations but also in checking conclusions based on other sources.

Summary of Report. The subject matter of the report may be generally indicated by the titles of the various chapters, which are as follows:

- 1 Conditions at Beginning of Sickness Insurance
- 2 Changes in Institutions and Objectives
- 3 Medical Service
- 4 The Physician in Sickness Insurance
- 5 Some General Professional and Social Effects

A historical sketch shows the social origins of insurance and traces the process by which a system organized primarily for cash relief became a system of medical service, while setting up institutions in no way suited to operate such a service. This development influences all present proposals for insurance. Systems of insurance became political instruments for the purchase of votes through increased benefits, with little regard to medical necessities.

There is considerable discussion backed by thorough documentation of the way in which sickness insurance increases the "morbidity" as measured by cash payments for days of labor lost. The evidence is furnished from neurologists and psychiatrists in insurance countries as to the tendency of insurance to create neuroses. It is also shown that the medical service tends to become perfunctory and to cause increased medication and excessive use of such treatment as can be given mechanically, and to excessive hospital service.

When a system has continued long enough for the insured to have paid in considerable sums, it is shown that there arises a general desire on their part to "get their money back," which greatly increases the demand for unnecessary medical service and causes a conflict between the insured, the physicians and the administrators of insurance systems which makes any scientific diagnosis and treatment difficult. This attitude is aggravated by the desire to obtain cash benefits, but it extends also to dependents who receive no cash.

Considerable stress is laid on the tendency of insurance to increase lay control of medical service and to show that this is a universal policy of the insurance administrators and of advocates of insurance in this country.

It is shown that these tendencies are most evident in the older systems and increase with time. Methods of payment of physicians and conditions of admittance to insurance practice are explained. The character of medical service is illustrated by quotations from medical writings, as is also the effect of insurance on graduate education.

There is an elaborate tabulation of the different medical forms of insurance in the various countries which makes clear at almost a glance just what is the character and the extent

of the medical service given in all leading insurance countries. There is no definite conclusion for or against insurance further than to make it clear that existing systems of insurance have failed to solve the problem of medical care for the people and have brought a great many evils along with some benefits. The question is raised and evidence cited to indicate that the huge sums necessary for insurance might be expended in other forms of health care with much greater effect. A large number of recent writers are cited to show that there is widespread movement in insurance countries to substitute for sickness insurance some form of compulsory saving with payment of an immediate sum for their medical services and the return of a portion of unused savings for insurance needs.

The question of the practicability of the insurance method in supplying medical care is discussed, and it is shown by documented evidence that insurance has nowhere reduced morbidity, that no actuarial basis has ever been set up that has not been proved defective, and that the vast sums required for insurance and the dominance of such systems in the political social life of a country tends to focus attention on insurance to the exclusion of other forms of effort and therefore indicates that it is not the most effective method of meeting the problems of medical care for the mass of the people.

MISCELLANEOUS ITEMS

The foregoing has necessarily been only a brief statement of the activities on the major phases of medical economics during the past year. Numerous other medical economic questions have occupied more or less attention.

A series of tables are almost complete, showing the distribution of physicians in each state, by size of community, according to the type of practice of each physician. Those physicians who are retired or not in practice have been removed from the active list in the tables.

Tables have also been secured showing the distribution of Negro physicians in the various sections of the United States. These tables also show the number and percentage of graduates of Negro physicians from the medical schools in which they were trained, the distribution and ratio of physicians to population by districts and race, the ratio of both Negro and white physicians to population according to states, and the ratio of Negro physicians to population in cities above and below 50,000 population.

Most discussions of medical economics touch at some points the subjects of medical organization and the principles of medical ethics. The chairman of the Judicial Council has been consulted repeatedly on specific questions dealing with medical ethics.

It has been necessary to give some attention to that phase of hospital practice which involves the services of the clinical pathologist, the anesthetist and the roentgenologist. In many hospitals these services particularly that of roentgenology are used to provide an income profit to the hospital with which deficits in other departments may be met. This practice necessarily involves the question of utilizing the skill and experience of a physician at a nominal fixed salary for the accumulation of profit to the institution. This is receiving serious consideration in a number of sections of the United States and will no doubt become a medical economic question of increasingly greater importance.

There is a definite medical economic phase to many of the practices that have become prevalent in the programs of health departments and boards of education. Attempts are being made in some sections of the country to correct these practices and to return to the private practicing physician some of the work formerly done by these departments but which always belonged to the practicing physician.

In some sections of the United States plans for part pay clinics are being studied or proposed as a relief for some of the general economic unrest. This question also will no doubt become of more importance.

The activities of universities and colleges in providing health or medical services to their students have a definite medical economic bearing. A study of this subject has been initiated and a report will appear as soon as the data can be assembled and studied.

FIELD WORK

The following represents the field work for 1933

- One hundred and twenty four days away from the office
- Fifty two scheduled talks before medical society meetings aggregating more than 5900
- One hundred and seven conferences in the United States and Cuba with more than 650 physicians
- Eighteen states visited
- Twenty-eight cities in the United States and six cities in Cuba visited

In addition to the foregoing field work by the director, Mr. Simons, the assistant director, made visits to Washington New York, Boston and Pittsburgh, to collect data for the study on "Medical Relations Under Workmen's Compensation."

OFFICE ROUTINE

In the office routine, 2,168 communications were handled the majority of these being on the subjects of medical economic instruction, group practice, contract practice, care of the indigent sick and collection agencies and methods.

PLANS FOR THE PRESENT YEAR

Some of the major activities contemplated for the Bureau of Medical Economics for 1934 are

- 1 To continue the study and criticism of contract practice schemes
- 2 To continue and complete the study on the medical care of the indigent
- 3 To initiate the study of new problems in the field of health and accident insurance practices
- 4 To complete the study on health insurance
- 5 To complete the study of university and college student health services

QUESTIONS TO STATE SECRETARIES ON CARE OF THE INDIGENT SICK

- 1 What is the legally provided method of furnishing medical care to the indigent in your state?
- 2 If your state has published a summary of the poor laws where may a copy be obtained?
 - A What is the governmental unit charged with the provision of medical care for the indigent? (Name of official or body)
 - (a) County
 - (b) Township
 - (c) City
- 3 What standards of indigency have been established?
- 4 What is the method of payment for medical care for the indigent?
 - A Contract with individual—
 - (a) County physician
 - (b) Township physician
 - B Are they paid for full time or part time services?
- 5 What are the duties of such employed physicians? (Full or part time)
 - (a) Care of institutional poor (jail—poorhouse—children's homes or orphanages)
 - (b) Outpatient (home) care
 - (c) Health officers
- 6 How fully do employed county or city physicians meet the local demand?
- 7 What arrangements are made to pay for medical care in addition to that furnished by county, city or township physicians?
- 8 Have any county medical societies in your state contracted with county or city officials to render medical care to indigents? (If so please give list of such county medical societies)
- 9 What actions have county medical societies taken with respect to medical care of the indigent aside from such contract?
 - (a) Established fee schedule
 - (b) Cooperation with authorities
 - (c) Any other actions
- 10 What changes have been made in methods of medical care for indigents during the past four years?
- 11 Is the present system satisfactory?
- 12 Was it satisfactory before 1929?
- 13 What are main defects?
- 14 Has the state medical association or any county medical society made any special study of the care of indigents?
 - A If so is the result of the study or studies available?
- 15 What if any arrangements have been made by the state medical association or county medical societies with emergency relief bodies? (For example The Federal Emergency Relief Administration)

Please end complete file of regulations forms used contracts agreement rules of procedure etc for the Bureau of Medical Economics file

QUESTIONS FOR CORRESPONDENTS ON SICKNESS INSURANCE

- How does health insurance affect the individual physician as to income?
- What is the average or median income of insurance physicians?
 - (a) In the city?
 - (b) In the country?

Are insurance incomes supplemented from private practice?
How?
To what extent?
What has been the general effect of sickness insurance on the profession as to
Public confidence?
Medical education?
Graduate work and research?
Have the medical insurance records of patients been of any value in medical or economic research?
Has the character of medical service been changed under sickness insurance?
Does the method of diagnosis under sickness insurance differ from that used in private practice?
Is there any change in the extent of use of laboratory procedures?
Treatment: Is there an increase or a decrease of medication?
Have hospitals, clinics, laboratories, etc. been unduly expanded?
Are they controlled by the medical profession or by insurance funds?
Is treatment interfered with by insurance authorities? If so how?
What has been the effect of sickness insurance on professional organization?
Is there an economic as well as a scientific organization of the medical profession?
What is the attitude of the medical profession toward the sickness insurance system?
What criticisms are made of sickness insurance?
What have been the effects of sickness insurance on patients as to
Amount of sickness?
Length of sickness?
Confidence in profession?
Patronizing quirks?
What has been the effect of combining cash and medical benefits?
How does giving sickness certificates effect the relations of physician with patient?
What if any has been the effect of sickness insurance on medical research and the individual initiative of physicians?

Bureau of Legal Medicine and Legislation

FEDERAL LEGISLATION

The special session of the Seventy-Third Congress convened March 4, 1933, and adjourned June 16, 1933. The first regular session convened Jan. 3, 1934, and is still in progress; this report is being written (March 15). The Bureau of Legal Medicine and Legislation has kept in touch with legislation proposed in Congress and with various administrative rules and regulations of interest to physicians proposed by the National Recovery Administration, the Federal Emergency Relief Administration, the Federal Civil Works Administration, the United States Employees' Compensation Commission and other branches of the government. Copies of bills of interest have been obtained and timely notice has been given through THE JOURNAL of their introduction and of subsequent action if any, with respect to them. Administrative regulations and orders have been communicated to the profession through THE JOURNAL as promptly as practicable. Special communications with respect to these matters have been sent to the officers of state associations as circumstances warranted. The Bureau prepared and published in the AMERICAN MEDICAL ASSOCIATION BULLETIN, November 1933, a summary of the federal legislation acted on by Congress during the year, or then pending. The director of the Bureau has spent a great deal of time in Washington to confer with federal officials and to appear before congressional committees. Some of the more important phases of the Bureau's activities in connection with federal legislation are discussed below.

NATIONAL INDUSTRIAL RECOVERY ACT

On June 16, 1933, the President approved the National Industrial Recovery Act, frequently referred to as NIRA. It authorized the President, on the application of trade or industrial associations or groups, to approve codes of fair competition for the trades or industries represented by the applicants. It authorized the President, too, to enter into agreements with, and to approve voluntary agreements among, persons engaged in a trade or industry, labor organizations, and trade and industrial organizations, associations or groups, relating to any trade or industry, if in his judgment such agreements would further the purpose of the act with respect to transactions in or affecting interstate or foreign commerce. The act made no provision for the regimentation of any profession under any code or agreement. On the other hand, it did not forbid any member of any profession from becoming a party to any agreement that the President might propose.

On July 20, 1933, the National Recovery Administrator, with the approval of the National Industrial Recovery Board, pro-

mulgated the "President's Reemployment Program." As a part of that program the "President's Reemployment Agreement" was issued, fixing maximum hours of work and minimum rates of pay for the guidance of all who signed the agreement, all of whom pledged themselves to support and patronize others party to the agreement and listed as members of the National Recovery Administration. The agreement was to be operative only from Aug. 1 to Dec. 31, 1933.

The Executive Committee of the Board of Trustees, at a meeting Aug. 4, 1933, considered all possible implications of the National Industrial Recovery Act with respect to the medical profession. The nature of the Association and its relation to matters covered by the act were set forth by the Secretary in a letter to the National Recovery Administration, Aug. 7, 1933, and the administration was requested to furnish interpretations of the act as applied to medical organizations and to the practice of medicine, in order that the Association might do anything within its power to uphold the hands of the government. A brief reply was received under date of August 25, but most of the questions propounded have not yet been officially answered, although they have settled themselves or are settling themselves in the course of experience.

The Board of Trustees did not deem it wise to sign the President's Reemployment Agreement on behalf of the Association. The Board has not deemed it expedient to sign any code. It has endeavored however, to keep every activity of the Association well within not only the letter but also the spirit of the National Industrial Recovery Act and will continue to do so.

Private Practitioners and the National Industrial Recovery Act—Moral and social pressure, plus the possible withdrawal of patients implicit in the obligation of signers of the agreement to support and patronize other signers of it, led many physicians to become parties to the agreement. From other physicians came appeals for information as to the policy of the American Medical Association with respect to the matter. In view of the wide diversity of conditions under which medicine is practiced in the United States, it did not seem possible to advise physicians generally to become parties to this agreement without defeating the very purpose of the National Industrial Recovery Act. One of the declared purposes of the act is to eliminate unfair competitive practices. The display of the Blue Eagle by a physician a party to the agreement was in effect notice to every other person in the community who had signed the agreement to support and patronize that physician and other Blue Eagle physicians, in preference to all others, even though those physicians, because of financial conditions, could not become parties to the agreement. Waiving any question as to the professional ethics involved in such a procedure the fact that this tended to promote unfair competitive practices and not to eliminate them, as the act proposed, is obvious.

Physicians who inquired whether they should or should not become parties to the President's Reemployment Agreement were therefore advised to take the matter up with their county medical societies with a view to having the society determine whether, under conditions then existing in the community, the signing of the agreement was compatible with fair professional competition. It was suggested that if the society found that physicians by becoming parties to the agreement, promoted unfair competition the society should if possible suggest to the National Recovery Administration such changes in the agreement as would render it susceptible of being signed by every physician consistently with its purposes and the purposes of the National Industrial Recovery Act, in order that every physician in the community might be able to sign it with justice to all others.

Physicians Employees—Notwithstanding the fact that physicians in their professional capacity, were not within the purview of the National Industrial Recovery Act or of the President's Reemployment Agreement, it was contended by some of the officers connected with the National Recovery Administration that physicians' employees were covered by the agreement, except that professional employees were exempted from the maximum hour requirements. Since the agreement expired by limitation Dec. 31, 1933 the question whether the medical profession could be brought within its terms by the simple

expedient of bringing employees of the profession within its terms is now of only academic interest. But until the practice of medicine has become a trade or an industry, the medical profession will not be within the purview of the National Industrial Recovery Act.

Hospitals—Under the National Industrial Recovery Act and the President's Reemployment Agreement the question whether hospitals came within the purview of the act arose. After some early misunderstanding about the matter, Mr. Donald R. Richberg, General Counsel, National Industrial Recovery Administration, Aug. 17, 1933, ruled that hospitals not engaged in carrying on a trade or industry do not come within the purview of the act so as to come under the ordinary requirement of a code of fair competition.

Röntgenologic Laboratories—Owners and operators of clinical and roentgenologic laboratories in certain localities sought to take advantage of the provisions of the National Industrial Recovery Act and initiated movements to procure the adoption of a code. They seemed willing to admit that they were engaged in a trade or industry not in the practice of a profession. How the activities of such laboratories constituted transactions in or affecting interstate or foreign commerce does not appear. So far as is known no responsible group of roentgenologists or of proprietors of clinical laboratories, whether professional men or laymen organized on a national scale, has sought to procure the adoption of a code to cover their activities. Such codes as have been proposed by local groups have not been susceptible of consideration by the National Recovery Administration because the proponents were not truly representative of a trade or industry.

Osteopathic and Chiropractic Codes—So far as is known the osteopaths of the country have made no effort to procure the approval of a code of fair osteopathic practice. Some of the chiropractors, however, have sought without success to procure the adoption of a chiropractic code.

Optometric Code—The American Optometric Association, although professing to be a professional organization, has subjected itself and its members to the Optical Retail Code.

Other Codes—To prevent trade and industries from trenching on the practice of medicine, through trade and industrial codes, it has been necessary for the American Medical Association to keep in active touch with the formulation and approval of such codes. Among those to which particular attention has been given are the codes for the retail drug trade, the optical retail trade, and the package medicine industry. Incidental attention has been given to codes in other trades and industries relevant to medical practice and suggestions have been made from time to time with a view to having such codes promulgated in forms not inconsistent with the normal practice of medicine and consonant with the public good.

It is a pleasure to report the uniform courtesy that the American Medical Association received at the hands of the National Recovery Administration and the broad understanding and cooperation manifested by the administration and its officers in dealing with problems of medical hospital and laboratory practice.

FEDERAL EMERGENCY RELIEF ADMINISTRATION

The Emergency Relief and Construction Act of 1932—On July 21, 1932 the President approved the act now known as the Emergency Relief and Construction Act of 1932. For the relief of destitution, title I of the act authorized the Reconstruction Finance Corporation to make available to the several states and territories out of the corporation's funds three hundred million dollars to be used in furnishing relief and work relief to needy and distressed people and in relieving the hardship resulting from unemployment. The amounts advanced were loans, to be repaid to the corporation through annual deductions from such future federal allotments as might be made to aid the debtor states or territories in the construction of highways and rural post roads. The act failed to effect the necessary relief.

Federal Emergency Relief Act of 1933—On May 12, 1933 the President approved the Federal Emergency Relief Act of 1933. This act repealed so much of the Emergency Relief and Construction Act of 1932 as related to loans to states

and territories by the Reconstruction Finance Corporation for the purposes stated in the preceding paragraph. It directed the Reconstruction Finance Corporation to make available to the Federal Emergency Relief Administration created by the act, out of the corporation's funds, not to exceed five hundred million dollars in addition to the unexpended balance of the state and territorial relief fund provided by title I of the Emergency Relief and Construction Act of 1932. The new act provided that the Federal Emergency Relief Administration should cease to exist two years after date of its enactment. Out of the funds made available by the act, the Federal Emergency Relief Administrator was authorized to make grants to the several states as gifts not as loans, "to aid in meeting the costs of furnishing relief and work relief and in relieving the hardship and suffering caused by unemployment in the form of money, service materials, and/or commodities to provide the necessities of life to persons in need as a result of the present emergency, and/or to their dependents, whether resident, transient, or homeless." These grants were to be made on a proper showing of necessity by the governors of the several states and territories and a proper showing that provision had been made to assure adequate administrative supervision and suitable standards for relief. Mr. Harry L. Hopkins was appointed Federal Emergency Relief Administrator.

As Federal Emergency Relief Administrator, Mr. Hopkins promptly recognized that adequate relief implied medical service for sick and injured persons unable to provide it at their own expense or to obtain it through state or local agencies. He promptly set about formulating rules to govern the use of federal funds for medical relief purposes conferring with a representative of the American Medical Association as he did so. The rules formulated were promulgated as Rules and Regulations No. 7 Federal Relief Administration Governing Medical Care Provided in the Home to Recipients of Unemployment Relief. These rules and regulations were almost unique, in that they sought to maintain the traditional family and family physician relationship, in the treatment of indigent persons in their homes. They recognized, too, organized medicine as the best channel through which to approach the problem of providing medical relief of the destitute sick. In the assigning out the program of medical relief the Federal Emergency Relief Administrator threw a great responsibility on organized medicine and gave it the opportunity to justify itself by its works before the Federal Emergency Relief Administration and before the public. It is believed that in the main the organized profession has done so. The misunderstanding and friction that have occurred have been insignificant in comparison with the magnitude of the work done and only such as may be looked on as normal, when the personal element is involved in an undertaking of this kind and size.

The fees paid under the Federal Emergency Relief Act have seemed often to be pitifully inadequate, but this it is said, has been the result of financial necessity. The medical profession has accepted the situation with grace and, in keeping with its traditions, has let no one suffer for lack of medical service even when it regarded the fees tendered so small that they could not be accepted with professional self respect and gave its services free. In one other respect the program of the Federal Emergency Relief Administration can be said to have fallen far short of the ideas of the officials of the American Medical Association as to what it should be—the failure on the part of the Administration to provide for the care of the destitute sick and injured in hospitals when hospital service has been necessary. This has been unfortunate. It is necessary to recognize however, in this connection, the necessity for conserving the money available for relief and to give weight to the experience of the administrator who when he promulgated regulations denying hospital services at federal expense had never met a case in which state and local agencies had failed to provide hospital service when necessary.

As this report is being prepared the Federal Emergency Relief Administration is still functioning. Contrary to a wide spread misunderstanding it was not replaced by the Federal Civil Works Administration which will now be discussed. Persons who are in need of medical services in their home and who are unable to work or if able to work unable to find

employment that will enable them to provide medical services for themselves and their families, can still be cared for through the Federal Emergency Relief Administration

FEDERAL CIVIL WORKS ADMINISTRATION

The Federal Civil Works Administration was created under the National Industrial Recovery Act, approved June 16, 1933. Title II of that act authorized the President to create a Federal Emergency Administration of Public Works and to establish such agencies as he might find necessary to effectuate its purposes. It authorized the proposed Federal Emergency Administrator of Public Works to prepare a comprehensive program of public works. The program authorized by the act contemplated the employment of considerable numbers of men on public works undertaken to create employment. Projects looking toward the construction and maintenance of public works, however generally require surveys, the preparation of plans and specifications, competitive bidding, and the award of contracts, before employment on any large scale can be effected. A sufficient increase in employment under the act was therefore slow in developing, and winter was approaching. To provide employment quickly for as many unemployed persons as possible, and to take as many persons as possible off the relief rolls, the President, Nov. 7, 1933, under authority of the act, created the Federal Civil Works Administration and appointed as its Federal Civil Works Administrator Mr. Harry L. Hopkins. Mr. Hopkins was thus vested with the duties of this new office in addition to his duties as Federal Emergency Relief Administrator. To finance the activities of the Federal Civil Works Administration, the Board of the Federal Emergency Relief Administration of Public Works allocated to it four hundred million dollars. The Federal Civil Works Administration was to provide regular work on public works at regular wages for unemployed persons able and willing to work. To do this it was to undertake to carry out by day labor, and not by contract, all public works projects of the character theretofore constructed or carried on either by public authority or with public aid, to serve the interests of the general public provided such projects were (1) socially and economically desirable and (2) susceptible of being undertaken quickly. State and local Civil Works Administrators were promptly appointed, and within a few weeks, according to published reports, more than four million men and women were put to work.

Under the organization adopted by the Federal Civil Works Administration, every man and woman put to work became an employee of the federal government. Under the provisions of the United States Employees' Compensation Act, approved Sept. 7, 1916, as amended, he or she became entitled to certain benefits for any disabling injury or disease sustained in the performance of duty, his or her surviving spouse became entitled to certain benefits if the employee's death occurred in the performance of duty, and in any event an injured employee was entitled to "all services, appliances, and supplies prescribed or recommended by duly qualified physicians which, in the opinion of the [United States Employees' Compensation] commission are likely to cure or to give relief or to reduce the degree or the period of disability or to aid in lessening the amount of the monthly compensation." Medical services, appliances and supplies, however, had to be furnished "by or upon the order of United States medical officers and hospitals" and where this was not practicable, "by or upon the order of private physicians and hospitals designated or approved by the commission." The United States Employees' Compensation Act had been in effect since 1916, and when the Federal Civil Works Administration was established, some four thousand private physicians throughout the country had been already designated or approved by the commission to treat injured federal employees when and where United States medical officers and hospitals were not available. These designated physicians were, however, obviously inadequate in number and distribution to render the service legally required for the four million and more federal employees suddenly added to the federal pay rolls.

In order to comply with the statutory requirement that service be rendered by physicians designated by the United States Employees Compensation Commission, it was proposed to the commission, on behalf of the American Medical Association that all members of the Association be thus designated or

approved by the commission, without prejudice to the right of any nonmember physician to submit to the commission evidence of his fitness and to be designated or approved. In the end, however, the commission and the Federal Civil Works Administration, both of which had substantial official interests in the matter, agreed to direct their state and local representatives to cooperate with state and county medical societies in selecting from the physicians in their respective communities those desiring to treat the sick and injured workers on the terms laid down in the regulations and competent to do so. In formulating these regulations and an agreement with representative national hospital associations as to hospital services required under the act, the American Medical Association was actively represented.

Notwithstanding the very considerable funds available in the first instance for carrying out the Federal Emergency Relief Act of 1933 and the civil works program under the Federal Civil Works Administration it became necessary to appeal for more funds. In response to that appeal, by an act approved Feb. 15, 1934, there was appropriated nine hundred and fifty million dollars, to remain available until June 30, 1935. By the same act, the benefits accruing to employees of the Federal Civil Works Administration were diminished. Compensation and death benefits were made payable only in event of disability or death from "traumatic injury while in the performance of duty," and only such medical services are to be rendered at government expense as are rendered necessary by "traumatic injury," defined by the act as "only injury by accident causing damage or harm to the physical structure of the body and shall not include a disease in any form except as it shall naturally result from the injury." There the matter now rests but with the gradual disbanding of the federal civil works corps the situation has become one of diminishing importance.

The same uniform consideration and cooperation reported above with respect to the National Recovery Administration has been manifested throughout all negotiations between representatives of the Association and the Federal Civil Works and Emergency Relief Administrations and the United States Employees' Compensation Commission, and their officers and employees.

HOSPITALIZATION OF VETERANS

All public laws granting medical and hospital treatment and domiciliary care to veterans (except veterans who served prior to the Spanish-American War) for injury or disease incurred or aggravated in the line of duty in the military or naval service were repealed by an Act to maintain the credit of the United States Government, approved March 20, 1933, sometimes referred to as the Economy Act. The clear intent of the act was to repeal also so much of those laws as authorized medical, surgical, nursing and hospital service for veterans suffering from diseases and injuries not of service origin, and it has been administered as thus construed. The same act, however, as amended by the Independent Offices Appropriation Act approved June 16, 1933, authorized the Administrator of Veterans' Affairs, under such limitations as the President might prescribe and within the limits of existing Veterans' Administration facilities to furnish to men discharged from the army, navy, marine corps or coast guard, for disabilities incurred in line of duty and to veterans of any war, including the Boxer Rebellion and the Philippine Insurrection domiciliary care when they are suffering from permanent disabilities, tuberculosis or neuropsychiatric ailments, and medical and hospital treatment for diseases or injuries.

By Executive Order, Veterans Regulation No. 6 (a), Eligibility for Domiciliary or Hospital Care, Including Medical Treatment, promulgated July 28, 1933, the President authorized the Administrator of Veterans' Affairs, within the limits of Veterans' Administration facilities, to furnish domiciliary or hospital care, including medical treatment, to honorably discharged veterans of any war, including the Boxer Rebellion and the Philippine Insurrection, in the following order of preference:

(a) To honorably discharged veterans of any war including the Boxer Rebellion and the Philippine Insurrection who are suffering with injuries or diseases which were incurred or aggravated in line of duty in the active military or naval service when in need of hospital treatment for such injuries or diseases.

(b) To persons honorably discharged from the United States Army, Navy Marine Corps or Coast Guard for disabilities incurred in line of

duty who are suffering with injuries or diseases which were incurred or aggravated in line of duty in the active military or naval service when in need of hospital treatment for such injuries or diseases

(c) To honorably discharged veterans of any war including the Boxer Rebellion and the Philippine Insurrection who served in the active military or naval service for a period of ninety days or more who are suffering with permanent disabilities or tuberculous or neuropsychiatric ailments which incapacitate them from earning a living and who have no adequate means of support

(d) To persons honorably discharged from the United States Army Navy Marine Corps or Coast Guard for disabilities incurred in line of duty who served in the active military or naval service for a period of ninety days or more who are suffering with permanent disabilities or tuberculous or neuropsychiatric ailments which incapacitate them from earning a living and who have no adequate means of support

By Executive Order, Veterans Regulation No 7 (a), Eligibility for Medical Care, promulgated July 28, 1933, the President authorized the Administrator of Veterans' Affairs, in his discretion, to furnish to honorably discharged veterans of any war, including the Boxer Rebellion and the Philippine Insurrection, and to men honorably discharged from the United States Army, Navy, Marine Corps and Coast Guard, suffering from disabilities incurred in the line of duty, such medical, surgical and dental services as might be found to be reasonably necessary for diseases or injuries incurred or aggravated in the line of duty in the active military or naval service

The law and regulations that have been cited limited hospital treatment to veterans suffering from diseases or injuries incurred or aggravated in line of duty in active military or naval service, and veterans without means of support and incapacitated from earning a living, suffering from permanent disabilities or tuberculous or neuropsychiatric ailments. Hospital and domiciliary care for non-service-connected temporary conditions were discontinued

That such a curtailment of the benefits previously granted to veterans suffering from injuries and diseases not of service origin would be accepted by all of the veterans organizations was too much to be expected. Approximately one hundred bills have been introduced in Congress proposing to restore some or all of the benefits withdrawn. In the Senate, bills of this character were referred to the Committee on Finance, and in the House of Representatives to the Committee on World War Veterans' Legislation, and there they remained without action. But on Jan 17, 1934, when the Independent Offices Appropriation Bill, H R 6663, had passed the House and was pending before the Senate Committee on Appropriations, Senator David A Reed of Pennsylvania offered an amendment to it to restore to the veterans, among other things, the hospital benefits of which they had been deprived. Senator Reed proposed

That any World War Veteran who was employed in the active military or naval service between April 6 1917 and November 11 1918 who was not dishonorably discharged suffering from disability disease or defect who is in need of hospitalization or domiciliary care and is unable to defray the necessary expenses therefor (including transportation to and from the Veterans Administration facility) may be furnished necessary hospitalization or domiciliary care (including transportation) in any Veterans Administration facility irrespective of whether the disability disease or defect was due to service. The statement of the applicant on such form as may be prescribed by the Administrator of Veterans Affairs shall be accepted as sufficient evidence of inability to defray necessary expenses

The American Medical Association promptly filed a protest against the adoption of the proposed amendment

January 19, two days after Senator Reed filed his proposed amendment, the President promulgated Executive Order, Veterans Regulation No 6 (b) Eligibility for Domiciliary or Hospital Care, Including Medical Treatment authorizing hospital and domiciliary care and medical service beyond the limits laid down in Veterans Regulation No 6 (a). The new order extended such benefits to persons who between April 6 1917 and Nov 11, 1918, inclusive were provisionally in the military and naval service but who before being actually enrolled suffered injuries and diseases in the line of duty. Hospital and domiciliary care and medical service for veterans with non-service connected disabilities which had been limited to veterans suffering from permanent disabilities or tuberculous or neuropsychiatric ailments, were extended to include veterans suffering from such other conditions requiring emergency or extensive hospital treatment as might be prescribed by the Administrator of Veterans Affairs

Some members of the Senate Committee on Appropriations, to which the Reed amendment was referred, were of the opinion that it could not properly be reported as an amendment to the appropriation bill and therefore it was not so reported. When the bill came up for debate, however, Senator James F Byrnes of South Carolina offered an amendment authorizing substantially the same benefits as were authorized by Executive Order Veterans Regulation No 6 (b). Senator Frederick Steiwer of Oregon and Senator Pat McCarran of Nevada offered an amendment, which, so far as relates to hospital benefits, was adopted by the Senate in the following form

That any veteran of any war who was not dishonorably discharged suffering from disability disease or defect who is in need of hospitalization or domiciliary care and is unable to defray the necessary expenses therefor (including transportation to and from the Veterans Administration facility) shall be furnished necessary hospitalization or domiciliary care (including transportation) in any Veterans Administration facility within the limitations existing in such facilities irrespective of whether the disability disease or defect was due to service. The statement under oath of the applicant on such form as may be prescribed by the Administrator of Veterans Affairs shall be accepted as sufficient evidence of inability to defray necessary expenses

The House of Representatives acquiesced in so much of the Steiwer-McCarran amendment as is set forth above, already adopted by the Senate, and the Independent Offices Appropriation Act containing this legislation, passed by both Houses, was vetoed by the President. It was then passed by the House of Representatives and Senate over the President's veto and is now a law. The hospitalization of veterans generally for non-service connected injuries and diseases is now governed primarily by the provisions of the Steiwer-McCarran amendment

CONTRACT SURGEONS OF THE SPANISH-AMERICAN WAR

In the scramble for benefits based on military service, one class of physicians, who served their country well in time of need, has been sadly neglected, namely, the contract surgeons who served during the Spanish-American War, the Philippine Insurrection and the Boxer Rebellion. Prior to March 20, 1933, they were entitled to pensions for injuries sustained in military service, just as all other veterans of those military activities were. But even then, contract surgeons did not share in the right given all other persons, even contract nurses, who served ninety days or more, to pensions for disabilities of a permanent character which incapacitated them for the performance of manual labor, regardless of the origin of such disabilities, and to pensions by reason of age alone, when they became 62 years old. The failure of the government to confer on contract surgeons benefits similar to those conferred on other participants in these military operations is difficult to explain and justify.

The discrimination against contract surgeons has become more acute since the passage of An Act to maintain the credit of the United States Government, approved March 20, 1933, commonly referred to as the Economy Act. The Economy Act repealed existing pension laws, with exceptions not here pertinent, and established a new deal for veterans. In this new deal, however, the contract surgeons of the Spanish-American War, the Philippine Insurrection and the Boxer Rebellion were again neglected. By an executive order issued by the President, March 31, 1933, Veterans' Regulation No 10, benefits conferred by other regulations on veterans of these military activities were limited to officers and enlisted men, "including those women who served as army nurses under contracts on or after April 21, 1898 and before August 13, 1898," with the exception that for the purposes of hospitalization the term "veteran of any war" was defined as including "persons who served overseas as contract surgeons of the Army on and after April 21, 1898, and before August 13, 1898." Pensions are now payable, therefore to officers and enlisted men and to contract nurses who served in the Spanish-American War, the Philippine Insurrection and the Boxer Rebellion for total permanent disabilities, but not to contract surgeons, because they are not officers enlisted men or contract nurses.

The failure of the contract surgeons who served during the Spanish-American War and the military expeditions that followed to obtain adequate recognition is probably due in large part to the fact that they were and are an unorganized group. To win recognition and benefits from Congress those who believe that they are justly entitled to such benefits must present their causes to their Senators and Representatives and

this is certainly best done through organized action. The exact number of contract surgeons who are now living is not known, but they number probably between four and five hundred. The Board of Trustees, Feb 19, 1932, authorized action looking toward the support of a movement to place these members of the medical profession on a parity, so far as pensions and other benefits are concerned, with the numerous lay persons who rendered similar service. But probably little can be accomplished unless the contract surgeons themselves organize and support such a movement more actively in the future than they have done in the past.

A bill to provide for the relief of contract veterans of the Spanish-American War including the Philippine Insurrection and the China Boxer Rebellion, was introduced in the Senate, S 1990, Jan 4, 1934 by Senator Charles L. McNary of Oregon, and in the House of Representatives H R 8580, March 10, 1934, by Representative Charles H. Martin of Oregon. The bill is identical in the two houses and undertakes to confer on contract surgeons and others of similar status the benefits of the Economy Act. It is hoped that in this way, or in some more effective way, justice can be done the contract surgeons of the Spanish-American War and the military expeditions that followed it.

LIBRARY OF THE SURGEON GENERAL'S OFFICE

The Library of the Surgeon General's Office is the largest medical library in the world. Its official designation, Library of the Surgeon General's Office, gives only a scant clue to its real character and purpose. "It is a national institution," says Surg Gen Robert U. Patterson in his annual report for 1933, "the material of which is available to the entire medical (including dental, veterinary, public health etc.) profession of the country." Surg Gen M. W. Ireland, now retired in testifying in support of the War Department appropriation bill for 1925, said of the Library: "It is a national library, and it is very unfortunate that during the Civil War when they started this library, they made it the library of the Surgeon General's Office because it has been looked upon as maybe a small concern by those people who are not acquainted with it."

In December 1933 the Library contained 905,000 books and pamphlets. During the fiscal year ended June 30 1933, 2,041 periodicals were received. During that year 5,282 readers made use of the library and 11,958 books were lent to 346 libraries and institutions throughout the country under the interlibrary system. Not the Medical Department of the Army alone but also the Bureau of Medicine and Surgery of the Navy, the United States Public Health Service, the Veterans' Administration and other branches of the federal government whose activities center in Washington have free recourse to this great center of medical knowledge.

Certainly these facts cannot have been recognized by the responsible officers of the War Department or by the director of the budget when they proposed to Congress a reduction in the annual appropriation for the library from \$19,500 to \$14,300. The annual appropriations for the library for each of the fiscal years 1925 and 1926 was \$20,000, and the amount appropriated annually since that time and up to and including the fiscal year 1934 has been \$19,500. With a record such as this and with the threatened advent of an era of high prices of all kinds, there can be no good reason for reducing by approximately one third the appropriation to this library.

The War Department appropriation bill carrying the appropriation for the Library of the Surgeon General's Office had been formulated in the War Department and passed by the director of the budget and was pending in the Committee on Appropriations, House of Representatives, before the proposed reduction in this appropriation came to the attention of the American Medical Association. The bill passed the House of Representatives, March 9, and at the present writing [March 15] is pending in the Senate. Whether anything can be done during the current year to check the deterioration in the library and in the library service that must result if such a reduction as is proposed is made in the appropriation for its maintenance is uncertain. Certainly, however, the medical profession of the country should unite in a continuing movement for the rescue and preservation of this potent instrumentality for the broader and better education of the physicians of the country.

FOOD, DRUG AND COSMETIC LEGISLATION

It came to the notice of the Association that the U. S. Department of Agriculture was preparing a revision of federal food and drug legislation, with a view to its enactment as a substitute for existing law in that field. Assistant Secretary of Agriculture Tugwell, who had the matter in charge was promptly informed that the resources of the American Medical Association were at his disposal for use in connection with this undertaking. They were never used, unless an invitation to the Association to be represented at a hearing on the proposed legislation can be so construed. The invitation was accepted. The hearing lasted two days but no copies of the contemplated legislation were available, and the discussion was of a more or less general character. On June 12, the bill prepared by the Department of Agriculture was introduced in the Senate by Senator Copeland as S 1944. This is the bill sometimes designated as the Tugwell bill. Later modifications of it, S 2000 and S 2800 have been variously referred to as the Tugwell-Copeland bill and as the Copeland bill.

The Tugwell bill was offered as a substitute for the Federal Food and Drugs Act of 1906, as amended, which it proposed to repeal. It proposed to extend the law so as to cover cosmetics and to cover advertising relating to foods, drugs and cosmetics. Drastic administrative provisions in it aroused a storm of protest and are largely responsible, it is believed, for the widespread bitter opposition that still prevails against all legislation in this field except such as has been prepared by food, drug, cosmetic and advertising interests and introduced on their behalf. On June 14, 1933 the Board of Trustees after a careful study of the Tugwell bill, adopted the following resolution:

WHEREAS The American Medical Association has for years protested against the inadequacy of the National Food and Drugs Act of 1906 because of which inadequacy the officers of the government charged with the enforcement of the act have been and are unable effectively to protect the people against fraud and danger to health be it

Resolved That the American Medical Association pledges its support toward procuring the formulation and enactment of effective national food and drug legislation adequate for the protection of the people

The Senate Committee on Commerce, to which the Tugwell bill had been referred, referred it to a subcommittee, of which Senator Royal S. Copeland of New York is chairman. That subcommittee held hearings in Washington December 7 and 8. The Association took no part in those hearings but was represented by an observer. After the hearing, however, a representative of the Association pointed out to Senator Copeland some of the provisions of the bill that seemed inexpedient. Senator Copeland, January 4, introduced a revised bill, S 2000. Later, February 19, a second revision was introduced, S 2800. S 2800 was made the subject of a hearing before the full Senate Committee on Commerce, February 27 to March 3, when a representative of the Association discussed the bill, commending it for its good features and pointing out changes that seemed to be needed to make it a more effective measure. Subsequently an exhaustive brief of the same tenor was filed.

As this report is being written (March 15) the Copeland bill, S 2800, has been reported to the Senate and is now on the calendar. Four other food, drug and cosmetic bills before this committee may therefore be considered as dead. Five similar bills are pending before the Committee on Interstate and Foreign Commerce, House of Representatives.

FEDERAL CONTROL OF MEDICINAL LIQUOR

On Dec 5, 1933, the twenty-first amendment to the constitution of the United States became effective, and direct federal control of the medicinal use of liquor passed back to the states. The determination of the nature and extent of the control that is to be exercised is now a matter primarily for state associations. The resources of the Association as a whole are at the command of the state associations to aid them in the discharge of this function.

BIRTH CONTROL

A bill to facilitate the dissemination of information concerning the prevention of conception and of preparations and devices to accomplish that end was introduced in the Senate, June 6 1933, by Senator Daniel O. Hastings of Delaware S 1842 and in the House of Representatives June 8, 1933, by Representative

Walter M Pierce of Oregon, H R 5978 Hearings were held on these bills The American Medical Association was not represented at either of these hearings and did not participate in them

REGULATION OF RADIO BROADCASTING

A bill, S 2660 to regulate broadcasting from a studio in the United States through a broadcasting station in a foreign country back into the United States has passed the Senate It has been favorably reported in the House of Representatives and is now on the calendar This bill is designed to prevent broadcasting from the United States by remote control, through a foreign country and back into the United States matter that could not be broadcast from a United States broadcasting station directly throughout the United States in the first instance

STATE LEGISLATION

During 1933, the legislatures of forty-three states met in regular session and in addition forty two special sessions were held Since Jan 1, 1934, to date (March 15) the legislatures of nine states have convened in regular session and special sessions have convened in four other states All bills of medical interest introduced in these sessions were studied and appropriate notices were sent to the interested state medical associations Advanced notices were sent, too, to the presidents and secretaries and the chairmen of the legislative committees of the several state associations, concerning bills in which they had particular interests Abstracts of bills were published in THE JOURNAL, and later their progress was reported A survey of all state legislation considered in these legislative sessions, of interest to the profession was published in the November and December issues of the AMERICAN MEDICAL ASSOCIATION BULLETIN

The uniform narcotic drug act was enacted in 1933 in Florida, Nevada, New Jersey and New York, and in 1934 in Virginia, with slight modifications in some states In 1933 basic science laws were enacted in Arizona and Oregon So-called medical lien bills were enacted in 1933 in Arkansas, Indiana, Minnesota and Texas and in 1934 in Iowa The cults scored heavily against public health interests in 1933 Independent chiropractic examining and licensing boards were created for the first time in Colorado and Michigan, and the chiropractic acts in Montana, New Mexico, North Carolina and North Dakota were amended so as to enlarge the scope of chiropractic practice Osteopaths were granted enlarged rights in New Mexico and North Dakota, and but for the courageous and intelligent use of the veto power they would have been granted unlimited rights in Michigan A naturopathic practice act conferring on naturopaths an independent status would now be a law in Arizona but for the governor's veto Why cult legislation of this character should be so successful is a question calling for searching inquiry by state organizations

MISCELLANEOUS SERVICES

The Bureau of Legal Medicine and Legislation has throughout the year cooperated actively with state and county medical associations in their efforts to solve their legislative and medico-legal problems Advice to individual correspondents concerning matters of law have necessarily been of a general character for it is impossible for the Association to undertake to solve the personal legal problems of its Fellows and members Where information has been asked concerning matters of a strictly medicolegal type citations and information have been freely furnished The Bureau has continued as heretofore to prepare abstracts of current court decisions for publication in THE JOURNAL

Bureau of Health and Public Instruction

The work of the Bureau has included editing of the Question and Answer Department in HYGIEIA maintenance of a radio program in Chicago furnishing radio talks to medical societies for local programs outside Chicago information exchange service to state and county medical societies in their educational activities preparation of material relating to protection of medical research representing the American Medical Association on advisory boards of lay organizations personal appearances on invitation in various parts of the United States and writing of articles for publication

RADIO

The American Medical Association maintained a weekly broadcast of two five-minute talks and one fifteen-minute talk over station WBBM, Chicago, through 1933 In December an arrangement was perfected for broadcasting a weekly talk over a coast-to-coast network of the National Broadcasting Company the talks on the network being divided about equally between the editor of THE JOURNAL and the director of the Bureau During the current year broadcasting facilities have been made available by the Columbia Broadcasting System Thus the service of the two great national radio organizations, generously provided, is being utilized for the dissemination of information to the people of the country Cooperation was extended to radio programs of reputable organizations in Chicago Radio talks furnished to local medical societies have been mentioned

The Bureau prepared or edited 193 radio talks, of which 168 were broadcast over Chicago stations in the name of the American Medical Association, while 25 were not broadcast locally, 171 such talks were prepared in 1932 The total of available talks now closely approaches 500 State, district and county medical societies, and other organizations cooperating with such societies received 7,277 copies of radio talks for use in local broadcasts, as compared with 4,312 in 1932

SERVICE TO STATE AND COUNTY SOCIETIES

The Bureau attempts to function as a clearing house of information on public health and health education, for state and county medical societies Educational material is furnished such societies as well as individual physicians in close cooperation with HYGIEIA using especially the HYGIEIA clip sheet and collections made of HYGIEIA clippings on more than seventy topics of common interest

PROTECTION OF MEDICAL RESEARCH

As in previous years, the Bureau has cooperated closely with the American Medical Association Committee for the Protection of Research

COOPERATION WITH LAY ORGANIZATIONS

By order of the Board of Trustees the director is acting as representative of the American Medical Association on medical advisory committees for the following organizations

The National Congress of Parents and Teachers has had the cooperation of the American Medical Association for several years through the donation by HYGIEIA of half the necessary blanks for the summer round up of preschool children During 1933 the advisory committee for the summer round up met once to consider printed matter for use in the 1935 round up This consisted principally of examination blanks, instructions for state and local leaders and leaflets for parents explaining the purposes of the summer round up The instructions and the leaflets for parents will emphasize the desirability of having the children examined whenever possible in the offices of their family physicians

The General Federation of Women's Clubs invited the American Medical Association in 1933 to appoint a representative to the medical advisory board for the federation's department of health and welfare The director of the Bureau was appointed and instructed to ask for the appointment of two other physicians preferably practicing physicians as additional representatives Dr N B Van Etten of New York and Dr A C Christie of Washington were appointed in response to this request Two meetings were held in 1933 the first attended by the director only the other by all the representatives of the American Medical Association The result of deliberations at these meetings was briefly as follows A proposed study of medical economies by local women's clubs was not undertaken a proposal to endorse group hospitalization plans in principle was postponed an outline for studies by local women's clubs of the public health work in their respective communities was approved for publication after extensive changes suggested by the American Medical Association representatives had been made an outline of principles for child health and welfare activities was criticized by the director of the Bureau and many but not all the changes suggested by him were made a conservative program of cancer

education in cooperation with the American Society for the Control of Cancer was endorsed.

The National Committee for Boys and Girls Club Work, better known as the 4-H Club movement, also requested a representative from the American Medical Association during 1933, and the director of the Bureau was named. He addressed the committee and a group of its state club leaders at the annual congress in Chicago in December and visited a state meeting at Lafayette, Ind., earlier in the year, he also attended some conferences with the Elizabeth McCormick Fund staff relating to examination forms and procedures. He contended for a more constructive procedure in the health phase of the committee's activities than the contest in which so called healthiest boys and girls are selected from local groups, state-wide groups and finally a nationally selected group. Results of his efforts, if any, were not apparent. The movement reaches almost a million boys and girls in rural areas. Further efforts to aid this committee in developing its health program may prove fruitful.

The Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association met at Minneapolis in February 1933 and considered a number of reports dealing with health problems in the schools. One report, dealing with inspection of school children by teachers or nurses in the absence of available medical service, was published.

PERSONAL APPEARANCES

The director of the Bureau made addresses on invitation before six medical society or auxiliary groups, one medical school class, two educational groups, four public health groups and five lay groups, and attended nine meetings of advisory conferences.

ARTICLES PUBLISHED

Articles by the director of the Bureau were published in the AMERICAN MEDICAL ASSOCIATION BULLETIN, a state medical journal and a county society bulletin, two education magazines, a magazine of general circulation to the public, and in transactions of the annual meetings of the National Education Association and the National Tuberculosis Association. Contributions were published also in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and in HYGEIA.

EXHIBITS

The Bureau cooperated with the American Medical Association Bureau of Exhibits in preparing exhibits for various meetings and for A Century of Progress.

PAMPHLETS

Pamphlets have been extensively revised. A new series on sex education was prepared and published, a second printing was required before the end of the year. Nine other standard pamphlets were revised and brought up to date, twenty-two new titles added to the lay catalogue and ten old ones dropped.

A CENTURY OF PROGRESS

The specific contribution of this bureau to A Century of Progress was a set of 145 questions on health, together with answers thereto carefully revised and checked by a group of practicing physicians. These were displayed in visible file units which made them readily accessible to visitors at the American Medical Association exhibit. They were constantly in demand. They have been republished in booklet form for use as a HYGEIA premium.

There was no change in the personnel of the Bureau during the year. The work done is measured, to some extent, by the volume of correspondence. Letters written on Bureau business numbered 3,164, as compared with 2,824 in 1932. Letters written in reply to questions received by HYGEIA totaled 4,612, as compared with 3,569 in 1932.

Bureau of Investigation

Physicians and laymen continue to call on the Bureau of Investigation for information on the subjects with which the Bureau deals. Of the nearly 11,000 inquiries that were received and answered by the Bureau during 1933, the letters were about evenly divided between laymen and physicians. Two things have stimulated interest on the part of the public and the profession in the matter of "patent medicines." One is the proposed new

law that will extend the powers of the national government over the sale and particularly the advertising of nostrums. The other is the fact that there is probably more misleading or fraudulent "patent medicine" advertising today than there has been in the past quarter-century. While the newspapers of the country, as a result of the economic situation, have in many instances let down the bars to much "patent medicine" advertising that in more prosperous times they would reject, they have nevertheless kept such advertising within certain bounds and have certain standards of advertising decency. Some radio stations, however, have developed no such ethical conscience, and much of the "patent medicine" advertising that goes over the air is reminiscent of the type used by nostrum exploiters before the passage of the National Food and Drugs Act of 1906. Such blatant quackery has aroused the medical profession and even the more intelligent part of the lay public to the need of an extension of the powers of the Food and Drugs Act to cover collateral advertising instead of, as now, merely the advertising that appears on or in the trade package. This has resulted in the Bureau of Investigation's receiving thousands of inquiries for information about "patent medicines" that are advertised over the radio, and for information, also, as to whether the proposed new law will help to put an end to what has become a stench in the nostrils of decent people.

The Bureau of Investigation continues to cooperate with the Better Business Bureaus, both local and national. Not only the National Better Business Bureau but practically all the component branches located in cities all over the United States receive each week from the Bureau of Investigation pages from THE JOURNAL carrying articles prepared by the director of the Bureau that deal with any phase of the nostrum evil or quackery with which advertising men might properly be concerned.

The Bureau has also received an unusual number of inquiries from professors and teachers in universities, colleges, normal schools and high schools, who seek information on "patent medicines." As a result of this interest, the Bureau also gets a large number of inquiries from the students of such institutions.

The director of the Bureau has prepared the usual number of articles on "patent medicines," quacks and medical schemes of a dubious character that have been published in practically every issue of THE JOURNAL the past year. While most of the material represents individual investigation by the Bureau, with, of course, the aid of such analytic work as the Chemical Laboratory was asked to furnish, there have also been a number of articles based on reports issued by such agencies as the Post Office Department, the Federal Trade Commission and the Food and Drug Administration.

The director of the Bureau has been called on to give a number of talks, usually illustrated with lantern slides, on either "patent medicines" or cosmetics. Not all of these requests could be complied with without impairing the efficiency of the Bureau. Thirty-three such talks were however, given, of which fifteen were in Chicago or the Chicago area and the remainder divided among seven states. All these talks were before public audiences and most of them were given under the auspices of either state or county medical societies or the woman's auxiliaries of the state or county organizations.

The various pamphlets on quackery and the nostrum evil are still in demand. At the beginning of the year the American Society for the Control of Cancer asked the director of the Bureau to prepare a new pamphlet on quack cancer cures and treatments so that they could distribute numbers of these pamphlets at the society's exhibit at the Century of Progress exposition. The pamphlet was prepared and made available by the time the exposition opened.

There has been an unusually brisk demand for the pamphlet on cosmetics, owing to the interest that has been stimulated by several deplorable accidents in the use of certain of these products. There has been an especially insistent demand for a third volume of "Nostrums and Quackery." The first volume of this book was issued in 1912 and has been out of print for some years. The second volume which is still available, was issued in 1921. There is already available plenty of material for volume 3, but the routine work of the Bureau has absorbed all the available time and so far has made it impossible to get out the third volume.

The lantern slides prepared by the Bureau are still being called for by physicians or public health officials who wish to give talks on the subject with which they deal. An extension of this service is now in process of development. The same is true of the educational posters. Three of the posters that were prepared by the Bureau of Investigation a few years ago on vitamins, food iron and food calcium have been discontinued, as similar posters are available without cost. The latter have been prepared by the National Live Stock and Meat Board and approved by the Committee on Foods of the Association.

Bureau of Exhibits

The activities of the Bureau of Exhibits are carried on along several lines—the Scientific Exhibit each year, the Central Scientific Exhibit, and Association exhibits.

THE ANNUAL SCIENTIFIC EXHIBIT

The Milwaukee Session marked the thirty-fifth year for the Scientific Exhibit. Twelve sections of the Scientific Assembly were again represented by official committees, under whose direction groups of exhibits in the different specialties of medicine were made. There was a total of 120 exhibits, the same number as at New Orleans, but the hall was considerably larger, making it possible to provide more room in which the exhibits could be shown and more aisle space in which the visitors could circulate. Thirty-seven papers read before the sections of the Scientific Assembly were illustrated in the Scientific Exhibit. There were thirty-nine motion pictures shown in the different booths and in the motion picture programs sponsored by several section exhibit committees. Four special exhibits, put on by special committees appointed for the purpose included poliomyelitis and cancer, both shown for the second time, fresh pathology, which had been omitted at New Orleans, and a new exhibit on circulation of the blood in the capillaries.

The Committee on Awards worked faithfully for three days the task of selecting the most commendable exhibits being a difficult one because of the diversified nature of the material shown.

THE CENTRAL SCIENTIFIC EXHIBIT

No exhibits from the Milwaukee Session were selected for the Central Scientific Exhibit. Part of the exhibit space at the headquarters building is being used for offices, and promotion of this activity has ceased for the time being.

ASSOCIATION EXHIBITS

Under the heading Association Exhibits are conducted activities falling into two groups. The first includes exhibits of a strictly scientific nature dealing with the work of the American Medical Association and shown at medical and other professional meetings. The second consists of exhibits for the public and supplements the program of the Bureau of Health and Public Instruction. Such exhibits, shown at fairs, exposition school gatherings and the like, are put on with the co-operation or approval of the state or county medical society in that territory.

During the year 1933 many requests for exhibit material could not be complied with because of the pressure of work connected with the exhibit of the American Medical Association at A Century of Progress Exposition. Thirty-two exhibits were sent out, thirteen to professional groups and nineteen to lay groups. This does not include the exhibits of five bureaus and councils of the Association at the Milwaukee session or the exhibit at A Century of Progress Exposition.

EXHIBIT AT A CENTURY OF PROGRESS EXPOSITION

During the five and a half months of A Century of Progress Exposition, nearly five million people visited the exhibit of the American Medical Association. It was impossible to furnish demonstrators to talk to groups as they passed through the information being imparted by photograph records carefully worded labels and mechanical apparatus. A list of 145 questions and answers which had appeared in *HYGEIA* was extremely popular. Attendants were present to make note of additional questions which the visitors asked and these were turned over to the Bureau of Health and Public Instruction for reply by mail.

Committee on Foods

The Committee on Foods added to its membership and made excellent progress during 1933. Dr Edwin O. Jordan, Ph.D., Sc.D., professor of bacteriology at the University of Chicago, Dr James S. McLester, M.D., professor of medicine, University of Alabama School of Medicine, and Dr Mary Swartz Rose, Ph.D., professor of nutrition, Teachers College, Columbia University, became members of this body through appointment by the Board of Trustees.

The submission of foods to the Committee has continued at approximately the same rate as during the preceding two years—roughly, 600 per annum. Applications for consideration of simple types of foods, such as breads and flours were refused for six months to permit the Committee to catch up on pending work. The Committee declined to pass on alcoholic beverages. Owing to the volume of work, a considerable number of satisfactory submissions have not been acted on, many incomplete or unsatisfactory submissions have not been developed. Requests for outline of procedure for submitting foods number in the hundreds. The rigid requirements for submitting foods and governing accepted foods unquestionably have prevented submissions from running over the thousand mark each year.

Products submitted, accepted and rejected and acceptances withdrawn are summarized in the following table.

Report of Committee's Actions

Products submitted—total up to Dec 31 1933	1 860
1932	632
1933	583
Products accepted—total up to Dec 31 1933	1 276
1932	493
1933	490
Products rejected—total up to Dec 31 1933	61
1932	16
1933	41
Withdrawals of acceptance—total (1933)	31

RULES AND REGULATIONS

The Rules and Regulations have been almost wholly revised and republished. The new rules state more precisely the purpose and policy of the Committee, the significance of acceptance and of the seal, the conditions of acceptance, the aims of the Committee for cooperation with the food and advertising trade, and the procedure of submitting foods. The most important amendment calls for the regular submission of all advertising subsequent to acceptance, to assure that the advertising is maintained acceptable and as a safeguard to the significance of the seal and of acceptance. Although this requirement adds to the routine burden of the office of the Committee, it is an essential step to assure that the prestige and standing of the Committee shall not be endangered by faulty advertising for accepted foods. The established standards are being rigidly upheld.

It is expected that the Rules and Regulations will require little amendment in the future. They declare in certain and definite terms the purpose and scope of the operations of the Committee as a public health and welfare body of the American Medical Association. They lay down the general rules and basic principles governing accepted foods. Good food advertising and proper foods depend on the response and efforts of the trade to meet the standard of these requirements. Constant requests for the Rules indicate that they are being recognized.

GENERAL COMMITTEE DECISIONS

The Committee has adopted twenty new or revised General Committee Decisions. These decisions define the position of the Committee on certain advertising, food composition and public health issues. As the work develops more and more attention is being given to questions of special and direct concern to public health. This is evidenced by such decisions as 'Addition of Phenolphthalein, Acetylsalicylic Acid (Aspirin) and Other Drugs to Chewing Gum Candy and Food Articles', 'Contamination of Fruits and Vegetables with Toxic Insecticide Spray Material', 'Tolerance for Arsenic, Copper and Lead in Foods and Pasteurization of Milk'. Numerous requests—especially by the trade—are made for copies of these decisions. They are being recognized by sponsors of accepted foods as well as by those apparently not interested in gaining acceptance for their products.

The General Committee Decisions adopted or revised during 1933 are listed herewith

I Decisions Governing Advertising

Academic Titles Doctor and M.D. as Integral Parts of Names of Foods (revised)
The Designations Food Concentrate and Scientific Food Concentrate for Foods
The Claim Digests Starch for Foods Containing Dextrically Active Malt or Malt Extract
Educational Food Advertising
Good Food Advertising
Health Food Claims and the Term Healthful (revised)
The Ideal Label for Foods
Mineral, Spring, Natural or Alkaline Waters
Questionnaire Advertising
Resistance Claims in Food Advertising
So Called Special Diabetic Foods or Special Foods for Sugar and Carbohydrate Restricted Diets
Trick Claims in Food Advertising
Vague Clinical Experience Claims

II Decisions Governing Food Composition

Fortification of Foods Other Than Table Salt with Iodine or Iodine Compounds
Iodized Salt and Cauter in Iodine Deficiency Disease (revised)
Whole Wheat and Graham Foods

III Special Public Health Decisions

Addition of Phenolphthalein, Acetylsalicylic Acid (Aspirin) and Other Drugs to Chewing Gum Candy and Food Articles
Contamination of Fruits and Vegetables with Toxic Insecticide Spray Material
The Pasteurization of Milk
Tolerances for Arsenic, Copper and Lead in Foods

Of special interest have been efforts of the trade to merchandise foods with enhanced nutritional values. A considerable number of vitamin D liquid milks and one vitamin D evaporated milk have been accepted. Several nationally distributed vitamin D evaporated milks are about to be accepted. The Committee is requiring that all these milks be proved nutritive by chemical evidence. To all appearances vitamin D milk soon will be generally distributed. A few vitamin D fortified breads, cereals and other foods are already established on the market. Special vitamin B foods also are receiving attention. These are prepared by the addition of substantial quantities of wheat germ or rice bran, by-products of the milling industry, rich in vitamin B and heretofore used for animal feed. Other special vitamin-fortified foods planned for the market are in the offing.

The manufacture of foods with enhanced values for improving the nutrition of the public is a commendable commercial enterprise. It is important, however, that such undertakings have authoritative, commercially disinterested guidance. The policy of the Committee on these issues is based solely on public welfare and established knowledge.

The food and advertising trades are quick to exploit newly reported nutritional observations before they are adequately substantiated. Results of limited animal or clinical studies are given exaggerated unwarranted significance. The urge to reap gain from an uninformed public on the basis of unripe knowledge requires constant, firm and understanding control. The Committee exerts a positive influence for restraining impetuous sales projects by the trade in the still speculative field of the newer knowledge of nutrition.

Reports on a number of scientific or pseudoscientific investigations sponsored by the advertising trade were submitted and passed on during the year.

The Committee is constantly challenged by complex and difficult problems of almost every conceivable character involving food composition, nutrition, physiologic effects of foods, relation of foods to public health, proper labels and advertising claims, manufacturing methods, and so on. The members of the Committee have conscientiously given of their time, knowledge and experience to the good of the public. They have displayed a sympathetic understanding toward the public spirited members of the trade and have cooperated wholeheartedly to help them when possible. It is the essential purpose of the Committee to aid the food industries to attain newer and higher planes of merchandising and thereby better serve public welfare. The trade is by no means unappreciative. The many letters of gratitude and commendation from the trade show that it recognizes the spirit of the Committee and is gladly willing to carry through with it to the ultimate goal. The splendid support of the trade is an honor.

The office work of the Committee has steadily increased. The office personnel and system have been reorganized to meet the exigencies of the new demands. Members of the trade appear daily for consultation and interview. The expanding volume of correspondence with physicians indicates their growing interest in the Committee. General correspondence is especially heavy, requests come in from all quarters for information on almost every subject in the field of foods and nutrition. Contacts with food manufacturers by letter and interview indicate beyond question that the influence of the Committee is rapidly extending and becoming increasingly recognized. A number of sections for the book "Accepted Foods" were prepared, but pressure of other work prevented completion of more than possibly one fourth of the material. The office follows up all requirements of the Committee for accepted products to insure compliance by their sponsors. This involves much routine work but is a necessary part of the thoroughness with which the work is being carried on. With few exceptions the trade is thoroughly and wholeheartedly cooperative. Expressions of commendation are many and of criticism few.

Commencing last October, a series of monthly articles on the work of the Committee entitled "A Housewife Looks at the Committee on Foods" has appeared in *Hygeia*. Each article is devoted to an individual type of foods, permissible and improper claims, requirements of composition for acceptance, pertinent Committee decisions and actions, and general information on the work of the Committee. A radio talk on the Committee also was given each month.

The Committee is undertaking a form of social research in the field of foods and food advertising. It is developing a new and enlarged concept of the nutritional values of merchandised foods and of the scope and character of food advertising in the interest of public welfare and health. It is defining the principles that should govern food composition and advertising. These principles, once defined, become diffused through the food and advertising trades and will become the recognized codes of food merchandising and advertising of the future. The food industry is recognizing these principles laid down by the Committee and putting them in practice.

Donations for Pershing Memorial Returned to Donors

Since only a little more than one fourth of the sum required was subscribed to the fund for the establishment of a memorial room in the Pershing Memorial in Paris, and because it was not thought to be advisable to ask for additional subscriptions, all donations were returned to the individual donors and groups concerned.

Field Secretary

The Board of Trustees has given most careful consideration to the proposal that a Field Secretary should be employed and has concluded that it is not advisable to take final action in this matter at the present time. There is grave doubt that results that might be realized through the activities of any individual employed for the indicated purposes would justify the expense involved. Not more than a small part of the field could be covered in any one year. Prolonged absences would make it difficult if not impossible, for the person so employed to keep fully informed concerning developments in the home offices. During the last three years it has been possible to maintain closer contacts with constituent and component societies, and in the year covered by this report the field work of official representatives has been of far larger scope than ever before. More state county and district societies have been visited and the number of appearances of official representatives of the Association before lay audiences has been greater than in any previous year.

The President, the President-Elect, members of official bodies and the heads of practically all the departments at Association headquarters have appeared before an unusually large number of state district and county societies during the last year and have also participated in the programs of numerous civic and social organizations.

During the year the editor of *THE JOURNAL* delivered approximately 125 addresses in various parts of the United States which dealt with various subjects of important interest to the profession and to the lay public. The director of the

Bureau of Medical Economics spent 122 days in field investigations, during which time he appeared before the state or county medical associations in eighteen states and in twenty cities. The director of the Bureau of Health and Public Instruction, the director of the Bureau of Investigation, the secretary of the Council on Pharmacy and Chemistry, the secretary of the Council on Medical Education and Hospitals and other department heads attended numerous meetings of professional and lay organizations held in practically all parts of the country. The Secretary of the Association visited twelve states and appeared on the programs of state medical associations in most of these states and on the programs of county and district medical societies in practically all of them. Most of the states were visited during the year by official representatives of the Association.

Employees

The total number of employees on April 1, 1934, was 526. The largest number of employees at any one time in 1933 was 512. The number employed at the time this report was prepared was 544. Variations occur because of requirements dependent on the amount of work to be done at certain intervals. The reduction in working hours effected by the National Recovery Act and the growing demands made on the Association have compelled the employment of additional personnel in some departments.

The Board of Trustees desires to record its appreciation of the loyal and efficient service of the Association's employees.

Respectfully submitted

J. H. J. UPHAM, Chairman
AUSTIN A. HAYDEN, Secretary
ARTHUR W. BOOTH
D. CHESTER BROWN
ALLEN H. BUNCE
THOMAS S. CULLEN
JOSEPH A. PETTIT
ROCK SLESTER
C. B. WRIGHT

ADDENDA TO REPORT OF BOARD OF TRUSTEES

COMMITTEE ON THERAPEUTIC RESEARCH

The Committee on Therapeutic Research, a standing committee of the Council, encourages scientific investigations in the field of therapeutics by providing funds for the prosecution of necessary research.

During the year 1933 the committee made twenty-three new grants. A detailed list of these grants together with a list of publications during 1933 and of unexpired grants made before Jan. 1, 1933, is appended.

The following is a list of the investigations conducted with the assistance of grants made by the Therapeutic Research Committee, reports of which were published during 1933.

1. Studies on Respiration with Action Potential Methods—Robert Gesell *American Journal of Physiology* 105: 37-38 (July) 1933.
2. Researches on Nitrogenous Glycosides. II. The Synthesis of Glycosido Ureides. Katherine M. Haring and Treat B. Johnson *Journal of the American Chemical Society* 55: 395 (Jan.) 1933.
3. A Study of the Metabolic Activity of the Pancreas. Eugene I. Still, A. L. Bennett and V. B. Scott. *American Journal of Physiology* 106: 509 (Dec.) 1933.
4. The Absorption of Insulin from the Gastrointestinal Tract. I. The Effect of Calcium Lactate, Sodium Bicarbonate and Blood Serum in Pancreatized Dogs. A. G. Eaton and John R. Murlin. *American Journal of Physiology* 104: 636 (June) 1933.
5. Serum Sickness in Rabbits. IV. Influence of Various Sera upon the Occurrence of Serum Sickness. Moyer S. Fleisher and Lloyd Jones. *Journal of Immunology* 24: 369 (May) 1933.
6. Serum Sickness in Rabbits. V. Immediate and Accelerated Reactions. Moyer S. Fleisher and Lloyd Jones. *Journal of Immunology* 24: 383 (May) 1933.
7. The Relation of Serum Frictions to Serum Sickness in Rabbit. Moyer S. Fleisher and Lloyd Jones. *Proceedings of the Society for Experimental Biology and Medicine* 30: 1195 (June) 1933.
8. Protein as a Stimulant for Secretion of Pepsin in George R. Cowgill and Elizabeth R. B. Smith. *Proceedings of the Society for Experimental Biology and Medicine* 30: 1228 (June) 1933.
9. Meat Extracts as Stimulants for Secretion of Pepsin in Elizabeth R. B. Smith and George R. Cowgill. *Proceedings of the Society for Experimental Biology and Medicine* 30: 1284 (June) 1933.
10. Proteins as Stimulants for the Secretion of Pepsin. Elizabeth R. B. Smith and George R. Cowgill. *American Journal of Physiology* 105: 19 (Sept.) 1933.

11. Clinical Manifestations of Hypo and Hypermagnesaemia. Arthur D. Hirschfelder. *Journal of Clinical Investigation* 12: 982 (Sept.) 1933.
12. A Rapid Method for Determining Magnesium in Blood and Urine. Arthur D. Hirschfelder. *Journal of Clinical Investigation* 11: 841 (July) 1933.
13. Clinical Manifestations of Variations in Blood Magnesium—Hypo magnesaemia and Hypermagnesaemia. Arthur D. Hirschfelder. *Proceedings of the Society for Experimental Biology and Medicine* 30: 996 (April) 1933.
14. Clinical Effects of High and Low Blood Magnesium and of Renal Insufficiency on the Action of Soporific Drugs. Arthur D. Hirschfelder. *Journal of Pharmacology and Experimental Therapeutics* 48: 277 (July) 1933.
15. A Comparative Study of the Antidotal Action of Picrotoxin, Strychnine and Cocaine in Acute Intoxication by the Barbiturates. A. H. Maloney. *Journal of Pharmacology and Experimental Therapeutics* 49: 133 (Oct.) 1933.
16. Mercurial Inunctions in the Treatment of Syphilis. H. N. Cole, H. F. de Wolf, N. E. Schreiber, T. Sollmann and Joseph Van Clive. *Archives of Dermatology and Syphilology* 27: 111 (Jan.) 1933.

During 1933 the following grants were made:

- Grant 196. Arthur D. Hirschfelder, professor of pharmacology, University of Minnesota School of Medicine, \$250 to investigate the concentration of calcium and of magnesium in the blood in experimental and clinical conditions.
- Grant 197. Fred E. D. Amour, Department of Chemistry, University of Denver College of Liberal Arts, \$150 to investigate the effects of Provokol and related compounds.
- Grant 198. Roy R. Kracke, chairman of the Department and Associate Professor of Pathology, Emory University School of Medicine, \$250 to investigate bone marrow stimulation.
- Grant 199. Henry G. Barbour, associate professor of pharmacology and toxicology, Sterling Hall of Medicine, Yale University, \$250 to investigate the effects of metabolism and water exchange of long continued administration of morphine.
- Grant 200. Walter Bauer, Massachusetts General Hospital, the Robert W. Lovett Memorial Foundation of the Harvard Medical School, \$250 to investigate the anatomy and physiology of normal joints with special reference to rheumatoid arthritis.
- Grant 201. George R. Cowgill, associate professor of physiologic chemistry, Sterling Hall of Medicine, Yale University, \$250 to investigate vitamin B in relation to morphine addiction.
- Grant 202. Charles M. Gruher, professor of pharmacology, Jefferson Medical College of Philadelphia, \$200 to investigate the effects of drugs on Bell's muscle, trigon and fundus of the urinary bladder and of Dilaudid on the intestine of unanesthetized dogs.
- Grant 203. Louis N. Katz, physiologist and director of cardiovascular research, Nelson Morris Memorial Institute for Medical Research, Michael Reese Hospital, Chicago, \$250 to investigate the action of drugs on the coronary circulation.
- Grant 204. E. B. Krumhaar, professor of pathology, McManes Laboratory of Pathology, University of Pennsylvania School of Medicine, \$100 to investigate leukocyte attraction.
- Grant 205. J. T. McClendon, professor of physiologic chemistry, University of Minnesota Medical School, \$200 to investigate the relation of iodine to goiter.
- Grant 206. James H. Means, Massachusetts General Hospital, \$250 to investigate the effects of liver extracts on hematopoiesis in human subjects with pernicious anemia and in guinea pigs.
- Grant 207. Valy Meakin, department of pathology, Harvard Medical School, \$200 to investigate inflammation and tuberculosis in relation to immunity.
- Grant 208. John R. Murlin, director and professor of physiology, Department of Vital Economics, University of Rochester School of Medicine, \$150 to investigate the absorption of insulin from the alimentary tract.
- Grant 209. V. C. Myers, professor of biochemistry and T. C. Bing, Department of Biochemistry, Western Reserve University School of Medicine, \$250 to investigate iron metabolism.
- Grant 210. C. I. Reed, associate professor of physiology, University of Illinois College of Medicine, \$200 to investigate the use of viosterol 10,000 X in seasonal hay fever.
- Grant 211. Samuel R. M. Reynolds, Department of Physiology and Pharmacology, Long Island College of Medicine, \$150 to investigate the identification and standardization of Progesterin.
- Grant 212. William C. Rose, professor of physiologic chemistry, University of Illinois, \$375 to investigate the isolation of an unknown dietary essential present in proteins.
- Grant 213. Richard W. Whitehead, professor of physiology and pharmacology, University of Colorado School of Medicine and Hospitals, \$200 to investigate the influence of suprarenal cortex extract administration on the resistance to bacterial toxins.
- Grant 214. F. A. Park, professor of pediatrics and J. A. Pierce, Johns Hopkins University School of Medicine, \$200 to investigate the reaction of cartilage.
- Grant 215. William R. Amberson, professor of physiology, University of Tennessee College of Medicine, \$250 to investigate hemoglobin per fusion fluids.
- Grant 216. A. H. Maloney, head of the department and professor of pharmacology, Howard University School of Medicine, \$200 to investigate picrotoxin and coriamyrtin-barbiturate antagonism and dehydration and convulsant action of drugs.
- Grant 217. Henry B. Richard, professor of medicine, Cornell University Medical College, \$250 to investigate ex-hormone therapy.
- Grant 218. O. W. Barlow, assistant professor of pharmacology, Western Reserve University School of Medicine, \$150 to investigate the effects of a series of analeptics against pentobarbital, tribromethanol and chloral hydrate.

The following grants were issued before Jan 1, 1933. In some cases the grant has expired and an unexpended balance remains, or the work is not yet completed, or not yet published.

Grant 102 C W Greene, professor of physiology and pharmacology, University of Missouri Department of Physiology \$250 to investigate the distribution of nitrous oxide and oxygen in the blood during anesthesia.

Grant 119 Nicholas Kopeloff, research associate in bacteriology, New York State Psychiatric Institute and Hospital \$100, to investigate bacillus acidophilus milk for the prevention and treatment of summer diarrhea in babies.

Grant 143 Cleveland J White MD 104 South Michigan Avenue Chicago \$150 to investigate the local general and prophylactic aspects of superficial fungus diseases of the skin.

Grant 152 C W Greene, professor of physiology and pharmacology, University of Missouri School of Medicine \$300, to investigate the reaction of the coronary system to drugs.

Grant 164 E J Jackson, associate professor of pharmacology, Emory University School of Medicine, \$200 to investigate the antagonism between soluble barbitol and insulin.

Grant 166 Jern Oliver professor of pathology, Howard Laboratories, Johns Island College of Medicine, \$200 to investigate experimental nephritis in the frog.

Grant 168 N I Schreiber, research fellow Department of Pharmacology, Western Reserve University \$250, to investigate the excretion of mercury after oral administration.

Grant 169 C W Greene professor of physiology and pharmacology, University of Missouri School of Medicine \$250 to investigate the pharmacology of camphor and camphor derivatives.

Grant 170 Moyer S Fleisher, professor and director of Department of Bacteriology and Hygiene, St. Louis University School of Medicine \$250 to investigate serum sickness.

Grant 171 Ernest C Dickson professor of Department of Public Health and Preventive Hygiene, Stanford University School of Medicine \$250, to investigate therapeutic procedures against coccidioid granuloma.

Grant 174 Trent B Johnson Sterling professor of chemistry, Yale University \$250, to investigate protein sugar fractions and their antigenic properties.

Grant 180 A H Mafoney, head of the department and professor of pharmacology, Howard University School of Medicine \$200 to investigate picrotoxin barbiturate antagonism.

Grant 182 R R Krecke, chairman of the department and associate professor of pathology, Emory University School of Medicine, \$250 to investigate bone marrow stimulation.

Grant 186 Department of Pharmacology, Western Reserve University, \$370, to investigate the excretion of metris in syphilis therapy.

Grant 189 Moyer S Fleisher professor and director of Department of Bacteriology and Hygiene, St. Louis University School of Medicine \$250 to investigate serum sickness.

Grant 189 O W Barlow, assistant professor of pharmacology, Western Reserve University School of Medicine \$300 to investigate the effects of a series of analeptics against pentobarbital, tribrom ethanol and chloral hydrate.

Grant 191 Robert Gesell, professor of physiology, University of Michigan Physiology Laboratory \$250 to investigate action potentials involved in the control of respiration.

Grant 192 Carl J Wiggers professor of physiology, Western Reserve University School of Medicine, \$250 to investigate the effect of drugs on the coronary circulation in intact dogs.

Grant 193 J P Quigley, senior instructor in physiology, Western Reserve University School of Medicine \$150, to investigate gastro-intestinal motility.

Grant 194 Sara A Riedman, Columbia University College of Physicians and Surgeons \$200, to investigate the effect of a high fat or ketogenic diet on the susceptibility of animals to convulsions of experimental origin.

Report of the Committee on Scientific Research for 1933

During 1933, eighty-four applications for grants have been received. Thirty-seven awards have been made, the amount awarded is \$9,935. Thirty-seven applications have been declined, and ten are under consideration. The new grants support research in various fields of medicine. In all cases the money has been paid to the financial officer of the institution with which the grantee is connected, the grants being disbursed on requisitions by grantees, at the same time accurate accounts being kept of the disbursements. Recent reports by the grantees indicate that their work is making good progress except perhaps in one or two instances. The results of work under thirty-six grants prior to 1933 have been published or are in actual course of publication. The results of work under twenty-seven grants prior to 1933 are in the course of preparation for publication. In the case of twenty-three grants prior to 1933 active work is still in progress but in several cases reports on results have been published. Refunds amounting to \$1,191.78 have been made from grants.

The committee begs leave to recommend that as nearly as possible the same appropriation be made for 1934 as for 1933, namely, \$12,550 for grants in aid of medical research and \$1,200 for the expenses of the committee.

Financial statement for 1933 is presented, also brief accounts of the grants pending at the end of 1932 and a list of the grants made in 1933.

Respectfully submitted

COMMITTEE ON SCIENTIFIC RESEARCH OF
THE AMERICAN MEDICAL ASSOCIATION

N W JONES, Portland, Ore

Term expires, 1934

MARTIN H FISCHER, Cincinnati

Term expires, 1935

LUDWIG HEKTOEN, Chicago, Chairman.

Term expires, 1936

C C BASS, New Orleans

Term expires, 1937

JOHN J MORTON, Rochester, N Y

Term expires, 1938

GRANTS OF COMMITTEE ON SCIENTIFIC RESEARCH NEW GRANTS—1933

Grant 273 Gregory Schwartzman Mount Sinai Hospital New York, \$400 for study on antibodies to Rous sarcoma agent by local skin reactivity.

Grant 274 William C Rose University of Illinois Urbana \$300 for study of unknown dietary essential in casein.

Grant 275 John Guttman Post Graduate Medical School and Hospital New York \$400 for study of electric current produced by cochlea on stimulation by sound.

Grant 276 Jessie L King Goucher College Baltimore \$75 for study of effect of cortical extract on suprarenalctomized rats.

Grant 277 Gustav Zechel University of Illinois College of Medicine \$260 for study of growing malignant cells by moving photomicrographs.

Grant 278 Carl C Speidel University of Virginia Medical School \$100 for study of the myelin nerve sheath with polarized light.

Grant 279 E C Faust Tulane University \$800 for continuation of studies on Strongyloides stercoralis.

Grant 280 W T Dawson University of Texas School of Medicine \$200 for work on the relations between the chemical constitution and toxicity of cinchon alkaloids.

Grant 281 Arthur Knudson and Lloyd Ziegler Albany Medical College \$325 for study of the remote effects of rickets in rats.

Grant 282 Maurice B Visscher University of Illinois College of Medicine \$200 for study of the mechanical efficiency of the heart.

Grant 283 Philip B Armstrong, Cornell University Medical College, \$150 for study of drug action in relation to enervation of the heart.

Grant 284 Helen C Coombs New York Homeopathic Medical College and Flower Hospital \$600 for study of the bromide treatment of experimental convulsions.

Grant 285 M G Seelig Barnard Free Skin and Cancer Hospital St. Louis \$200 for a study of the carcinogenic action of dibenzanthracene 1, 2, 5, 6 and of scarlet red.

Grant 286 F H Pike Columbia University \$600 for study of the effects of successive experimental lesions of the nervous system.

Grant 287 Thomas D Masters, Springfield Hospital Springfield \$100 for work on available dextrose in certain common foodstuffs.

Grant 288 James L O Leary Washington University, \$175 for work on the nervous mechanisms controlling blood pressure.

Grant 289 Harry J Deuel Jr University of Southern California \$300 for further study of the sexual variation in carbohydrate metabolism.

Grant 290 Harry Goldblatt Western Reserve University \$150 for study of experimental hypertension in dogs.

Grant 291 C Alexander Hellwig St Francis Hospital Wichita \$50 for work on the thyroid gland and on thyrotropic substance in human urine.

Grant 292 Ludwig A Emge Stanford University School of Medicine \$200 for study of transplantable benign tumors during pregnancy.

Grant 293 Arthur Grollman Johns Hopkins University \$200 for study of the effects of the hormone of the suprarenal cortex.

Grant 294 Robert Hegner Johns Hopkins University \$300 for a study of the relation between intestinal starch and infections with protozoa.

Grant 295 W R Tweedy Loyola University School of Medicine \$350 for chemical studies on parathyroid hormone.

Grant 296 Alexander S Wiener Jewish Hospital of Brooklyn \$100 for work on agglutinogens M and N.

Grant 297 Erma A Smith Iowa State College \$150 for study of effect on the rat of sublethal amounts of illuminating gas.

Grant 298 Lewis H Hitzrot Philadelphia General Hospital \$100 for study of the therapeutic effect of alternate negative and positive pressure.

Grant 299 S W Ranson Northwestern University \$250 for study of cutaneous nerves in man.

Grant 300 J M Wolfe Vanderbilt University \$100 for study of histology of anterior hypophysis.

Grant 301 Allen D Keller University of Alabama \$500 for study of functions of brain stem.

Grant 302 Erwin Brand and G F Cahill New York State Psychiatric Institute and Hospital \$250 for research on cystinuria.

Grant 303 C C Speidel, University of Virginia Medical School \$250 for study of living nerves.

Grant 304 Frederic A Gibbs Boston City Hospital Boston \$200 for work on the convulsive center in the cat brain.

- Grant 305 John R Murlin, University of Rochester \$500 for study of the effect of sex hormones on energy metabolism
- Grant 306 S S Lichtman Mount Sinai Hospital New York \$350 for further study on estimation of bile salts in body fluids
- Grant 307 E K Marshall, Jr., Johns Hopkins University \$200 for study of the action of iodine compounds on experimental exophthalmic goiter in guinea pigs
- Grant 308 John L Ulrich Johns Hopkins University \$250 for study of the reflex system in the cat
- Grant 309 Carroll L Birch University of Illinois School of Medicine \$300 for work on assay of urine for sex hormone of the anterior pituitary

Financial Statement for 1933

Balance Jan 1 1933	\$ 2 364 27
Appropriation for 1933	13 750 00
Refund grant 184	19
Refund grant 197	173 35
Refund grant 198	94 00
Refund grant 201	34 80
Refund grant 203	64 22
Refund grant 224	44 68
Refund grant 226	36 07
Refund grant 237	56 25
Refund grant 245	182 22
Refund grant 251	5 02
Refund grant 257	106 70
Refund grant 259	125 49
Refund grant 261	1 49
Refund grant 273	267 30
	\$17 306 05

Grants and Expenses Paid in 1933

Grant 273 Gregory Schwartzman	\$ 400 00
Grant 274 William C Rose	300 00
Grant 275 John Guttman	400 00
Grant 276 Jessie L King	75 00
Grant 277 Gustav Zechel	260 00
Grant 278 C C Speidel	100 00
Grant 279 E C Faust	800 00
Grant 280 W T Dawson	200 00
Grant 281 Arthur Knudson and Lloyd H Ziegler	325 00
Grant 282 M B Visscher	200 00
Grant 283 Philip B Armstrong	150 00
Grant 284 Helen C Coombs	600 00
Grant 285 M G Seelig	200 00
Grant 286 F H Pike	600 00
Grant 287 Thomas D Masters	100 00
Grant 288 James L O'Leary	175 00
Grant 289 Harry J Deuel Jr	300 00
Grant 290 Harry Goldblatt	150 00
Grant 291 C Alexander Helliwig	50 00
Grant 292 Ludwig A Emge	200 00
Grant 293 Arthur Grollman	200 00
Grant 294 Robert Hegner	300 00
Grant 295 W R Tweedy	350 00
Grant 296 Alexander S Wiener	100 00
Grant 297 Erma A Smith	150 00
Grant 298 Lewis H Hitzrot	100 00
Grant 299 S W Ranson	250 00
Grant 300 J M Wolfe	100 00
Grant 301 Allen D Keller	500 00
Grant 302 Erwin Brand and G F Cahill	250 00
Grant 303 C C Speidel	250 00
Grant 304 Frederic A Gibbs	200 00
Grant 305 John R Murlin	500 00
Grant 306 S S Lichtman	350 00
Grant 307 E K Marshall Jr	200 00
Grant 308 John L Ulrich	250 00
Grant 309 Carroll L Birch	300 00
Clerical expense	600 00
Committee expense	361 90
Printing	18 64
	\$10 915 54
Balance on hand	6 390 51

STATE OF WORK UNDER PREVIOUS GRANTS

I COMPLETED DURING THE YEAR

Completed means that the work immediately aided by a grant has been concluded that full account has been made of the expenses and that the results of the work have been published or are in the course of publication

Grant 105 1927 \$1800 to H B Ward University of Illinois for study of life history of broad fish tapeworm endemic in man in northern Minnesota. For history of the grant and previous publication of results of work under it see the report of the committee for 1931. Articles not listed previously. Essex H E Early Development of *Diphyllobothrium Latum* in Northern Minnesota *J Parasitol* 14 106 1927. A New Larval Cestode Probably *Hymenolepis Cuneata* a Tapeworm of a Wild Duck *ibid* 18 291 1932. Dolley J S Preliminary Notes on the Biology of the St Joseph River *Am Midland Naturalist* 14 193 1933

Grant 107 1927 \$500 to H L Huber Chicago for work on the chemical and immunologic properties of the pollens of hay fever and allied conditions. Huber H L Critical Analysis of Information Obtained from Hay Fever Sufferers *J Allergy* 2 45 1930. Huber H L and Harsh G F A Summer Dermatitis Caused by a Common Weed *ibid* 3 578 1932. The following articles are in course of pub-

lication. Studies in Pollen Chemistry 1 An Evaluation of the Scarification Test as a Quantitative Measure of the Allergic Activity of Pollen Extracts 2 Miscellaneous Chemical Studies on the Pollen of the Large Ragweed (*Ambrosia trifida*) 3 The Tryptic and Peptic Digestion of Extracts of the Pollen of the Large Ragweed (*Ambrosia trifida*) 4 On the Question of a Volatile Fraction of Ragweed Pollen and Its Possible Etiologic Significance

Grants 177 and 192 1930 W T Dawson University of Texas School of Medicine Galveston \$250 for chemical and physiologic study of alkaloids of the cinchona series. Dawson W T and Newman S P Acquired Allergic Corneal Reactions to Quinine But Not to Quinidine or Quinine J A M A 97 930 1931. Sanders J P and Dawson W T Efficacy of Quinidine in Malaria J A M A 99 1773 1932. Bevil H G Hydroquinidine in Malaria *Am J Trop Med* 12 473 1932. Dawson W T Sanders J P and Tomlinson L M Differentiation of Optically Isomeric and Related Cinchona Alkaloids by Quinine Sensitive Subjects *J Immunol* 24 173 1933. Hone C T and others Hydrocinchonidine and Hydrocinchonine in Malaria *Am J Trop Med* 13 437 1933. This work is continued under grant 280, 1933

Grant 184 1930 Herbert F Thurston Indiana University Indianapolis \$300 for study of the suturing of blood vessels. Thurston H F and Lamb E B Circular Suture of Blood Vessels An Experimental Study *Arch Surg* 27 786 1933

Grant 187 1930 A R Johnston University of Cincinnati \$1000 for a study of the toxic action of poisonous amines. Fischer M H Suer W J and Johnston A R Colloid Chemical Properties of Some Protein Amine Compounds *Arch Path* (in course of publication)

Grant 195 1930 Helen T Parsons University of Wisconsin \$300 for further study of the physiologic effects of high protein diets (see grant 175, 1930 and 227 1931). Parsons Helen T and Kelly E The Effect of Heating Egg White on Certain Characteristic Pellagra Like Manifestations Produced in Rats by Its Dietary Use *Am J Physiol* 104 150 1933

Grant 196 1930 Ward W Summerville Institute of Pathology Western Reserve University \$150 for a study of the effects of anemia of the kidney. Summerville Ward W Hanzal R F and Goldblatt H Urea Clearance in Normal Dogs *Am J Physiol* 102 1 1932. The work is continued under grant 290 1933 to Harry Goldblatt

Grant 200 1931 C A Dragstedt Northwestern University Medical School \$250 (Van Zwalenburg Fund) for a study of experimental appendicitis and related problems. Dolyns G J and Dragstedt C A Intra Intestinal Pressure and Absorption from the Intestine *Proc Soc Exper Biol & Med* 30 707 1933

Grant 204 1931 Alan M Chesney Johns Hopkins Hospital \$1000 in aid of work on immunity in syphilis. Chesney A M Turner T B and Grauer F M Studies in Experimental Syphilis *Bull Johns Hopkins Hosp* 52 145 1933. A second and final article is in course of publication in the *Bulletin of Johns Hopkins Hospital*

Grant 207 1931 Maurice L Cohn National Jewish Hospital Denver \$250 for work on the cultivation of the tubercle bacillus (refund 11 cents). Corper H J and Cohn Maurice L Routine Clinical Examination for Tubercle Bacilli in Microscopic Negative Sputums by Various Culture Methods *J Lab & Clin Med* 18 515 1933. Cohn M L An Analysis of Loewenstein's Method for Isolating Tubercle Bacilli from Blood *J Infect Dis* 52 214 1933. Corper H J and Cohn M L The Nutrient Quality of Eggs for Growing Tubercle Bacilli *Am J Hyg* 18 1 1933

Grant 211 1931 Ward Giltner and I Forest Huddleson Michigan State College \$1500 for an investigation of Brucella infection in swine and in workers in packing plants (refund \$969 89). Huddleson I T Johnson Howard J and Hamann E E A Study of Brucella Infection in Swine and Employees of Packing Houses *J Am Vet Med A* 83 16 1933

Grant 213 1931 Harold G Grayzel The Jewish Hospital of Brooklyn \$500 for a study of experimental amyloidosis (refund \$27 14). Grayzel H G and others Experimental Studies in Amyloidosis *Proc Soc Exper Biol & Med* 28 172 1930. Final report in course of publication (*Arch Path*)

Grant 216 1931 W R Tweedy, Loyola University School of Medicine Chicago \$750 for continuation of work under grants 143 and 146 1928 on the parathyroid hormone. McJunkin T A Tweedy W R and Breuhaus H C The Parathyroid Hormone *Arch Path* 14 649 1932. Tweedy Wilbur R and Torigoe Masamichi Chemical Studies on a Parathyroid Hormone *J Biol Chem* 99 155 1932

Grant 214 1931 Harry J Deuel Jr University of Southern California School of Medicine \$600 for work on ketosis. Deuel Harry J Jr and Culick Margaret The Sexual Variation in Starvation Ketosis *J Biol Chem* 96 25 1932. Deuel H J Jr Machay Eaton M Jewel Paul W Gulick Margaret and Grunewald Carl F Studies on Ketosis III *J Biol Chem* 101 301 1933

Grant 215 1931 Daniel A McGinty Emory University Georgia \$150 for a study of the absorption of lactic acid dextrose and oxygen by the heart muscle in continuation of work under grant 185 1930. McGinty D A and Miller A T Jr Studies on the Coronary Circulation II The Absorption of Lactic Acid and Glucose and the Gaseous Exchange of Heart Muscle *Am J Physiol* 103 712 1933

Grant 217 1931 F B Hart and C A Elvehjem University of Wisconsin \$600 toward a study of phosphorus in rachitic and normal blood. Stare F J and Elvehjem C A The Phosphorus Partition in the Blood of Rachitic and Nonrachitic Calves *J Biol Chem* 97 511 1932. Elvehjem C A and Kline B E Calcium and Phosphorus Studies in the Chick *J Biol Chem* 103 733 1933

Grant 219 1931 Norbert Enzer Mount Sinai Hospital Milwaukee \$100 for an investigation of the gases produced by the combustion of x-ray films. Ballard Grace An Investigation of the Gaseous Decomposition Products of X-Ray Films *Radiology* 20 18 1933

Grant 222 1931 C E Burget University of Oregon Medical School \$0 toward investigation of absorption from the closed intestinal loop. Schwichtenberg C and Burget G F Closed Loop Fluid *Proc Soc Exper Biol & Med* 20 16 1931. Smith Vera The Isoterial Flora

of Isolated Intestinal Segments, *J Infect Dis* 18 295 1931 Moore, Philip, H., Lloyd, R. W., and Burget G. E. The Copper Reduction Values of Mannose Under Certain Fixed Conditions, *J Biol Chem* 97 345, 1932 Burget, G. E., Lloyd, Robert and Moore, Philip Absorption Rates of Galactose and Mannose, *Proc Soc Exper Biol & Med* 30 368 1932 Burget, G. E., Moore P. H., and Lloyd R. W. Absorption of Glucose by Chronic Loops of Colon, *Am J Physiol* 105 187 1933

Grant 223 1931 Geza de Takats Northwestern University Medical School, \$600 for aid in studying the effect of celine ganglionectomy on sugar tolerance de Takats Geza and Cuthbert F. P. Effect of Celine Ganglionectomy on Sugar Tolerance of Dogs *Proc Soc Exper Biol & Med* 20 217 1931 de Takats Geza and Cuthbert F. P. The Effect of Celine Ganglionectomy on the Sugar Tolerance of Dogs *Am J Physiol* 102 614 1932

Grant 224 1931 Owen H. Waungensteen University of Minnesota \$600 in aid of a study of intestinal obstruction in continuation of work under grant 188 1930 Waungensteen Owen H. and Carlson, H. A. Histologic Study of Intestine in Simple Obstruction *Proc Soc Exper Biol & Med* 20 421 1932 Waungensteen Owen H., and Scott H. G. Length of Life Following Various Types of Strangulation Obstruction in Dogs, *ibid* 10 424, 1932 Blood Pressure Changes Correlated with Time, Length and Type of Intestinal Strangulation in Dogs *ibid* 20 428 1932 Scott H. G. and Waungensteen Owen H. Effect of Intravenous Injections of Peritoneal Fluids from Dogs with Intestinal Strangulation, *ibid* 20 559 1932 Blood Losses in Experimental Intestinal Strangulation *ibid* 20 748 1932

Grant 227 1931 Helen T. Parsons University of Wisconsin \$300 for a continuation of an investigation of the physiologic effects of egg white in continuation of previous work under grants 175 and 195 1930 Parsons Helen T. and Kelly E. The Character of the Dermatitis Producing Factor in Dietary Egg White as Shown by Certain Chemical Treatments *J Biol Chem* 100 645, 1931

Grant 232 1932 Lawrence H. Snyder, Ohio State University \$50 for work on hereditary factors in congenital deafness Tinkle, William J. Deafness as a Eugenic Problem *J Heredity* 21 11, 1933

Grant 234 1932 Alfred Freidlander Cincinnati General Hospital \$250 for study of temperature variations in different parts of the skin Temperature Studies with Reference to Vascular Diseases *J H Conway M S University of Cincinnati thesis* 1932 (The placement of the thesis in the library of the University of Cincinnati has been accepted as equivalent in this case to publication)

Grant 237 Israel S. Kleiner New York Homeopathic Medical College and Flower Hospital \$500 to investigate the possible presence of a lactose splitting or lactose synthesizing enzyme in mammary tissue (refund \$625) Kleiner Israel S. and Trauber Henry Enzymes of the Mammary Gland *J Biol Chem* 99 241 1932 Trauber, Henry and Kleiner Israel S. A Method for the Determination of Monosaccharides in the Presence of Disaccharides and Its Application to Blood Analysis *ibid* 99 249 1932 Trauber Henry The Chemical Nature of Emulsin, Rennin and Pepsin *ibid* 99 257 1932

Grant 241 1932 N. Michels Jefferson Medical College \$200 for study of erythropoiesis Michels Nicholas Aloysius Susceptibility of the Omentum of Rabbits to a Single Erythema Dose (400 r) of Roentgen Rays *Am J Anat* 52 333 1933

Grant 242 1932 Ernest Carroll Faust Tulane University \$1000 for a study of strongyloidosis Faust Ernest Carroll and Kary Edwin S. Experimental Studies on Human and Primate Species of Strongyloides I. The Variability and Instability of Types *Am J Trop Med* 17 47 1933 Kreis Hrus A., and Faust Ernest Carroll Two New Species of Rhabditis (Rhabditis Microcera and R. Clavopapillata) Associated with Dogs and Monkeys in Experimental Strongyloidosis Studies *Tr Am Microscop Soc* 52 162 1933 Faust Ernest Carroll Experimental Studies on Human and Primate Species of Strongyloides II. The Development of Strongyloides in the Experimental Host *Am J Hyg* 18 114 1933

Grant 244 1932 Theodore Cornbleet University of Illinois Medical School \$250 for study of self sterilization of the skin Cornbleet Theodore Self Sterilizing Powers of the Skin, *Arch Dermat & Syph* 27 756, 28 526 1933

Grant 245 1932 M. S. Burman Hospital for Joint Diseases New York, \$200 for study of the fluorescence of cartilage (refund \$182.22) Sutro Charles J., and Burman Michael S. Visualization of the Biliary System by Fluorescence *J A M A* 99 2024 1932 Burman, Michael S. and Sutro Charles J. Fluorescence of Cartilage Exposed to Filtered Ultraviolet Radiation *Arch Path* 15 537 1933

Grant 251 1932 Esther B. Tietz University of Cincinnati \$250 for work on so called pseudopregnancy in rabbits (refund \$5.02) Tietz E. B. The Humoral Excitation of the Nesting Instinct in Rabbits, *Science* 78 316 1933

Grant 252 1932 Bernhard Steinberg Toledo Hospital \$250 for work on protection of the peritoneum against infection Steinberg Bernhard A Rapid Method of Protecting the Peritoneum Against Peritonitis *Arch Surg* 24 308 1932 Steinberg Bernhard An Improved Method of Protecting the Peritoneum of Dogs Against Fatal Colon Bacillus Infection, *Proc Soc Exper Biol & Med* 20 1018 1932 Steinberg Bernhard and Goldblatt Harry Protection of Peritoneum against Infection *Surg Gynec & Obst* 57 15 1933

Grant 256, 1932 Allen D. Keller University of Alabama \$500 for work on the functions of the brain stem See grant 301 1933 Keller Allen D. Observations on the Localization in the Brain Stem of Mechanisms Controlling Body Temperature *Am J M Sc* 185 746 1933 D'Amour M. C. and Keller, A. D. Blood Sugar Studies Following Hypophysectomy and Experimental Lesions of Hypothalamus *Proc Soc Exper Biol & Med* 30 1175 1933 Keller A. D. Hare W. K. and D'Amour, M. C. Ulceration in Digestive Tract Following Experimental Lesions in Brain Stem *Proc Soc Exper Biol & Med* 30 772 1933

Grant 257 1932 M. G. Seelig, Barnard Free Skin and Cancer Hospital St. Louis \$500 for work on blood diastase in cancer (refund \$356.70) Tureen Louis L. Blood Diastase in Cancer *Arch Path* 15 834 1933

Grant 262 1932 C. Alexander Hellwig St. Francis Hospital Wichita, \$100 for study of the effect of iodine on the thyroid gland of the white rat Hellwig, C. Alexander Die Lebenskurve der nordamerikanischen Schilddrüse Endokrinologie 12: 323 1933 Hellwig C. Alexander Histologic Changes in the Thyroid Gland of the Rabbit Following Injection of Urine *Arch Path* 15 321, 1933 (The work is continued under grant 291, 1933)

Grant 260, 1932 Frank R. Menne University of Oregon \$150 for study of the structural changes in the heart in hyperthyroidism Menne F. R., Jones N. O., and Jones N. W. Changes in Myocardium of Rabbits etc (in course of publication in *Archives of Pathology*)

Grant 263 1932 H. J. Deuel, Jr. University of Southern California \$500 for a study of the cause of difference in carbohydrate metabolism between the sexes Butts Joseph S. and Deuel Harry J. Jr. The Sexual Variation in Carbohydrate Metabolism *J Biol Chem* 100 415 1933

Grant 264, 1932 William H. Welker University of Illinois Chicago \$200 for the preparation and study of hematin in its relation to the benzidine and other tests for blood Johnson Clarence A. The Peroxidase Activity of Hematin *Arch Path* 16 667, 1933

2 INCOMPLETE

A Work under the grant completed, account rendered of expenses but results not published fully

Grant 118 1927 \$1,000 to Edward Reynolds and E. A. Hooton Harvard University, for study of the mechanism of erect posture

Grant 167 1929 \$500 to Hans Jensen, Johns Hopkins University for aid in the chemical and physiologic study of toad poisons (refund \$60.81) Jensen Hans and Chen K. K. Chemical Studies on Toad Poisons *J Biol Chem* 87 741 and 755, 1930 Jensen Hans *Science* 75 53 1932

Grant 181 1930 Erwin Brand New York State Psychiatric Institute and Hospital \$700 for research in cystinuria (refund \$366.61) See grant 302 1933

Grant 182 1930 Icie G. Macy Merrill Palmer School Detroit \$500 for a study of vitamins A and B in human breast milk Donelson Eva and Macy Icie G. Human Milk Studies *Am J Physiol* 100 470 1932

Grant 189 1930 Ralph H. Major University of Kansas Lawrence \$500 for study of depressor substances in the brain liver and pancreas Major, Ralph H., Manning J. B. and Weber C. J. A Comparison of the Properties of Certain Tissue Extracts Having Depressor Effects *J Physiol* 76 487 1932 Weber C. J., Manning J. B. and Major Ralph H. Isolation of a Crystalline Depressor Substance from the Brain *Proc Soc Exper Biol & Med* 30 513 1933

Grant 194 1930 C. H. Thienes University of Southern California Los Angeles \$500 for study of the relationship between the myenteric plexus and ganglions and the mesenteric nerves Shulter Lilian and Thienes C. H. Analysis of the Actions of Cocaine on Excised Smooth Muscles *Proc Soc Exper Biol & Med* 28 994, 1931 Hendricks Max D. and Thienes C. H. A Pharmacologic Study of the Inhibitory Mesenteric Nerves to the Intestines *ibid* 28 993 1931

Grant 201 1931 J. H. Black Baylor University College of Medicine \$100 for study of the relation of certain pollen fractions (refund \$34.80)

Grant 202 1931 James T. Case and C. A. Aldrich Evanston Hospital Evanston, Ill. \$250 for roentgenologic and clinical study of the thymus

Grant 203 1931 W. J. Merle Scott University of Rochester School of Medicine and Dentistry \$300 toward a study of the role of the suprarenal cortex in pyogenic infections (refund \$64.22) Scott, W. J. Merle and others The Influence of Adrenal Cortex Extract on the Resistance to Certain Infections and Intoxications *Epidemiology* 17 529 1933

Grant 209, 1931 Wilbur A. Selle University of Texas School of Medicine \$150 for a study of the carbohydrate metabolism in its relation to the growth of tumors (See grant 243 1932)

Grant 210 1931 Harold E. Himwich Yale University School of Medicine \$500 for a study of fat metabolism in diabetes Himwich Harold E. and Spiers M. A. The Degree of Saturation of Blood Fats Mobilized During Diabetes *Proc Soc Exper Biol & Med* 20 235 1933

Grant 220 1931 David Polowe Paterson N. J. and Memorial Hospital, New York \$100 for a study of the specific gravity of the blood in human cancer

Grant 225 1931 R. S. Cunningham Vanderbilt University, Nashville Tenn. \$500 toward a study of the cellular reactions in experimental syphilis with respect to the effects of treatment Cunningham, R. S. and associates The Cellular Pathology of Experimental Syphilis as Studied by the Supravital Method *Am J Syph* 17 515, 1933

Grant 226 1931 Warren C. Hunter University of Oregon Medical School \$100 for a study of the effect of cinchophen on the liver of the dog (refund \$36.07)

Grant 229 1931 Timothy Leary Office of the Medical Examiner Boston \$810 toward a study of the effect of alcohol and insulin on the deposition of cholesterol in the animal body Leary Timothy Human Coronary and Experimental Rabbit Atherosclerosis A Comparison of Lesions, *New England J Med* 209 1132 1933

Grant 230 1932 Alexander S. Wiener Jewish Hospital of Brooklyn \$50 for a study of agglutinin N See grant 296 1933

Grant 240 1932 William D. McNally, Rush Medical College \$500 for a study of the effect of tobacco tar on the lungs of rats and other animals McNally, W. D. The Tar in Cigarette Smoke and Its Possible Effects, *Am J Cancer* 16 1502, 1932

Grant 243 1932 Wilbur A. Selle University of Texas Medical School \$250 for work on the relationship between carbohydrate metabolism and the growth rate of experimental tumors See grant 209 1932

Grant 247 1932 Wilson D. Langley University of Buffalo \$250 for work on the formation of acetone bodies in diabetic animal tissue

Grant 248 1932 Helen C. Coombs New York Homeopathic Medical College and Flower Hospital \$575 for work on the relationship between epilepsy and tetany Coombs Helen C. Combined Effects of Drugs and Electrical Excitation of Cortical Motor Area in Cats, *Proc Soc*

Exper Biol & Med 30 1, 1932 Coombs Helen C and Searle Donald S Calcium Phosphorus of the Blood Serum During Cerebral Anemia *Am J Physiol* 105, 1933

Grant 249 1932 Arthur H Smith Yale University \$350 for a study of the acid base balance and the osmotic pressure of the blood of stunted albino rats

Grant 253 1932 Willard O Thompson Rush Medical College \$250 for study on the influence of thyroxine on the toxic effects of arsenphen amine and acetonitrile (See grant 268 1932)

Grant 259 1932 Daniel A McGinty, Emory University \$150 for study of lactic acid dextrose and oxygen absorption and carbon dioxide production by heart muscle (refund \$125 49) Thompson W O and others Effect of Alkali on the Absorption of Thyroxine from the Gastrointestinal Tract *Arch Int Med* 52 809 1933

Grant 261 1932 R S Cunningham Vanderbilt University \$300 for work on the effects of certain colloidal solutions on experimental syphilis (refund \$1 49) Cunningham R S and associates The Effect of Trypan Blue on Experimental Syphilis in the Rabbit *Am J Syph* 17 572 1933

Grant 265 1932 S W Ranson Northwestern University Chicago \$400 for study of structure and function of cutaneous nerves in man Ranson S W Cutaneous Sensation *Science* 78 395 1933

Grant 268 1932 W O Thompson Rush Medical College \$250 for study of relation between thyroxine and glutathione oxidation system (See grant 253 1932)

Grant 272 1932 Joseph L Donnelly University of Cincinnati \$750 for work on the coagulation of biologic materials Donnelly J L On the Physiological Effects of Radio Waves *Science* 78 290 1933

B Active work still in progress

Grant 133 1928 \$715 to F Lowell Dunn University of Nebraska for spectrophotometric analysis of biologic fluids Dunn F Lowell A Cylindrical Rotating Sector Photometer *Rev Scient Instruments* 2 807 1931

Grant 167 1929 \$100 to J P Simonds, Northwestern University Medical School for a study of the action of cinchophen and its derivatives on the liver Churchill T P and Van Wagoner F H Cinchophen Poisoning *Proc Soc Exper Biol & Med* 28 581 1931 Van Wagoner F H and Churchill T P Production of Gastric and Duodenal Ulcers in Experimental Cinchophen Poisoning *J A M A* 99 1859 1932 Churchill T P and Manshardt D O Experimental Production of Gastric and Duodenal Ulcers in Dogs in Cinchophen Poisoning *Proc Soc Exper Biol & Med* 30 825 1933 Van Wagoner F H and Churchill T P Production of Gastric and Duodenal Ulcers in Experimental Cinchophen Poisoning of Dogs *Arch Path* 14 860 1932

Grant 163 1929 \$750 to George Hermann Tulane University School of Medicine for the study of problems of the circulation (refund \$17 80) The work under this grant will be carried on to completion by Roy H Turner assistant professor of experimental medicine Tulane University

Grant 174 1930 Alfred R Ross College of Medical Evangelists Loma Linda Calif, \$1 455 for study of bay fever pollens in the Southwest

Grant 179 1930 George T Pack Memorial Hospital New York \$300 for a study of certain clinicopathologic problems of melanoma (See grant 231 1932)

Grant 183 1930 Robert W Hegner Johns Hopkins University \$1 500 for study of host parasite relations in man in continuation of work under previous grants 101 (C A Brant Fund) 1926 125 1927 and 154 1929 For list of articles on results of work under this grant see the report of the committee for 1931 New articles Fish F Quantitative and Statistical Analyses of Infections with *Eimeria Tenella* in the Chicken *Am J Hyg* 14 560 1931 Stabler R M An Extended Study of Variations in a Single Race of a Coli-like Amoeba and Its Bearing on the Specificity of Councilman's Lafeuri *ibid* 16 1 1932 Hegner Robert W Differential Reactions of Species and Strains of Trichomonad Flagellates to Changes in the Environment *ibid* 16 513 1932 Swezey W W The Transition of Troglodytella Abrassarti and Troglodytella Abrassarti Acuminata Intestinal Ciliates of the Chimpanzee from One Type to the Other *J Parasitol* 19 1 1932

Grant 198 1931 Gilbert Dalldorf (Robert L Dickinson) Grasslands Hospital Valhalla N Y \$200 for a study of the human uterus by casts and in other ways (refund \$94 00)

Grant 218 1931 Clayton J Lundy Rush Medical College Chicago \$1 000 toward making animated motion pictures of the actions of the heart in health and in disease

Grant 231 1932 George T Pack Memorial Hospital New York \$500 to complete an analysis of 300 cases of melanoma (See grant 1 9 1930)

Grant 233 1932 Detlev W Bronk University of Pennsylvania School of Medicine \$550 for studies on the nervous regulation of the circulation Bronk D W and Ferguson L K Impulses in Cardiac Sympathetic Nerves *Proc Soc Exper Biol & Med* 30 339 1932

Grant 235 1932 E A Smith Iowa State College \$100 for study of the effects of illuminating gas and amyl acetate on the rat (See grant 297 1933)

Grant 236 1932 C H Thienes University of Southern California \$400 for studies on the relation of the mesenteric nerves to the myenteric ganglions and plexuses (See grant 194 1930)

Grant 238 1932 Harold E Himwich Yale University \$1 000 to study the relation of the autonomic nervous system to metabolism and effect of alcohol on metabolism Himwich H E and associates Effects of Alcohol on Metabolism *Am J Physiol* 101 57 1932 Metabolism of Alcohol *J A M A* 100 651 1933

Grant 239 1932 Victor C Jacobson Albany Medical College \$1 000 for a study of transplantable mouse melanoma

Grant 246 1932 W C Langston and Paul L Day University of Arkansas \$400 for a study of vitamin G deficiency in the monkey with special reference to catarract

Grant 250 1932 S S Lichtman Mount Sinai Hospital New York \$400 for work on a method of estimating bile salts in body fluid

Grant 254 1932 J Lisle Williams McCormick Institute Chicago \$200 for work on decreased dextrose tolerance in acute infectious diseases

Grant 255 1932 Max Wishnofsky Jewish Hospital of Brooklyn \$100 for work on problems in carbohydrate metabolism

Grant 266 1932 Herbert S Landes Loyola University Chicago \$400 for study of the mechanics of residual urine

Grant 267 1932 M S Dooley Syracuse University \$200 for study of the blood supply of individual heart muscle bundles

Grant 270 1932 Edwin F Hirsch St Luke's Hospital Chicago \$500 for determination of copper and active iron in tissues in infection and toxemia

Grant 271 1932 S S Lichtman Mount Sinai Hospital New York \$75 to complete methods for estimating bile salts in normal body fluids (See grants 250 1932 and 306 1933)

Grant 269 1932 M M Wintrobe Johns Hopkins Hospital \$250 for study of vertebrate red corpuscles Wintrobe M M Variations in the Size and Hemoglobin Content of Erythrocytes in the Blood of Various Vertebrates *Folia haemat* 51 32 1933

3 DISCONTINUED (NO RESULTS PUBLISHED)

Grant 205 1931 Robert M Oslund University of Illinois College of Medicine \$150 for a histologic study of the bones and teeth as influenced by the anterior lobe of the hypophysis (refund \$25 20) Owing to the depression the grantee has not been able to carry his work to completion

Grant 197 1931 J J Morton University of Rochester School of Medicine and Dentistry \$250 (Van Zwalenburg Fund) for a study of the causes of appendicitis (refund \$173 35)

TREASURER'S REPORT

Report of the Treasurer of the American Medical Association for the year ended December 31 1933

Reserve Invested as at December 31 1932		\$1 895 831 38
Balance for Investment December 31 1932	\$100 123 74	
Interest on Investments	77 061 33	
Interest on Monthly Bank Balance	339 82	177 524 89
Invested and Uninvested Reserve as at December 31 1933		<u>\$2 073 356 27</u>

DAVIS MEMORIAL FUND

Balance Fund December 31 1932	\$6 460 69
1933 Interest on Bank Balance	162 51
Total Fund as at December 31 1933 on Deposit	<u>\$ 6 623 20</u>

HERMAN L KRETSCHMER, Treasurer

AUDITOR'S REPORT

January 31, 1934

To the Board of Trustees,

American Medical Association Chicago, Illinois

Dear Sirs

In accordance with instructions, we have examined the accounts of the American Medical Association, for the year ended December 31, 1933, and have prepared therefrom, and append hereto the statements undermentioned

Exhibit "A"—Balance Sheet as at December 31, 1933

Exhibit "B"—Income Account, for the year ended December 31, 1933

Schedules for the year ended December 31, 1933

Schedule "1"—Journal Operating Expenses

Schedule "2"—Association and Miscellaneous Expenses

In our opinion, based on our examination and information furnished to us the accompanying Balance Sheet and relative Income Account set forth the financial condition of the Association as at December 31, 1933 and the result of its operations for the year ended on that date subject to the following qualifications and observations

(1) The inventories of Materials Supplies and Work in Progress in the amount of \$89 398 49 are stated in accordance with affidavits sworn to by responsible officials of the Association and have not been confirmed by us in any way

(2) In accordance with the established practice of the Association no provision has been made for (a) accrued interest on bonds (b) membership dues unpaid (c) accrued salaries and wages (d) accrued property taxes for the year 1933 and (e) accrued legal fees

(3) Subscriptions paid in advance represent an estimated amount based on cash received for subscriptions for the year 1934 received in the month of December 1933 This conforms with the method used in prior years

(4) Advance payments on publications represent an estimated amount of prepaid subscriptions to *HYGIEA* \$104 514 87 plus \$38 095 28 received in advance for January advertising and directory sales and service

During the year ended December 31 1933 the Association wrote down the value of its real estate to the extent of \$40 000 00

to provide for an estimated decrease in the value of its realty holdings. The aforesaid write-down was charged to Capital Account. We were informed that this charge of \$40,000.00 to the Capital Account would be brought to the attention of the Board of Trustees at its next meeting for proper approval.

We have received a letter from Messrs. Loesch, Scofield, Loesch & Burke, acting as attorneys for the Association, stating that during the year ended December 31, 1933, four lawsuits against the Association or against some official for whose alleged libel the Association was sought to be made liable, have been definitely terminated without liability for damages against the Association. Also that at December 31, 1933, there is one remaining lawsuit still pending with respect to which the attorneys are hopeful of a favorable outcome and termination of same during the year 1934. We have also received a certificate from an official of the Association stating that there are no contingent liabilities at December 31, 1933, other than the lawsuit aforementioned which it believes will be decided favorably to the Association.

Fidelity insurance is carried against the undermentioned officers and employees of the Association in the amounts here stated:

Dr. Olin West, General Manager	\$10,000.00
Dr. Herman I. Kretschmer, Treasurer	10,000.00
F. C. Shelly, Cashier	10,000.00
F. A. Hoffman, Assistant Cashier	2,000.00
Sundry Employees (eight \$1,000.00 each)	8,000.00
Total Fidelity Insurance	<u>\$40,000.00</u>

We have pleasure in reporting that the books are well maintained and that every facility was afforded us for the proper conduct of the examination.

Yours truly, PEAT, MARWICK, MITCHELL & CO

STATEMENTS

EXHIBIT 'A'

BALANCE SHEET AS AT DECEMBER 31 1933

ASSETS	
Property and Equipment (at cost less depreciation)	
Real Estate and Building	\$ 691,707.30
Machinery	108,262.98
Type and Metal	12,061.60
Furniture and Equipment	44,177.04
Chemical Laboratory	2,637.93
Total Property and Equipment	<u>\$ 858,786.85</u>
Investments (at cost)	
U. S. Government Securities	\$1,000,577.13
Railroad Municipal and other bonds	895,254.25
	<u>1,895,831.38</u>
Cash held by Treasurer for Investment	177,524.89
Cash in Banks and on Hand	198,286.13
Temporary Investment—Certificate of Deposit	100,000.00
Accounts receivable	
Advertising	\$ 59,309.26
Co-operative Medical Advertising Bureau	8,006.90
Reprints	6,208.09
Miscellaneous	5,586.40
	<u>79,110.65</u>
Notes Receivable	379.43
Inventories of Materials, Supplies and Work in Progress	89,398.49
Expenditure on Publications in Progress	49,511.95
Prepaid Expenses—Insurance, etc.	1,695.74
Total	<u>\$3,450,525.51</u>
LIABILITIES	
Accounts Payable	
Co-operative Medical Advertising Bureau	\$ 7,727.49
Miscellaneous	14,390.50
	<u>\$ 22,117.99</u>
Subscriptions Paid in Advance	102,330.96
Advance Payments on Publications	142,610.15
Net Worth	
Association Reserve Fund	\$ 250,000.00
Building Reserve Fund	750,000.00
Capital Account	
Amount thereof as at December 31, 1932	\$2,125,866.10
Adjustment of Reserve for Taxes for 1931	9,135.27
	<u>\$2,135,001.37</u>
Less—Depreciation of Real Estate—Special Provision	40,000.00
	<u>\$2,095,001.37</u>
Net Income for the year ended December 31, 1933	88,465.04
	<u>2,183,466.41</u>
Net Worth as at December 31, 1933	<u>3,183,466.41</u>
Total	<u>\$3,450,525.51</u>

EXHIBIT 'B'

INCOME ACCOUNT

FOR THE YEAR ENDED DECEMBER 31, 1933

JOURNAL	
Gross Earnings	
Fellowship Dues and Subscriptions	\$ 539,464.45
Advertising	714,594.94
Jobbing	84,141.94
Reprints	4,910.23
Books	18,597.85
Insignia	4,436.14
Miscellaneous Sales	7,416.60
Interest	1,127.53
Gross Earnings from Journal	<u>\$1,375,337.58</u>
Operating Expenses—Schedule '1'	836,924.01
Net Earnings from Journal	<u>\$ 538,383.95</u>
Miscellaneous Income	
Rents	\$ 1,200.00
Sundry Publications	12,240.68
	<u>13,440.68</u>
Association Income	
Income from Investments	\$ 77,407.83
Miscellaneous Income	5,929.38
	<u>83,337.21</u>
Gross Income	<u>\$ 635,156.84</u>
Association Expenses—Schedule 2	\$ 333,730.40
Miscellaneous Expenses—Schedule 2	212,961.40
	<u>546,691.80</u>
Net Income	<u>\$ 88,465.04</u>

SCHEDULE '1'

JOURNAL OPERATING EXPENSES

FOR THE YEAR ENDED DECEMBER 31 1933

Wages and Salaries	\$ 399,676.44
Editorials, News and Reporting	11,566.40
Paper—Journal Stock	164,877.66
Paper—Miscellaneous	4,045.51
Electrotypes and Engravings	17,600.37
Binding	1,198.24
Ink	6,806.30
Postage—First Class	34,287.69
Postage—Second Class	47,177.43
Journal Commissions	12,684.10
Collection Commissions	2,006.34
Discounts	24,519.00
Express and Cartage	4,418.66
Exchange	3,383.40
Office Supplies	2,097.71
Telephone and Telegraph	2,948.77
Office Jobbing	10,567.11
Power and Light	6,829.63
Factory Supplies	10,366.65
Repairs and Renewals—Machinery	4,147.97
Miscellaneous Operating Expenses	70,207.89
Losses on Bad Debts and Sales of Equipment	4,106.25
Total JOURNAL Operating Expenses before provision for Depreciation	<u>\$ 795,843.67</u>

Depreciation on Equipment (computed on diminishing balances)	
Machinery	% 20 \$27,065.75
Furniture and Equipment	% 20 8,944.97
Factory Equipment	% 20 2,099.30
Type	% 20 1,241.17
Metal	% 20 1,759.23
Total Journal Operating Expenses	<u>\$ 836,934.01</u>

SCHEDULE '2'

ASSOCIATION AND MISCELLANEOUS EXPENSES

FOR THE YEAR ENDED DECEMBER 31, 1933

Association Expenses	\$ 104,964.75
Association	12,976.40
Health and Public Instruction	30,725.12
Pharmacy and Chemistry	12,613.49
Food Committee	21,874.44
Chemical Laboratory	65,063.10
Medical Education and Hospitals	4,767.48
Therapeutic Research	29,248.94
Legal Medicine and Legislation	19,979.93
Bureau of Investigation	17,466.34
Bureau of Medical Economics	10,877.06
Physical Therapy	2,146.97
Bureau of Association Exhibits	650.00
New Property	659.48
Laboratory Depreciation (20% on diminishing balances)	
Total Association Expenses	<u>\$ 333,730.40</u>
Miscellaneous Expenses	
Insurance and Taxes	\$ 16,587.90
Legal and Investigation	20,360.90
Building Expenses	27,116.93
Building Depreciation (5% on diminishing balances)	21,204.68
Library—Books, Obsolete	339.17
Fuel	5,415.16
Sundry Publications	121,936.04
Total Miscellaneous Expenses	<u>\$ 212,961.40</u>

REPORT OF THE JUDICIAL COUNCIL

To the Members of the House of Delegates of the American Medical Association

While no appeals from actions by state associations have been made during the year, the work of the Council has approximated the amounts of previous years. To the Council comes a steady stream of inquiries, complaints and demands concerning ethical subjects. Most of these arise from some economic situation and fall naturally into one of four classifications: (1) to be sure that contemplated action is strictly within ethical principles, (2) to learn how far departure from the established principles can extend without serious results, (3) a justification of a violation of the principles on the ground that others are doing so, and so why not they or (4) complaints against situations, occurrences or individuals with the demand that the national organization apply corrective measures. Actual situations are described by some, requesting opinions as to the ethical or unethical standing of them. Others cite hypothetical situations with the same request.

Careful consideration is given to all letters, and such help and advice are given as seem proper in each case but care always is taken not to commit the Council beyond its constituted limits or good judgment. Considerable time is spent and effort made to find past decisions and reports of the Council and actions by the House of Delegates that might be applicable to the situation at hand. Frequently appreciation and satisfaction are expressed by the correspondent, but many times dissatisfaction, criticism and fault finding that the officers of the Association do not quell the evils complained of.

The larger proportion of the writers have complaints to make demanding correction by the Judicial Council or the officials of the American Medical Association of situations as they appear to the writers. This correspondence comes largely from individuals, but a fair amount is from county medical societies or their committees. Running through all of it there can be felt a sense of inadequacy, of lack of courage or of inability to handle a situation locally either because it is too large in point of numbers or because of the prominence or influence of the individuals or groups complained of. The most frequent complaint and demand for rectification concern the publicity that attaches to a number of well known clinics and individuals. The next most frequent complaint is against alleged unethical practices of groups and clinics. To all these and similar complaints and inquiries the explanation is made that the Judicial Council is neither a legislating body nor a prosecuting board that legislation rests in the House of Delegates elected by the state associations as their representatives that prosecution is the duty of the county medical society that the Judicial Council is a court to interpret the laws and ethics of the medical profession and to adjudicate those matters brought to it from the state associations under the constitution and by-laws.

In bringing these matters to the House of Delegates and the profession at large, the Council expresses no opinion as to the justness or unjustness of the complaints. It conceives it to be its duty to give this House some conception of the trend of mind of the members of the Association and the extent of that trend for such use as the judgment of the House may indicate. It also conceives it to be its duty in this time when it is evident that many of the members are straining at the ethical leashes which curb their desires to point out that there is but one code of ethics for all, be they group clinic or individual and be they great and prominent or small and unknown. It is but a principle of sound ethics that the greater or more prominent an individual or a group may be the more scrupulous should be the observance of the principles of ethics by them. In bringing this matter before the House the Council makes no charge or implication against any particular individual or group. It realizes that the great and prominent are news and that there is no legal means of avoiding the publication of such news. It believes that the majority of the great and prominent avoid publicity so far as it is in their power and adhere to the Principles of Ethics most carefully. However it has knowledge that there are others of whom this is not true. Under the present constitution the situation is the primary responsibility of the county and state associations as it properly should be the Judicial Council having authority only on appeal from deci-

sions of the state associations. The only exception provided is chapter XI, section 12, of the By-Laws, which provides that "The House of Delegates shall have the power to discipline or expel a member of the American Medical Association on recommendation of the Judicial Council." The Judicial Council frequently is called on to initiate procedures against members. It has declined to do so except on the most flagrant, indefensible and unquestionable violations of the Principles of Ethics, feeling that in view of its judicial rather than its accusative functions and its remoteness from the immediate environments complained about it would be unwise to be the body initiating charges. Whether or not there should be some change in authority or procedure is a matter for decision by the House of Delegates.

During the past year, some of the basic beliefs and principles of the medical profession have been attacked and invaded more seriously and extensively than at any time before. An organized and financed campaign for a socialized system of furnishing medical care to a large proportion of the population has apparently crystallized its plans and begun its propaganda with the millions of certain foundations backing the effort. Practice of medicine by government in all the history of medicine in this country never has invaded the field of the private practitioner with his individual families as has the United States government through the Emergency Relief Administration. This is a complete and undisguised example of 'state medicine.' The avidity with which in general the government's offer was received can be explained only on the basis of an acute economic situation in the profession itself. The occurrence must be considered as a temporary expedient only, due to the unparalleled stress of the times, and must be discontinued as rapidly as the stress on the profession is relieved. A number of societies refused to enter into agreements whereby their members would be bound to provide services and accept compensation directly at the hands of the government. In some instances, official committees of state medical associations and county medical societies have strongly recommended to their members that they continue to provide medical service to all in need and refuse to accept compensation from the government for such services. One of the strongest holds of the profession on public approbation and support has been the age old professional ideal of medical service to all, whether able to pay or not. That ideal is basic in our ethics. The abandonment of that ideal and the adoption of a principle of service only when paid for would be the greatest step toward socialized medicine and shortly state medicine which the medical profession could take. All our arguments as to better service to the people, freedom of choice of doctor, individual service, and maintenance of high grade medical service by highly qualified doctors would be as naught if such service were not available to a vast proportion of the people.

There is no question that medical charity is badly abused and that the past two years of public support of vast number of unemployed have added thousands to that number of paupers we have always with us, people who never have worked and never will, who are content to live on public charity. It conceivably may be that this number may have become so great that the burden of their medical care should be borne by the community as are their other necessities of life. Perhaps the time has come when the profession should distinguish between the temporary and the chronic indigent and demand that the community relieve the private practitioner from furnishing free care to the chronically indigent. But the temporarily indigent those who when able paid for medical care according to their ability to pay should still be the charge of the medical profession in their period of distress.

There have been widespread inquiries and complaints concerning the practice of medicine by hospitals, the division of fees between hospitals and doctors, the acceptance of commissions or rebates by ophthalmologists from opticians, the extensive unethical instances of contract practice particularly in the Pacific Coast states. Concerning all these matters it is sufficient to say that the wide extent of an unethical practice does not make it ethical. Ethics has to do with principles not numbers or locality. A procedure unethical in one part of the country cannot be ethical under the same circumstances in another. Because the percentage of rebate is large in com-

parison, and in a year amounts to a considerable sum, and although many of the practitioners in a specialty may accept those rebates, the acceptance is no more ethical than for the general practitioner to accept a rebate on the occasional truss he may prescribe. The Judicial Council deprecates such ignoring of ethical principles, not only because of the extent of the practices but because in many instances the plea of financial necessity cannot be offered as an excuse. The Council can only publicize the abuses and express its severe condemnation of them. It has no power in itself of control or correction.

Respectfully submitted

GEORGE EDWARD FOULANSBEE, Chairman
WALTER F. DONALDSON
JAMES B. HEKRICK
JOHN J. O'SHEA
EDWIN P. SLOAN
OLIN WEST, Secretary ex officio

REPORT OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

To the Members of the House of Delegates of the American Medical Association

I MATTERS REFERRED BY THE HOUSE OF DELEGATES

1 In 1931 the House of Delegates requested the Council to make a classification of foreign medical colleges. Since it was found, for diplomatic and financial reasons, impracticable to do this, a study was made of the number of Americans studying in Europe. When it was learned that well over a thousand such students were enrolled in medical faculties abroad, the facts were brought to the attention of licensing bodies and a joint committee was created to deal with this problem. As a result of its negotiations and recommendations, the Federation of State Medical Boards of the United States, and most of the individual state boards, have adopted procedures designed to discourage students who are not acceptable to our own medical schools from migrating to other countries for their medical training with the expectation of returning to the United States to practice.

2 In 1931 the House of Delegates also instructed the Council "to investigate and make recommendations looking to the establishing of proper qualifications of physicians who shall engage in special practice." At the last annual session the Council reported the results of its study and was further authorized to express its approval of such examining boards as conform to the standards which the Council shall formulate. The procedures of existing boards have been analyzed, and the Council is preparing, as rapidly as possible, a statement of essentials to which all special examining boards may be expected to conform.

3 At the New Orleans session the House of Delegates requested an analysis of hospital staffs with a view to determining how many of the physicians connected with hospitals are members of the American Medical Association. The amount of clerical work involved has prevented a check of all the 6,437 hospitals in the country, but a sampling of a large number shows that 87 per cent of the staffs of these hospitals were members of the American Medical Association.

Since the management of hospitals is a function of ownership, it does not seem to be practicable for the Council or for the American Medical Association to lay down a rule that only members of the county society may be given hospital appointments. Obviously, there would be no way of enforcing such a rule. However, it is believed that in all institutions where the staff members have a voice in the selection of their colleagues, an effort should be made to bring into the local society every physician who may be regarded as eligible for a hospital appointment.

4 Two years ago the House of Delegates adopted a resolution urging the Council to aid the smaller hospitals in improving their standards and efficiency. What the Council is doing along this line is reported in paragraph 17.

5 At the last session the House of Delegates called attention to the excessive number of applicants for admission to medical schools. It has been found that this condition exists in other professional fields as well. It is directly related to the enormous

increase in the number of college students since the war. Figures recently available show that the numbers enrolled in institutions of higher learning bear a ratio to the whole population in England of 1 to 1,150, in Scotland, 1 to 455, and in the United States, 1 to 125. The facts are being reported to the college authorities in order that their students may be warned that admission to a college does not automatically guarantee admission to one of the professions.

6 At the Milwaukee session a resolution was adopted requesting the Council to ascertain whether medical students might not receive training in those basic procedures necessary to conduct successfully the business of a medical practice. This question is being investigated by the Association of American Medical Colleges, which has not as yet made its report.

7 Another resolution called on the Council to investigate the size and scope of a teaching clinic and the extent to which medical schools are engaging in the competitive practice of medicine. This problem was made the topic of a symposium at the Annual Congress on Medical Education, Licensure and Hospitals in February and further investigations are being made. The Council is not ready to report at this time.

8 Of the resolution introduced by Dr. Louis J. Hirschman, Michigan, the following items were referred to the Council:

(c) Devising a course of lectures and demonstrations related to medical ethics, economics, office practice and business details, relationship of physician to patient and public and the fundamental purposes and activities of county, state and national organizations and causing their inclusion in curriculums of approved colleges.

This is being treated in connection with the recommendation described in paragraph 6.

(e) A study and devising of a plan that will abolish the so-called state board examinations (often farcical and not at all competent to determine a candidate's qualifications) and in lieu of such examination accept the certification of an approved medical college as to the candidate's training and graduation.

The Council is not convinced that it would be desirable to abolish the state examinations for licensure and substitute therefor a medical diploma. The plan has already been tried in this country and was generally considered a failure. However, since the proposal involves the revision of state laws, and since the American Medical Association does not intervene in purely state affairs, it would seem that this matter might be referred to the constituent state societies for such action as they deem appropriate.

9 Another resolution of the House of Delegates requested the Council to undertake a study of schools of occupational therapy. Such a study is being carried out and it is hoped that a report will be available at the Cleveland session.

10 The Council has actively cooperated with the Committee on Mental Health in accordance with the provisions adopted by the House of Delegates.

II PUBLICATIONS

11 The Council has prepared material for five special numbers of THE JOURNAL and published the Proceedings of the Annual Congress on Medical Education, Licensure and Hospitals.

12 Revised lists of hospitals approved for internships and residencies have been made available and are in great demand.

13 The usual data concerning medical schools and hospitals are being prepared for the forthcoming edition of the American Medical Directory.

III MEDICAL EDUCATION

14 During the last ten or fifteen years, advances have been made in many phases of medical education. New problems also have arisen. The time, therefore, seems ripe for a comprehensive resurvey of medical education and, with the generous support of the Board of Trustees, such a study is now being undertaken.

15 At the request of the State Board of Regents, the Council made an inspection of the University of Georgia School of Medicine in April 1933 and submitted certain recommendations. Since no action had been taken looking toward a fulfillment of the Council's requirements, approval of the school was withdrawn at the last meeting of the Council (February 1934).

16 Anticipating that the surplus of premedical students who find themselves unable to gain admission to the recognized

schools in this country may find their way into the universities of the Spanish speaking countries to the South of us an attempt is being made with the assistance of the Secretary of State and the Pan American Union to secure official information regarding the standards of medical training that prevail in Latin America

IV HOSPITALS

17 During the year 1933, 755 hospitals were visited by members of the Council's staff These were distributed as follows

Approved for interns or residencies or applying for such approval	206
Tuberculosis sanatoriums	258
Negro hospitals	47
Other hospitals	244

In addition there were inspected

Schools of occupational therapy	4
Schools of physical therapy	4
Schools of laboratory technique	15

The tuberculosis hospitals for the first time have been included in the Council's routine survey With the cooperation of the national associations in this field, it is expected that more complete and more reliable information about the institutional care of tuberculous patients will be available than ever before

Complying with the request of the House of Delegates (paragraph 4) the Council has included in its inspections more than 200 of the smaller hospitals Without attempting to force all of these institutions into the same mold, the members of our staff have been able to give considerable assistance to some of these small hospitals by suggesting improvements in organization or methods of operation

18 At the invitation of the American Hospital Association, a joint meeting was held with its Council on Public Relations' Division of Medical Practice and certain fields of mutual interest were designated for cooperative study

19 Reports for the year 1933 showing the number of unoccupied hospital beds may be summarized as follows

	1929	1933
Governmental	65 652	68 399
Nongovernmental	114 715	148 376
Total	180 367	216 775
General hospitals	123 025	155 021
Special hospitals	57 342	61 754
Total	180 367	216 775

With a daily average of 155 000 unoccupied beds in general hospitals, it would seem to be unnecessary to invest more money at the present time in institutions of this sort

Respectfully submitted

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

RAY LYMAN WILBUR, Chairman
ENMETT P NORTH
REGINALD FITZ
MERRITT W IRELAND
CHARLES E HUMISTON
FREDERIC A WASHBURN
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WILLIAM D CUTTER, Secretary

REPORT OF THE COUNCIL ON SCIENTIFIC ASSEMBLY

To the Members of the House of Delegates of the American Medical Association

Dr John E Lane, for thirteen years a member of the Council on Scientific Assembly and for much of that time its chairman died at his home in New Haven Conn Oct 17 1933 For many years Dr Lane represented his state association in the House of Delegates of the American Medical Association and as a member of that body rendered distinguished service as a member of important committees and commissions A physician true to the highest ideals and traditions of his profession, Dr Lane rendered devoted service in the discharge of every duty imposed on him by his fellows As a member of the Council Dr Lane endeared himself to his associates through his unflinching courtesy through his unswerving loyalty to the

cause of scientific medicine and to the American Medical Association, and through his ready willingness to bear his full share of every responsibility

For several years a program known as the "Clinical Lecture" program has been presented on the first two days of each annual session Many prominent members of the professions of this and other countries have contributed and have made splendid presentations dealing in a thoroughly practical manner with subjects of general interest In some years the attendance has not been as large as the high quality of these lectures merited while in other years large audiences have been attracted The response over the entire period has been of such a nature as to indicate clearly a widespread interest in the program and an apparent desire on the part of many physicians that it be continued This part of the program of the Scientific Assembly will hereafter be designated "General Scientific Meetings" and will be presented on Monday and Tuesday at each annual session At this meeting a group of distinguished practitioners and teachers will offer contributions dealing with various subjects of important interest to the general profession

The regular Annual Conference of Secretaries of the Sections with the Council was held in December and nearly all the sections were represented The secretary who could not attend forwarded a written communication concerning the status of the program in his charge The Council again expresses commendation of the zealous and efficient services of the officers of the sections of the Scientific Assembly

One session of the Section on Miscellaneous Topics will be given over to a program on Forensic Medicine Dr Ludvig Hektoen will serve as chairman and Dr Harrison Martland as secretary

Another session of the Section on Miscellaneous Topics will be devoted to scientific discussions pertaining to Nutrition, under the chairmanship of Dr James S McLester, with Dr William S McCann as secretary

The usual arrangements for section meetings have been made No resolutions or memorials have been submitted to the Council during the year

Respectfully submitted

FRANK H LAHEY, Chairman

IRVIN ABELL

JAMES E PAULLIN

FRANK SMITHIES

CYRUS C STURGIS

WALTER L BIERRING, President-Elect

MORRIS FISHBEIN,

Editor, THE JOURNAL

OLIN WEST, Secretary

} Ex officio

The American Mind in Medicine—What should attract us all is a study of the growth of the American mind in medicine since the starting of the colonies As in a mirror this story is reflected in the literature of which you are the guardians and collectors—in letters, in manuscripts in pamphlets in books and in journals In the eight generations which have passed, the men who have striven and struggled—men whose lives are best described in the words of St Paul, in journeyings often, in perils of water, in perils in the city, in perils in the wilderness, in perils in the sea in weariness and painfulness in watchings often, in hunger and thirst, and in fastings—these men of some of whom I have told you somewhat have made us what we are With the irrevocable past into which they have gone lies our future since our condition is the resultant of forces which, in these generations have molded the profession of a new and mighty empire From the vantage ground of a young century we can trace in the literature how three great streams of influence—English French and German—have blended into the broad current of American medicine on which we are afloat Adaptiveness lucidity and thoroughness may be said to be the characteristics of these Anglians, Gallic and Teutonic influences, and it is no small part of your duty to see that these influences the combination of which gives to medicine on this continent its distinctly eclectic quality are maintained and extended—Sir William Osler Some Aspects of American Medical Bibliography Address delivered before the Association of Medical Librarians 1902

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SATURDAY, MAY 5, 1934

THE OCCURRENCE OF LEAD IN CEREBROSPINAL FLUID

Lead poisoning is no novelty in medicine, its effects in producing pathologic changes in the body have been known almost as long as it has been employed in industry and the arts. Lead "colic" and lead "palsy" have long been recognized in medical literature. Credit for first correlating the most obvious manifestations of intoxication by lead is usually given to Tanquerel des Planches who studied the subject about a century ago. Although lead has been regarded by many writers as the most important of the industrial hazards that lead to special disease, the incidence of industrial lead poisoning is said to be declining, thanks to the widespread introduction of prophylactic measures. According to Aub,¹ about a hundred and fifty industries involve some exposure to lead. The dusty trades are the most hazardous and include the manufacture of white and red lead, of storage batteries and of pottery, as well as painting, printing and the mixing of rubber.

Two features, of late, have become involved in the problem of plumbism. One is the method of treatment, initiated by Aub and Minot, that depends on the parallel metabolism of lead and calcium.² The severe symptoms can be relieved by administration of large doses of calcium in the form of milk and salts of calcium, whereby a deposition of lead in the bones is effected. After disappearance of the acute symptoms, this regimen is replaced with one containing as little calcium as possible. With this a condition of acidosis is initiated, large doses of phosphoric acid or ammonium chloride being given to produce a negative calcium balance, thus tending to liberate lead slowly from the bones so that it will be excreted.

The other feature is the growing recognition that lead is widely distributed in nature, so that plants grown on soils that contain the element may acquire lead. Thus it finds its way insidiously into the body in

food. The U S Department of Agriculture has found it desirable to attempt to establish a maximum permissible content of lead in edible products. It has been remarked that in view of this almost ubiquitous occurrence of lead one would expect it to be a common constituent of human excreta, owing to the ingestion of food materials containing lead, this is found to be the case. The average amount of lead in the feces of normal individuals with no undue exposure to lead was found to be approximately 0.08 mg per gram of ash.³ Its presence in feces does not, however, imply that it is present also in the body tissues, ingested lead may not be absorbed. According to investigators⁴ at the Montreal General Hospital, ten years' experience in examination of the urine indicates that the presence of lead is the rule and not the exception. The average amount is 0.1 mg per liter. Contamination during collection of samples is excluded. These observations fit in with those recorded by Kehoe and Thamann.⁵ Urine of individuals suffering from lead poisoning, or of those unduly exposed to lead in their work, may contain much larger quantities than 0.1 mg per liter. The differences between health and disease are therefore quantitative and not qualitative.

The development of spectrographic methods has greatly facilitated the investigation of minute traces of lead.⁶ In studies at Montreal,⁴ lead was found in the cerebrospinal fluid of every individual known to be suffering from lead poisoning. Lead was found also in isolated cases not presenting histories of undue exposure to the metal. In these cases, with one exception, the amounts were, however, small compared with those found in lead poisoning. An attempt was made to induce the appearance of lead in the cerebrospinal fluid by means of acidosis. Acidosis was produced by the administration of ammonium chloride, and the degree of acidosis was determined by the carbon dioxide combining power of the plasma. Whether lead was or was not liberated from the body was determined by the amount of lead in the urine during acidosis compared with that found before acidosis. Of twenty individuals suffering from a variety of neurologic conditions other than lead poisoning, and in whom no lead was found in the cerebrospinal fluid before acidosis, lead was found in the cerebrospinal fluid in five cases during acidosis. As before acidosis, however, the amounts found were small. Rabinowitch and his co-workers again emphasize the fact that lead readily attacks the central nervous system. Cerebrospinal fluid has been found to contain as much as 1 mg per liter,⁶ or ten times that found in the urine of normal individuals. Its distribution in the body may be widespread. This

¹ Aub J. C. Lead Poisoning in Cecil's Textbook of Medicine Philadelphia W. B. Saunders Company

² A general consideration is given by Aub J. C. Fairhall L. T. Minot A. S. and Reznikoff Paul. Lead Poisoning Baltimore, Williams & Wilkins Company 1926

³ Kehoe R. A. and Thamann Frederick. The Excretion of Lead J. A. M. A. 92: 1418 (April 27) 1929

⁴ Rabinowitch I. M. Dingwall A. and Mackay F. H. Studies on Cerebrospinal Fluid. II. The Occurrence of Lead in Cerebrospinal Fluid J. Biol. Chem. 103: 725 (Dec.) 1933

⁵ Rabinowitch I. M. Dingwall, A. and Mackay F. H. Studies on Cerebrospinal Fluid. I. Chemical and Spectrographic Detection of Lead J. Biol. Chem. 103: 707 (Dec.) 1933

⁶ Aub J. C. Fairhall L. T. Minot A. S. and Reznikoff, Paul. Lead poisoning. Medicine Monographs 7, 1926

accounts for the fact that lead poisoning may simulate almost every other disease of the central nervous system. Whether the minute quantities often present have any bearing whatever on obscure nervous symptoms is an important question for serious consideration in the future.

CHOLESTEROL IN THE ORGANISM

Although cholesterol has long been recognized as a widespread component of the animal organism and a substance that can be identified with considerable ease by a biochemist, the physiologic behavior of this peculiar sterol has been little understood until comparatively recent times. In the earlier days attention was primarily focused on the fact that cholesterol is the most conspicuous and abundant component of gallstones, and likewise that it is a characteristic constituent of nervous tissue. Early, too, was the recognition that cholesterol is a highly complex alcohol and that it appears to occur regularly in some quantity in the tissues and fluids of the body. In such material as the bile, blood, milk, liver, kidney and suprarenal cortex it is present not only in the free state but also in combination with several fatty acids as cholesterol esters. The sebum, or secretion of the sebaceous glands, seems to abound in cholesterol derivatives.

With this information, the little definitely known about the functional rôle of the ubiquitous sterol has been tantalizing. Some progress has been initiated by the introduction of methods for estimating more exactly the content of cholesterol in the blood. As a consequence it is possible to speak today of hypocholesteremia and hypercholesteremia. In nephrosis, diabetes and certain types of atherosclerosis, for example, the body appears to be overloaded with cholesterol even when the diet is not overabundant in this component. In some of the infections, however, cholesterol tends to disappear. Naturally one is led to infer that in such cases it is highly probable that disturbances in synthesis or decomposition as well as in excretion of cholesterol play an important part.

Plants contain sterols of various sorts somewhat related to cholesterol in organic structure and physicochemical behavior. According to Schoenheimer,¹ these are not absorbed by the animal organisms. Consequently, cholesterol must be synthesized by animals, and the evidence for this long delayed conclusion now seems convincing.² There are growing indications, too, that cholesterol can be destroyed by the human organism. According to Dam,³ this is not due to the intestinal bacteria. Recent investigations by Schoenheimer and Breusch⁴ at the University of Freiburg in Germany lead clearly to the assumption that in the tissues

cholesterol is continually being formed and destroyed. Either a positive or negative balance may be found depending on experimental conditions, i. e., synthesis may be in excess of destruction or vice versa. Thus, in experimental animals when moderate amounts of cholesterol were administered, a smaller amount of cholesterol was synthesized. When large amounts of cholesterol were given, a considerable part was destroyed. Large amounts of fat or carotene had no effect on the cholesterol balance. Bile acids increased destruction of cholesterol, probably on account of more ready absorption from the intestine. These observations afford a basis for new concepts in the consideration of what cholesterol may really signify in the body.

HUMAN STERILIZATION IN GERMANY AND THE UNITED STATES

Recent legislation in Germany attempting to decrease the incidence of the allegedly hereditarily unfit by sterilization on a large scale has aroused world-wide interest. Several of the Berlin letters in *THE JOURNAL*¹ have dealt with this program. The core of the law enacted July 14, 1933, which went into effect Jan. 1, 1934, has been translated as follows by Peter:²

Those hereditarily sick may be made unfruitful (sterilized) through surgical intervention when, following the experience of medical science, it may be expected with great probability that their offspring may suffer severe physical or mental inherited damages.

The hereditary sick, in the sense of this law, is a person who suffers from one of the following diseases: inborn feeble-mindedness, schizophrenia, circumscribed insanity, hereditary epilepsy, hereditary Huntington's chorea, hereditary blindness, hereditary deafness, severe hereditary physical deformity. Further, those may be made unfruitful who suffer from severe alcoholism.

It has been estimated that approximately 400,000 must soon undergo sterilization.² The larger portion of these are suffering from inborn feeble-mindedness.

Application for sterilization may be made by the individual and will be received from a national licentiate physician attesting that the applicant has been instructed concerning the nature and consequences of the operation. For those legally incapable of managing their own affairs, guardians, courts, legal representatives or trustees may make application. Several safeguards are provided to prevent miscarriage of justice. Seventeen hundred special courts and twenty-seven hereditary health supreme courts are newly and especially constituted for reviewing the cases. All applications must be in writing. Jurisdiction for the decision rests in the court in the district in which the applicant resides. No judge can serve as presiding officer in one of these special courts in a case in which he has rendered decision appointing guardianship. The proceedings of these courts are not public. The courts are obligated to institute all necessary investigations,

¹ Schoenheimer R. *Ztschr f physiol Chem* 180: 1 (1929)
² Beumer H. and Lehmann F. *Ztschr f ges exper Med* 37: 274 (1923)
³ Randles F. S. and Knudson Arthur J. *Biol Chem* 66: 459 (Dec) 1925
⁴ Dam H. *Biochem Ztschr* 232: 269 (1931)
⁵ Schoenheimer R. and Breusch F. *Synthesis and Destruction of Cholesterol in the Organism* *J Biol Chem* 103: 49 (Dec) 1933

¹ Berlin Letter *J A M A* 101: 459 (Aug 5) 1934 (Sept 9) 1933 102: 630 (Feb 2-) 1934
² Peter W. W. *Cerriman's Sterilization Program* *Am J Pub Health* 24: 187 (March) 1934

and physicians are required to testify completely without regard to professional secrecy. The verdict of the court must be signed by all who participated in the decision including the reasons for it. If the decision is for sterilization it remains inoperative for one month, during which time appeal may be filed. Finally, the authorized operation must be performed only in a hospital and by a national medical licensee.

Sterilization of the unfit is not a new idea in the United States. As many as twenty-seven states have legislation for human sterilization in effect, though there have been thirty which adopted such legislation at one time or another.³ Indiana on March 9, 1907, was the first state to adopt a compulsory eugenic human sterilization act. This law was, however, declared unconstitutional in 1921 and a new one was not adopted until 1926. In the interval, numerous other states have enacted legislation providing for human sterilization under certain circumstances. Most of these laws have been tested in the courts, the most important being the *Buck v. Bell* decision, rendered by the federal Supreme Court in 1927. The right of society to "prevent those who are manifestly unfit from continuing their kind" was affirmed in this decision. Another important case, tried in the Utah supreme court in 1929, was concerned not with the constitutionality of human sterilization laws but with the necessity for reasonable proof of the hereditary nature of the condition for which sterilization was ordered. The case of *Davis, Warden, v. Walton* was decided on the basis that insufficient evidence of the inheritance and inheritability of the condition had been produced, and mandatory sterilization was therefore not allowed.

On the basis of state legislation in force, about twelve thousand individuals had been sterilized up to 1932.³ It has been reasonably established that the operations of vasectomy or salpingectomy applied have had no deleterious physical or psychologic effects on those so treated. What the effect will be on the primary purpose of decreasing inherited mental defects is as yet impossible to determine, because the number is too small and the duration too brief. Certainly every conceivable effort should be made to follow the course of those sterilized and the progeny of their blood relatives.

Apparently widely different schemes for human sterilization are being applied in Germany and the United States. In Germany, mass sterilization is presumably being carried out. A more gradual evolution of the practice and principles has occurred in this country. Judging from the uncertain biologic foundation on which human sterilization rests, the latter would seem a less dangerous procedure. While recognizing the possible potential value of sterilization, the medical profession can perhaps serve its purpose best by retaining a scientific detachment in assessing the biologic and social results of the programs now in force.

Current Comment

DEHYDRATION IN INFANCY

Dehydration of infants is receiving far more serious consideration at present than it received earlier in the century. Not only is its seriousness for the patient more clearly recognized, but the attendant clinical conditions have gradually become far better understood. When persistent diarrhea or vomiting is encountered for any of a diversity of reasons, it is no longer merely the loss of water that challenges attention. The fluids of the body are saline solutions in which certain inorganic ions are nicely balanced. Loss of water is usually attended with loss of these mineral components of the organism, with a resultant disastrous upset in the equilibrium of the inorganic elements. The basic elements tend to leave the body in considerable measure in the stools. As recently pointed out anew,¹ if acid ions were excreted in the urine in a normal proportion, the body would suffer merely from deprivation of water and salt, the total fluid remaining in the body having a normal salt concentration. However, in severe dehydration the volume of urine is scanty, so that the acid ions are not adequately excreted. This retention of acid ions is undoubtedly one of the principal causative factors in the development of acidosis. Mere administration of saline solutions fails to remedy many of these situations, hence a device for promoting diuresis has been recommended. According to pediatricians¹ at Cornell, the primary aim of the initial treatment should be the restoration of an adequate flow of urine. They find that hypertonic solutions of dextrose administered intravenously serve this purpose. When combined with hypodermoclyses of saline solution they fulfil the three desiderata of immediate treatment by furnishing fluid and electrolytes and stimulating renal function. Improvement in clinical condition and acid-base status of the blood has resulted from this treatment. Obviously the use of hypertonic dextrose solutions is advisable only during the earlier stages of dehydration when oliguria or anuria is present. Once an adequate flow of urine is established and can be maintained by administration of fluids, the use of a diuretic solution would only defeat the purpose of further attempts to replenish body water.² Dehydration is fairly common in children, especially as a complication of other abnormal conditions. Under most conditions all that is required is attention to and encouragement of drinking more water. Difficulties arise when persistent vomiting or other alimentary disturbance requires the use of some other route of administration. Then rectal introduction, parenteral injection and other artificial methods must be used as temporary expedients. At the same time losses of fluid, particularly as sweat, must be minimized as much as possible. In no cases are these corrections of the water balance anything but palliative. Truly pathologic disturbances require treatment of the underlying alimentary, renal, hyperthermic or other disorder.

¹ Marples Eleanor Cohen Henry and Talamo Haskell. Relief of Oliguria in Dehydration in Infants by Intravenous Injections of Dextrose. *Am J Dis Child* 47: 331 (Feb) 1934.
² Woodward K F. Diuresis Produced by Injection of Dextrose. *Am J Dis Child* 47: 513 (March) 1934.

Association News

RESURVEY OF MEDICAL EDUCATION

The Council on Medical Education and Hospitals, with the cooperation of the Association of American Medical Colleges and the Federation of State Medical Boards of the United States, is planning a comprehensive resurvey of medical education. Dr Herman G Weiskotten, dean of the Syracuse University College of Medicine, will make the field studies. In addition to the inspection of schools, the Council will undertake a reexamination of the methods and objectives of medical education.

MEDICAL BROADCASTS

National Broadcasting Company

The American Medical Association broadcasts on a coast-to-coast network each Monday afternoon from 4 to 4 15 Central daylight saving time (4 o'clock Eastern standard time, 3 o'clock Central Standard time, 2 o'clock Mountain standard time, 1 o'clock Pacific standard time).

The next three broadcasts will be as follows

May 7 Hospital Day W W Bauer M D
May 14 Pursuit of Longevity Morris Fishbein M D
May 21 Disease by Air W W Bauer M D

Columbia Broadcasting System

The Association broadcasts on a Western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4 30 to 4 45, Central daylight saving time. The next three broadcasts will be as follows

May 10 Things Men Fear Morris Fishbein M D
May 17 Mischievous Misconceptions W W Bauer M D
May 24 Character of a Quack Morris Fishbein, M D

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS EDUCATION PUBLIC HEALTH, ETC.)

ALABAMA

State Medical Election—Dr William M Cunningham, Jasper, was chosen president of the Medical Association of the State of Alabama at its annual meeting in Birmingham April 19. Dr Douglas L Cannon, Montgomery, was reelected secretary for five years. Montgomery was designated as the place for the 1935 meeting, April 16 18.

ARKANSAS

State Medical Election—Dr Melvin E McCaskill Little Rock, was chosen president-elect of the Arkansas Medical Society at its annual convention in Little Rock April 16-18. Dr Fergus O Mahony, El Dorado, was installed as president. Other officers elected are Drs Albert M Elton, Newport, Silas C Fulmer, Little Rock, and Flem D Smith, Blytheville vice presidents, and William R Brooksher Jr Fort Smith and Royal J Calcote, Little Rock secretary and treasurer respectively. The next annual meeting will be held in Fort Smith.

CALIFORNIA

Hospital News—The new acute unit building of the Los Angeles County Hospital was dedicated April 15. Operation of the unit began in December 1933 when the obstetric division on the eighth floor was put into service.

Osman with Another Alias—E K Osman or Osmun whose activities as a fraudulent insurance representative were described in THE JOURNAL March 11 1933 page 745 was recently arrested in San Andreas for similar operations. Using the names Dr Crawford and Mulliberg he would call on physicians as a representative of various insurance companies,

stating that he had been delegated to select a medical examiner in each town. He would usually collect about \$3 50 from each physician interviewed, which, he claimed, was the fee charged for blanks and containers to be purchased by the selected examiners. He has been returned to Ventura, where he was also wanted by the authorities, it is reported.

Tuberculosis Control—The Santa Barbara County Health Department instituted its third annual campaign against tuberculosis among school children, April 9. In the last three years, 4,363 children in the county, outside the city of Santa Barbara, have had the tuberculin test, or more than 82 per cent of the school population. Of this number, negative results were obtained in 3,606. Of the 757 children who gave positive reactions, all have had roentgenograms made and most of them have had complete examinations, 123 are yet to be seen by the specialist, the state health department reported, April 7, and 692 reactors were found without present evidence of illness or progressing disease. Fifty-six were found to be definitely ill.

COLORADO

Dinner to Dr Levy—Dr Robert Levy, Denver, was entertained at dinner at the Cosmopolitan Hotel, April 4, by the Medical Society of the City and County of Denver, in recognition of his completion of fifty years in the practice of medicine. An oil portrait of Dr Levy was presented to the medical society by Dr John W Ames, on behalf of friends, and accepted by Dr Frank W Kenney. It will be placed in the society's library. Dr Levy has served for many years as professor and head of the department of otolaryngology of the University of Colorado School of Medicine, and organizations of which he has been president include the American Laryngological, Rhinological and Otolological Association, 1915, Colorado State Medical Society, and Denver County Medical Society. He is one of the founders and has been three times president of the Denver Clinical and Pathological Society.

DISTRICT OF COLUMBIA

Medical Bills in Congress—Bills Introduced S 3479, introduced by Senator King, Utah and H R 9362 introduced (by request) by Representative Norton New Jersey, propose to amend the act regulating the practice of the healing art in the District of Columbia (1) by substituting the corporation counsel of the District of Columbia for the United States district attorney as a member of the commission on licensure to practice the healing art and (2) by transferring to the corporation counsel for the District of Columbia, from the United States district attorney, the duty of instituting legal proceedings for the enforcement of the act.

District Scientific Assembly—The annual two day scientific assembly of the Medical Society of the District of Columbia opened, May 2, in Washington at the Mayflower Hotel. A public meeting Wednesday evening was addressed by Dr George Burgess Magrath, professor of legal medicine, Harvard University Medical School, Boston. Speakers on the program included the following physicians:

Harry Stack Sullivan, New York, Psychiatric Aspects of Medical Patients
Matthew White Perry Clinical Manifestations of Nondysenteric Amebiasis
Thomas A Groover Blazing New Trails for Organized Medicine
David Davis Bronchoscopy in Suppurative and Malignant Disease of the Lung
William P Herbst Jr Traumatic Rupture of Kidney
John Minor Practical Aspects of Diabetes
Samuel Desoff Gonorrheal Endocarditis of the Pulmonary Valve
Thomas W Mattingly Recurrent Thrombosis of the Portal Vein with Splenectomy
Francis Clark Grant Philadelphia Major Trigeminal Neuralgia

FLORIDA

Hookworm Campaign—A campaign against hookworm has been launched by the Florida State Board of Health. Emergency relief funds have been requested to carry on the work, which is concerned chiefly with sanitation of schools. A recent survey showed the disease to be prevalent to an alarming degree it was stated. During the month of March alone, out of 11,606 specimens examined 4,946 proved positive for hookworm, giving a percentage of 42.6.

Society News—A symposium on cancer of the breast was presented before the Dade County Medical Society in Miami April 6 by Drs Walter C Jones Jr Iva C Youmans and Frazier J Pavton. Dr Joseph H Luciman presented a case of angina pectoris treated by x-rays. At a recent meeting of the DeSoto-Hardee Highlands County Medical Society in Avon Park Dr Leland F Carlton Tampa discussed the

economic problem of arthritis—The program of the Duval County Medical Society, April 3, was devoted to a symposium on arthritis by Drs. Julian E. Gammon, Frank L. Fort and Wilfred M. Shaw, Jacksonville.—The Orange County Medical Society was recently addressed in Orlando by Dr. Paul D. White, Boston, on heart disease.

ILLINOIS

State Medical Meeting at Springfield, May 15-17—The eighty-fourth annual meeting of the Illinois State Medical Society will be held at Springfield, May 15-17, under the presidency of Dr. Philip H. Kreuscher, Chicago. The secretaries' conference will be Tuesday morning. The oration in medicine will be delivered, Tuesday afternoon, by Dr. Walter L. Biering, Des Moines, Iowa, President-Elect, American Medical Association. His subject will be "Diagnosis of Heart Disease: Historical Development of Its Recognition." Dr. Frederic J. Cotton, Boston, will present the oration in surgery Wednesday morning on "Ten Years of Progress in the Treatment of Fractures." Dr. Kreuscher's presidential address in the afternoon will be on "The Doctor and His Community." Tuesday afternoon will be devoted to a symposium on pneumoconiosis, with Drs. Frank J. Jirka, Royd R. Sayers, Washington, D. C., and Jerome R. Herd, Richard H. Jaffe, and Clarence O. Sappington all of Chicago participating. The following physicians, among others, will present papers:

Woodruff L. Crawford, Rockford, Survey of Allergic Diseases in Childhood
Thomas D. Masters, Springfield, Benign Melituria
Richard P. Herndon, Springfield, The Value of Symptoms
Frederic W. Bureky, Evanston, Agranulocytosis
Walter M. Whitaker and Walter D. Stevenson, Quincy, Membranous Nephritic Infections of the Lower Respiratory Tract in Children
William A. Evans, Chicago, Heart Disease: Past, Present and Future
Austin A. Hayden, Chicago, Fractures of the Nose
Michael Zeller, Chicago, Management of Allergic Vasomotor Rhinitis
Francis L. Lederer and Louis Zolo, Fishman, Chicago, Rationalization in Therapy of Laryngeal Tuberculosis
Joseph C. Beck, Chicago, Rehabilitation of the Voice After Laryngectomy
Ira H. Lockwood, Kansas City, Mo., The Aid of the X Rays in the Diagnosis of Breast Tumors
Benjamin H. Orndoff, Chicago, Radiotherapy and Electrosurgery in the Treatment of Cancer of the Breast

Fracture demonstrations will be conducted intermittently through the general sessions. The veterans' dinner, Tuesday evening at the Leland Hotel, will be addressed by Dr. Thomas B. Williamson, Mount Vernon, on "Why the Medical Commission?" Edward Hayes, national commander, American Legion, "The Legion Program as It Affects Organized Medicine," and Dr. Edward H. Cary, Dallas, Texas, Past President, American Medical Association on "The American Medical Association—Its Duty to Its Members and the Nation's Veterans of the World War." The meeting of the woman's auxiliary of the state society will be held at the Knights of Columbus Building, May 15-16.

Chicago

Personal—Dr. Walter W. Hamburger has been appointed clinical professor of medicine in the Division of Biological Sciences, University of Chicago.—Dr. Carl Beck was honored with a reception, March 25, in observance of his seventieth birthday.

Willard Gibbs Medal Presented to Dr. Urey—The presentation of the Willard Gibbs Medal to Harold Clayton Urey, Ph.D., associate professor of chemistry at Columbia University, New York, since 1929 took place at the Stevens Hotel, April 27. William Draper Harkins, Ph.D., of the University of Chicago made the presentation. Dr. Urey spoke on "The Significance of the Hydrogen Isotopes." "Some Differences in the Thermodynamic Properties of the Hydrogen Isotopes" was the title of Dr. Urey's paper before a meeting in the Kent Chemical Laboratory, April 28 under the auspices of the University of Chicago and the Chicago Section of the American Chemical Society. Dr. Urey was awarded the Gibbs medal for his discovery of double weight hydrogen.

INDIANA

Surgeon Sues Township—A physician recently filed suit in the DeKalb circuit court against Franklin township for \$321 on an account for professional services. Action was instituted when the township refused to pay the bill. According to the complaint as reported in the newspapers, a resident of the township was engaged in threshing grain last year when he slipped and fell so that his foot and leg were caught in the threshing machine and crushed. It was stated that the man was without property or credit to procure the necessary aid

and treatment. Since it was believed that the township trustee could not be reached in time to authorize the treatment the man was rushed to the hospital, where it was found necessary to amputate the leg at once. The wound became infected and a second operation was performed to amputate it above the knee. The physician declares that it was necessary to act at once to save the man's life and that there was no opportunity to consult the township trustee, but that the township has refused to pay the bill.

KANSAS

Graduate Clinics—The fourth annual graduate clinics of the school of medicine and the extension division of the University of Kansas, Lawrence, were conducted in Kansas City, April 2-4, by members of the faculty. The following program was presented:

Treatment of Appendix Abscess (Local Peritonitis) Dr. Thomas G. Orr
Dyspnea Dr. Peter T. Bohan
Dropsy Dr. Logan Clendinning
Bronchiectasis Dr. Roy F. Mills
Nonsurgical Treatment of Brain Concussion Dr. Edward T. Gibson
Prolonged Labor Dr. Buford G. Hamilton
Management of Pelvic Infection Dr. Robert D. Irland
Obesity Dr. Edward H. Hashinger
Treatment of Scoliosis Dr. Clarence B. Francisco
Ulcerative Colitis Dr. Ellis Wilhelm
Pneumonia in Children Dr. John Aull and Hugh L. Dwyer
Management of Children Exposed to Scarlet Fever Dr. Frank C. Neff
Collapse Therapy in Tuberculosis Dr. Lawrence E. Wood
Toxic Myocarditis Dr. Joseph E. Welker
Care of Early and Late Burns Dr. Earl C. Padgett
Menorrhagia Dr. Leroy A. Calkins
Infections of the Hand Dr. Laurence P. Engel
Nonspecific Prostatitis, Dr. Nels F. Ockerblad

In addition, Richard L. Scammon, Ph.D., dean of medical sciences, University of Minnesota, delivered the Porter lectures (THE JOURNAL, March 31, p. 1092).

KENTUCKY

Physician Sentenced—Dr. Lawrence M. Spitzelberger, formerly of Bellevue, was recently sentenced to three years in the United States Penitentiary at Atlanta, for violation of the Harrison Narcotic Act.

University News—Leslie B. Arey, Ph.D., professor of anatomy, Northwestern University Medical School, Chicago, delivered the first Phi Beta Phi lecture at the University of Louisville Medical School, March 10, on "Mechanism of Vision in the Retina."

Personal—Dr. William H. Fuller, Mayfield, was recently appointed a member of the state board of health to succeed Dr. Frank L. Johnson, Livermore.—Dr. James O. Nall, Freedom, has been appointed health officer of Caldwell County, with headquarters at Princeton, to succeed Dr. Aubrey Y. Covington.

Society News—Dr. Beatty, Earl Caywood addressed the Garrard County Medical Society, Lancaster, February 15, on diabetes mellitus. This society was recently reorganized after several years of inactivity.—Dr. Stuart P. Hemphill, Danville, addressed the Boyle County Medical Society, February 20 on the value of roentgen rays in diagnosis.—Physicians of Logan County recently organized a county medical society with Dr. Shepard S. McReynolds Jr., Russellville, as president, and Dr. Walter Byrne, Russellville, as secretary.

LOUISIANA

Dr. Menville Awarded Prize—Dr. Leon J. Menville, assistant professor of medicine and roentgenology, Tulane University of Louisiana School of Medicine, New Orleans, was presented with the annual award of the Louisiana Academy of Sciences at its annual meeting, March 17, for his paper on "The Possible Application of a Visualized Lymphatic System to the Cancer Problem." The prize is a medal designed specially for the academy.

Society News—The Orleans Parish Medical Society devoted its meeting March 26, to a symposium on appendicitis, with the following speakers: Drs. Andrew V. Friedrichs, Urban Maes, Frederick F. Boyce, Charles Walter Mattingly and Edward William Alton Ochser. A symposium on diets constituted the society's meeting, April 23, with Drs. Isaac I. Lemann, Manuel Gardberg, Joseph S. D'Antoni and Sydney Jacobs as the speakers.—Dr. Albert M. Abramson, Marks, presented a paper before the Avoyelles Parish Medical Society, Cottonport, March 14 on "Superficial Infections and Wounds."—Dr. George R. Herrmann, Galveston, Texas, was among the speakers before the Fourth District Medical Society at Shreveport, March 6 on "Peripheral Vascular Diseases."

MAINE

Society News—Speakers before the Kennebec County Medical Association, Augusta, March 15, included Drs Leon D Herring, Winthrop, on "Lead Poisoning," and Carl H Stevens, Belfast, "Management of Some Abdominal Emergencies"—At a meeting of the York County Medical Society in Biddeford, April 4, Drs Elton R Blaisdell and Thomas A Foster, Portland, discussed diabetes and children's diseases respectively—A recent meeting of the Portland Medical Club was addressed by Dr John R Hamel on diabetes mellitus

MARYLAND

Dr Woods Named Acting Director of Wilmer Institute—Dr Alan C Woods has been appointed acting director of the Wilmer Ophthalmological Institute at Johns Hopkins University School of Medicine, Baltimore, succeeding Dr William H Wilmer, who will retire July 1. Dr Woods will also become professor of ophthalmology to fill the vacancy caused by Dr Wilmer's retirement. Dr Woods has been associated with the institute since its establishment in 1925, becoming associate professor in 1927. After his return from France in 1919, Dr Woods was made instructor in ophthalmology at the medical school, and, in 1924, associate. He graduated from Johns Hopkins University in 1910 and from Johns Hopkins University School of Medicine in 1914. Dr Wilmer's retirement is in accord with the rule of the university that professors leave the faculty when they are 70 years of age (THE JOURNAL, January 6, p 51)

MASSACHUSETTS

Physician Imprisoned—Dr Percy W Carr, Boston, was committed to the Massachusetts State Prison, February 20, it is reported, for from two and one-half to four years, for attempting to procure an abortion

Dr Lanza Gives Cutter Lecture—Dr Anthony J Lanza, assistant medical director, Metropolitan Life Insurance Company, New York, delivered the Cutter Lecture on Preventive Medicine at Harvard Medical School Boston, April 20. His subject was "Silicosis and Asbestosis"

Personal—Dr John Herbert Waite, Boston, has been made clinical professor of ophthalmology at Harvard University Medical School—Dr Ralph C Wiggan has been appointed surgeon-in-chief of the Massachusetts Memorial Hospitals, Boston, succeeding Dr Charles T Howard, who is resigning after thirty-six years service. Dr Howard will continue as consultant—Dr Charles L Clay, Newton, was recently named medical director of Long Island Hospital, Boston.

Changes at Boston University—Dr Winfred Overholser, assistant commissioner of mental diseases in Massachusetts since 1930 and president of the Massachusetts Psychiatric Society, has been appointed professor of psychiatry at Boston University School of Medicine. He has been on the faculty since 1925. Dr Louis G Howard was named professor of orthopedic and fracture surgery, and Dr Rudolph Jacoby Jr professor of dermatology and syphilology. Dr Frederick W Colburn, professor of otology since 1929, was made professor emeritus, he had been connected with the faculty since 1901. He also received his degree of doctor of medicine at the school. Dr Otto J Hermann was named associate professor of orthopedic and fracture surgery.

MICHIGAN

Society News—Dr William W Bauer Chicago addressed the Henry Ford Hospital Medical Society, Detroit April 10, on "Popular Beliefs That Are Not So"—Dr William P Wherry, Omaha addressed the annual meeting of the Detroit Otolaryngological Society April 25 on "Clinical Application of the Newer Research in Chronic Sinusitis"—At a meeting of the Oakland County Public Health Association in Pontiac March 7, Dr David R Clark discussed "The Psychopathic"—Dr Bruce C Lockwood, Detroit spoke before the society April 4 on "Amebic Dysentery"—A symposium on colitis constituted the meeting of the medical section of the Wayne County Medical Society, April 9, on this occasion Harry M Nimmo, LL.D, editor of the Detroit Saturday Night was presented with honorary membership. A symposium on disturbances of menstruation was presented before the society, April 16 by Drs Lewis E Daniels, Harold Henderson and Milton A Darling all of Detroit.—The Gratiot-Isabella Clare County Medical Society heard Dr Myron G Becker Edmore discuss myelogenous leukemia at its meeting in Alma March 2

MISSOURI

Tuberculosis Surveys—Under the auspices of the Missouri Tuberculosis Association, tuberculosis surveys have been organized in Pettis, Livingston, Atchison, Randolph, St. Charles, Vernon, Nodaway and Saline counties. In some counties the survey will be followed by the tuberculin test and roentgen ray examination of contact children. In Laclede and Lawrence counties, tuberculin tests and roentgen examinations have been given in childhood tuberculosis clinics. Surveys are also being planned in other counties, the medical societies in all of which are cooperating with the tuberculosis associations.

Health at St. Louis—Telegraphic reports to the U S Department of Commerce from eighty-six cities with a total population of about 37 million, for the week ended April 21, indicate that the highest mortality rate (189) appeared for St. Louis and, for the group of cities as a whole, 122. The mortality rate for St. Louis for the corresponding period last year was 118 and, for the group of cities, 11. The annual rate for eighty-six cities for the sixteen weeks of 1934 was 126 as against a rate of 121 for the corresponding period of the previous year. Caution should be used in the interpretation of these weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have large Negro populations may tend to increase the death rate.

St. Louis Clinics—The graduate course and clinic conference will be held in St. Louis, May 21-26, under the auspices of the St. Louis Clinics. The programs are to be entirely clinical, covering the various branches of medicine, surgery and surgical specialties. Evening addresses will be presented by the following physicians:

Joseph F Bredeck Public Health Aspects of Tuberculosis
George D Kettlekamp Complications in Pulmonary Tuberculosis
Julius A Rossen What Constitutes Active Pulmonary Tuberculosis in Children?
Louis C Boismiere Useful Drugs in Controlling Symptoms in Pulmonary Tuberculosis
Harry S Crossen Cancer of the Uterus
Quintan U Newell Recent Advances in the Management of Sterility in the Female
Edward Lee Dorsett Diagnosis of Ectopic Pregnancy

Registration for the course may be made with the office of the St. Louis Clinics, 3839 Lindell Boulevard, St. Louis, the fee is \$10.

NEW HAMPSHIRE

State Medical Meeting at Manchester—The one hundred and forty-third annual meeting of the New Hampshire Medical Society will be held in Manchester, May 15-16, under the presidency of Dr Robert J Graves, Concord. Guest speakers will be:

Dr Dean Lewis Baltimore President American Medical Association
subject not announced
Dr William P Murphy Boston Pernicious Anemia
Dr Walter C Alvarez, Rochester Minn What Is Wrong with the Patient Who Feels Tired Weak and Toxic?
Dr Frank E Adair New York Diagnosis and Treatment of Breast Cancer

New Hampshire physicians listed on the program include:
Dr Joseph A Friberg Manchester, Friedman's Modification of the Aschheim Zondek Test for Pregnancy
Dr Donald E Higgins Epping Prolapse of the Uterus During Pregnancy
Dr Bernard P Haubrich Claremont A Case of Phenobarbital Poisoning
Dr Herbert L Taylor Portsmouth Bone Tumors

A symposium on tuberculosis will be presented by S A Petroff, Saranac Lake, N Y and Drs Richard H Overholt, Boston, Adelbert S Merrill Manchester, and Robert M Deming Glencliff. The fifty-year membership gold medal will be presented to Drs Leonard Jarvis, Claremont, and George E Leete Concord. The annual banquet will be given Wednesday evening May 16. Dr James J Powers, Manchester, is chairman for the banquet.

NEW JERSEY

Society News—Dr Alfred Stengel, Philadelphia, addressed the Atlantic County Medical Society, Atlantic City April 13, on "Problems in Medical Diagnosis"—Drs Francis I Borzell and Lyn W Deichler Philadelphia addressed the Essex County Medical Society Newark April 12, on medical economics—Dr Thomas M McMillan Philadelphia addressed the Gloucester County Medical Society Pitman, March 15 on rheumatic heart disease—Dr Russell L Cecil, New York addressed a joint meeting of the Passaic County Medical and Dental Societies Paterson March 8 on Dental Infection and Its Relationship to Systemic Disease.

NEW YORK

Drive Against Diphtheria—A state-wide drive for immunization against diphtheria was recently announced by the state health department. For the first time in five years the number of cases and deaths from diphtheria failed to decline in 1933 and several small outbreaks occurred during the year, according to the state health officer. There are thirteen cities with populations of 10,000 or more in which 35 per cent of the children under 5 years of age have been immunized, but in the remaining fifty-four cities of comparable size the percentages of immunization are much lower. Parents are to be urged in a house-to-house canvass to have their children immunized and various means of publicity will be used. Toxoid distributed by the state health department is the immunizing agent recommended for general use.

State Medical Meeting at Utica—The one hundred and twenty-eighth annual session of the Medical Society of the State of New York will be held in Utica, May 14-16, with headquarters at the Hotel Utica, under the presidency of Dr. Frederick H. Flaherty, Syracuse. General sessions will be held Tuesday and Wednesday afternoons, at which symposiums will be presented on "Hormones Which Influence Growth and Reproduction" by Philip E. Smith, Ph.D., New York; Drs. George W. Corner, Rochester; Robert T. Frank, New York; and Lewellys F. Barker, Baltimore, and on "Forensic Medicine" by Alexander O. Gettler, Ph.D., New York; and Drs. Charles Norris, New York; Harrison S. Martland, Newark, N. J.; and Vernon C. Brusham, Albany. The section on public health, hygiene and sanitation will present a symposium on asphyxia, given by Drs. Pradel J. Flagg, Alvan L. Baruch, New York, and Chevalier Jackson, Philadelphia. Among guest speakers who will address other sections are:

Drs. Hermann L. Blumgart and David D. Herlin, Boston. Treatment of Angina Pectoris and Congestive Heart Failure by Complete Ablation of the Thyroid Gland.

Dr. Ralph M. Lyson, Philadelphia. The Problem of the Premature Infant.

Dr. Joseph V. Knuder, Philadelphia, Jonathan Hutchinson.

Dr. John S. Coulter, Chicago. Work of the Council on Physical Therapy of the American Medical Association.

Dr. Dean Lewis, Baltimore, President, American Medical Association will give an address at the annual banquet at the Hotel Utica, Tuesday evening.

New York City

Hospital News—An examination for an appointment as resident at the Institute of Ophthalmology, Columbia-Presbyterian Medical Center, will be held at the institute, 635 West One Hundred and Sixty-Fifth Street, Friday, May 11, at 3 o'clock.

Changes at New York University—The council of New York University has recently announced the following appointments and changes in title at University and Bellevue Hospital Medical College:

Dr. John Winston Fowlkes, professor of otolaryngology.

Dr. Douglas Symmers, professor of pathology and director of pathologic laboratories.

Dr. Frank W. Co. Tut, associate professor of experimental surgery.

Julius A. Klosterman, Ph.D., associate professor of bacteriology.

Dr. Maurice Brodie, assistant professor of bacteriology.

Dr. Irving Graef, assistant professor of pathology and assistant director of pathologic laboratories.

Dr. Milton B. Rosenbluth, clinical professor of medicine.

Dr. Robert P. Wallace, assistant clinical professor of medicine.

Dr. Lillian C. Warnshius, assistant clinical professor of medicine.

Gibbs Prize to Be Awarded—The New York Academy of Medicine announces that a sum of about \$800 is available under the Edward M. Gibbs Memorial Prize toward original research in diseases of the kidney in 1934. Candidates for the award must be physicians who have been graduated at least three years and residents of the United States. They must submit evidence of research already performed and facilities to prosecute research on the causation, pathology and new methods of treatment of diseases of the kidney. The award may be continued through not more than three years to any one individual. Applications with the required evidence should be sent to the academy, 2 East One Hundred and Third Street, New York, before June 1.

Society News—Lester R. Cahn, D.D.S., addressed the Bronx County Medical Society, April 18, on "Correlation Between Medicine and Dentistry," and Dr. Theodor Blum, also a dentist, discussed importance of medicodental cooperation.

—Drs. Henry B. Richardson and Henry G. Bugbee discussed the medical and urologic phases, respectively, of perinephritis and perinephritic abscess at a combined meeting of the sections on medicine and genito-urinary surgery of the New York Academy of Medicine, April 18. —Dr. Charles L. Janssen

addressed the New York Surgical Society, April 23, on "Melanoma of Rectum." —Drs. George F. Pfahler, Philadelphia, and George B. Lusterman, Rochester, Minn., addressed the Society for the Advancement of Gastro-Enterology, May 3, on "Roentgenologic Diagnosis of Meckel's Diverticulum" and "Etiology, Pathways and Mechanism of Pain and Treatment of Peptic Ulcer," respectively. —Speakers before the Medical Society of the County of New York, April 23, were Drs. Louis E. Phancuf, Boston, on "Diagnosis and Treatment of Placenta Praevia," Harvey B. Matthews, Brooklyn, "Diagnosis and Management of Breach Presentations," and Edward A. Schumann, Philadelphia, "Diagnosis and Management of Persistent Occipitoposterior."

OHIO

Personal—Dr. Walter A. Jaquith, Chicago, has been appointed medical director of the Columbus Mutual Life Insurance Company, Columbus, succeeding Dr. Willis B. Carpenter. —Dr. Dorsey W. Fellers, Bloomville, has been appointed health officer of Seneca County.

Obstetric Society Organized—Representatives of the hospitals in Ohio having twenty-four or more bassinets organized the Hospital Obstetricians' Society of Ohio at a meeting at St. Luke's Hospital, Cleveland, February 24. The purpose of the society is to study maternal mortality and morbidity of the hospitals to establish minimal standards for hospitals in Ohio and to benefit the practice of obstetrics. Dr. Arthur J. Skel was elected president and Dr. Scott C. Runnels, secretary.

Postgraduate Day—The seventh annual "postgraduate day" of the Mahoning County Medical Society, Youngstown, was held April 28, with physicians from the faculty of McGill University, Montreal, as guest speakers. Dr. Jonathan C. Meakins spoke on "Rheumatic Fever Considered as a Specific Infectious Disease" and "Chronic Nontuberculous Pulmonary Disease"; Dr. James B. Collip on "Recent Advances in Anterior Pituitary Physiology"; Dr. John R. Fraser, "The Inflammatory Pelvis and 'Hemorrhage in the Last Trimester of Pregnancy,'" and Dr. Wilder G. Penfield, "Management of Head Injury Early and Late" and "Epilepsy: Classification and Management."

Cincinnati's Health in 1933—The general death rate in Cincinnati during 1933 was 14, as compared with 14.7 for 1932. The infant mortality rate was 55.4, a slight increase from the rate for 1932. Sixty-three deaths were charged to gastro-enteritis in children under 2 years old, an increase from the previous year, when 52 deaths occurred. Forty-seven mothers died from puerperal causes in 1933, as compared with 45 in 1932. Tuberculosis declined from 89.8 to 89.3 per hundred thousand of population. There were no deaths from typhoid among Cincinnati residents, but four imported cases were reported. Heart disease was the principal cause of death. 1,399 persons having died from this cause, 70 more than in 1932.

OKLAHOMA

State Medical Meeting at Tulsa, May 21-24—The forty-second annual session of the Oklahoma State Medical Association will be held at Tulsa, May 21-24. Guest speakers will be Drs. Donald C. Balfour, Rochester, Minn., and Charles F. Craig, New Orleans, who will speak at two general sessions Tuesday and Wednesday mornings. Dr. Balfour's subjects will be "Benign and Malignant Lesions of the Stomach and Their Management" and "The Duodenum" and Dr. Craig's addresses will be on amebic dysentery. Section meetings will be held in the afternoons, and an evening general meeting Tuesday, at which the incoming president, Dr. LeRoy Long, Oklahoma City, will give his official address. The president's reception and dance will be given at the Hotel Mayo Tuesday evening and the annual golf tournament Monday at the Tulsa Country Club. The Oklahoma Pediatric Society will hold a meeting Monday, with Dr. Williams McKim Marriott, St. Louis, as guest speaker.

OREGON

Personal—Dr. Leo S. Lucas, Portland, was elected president of the alumni association of the University of Oregon Medical School at the annual session in Portland, March 14.

PENNSYLVANIA

Physician's Right to Examine Motorist—Judge Norman T. Boose of Somerset County recently ruled, in a trial at Media of a man for alleged drunken driving, that a physician has no right to examine a man for intoxication unless the driver gives his consent. When such an examination is made without the driver's consent, the testimony of the physician is not admissible as evidence the judge asserted. In spite of the ruling, the jury returned a verdict of guilty in the case.

Society News—Drs Grover C Weil and John Henry, Pittsburgh, addressed the Westmoreland County Medical Society, Greensburg, March 8, on "Diagnosis and Treatment of Fractured Pelvis"—Dr Charles Howard Marcy, Pittsburgh, addressed the Lycoming County Medical Society, Williamsport, April 13, on pulmonary tuberculosis—Dr John P Griffith, Pittsburgh, addressed the Fayette County Medical Society, Uniontown, April 5, on "Postoperative Complications and Treatment"—Dr Jacques P GueQuerre, Philadelphia, addressed the Dauphin County Medical Society, Harrisburg, April 3, on dermatology and its relation to the general practitioner—Dr Harry E Mock, Chicago, gave an address on skull fractures and intracranial injuries before the Harrisburg Academy of Medicine, April 17—The tenth councilor district of the Medical Society of Pennsylvania combined its annual meeting with the annual clinic sessions of the Westmoreland County Medical Society, Greensburg, May 3. Among guest speakers were Drs Dean Lewis, President, American Medical Association, and John T King Jr, both of Baltimore, Donald Guthrie, Sayre, president, Medical Society of the State of Pennsylvania, on intestinal obstruction, and William H Guy, Pittsburgh, management of syphilis—Dr Norman H Russell, Timmins, Ont, addressed the Pittsburgh Academy of Medicine, April 24, on silicosis

Philadelphia

Special Meeting on Medical Research—Work of the Philadelphia Institute for Medical Research was presented at a special meeting of the Philadelphia County Medical Society, April 30. Dr Judson Daland, president of the institute, discussed its plans and organization, and other speakers described the research done in the past year on thymus extract. Dr Leonard G Rowntree, director, spoke on "The Accruing Effects of Thymus Extract (Hanson) on Growth and Development in Successive Generations of Rats", Dr Adolph M Hanson, Faribault, Minn, on "Preparation and Nature of an Active Thymus Extract", Jefferson H Clark, on "Histologic Findings in Rats Treated with Thymus Extract (Hanson)", John Lansbury, "Blood Picture in Rats Treated with Thymus Extract (Hanson)", and Henry H Donaldson, Ph D "Applications of the Results Obtained on the Rat to Man." A demonstration of thymus-treated rats was also arranged

Demonstration of Cardiac Diagnostic Methods—Demonstrations of methods of diagnosing and treating heart disease will be held under the auspices of the Philadelphia Heart Association, May 15-18. Sessions will be held at the University of Pennsylvania, Jefferson Medical College, Temple University School of Medicine, Pennsylvania Hospital, Philadelphia General Hospital and the Children's Heart Hospital. Among those who will conduct the demonstrations are

- Dr Edward B Krumhaar General Pathology of the Heart.
- Dr Francis Q Thorp Report of Results of Intravenous Streptococcus Vaccine in Children with Rheumatic Cardiovascular Disease
- Dr Eugene P Pendergrass Roentgen Examination in the Study of the Heart and Great Vessels
- Dr Thomas McCrae Syphilis of the Heart
- Dr Edward L Bauer Heart Lesions Occurring in Children
- Dr Leonard G Rowntree Present Status of Our Knowledge of Hypertension
- Dr William D Stroud Treatment of Acute Arrhythmias
- Dr Joseph B Wolfe Etiology and Treatment of Angina Pectoris

SOUTH DAKOTA

State Medical Meeting at Mitchell—The fifty-third annual session of the South Dakota State Medical Association will be held at the Widmann Hotel, Mitchell May 14-16 under the presidency of Dr Edward W Jones, Mitchell. Mornings will be devoted to medical and surgical clinics given by visiting physicians. Speakers listed on the program include

- Dr Francis E Senear Chicago Modern Treatment of Syphilis
- Dr Fred M Smith Iowa City Peptic Ulcer
- Dr Albert M Snell Rochester, Minn, Unusual Clinical Pictures Associated with Common Duct Stone
- Dr Irving S Cutter Chicago Studies on Capillaries
- Dr Ralph G Willy Chicago Radiologic Findings of Primary Carcinoma of the Lungs
- Dr Frederick A Willus, Rochester Minn Treatment of Congestive Heart Failure
- Dr Stuart W Harrington Rochester Surgical Treatment of Carcinoma of the Breast
- Dr Edgar J Huenekens Minneapolis Care of Infant in First Year of Life
- Dr Joseph C Ohlmacher Vermilion Etiologic and Pathologic Aspects of Some of the More Important Cardiovascular Diseases
- Dr Hiram Winnett Orr Lincoln Neb Osteomyelitis—Treatment Without Frequent Dressings

The annual banquet will be held Tuesday evening May 15 with Dr Irving S Cutter as speaker on State Medicine Its Significance.

TEXAS

Warning Against Rabies—Three dogs suffering from rabies were caught in Dallas within an hour and a half, March 16 newspapers reported. Dr James W Bass, city health officer, issued warning to residents to beware of dogs and to seek treatment immediately if they had been bitten. Rabies vaccine was administered to thirty-seven persons that day. A campaign to force all citizens to muzzle dogs, to have them vaccinated and to buy city licenses was instituted.

State Medical Meeting at San Antonio—The sixty-eighth annual session of the State Medical Association of Texas will be held in San Antonio, May 14-17, under the presidency of Dr Alonzo A Ross, Lockhart. Guest speakers who will address general meetings will be

- C T Freeman Sherman attorney for the association, Actionable Negligence in the Use of X Rays
- Dr James P Simonds Chicago Amebiasis
- Dr Russell M Wilder Rochester Minn, Recent Advances in Endocrinology
- Dr James C Masson Rochester, Malignancy of the Uterus
- Dr Leander A Rely Oklahoma City Diabetic Problems
- Dr Miguel A Bustamante, Mexico City The Virus of Typhus
- Dr Ellis Fischel, St. Louis Surgical Use of Radium

In addition, the guests will speak at special section luncheons and the regular section meetings. Dr Albert H Andrews, Chicago, will be the guest of the eye, ear, nose and throat section. Dr Ross will give his official address at the first general session and Dr Samuel E Thompson, Kerrville, president-elect, will speak on "Present-Day Drift Toward Overprotection and Its Evil Consequences." One general session will be devoted to memorial services. The Texas Neurological Society, Texas Radiological Society, Texas Dermatological Society, the Texas Railway Surgeons Association and a conference of county and city health officers will meet Monday, May 14. The association dinner will be held at the Gunter Hotel, Tuesday evening, followed by the president's reception and ball. Various Texas physicians will give public health lectures in San Antonio churches, Sunday, May 13.

WISCONSIN

Society News—The Ninth Councilor District Medical Society met in Wisconsin Rapids, January 11, with the following speakers: Drs William S Middleton, Madison, on silicosis, Leland C Pomerville, Wisconsin Rapids, perinephritic abscess, and Paul F Doege, Marshfield, work of the cancer committee of the state medical society. Speakers at a meeting of the Portage County Medical Society Stevens Point, March 6, were Drs Joseph Gale, on surgical treatment of pulmonary tuberculosis, William S Middleton, treatment of lobar pneumonia, and Mr J George Crownhart, economic problems facing the medical profession. All were from Madison—Drs Frank N Wilson, Ann Arbor, Mich, and James C Sargent, Milwaukee, addressed the Medical Society of Milwaukee County, March 9, on "Coronary Disease" and "Resection of the Prostate: An Evaluation," respectively—Drs Francis D Murphy and Edmund H Mensing addressed the Milwaukee Academy of Medicine, March 20, on "Complications of Diabetes Mellitus" and "Reducing the Hazards of Intestinal Obstruction" respectively—Drs Elmer W Hagens Chicago, and John E Mulsow addressed the Milwaukee Oto Ophthalmic Society, February 27, on "Anatomy and Pathology of the Petrous Bone" and "Local Lesions of the Mouth in Granulocytopenia" respectively—Dr Samuel Plahner, Milwaukee, addressed a joint meeting of the medical and dental societies of Jefferson County at Watertown, March 28, on causes and prevention of neuroses.

GENERAL

Research Fellowships Established—E R Squibb and Sons have announced plans for establishing fellowships in various institutions throughout the country in connection with the biologic laboratory at New Brunswick, N J. Fellowships with a value of \$1,800 the first year and not more than \$2,200 in subsequent years will be awarded in medicine, biology, chemistry and physics. Applicants must hold the degree of doctor of medicine or doctor of philosophy or an equivalent.

Care of Lepers—The United States Public Health Service in a recent letter to health officers urged that state and local officers arrange to send all lepers found in the continental limits of the United States to the National Leprosarium at Carville La. This institution which has been operated by the service since 1921, is a modern hospital in which every effort is made to provide the best medical and nursing care. At present there are 354 lepers under treatment there. Since 1921 166 persons have been discharged as no longer dangerous.

The service is prepared to defray the expenses of lepers from any state to Carville and will send qualified experts on request to consult with local physicians or to verify the diagnosis

Changes in Status of Licensure—The California State Board of Medical Examiners reports the following

Dr I Jesse Citron Hemet, license restored February 26 placed on probation for five years without narcotic possession or privileges

Dr Ernest N Freeman Glendale, license restored, February 26, placed on probation for five years

The Oklahoma state board of medical examiners has reported the following actions taken at a meeting, March 13

License of Dr John Milton Thompson, Walters, Okla., suspended for five years

License of Dr William Flournoy Griffin Watonga Okla., suspended for one year following his conviction on a charge of violating the Harrison Narcotic Act

License of Dr Richard E. Thacker Oklahoma City, revoked permanently following his sentence to life imprisonment for murder by an illegal operation

Medical Bills in Congress—*Changes in Status* S 822 has passed the Senate, authorizing the Postmaster General to permit the transmission in the mails of poisonous drugs and medicines to cosmetologists and barbers S 1842 has been reported to the Senate, with recommendation that it pass The bill proposes to authorize the dissemination of information relating to the prevention of conception, and articles, instruments, substances, drugs and medicines designed, adapted or intended for the prevention of conception, (1) by any physician legally licensed to practice medicine or by his direction or prescription, (2) by any medical college legally chartered under the laws of any state or the District of Columbia, (3) by any druggist in filling any prescription of a licensed physician and (4) by any hospital or clinic licensed in any state or the District of Columbia S 2455 has passed the Senate, providing that for the purpose of promotion there shall be credited to the officers of the Medical Corps all active service as officers of the Medical Reserve Corps rendered by them between April 23, 1908, and April 6, 1917, with the proviso that no back pay or allowances shall be held to have accrued prior to the passage of the act S 2794 has passed the Senate, amending the longshoremen's and harbor workers' compensation act Among other things the bill would authorize a deputy commissioner to suspend payment of compensation if the injured employee unreasonably refuses to submit to medical and surgical treatment S 3393 has passed the Senate, providing that Osage Indians who are habitual drunkards or habitual users of narcotics may be committed to institutions *Bills Introduced* H R 9230, introduced by Representative Carter, California, proposes to amend the veterans' provisions of the Independent Offices Appropriation Act, 1934, to give the benefits thereof to veterans who enlisted in the United States forces after August 12, 1898, and who served in Cuba

Society News—The American Association of Medical Milk Commissions will hold its annual meeting in Cleveland, June 11-12—The National Society for the Prevention of Blindness announces that four colleges will offer courses for training teachers and supervisors of sight-saving classes during the coming summer, as follows State Teachers College, Buffalo, University of Chicago, University of Cincinnati, and Teachers College, Columbia University, New York Information may be obtained from the society, 450 Seventh Avenue, New York, or from the universities—The Medical Women's National Association will hold its annual meeting in Cleveland June 10-12, with headquarters at the Hotel Cleveland, and under the presidency of Dr Mary O'Malley, Washington, D C—Dr Roy Glenwood Spurling, Louisville, was elected president of the Harvey Cushing Society at its third annual meeting in St Louis, April 5-6, and Dr Louise C Eisenhardt, Boston, secretary The next annual session will be held in New Haven, Conn Active members of the society are engaged in investigative work in neurology, neurosurgery and allied subjects The recent meeting opened with an operative clinic at Barnes Hospital followed by a roentgenologic demonstration, and the afternoon of the first day and the entire second day were devoted to addresses Dr John F Fulton Jr, New Haven, retiring president of the society, spoke on "Relation of the Physiology of the Nervous System to Neurology"—The American Physiotherapy Association, an organization of physical therapy technicians, will hold its annual meeting in Cleveland, June 13-16 Speakers will include Drs Russell L Haden and Wallace S Duncan, Cleveland on 'Arthritis as a General Medical Problem' and 'Low Back Disability Its Etiology and Treatment,' respectively—The American Association of Industrial Physicians and Surgeons will meet in Cleveland, June 11-12, with headquarters at the Hotel Statler

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 7, 1934

The Danger of Drugs Used for Weight Reduction

The death of a dancer from an overdose of nitrophenol, taken to reduce her weight, was reported in a previous letter The case has led the government to take action to prevent the public from being able to obtain such drugs so easily A letter from the home secretary was read before the Pharmaceutical Society asking if the council of the society would initiate restrictions pending the coming into force of the new pharmacy and poisons act During the discussion it was pointed out that the pharmacist from whom the tablets had been purchased told the girl that she would be well advised to take them only under a physician's orders As far back as September 1933 the manufacturers of the tablets containing the nitrophenol suggested to the home office that the drug should be placed on the poisons list, but nothing was done The first and second fatalities from nitrophenol were recorded in THE JOURNAL, Oct 21, 1933, page 1333, and Feb 17, 1934, page 523 The case that is the subject of this note is the third fatality on record, but serious symptoms have been observed in other cases Nitrophenol reduces obesity by increasing the metabolic rate and evidently is a dangerous remedy for this purpose and should be used with the greatest care

Attacking Locusts from the Air

As reported in a previous letter, a new method of destroying locusts has been devised Mr H H King, formerly chief entomologist to the Sudan government, has left London for northern Rhodesia for the purpose of making experimental attacks on flying swarms of locusts He will discharge clouds of sodium arsenite ahead of the locusts, passing to and fro across their line of advance These swarms may be of great extent They have been observed at sea 1,200 miles from land, and one that crossed the Red Sea in 1889 was estimated to be 20,000 square miles in extent In 1932 Mr King discovered by laboratory tests at Khartoum that the adult locust fell a ready prey to a spray of finely ground sodium arsenite His suggestion to discharge arsenite dust from an airplane on flying swarms of locusts was taken up by the locust control committee of the economic advisory council The damage caused by locusts in tropical and subtropical Africa has been estimated at \$7,500,000 annually Since 1929 the locust control committee has been collecting material for a comprehensive survey of the breeding grounds and migratory habits of the several species of locust With this knowledge and his own expert training, Mr King is in an ideal position to deal with the pest Including the hire of the airplane, the experiment will cost \$21,000 The airplane has been specially fitted with an apparatus for the discharge of the poison dust, which costs \$250 a ton Three tons has been sent to Rhodesia from the only company in Great Britain that could produce the dust of sufficient fineness The discharging apparatus has been fitted to the wings of the airplane, and the airman will be protected from the dust cloud, which will trail behind him as he flies Heretofore there has been no completely satisfactory method of destroying locusts The usual method is to kill them in the immature (hopper) stage by poison baits laid on the ground, but the migratory locust does not eat the bait so readily as the desert hoppers Calculations made by the chemical research department of the war office indicate that the rate at which sodium arsenite powder of the required density will fall raises no difficulty in creating a suitable cloud There is no danger to man or live stock, as natural dissipation quickly

reduces the density to a nonpoisonous level. Compared with poison gas, dust has the advantage of not requiring to be stored in heavy cylinders and in being cheaper.

The Feeding of Children

Much discussion is taking place as to the minimum dietetic requirements of persons subsisting on unemployment pay and as to the amount of money that should be allowed for this purpose. The children of the unemployed furnish a special problem. In the house of commons, a children's minimum committee has been formed to urge that every child shall receive sufficient nourishment for health. It sent a deputation to the prime minister, which made the following proposals: 1 That a daily ration of clean fresh milk should be available for all children attending state-aided schools, for younger children through the public health department, and for expectant and nursing mothers. 2 That it should be made compulsory on local authorities to provide school meals for children who by reason of poverty of their parents or for other reasons are inadequately fed. 3 That the allowance for children of unemployed persons should be substantially increased. 4 That encouragement should be given to the extension on municipal housing estates of schemes of rent rebates, when the family income is insufficient for minimum needs. The prime minister said that he welcomed the formation of the committee and looked forward to cooperation with it.

In a joint letter to the *Times*, the three medical peers—Lords Dawson, Horder and Moynihan—ask that the milk supplied to children be rendered safe for consumption. They state that the supply of milk to growing children will receive strong support from the medical profession, but until purity at the source and during subsequent distribution can be guaranteed all milk should by pasteurization be rendered safe from the risk of causing disease.

Heart Disease and the Workman's Compensation Act

The extraordinarily wide manner in which the workman's compensation act is now interpreted in the courts is shown in a paper on heart disease in workmen read before the Medical-Legal Society by Mr. D. H. Kitchin. He pointed out that, when a workman suffering from heart disease died at work, the courts nearly always treated the death as an accident arising out of his employment (the words of the statute). He considered that this was unjust to the employer and might be prejudicial to a workman in seeking employment. The act laid down that the employer had to pay compensation for personal injury by accident arising out of and in the course of the employment. In the earlier cases the courts held that, if nothing fortuitous or unexpected happened, any mishap could not be attributed to an accident. Thus when a workman ruptured the vessels of his stomach in straining at a fly-wheel of a gas engine this was held not to be an accident. But later decisions reversed this decision, and Lord McNaghten said in the supreme court that such a view would unfairly penalize a workman who put forth his best efforts. In what is now the leading case on the subject, a workman ruptured an aneurysm when performing some light operation—an occurrence that might have happened in his sleep. This was decided in the court of appeal by a majority of three to two to be an accident arising out of his employment. In another case a dipper in a galvanizing shop died of angina pectoris during an interval of the work, and this was held to be an accident arising out of his employment.

The Dangers of Colonic Irrigation and of Enemas

In a letter to the *British Medical Journal* Mr. A. Wilfrid Adams, a Bristol surgeon, reports a case in which a woman suspected to be suffering from acute intestinal obstruction was admitted to a hospital. The house surgeon ordered a turpentine

enema. When Mr. Adams operated a few hours later, the odor and character of the free fluid present in the peritoneal cavity showed that the enema had found its way there, obviously through a perforated gangrenous diverticulum of the sigmoid colon. The enema hastened the woman's end. In another fatal case of diverticulitis it seemed that the same pitiable sequence ensued. Mr. Adams points out that patients who have undergone colonic resection not rarely receive rashly administered enemas within a few hours or days of the operation. These have led to fatal leakage. He also refers to two fatal cases of appendectomy, recorded by Pett, in which leakage at the appendix stump was suspected to have been due to enemas, and virulent peritonitis followed. Another danger was described by Rayner, a Manchester surgeon, in 1932—injury to the mucous membrane of the anus and rectum in the administering of enemas. Rayner saw three such cases in six years. The injury is always grave, for it causes sloughing of the anal canal and rectum, and temporary colostomy is necessary to promote healing. The essential factor in producing the injury is the use of a hard conical nozzle, usually of bone, sometimes of glass, of which the tip is forced through the anal mucosa.

Fatal Dermatitis Due to Dyed Fur

Many cases of severe dermatitis due to the wearing of fur dyed with paraphenylenediamine have been recorded, but the following appears to be the only one that has proved fatal. An inquest was held at Liverpool on a widow, aged 59. Dr. Robert Mackenna, a dermatologist, stated that he treated her for dermatitis of the lower part of the face and the whole of the neck, chest and arms, caused by wearing a fur collar that was dyed. Later she was admitted to a hospital but, although the dermatitis improved, her general condition became worse and she died from heart failure and edema of the lungs. Fur dermatitis had never previously been known to end fatally, but he thought that the heart was in some way affected. Dr. Dilling, professor of pharmacology at Liverpool University, stated that he examined the fur. Two dyes had been used, paraphenylenediamine and para-aminophenol, both of which would cause dermatitis.

PARIS

(From Our Regular Correspondent)

March 14, 1934

Fiscal Measures Obnoxious to Physicians

Great indignation has been aroused in the medical profession of France by reason of the fiscal regulations recently introduced. The law passed last year obliged physicians to keep an account of all the sums they receive, with the name of the clients who paid them. All physicians protested that this constituted a violation of the right of privileged communication. The minister of finance proposed therefore substituting figures for the names of the patients, the latter being recorded in another book which would be kept secret. The physician was, however, compelled to deliver to his client a receipt for the sum each receipt to bear the recorded number of the patient. In this way traps might be set for physicians for certain clients are entitled to deduct from their income the money needed for their treatment in the event of a protracted disease, and in such cases they must present to the controllers of the treasury department the receipts for the sums that they have paid to their physician. If this particular physician was suspected by the controller of having made an inadequate declaration he might be requested to exhibit his books in which would be checked the numbers corresponding to the receipts. This solution of the matter was severely criticized. The Academy of Medicine passed a unanimous resolution condemning the system. During the discussion on the budget the physicians who are members of the chamber of deputies (and

there are a number of them) succeeded in suppressing the obligation of furnishing numbered receipts. But the senate reestablished it on the intervention of Mr. Cuillaux. The budget was returned to the chamber of deputies, which upheld the suppression, and then passed again to the senate, which finally yielded. Physicians are therefore no longer compelled to furnish their clients receipts for all the sums that the latter pay, but they must still keep book account of the sums received, and their books are always open for the inspection of the controllers of the income tax if their attention is called to any apparent discrepancy between the amount of income declared and the visible expenditures of the physician: amount of rent paid, number of domestics, number and type of automobiles, country home, and other items.

Typhoid in Marseilles

The Marseilles Medical Society selected as the topic for its recent annual meeting "Typhoid in Marseilles," where the mortality from the disease is 157 per hundred thousand, as compared with 48 in Paris, 05 in London and 08 in Berlin. Dr. Violle stated that the probable reasons were absence of sewers in several sections of the city and the suburbs, frequency of the pollution of spring water and of wells and, particularly, constant contamination of the shore line (in a sea that has no tide) by sewage. Mr. Teyssourette has made a study of the shell-fish consumed in Marseilles and has made a comparison of the relative number of typhoid bacilli found in the several varieties. Oysters proved to be only a secondary source of infection. It appears that at present it is chiefly the mussels and more rarely the sergheims that are mostly responsible. It is difficult to secure healthy shell-fish at Marseilles, and so long as the sewers empty on the shore typhoid will be prevalent. The only thing that will help is the establishment of rigorous regulations and strict surveillance, which the carelessness and skepticism of the people make exceedingly difficult. Mr. Olmer has noted that the infections observed at present in Marseilles are nearly always due to the Eberth bacillus (98 per cent of the cases, with 1.40 per cent paratyphoid B and 0.22 per cent paratyphoid A). The importance of vaccination is proved by the greater frequency of the disease in women (eighty-nine cases in women as compared with thirty-six cases in men, in a hospital department) and by the less grave type of the disease occurring in vaccinated persons. Vaccination is compulsory in men during their military service. Shell-fish infection in Marseilles has been found to be at the basis of sixty-five out of a hundred outbreaks. Typhoid due to shell-fish is distinguished by its gravity (21.42 per cent of mortality, as compared with 12.37 per cent in the same period for infections not having that origin). Certain peculiarities distinguish this etiologic type of the disease. The incubation period is sometimes shortened. Evolution occurs in two stages after a stage of ordinary gastro-intestinal infection or after an icterus. Diarrhea, hemorrhage and perforation are frequent. Cases occur in which accidents are precipitated as if the typhoid infection were rushing headlong. Blood disorders manifested by modifications of coagulation and of the appearance of the blood clot, are frequent. To explain the rapid course that shell-fish infection often presents, one may imagine a massive inoculation of bacilli through a concentration of microorganisms in the shell-fish, or, rather, of a combined infection, *Bacillus coli*, putrid bacteria and anaerobes exerting their action possibly in situ in the intestine and thus aggravating the effects of typhoid infection. C. Mattei and L. Isenmann reported their experience with serotherapeutic treatment of typhoid, which gave, in general, good results. The Rodet serum was found to be most active in these grave cases. The bacteriophage administered by mouth gave irregular results. Subcutaneous injections proved to be more effective but pro-

duced marked immediate reactions. Autohemotherapy acts favorably on the slow types—likewise simple transfusion of normal blood. Immunotransfusion of the blood of a subject previously vaccinated against typhoid gave excellent results and possibly may become the method of the future. The delirium of typhoid patients is quickly relieved by injections of liver extract in large doses.

BERLIN

(From Our Regular Correspondent)

March 12, 1934

The Federal Merger for Research on Nutrition

Federal health administration has been taken over by the Reichszentrale für Gesundheitsführung, which consists of eleven different federal *arbeitsgemeinschaften*, or mergers. The department of general nutrition is under the direction of Professor Reyher. A firm union of all the organizations combined in this department insures the avoidance of dangers that might threaten the enforcement of the common principles and prevents the special interests of any one group gaining the upper hand. In questions requiring special scientific study the federal bureau of health is ever ready to advise the members of the *reichsarbeitsgemeinschaft*, who are recruited from the different schools representing German research on nutrition. In addition to the testing of the modern principles of German science of nutrition research on the biologic value of food products and the care of the foods themselves is being conducted. Emphasis is placed on the hygienic importance of transportation of food products and their distribution among the population. Methods of preserving foods are studied. Furthermore in collaboration with the federal bureau of health, the uses of skim milk and potatoes, as additions to bread, have been investigated.

The investigation of proposed reforms in nutrition constitutes a special field of research. The reform movement has offered to cooperate with the *reichsarbeitsgemeinschaft*. A standing committee has begun to perform practical work, and it appears likely that the objectionable features of the reform movement, as pointed out by men of science, will soon disappear. This committee, in collaboration with the federal ministry for popular education and enlightenment, will control the publicity service, which is suffering from mismanagement, and if attempts are made to oppose such development, action will be taken to eliminate all opposition.

The second department, under the direction of Professor Schliker, has the task of elaborating and establishing dietetic criteria for patients in the hospital and in the spas and health resorts. It is also the duty of this department to establish criteria for the selection and training of the personnel responsible for the nutrition of patients and convalescents.

A special journal will publish results of the research of the *reichsarbeitsgemeinschaft* and the associated committees that have to do with the nutrition of the German people. A separate department will issue reports from time to time on the general nutrition of the people and will announce special diets to be used solely for patients and convalescents. The creation of a popular journal, whose essentials are now being worked out, has been announced by Professor Reiter (president of the federal bureau of health) for the fulfillment of this task.

Observations on the Hormone Regulation of the Circulation

Professor Rein, of the University of Göttingen, reported recently, before the medical society of Frankfurt on Main, on the results of his research on the intact organism with physiologic quantities of hormones. He measured the blood pressure simultaneously in several unopened vessels and thus obtained some insight as to how the whole organic system behaves

toward epinephrine. He concluded that when the muscle is working the blood vessel is not contractible. Physiologic doses of epinephrine, which do not cause pressure fluctuations in the coronary region, produce dilatation in the heart and during rest, constriction in the periphery. If however larger doses are given (0.05 mg for each 30 Kg of body weight) the epinephrine constriction is counteracted by the depressor effect hence in the region of the coronary arteries constriction results. Therefore, the muscle cannot be throttled by physiologic quantities. Not only in the muscle but also in the splanchnic region the same effect may be observed. The same rule applies to the skin. A pronounced constrictive tendency is observed in the suprarenals. Rein cites in evidence thirty experiments on the entirely intact suprarenal vessel. He observed constriction even though dilatation prevailed in the splanchnic region. It is evident therefore, that no considerable increase of pressure can develop as the suprarenal does not furnish the material itself and that the presence of an unphysiologic epinephrine level results in a suppression of the suprarenals.

If the sinus caroticus is clamped off, these are the results: constrictions in the periphery, increase of pressure, increase of heart activity, and dilatation of the coronary arteries. This action is of a purely neuroreflexive nature. The suprarenals play no part in it. The effusion of epinephrine into the circulation takes place independently of the increase of blood pressure.

The function of the suprarenals as regulators of the circulation can be conceived of, according to these observations, as follows. In the organism certain stimuli cause an effusion of epinephrine into the blood, among other things action of the muscle effects a projection of epinephrine but epinephrine does not produce everywhere the constriction that occurs. Constriction, moreover, occurs only where there is physiologic rest and not where there is activity; that is blood is transported from a quiet to an active area. Epinephrine is important because of its leveling action on the blood pressure but it will not of itself lead to increase of blood pressure. When present in the blood it suppresses its secretion from the suprarenal gland. Epinephrine can thus no longer be regarded as exerting physiologic action on the blood pressure. It is not impossible, however, that an increase of pressure may be observed in pharmacologic experiments, just as therapeutic utilization of epinephrine in a similar sense may continue to be upheld.

CAPE TOWN

(From Our Regular Correspondent)

Feb 8 1934

Professor of Forensic Medicine Appointed

The University of the Witwatersrand has recently appointed a professor in forensic medicine. This post has been made possible by the cooperation of the government which contributes a certain amount toward the salary of the professor who acts at the same time as chief district surgeon (police surgeon) for Johannesburg. Heretofore both universities with medical faculties attached to them have refrained from concentrating on this important subject of medical jurisprudence and the courts have several times complained about the nature and quality of the medical evidence tendered. General practitioners or specialists in departments other than medical jurisprudence have given evidence on points on which even an expert on medical jurisprudence might have been diffident in expressing his opinion. On the other hand one must cordially appreciate the excellent work done by district surgeons who have sometimes 'worked up' a case in a manner that would have done credit to any expert. A case that rises to mind is that of *Rex v Hauptfleisch* a homicide case in which the guilt or innocence of the prisoner turned largely on the nature of the burns on the body of the murdered woman. In this case the

district surgeon, Dr Bam, carefully went into the question of the nature of postmortem and antemortem burns, and his conclusions were afterward confirmed in every particular by a committee of experts appointed by the government. As a result, the prisoner was found guilty and hanged. Usually, however, homicide cases are not so carefully worked up. Now that Johannesburg has appointed a professor in forensic medicine, it is likely that Cape Town will follow suit, and it is understood that a similar arrangement will be made.

The First Education Number

The medical journal publishes this month, for the first time, an education number, following herein the example set by THE JOURNAL and some other medical papers. The number is devoted to a description of the work done at Cape Town and Johannesburg, with a full account of the various departments. It shows how rapid has been the progress of medical education in the unions. Indeed, some people hold that this progress has been far too rapid and that more medical men are being trained than can be readily absorbed. That, however, is not the opinion of either of the two principals of our universities with medical faculties. They show, in articles contributed to the education number, that South Africa can still find employment for the medical men it turns out and that a fair percentage of the newcomers have qualified abroad, where the requirements are not quite so exacting as here. A union medical student takes six years to qualify, and the first two years, devoted to chemistry, physics, zoology, anatomy and physiology, are particularly strenuous. Some rearrangement of the curriculum is probably desirable and is at present a matter of consultation between the faculties and the medical association. The views of the principals of the universities are not shared by many of the members of the association, and more than one voice has been raised in protest against flooding the country with medical men. It is perfectly clear that the native territories are understaffed with medical men. The subject is one for the determination of which data are needed that are at present not available.

First Annual Scientific Meeting

Last month the African branches of the British Medical Association met at Dar-es-Salaam for their first annual scientific meeting. The meeting was attended by delegates from England and elsewhere and the Medical Association of South Africa sent a deputation consisting of two of the best known members of their federal council. In the list of subjects discussed tropical diseases were to the fore.

William Darley Hartley

The profession has sustained a great loss through the death, in his seventy-ninth year, of the veteran Dr William Darley Hartley. He was born at Sheffield and did graduate study at Paris before coming to this country. During the campaign of 1879 he suffered from heat stroke—a disability that saved his life for his regiment left without him and was decimated at Isandula; his deputy medical officer being among those mutilated by the natives. Later on he practiced at East London. In 1898 he started practice as a specialist at Cape Town. He had always been interested in medical politics. He established the 'South African League,' a political organization that was at one time very strong. After the Boer War he founded the *South African Medical Record* in 1903 and soon devoted all his time and energy to it. He served on the Colonial Medical Council. He carried on his paper until 1926 when he agreed to sell it to the newly established Medical Association of South Africa which incorporated it with the *Transvaal Medical Journal* and appointed him its first editor. He was elected a life honorary vice president of the Cape Western Branch; he was the first holder of the association's medal for meritorious ser-

vices, and on more than one occasion, at congresses and special meetings, he received tributes of affection and appreciation tendered by his colleagues. His influence extended very far, but he wrote few medical articles, and those chiefly on ethics and the history of medicine. He was highly cultured, a good linguist, a keen controversialist but always a chivalrous opponent in debate.

PRAGUE

(From Our Regular Correspondent)

March 1, 1934

Conference on Preventive Medicine

The fourth National Conference of Preventive Medicine was held on February 1-4 at Karlova Studánka, a small watering place of Silesia. This congress is becoming an important institution for the promoting of public health measures in Czechoslovakia. Four main topics were on the program. The first dealt with a reform of the law on infectious diseases. The conference came to the conclusion that a law for combating infectious diseases should not be too specific and should contain only a frame for measures that might be filled in at subsequent periods in accordance with the progress of bacteriology and epidemiology. This is the main criticism of the law of 1913, now in force, which was modern at that time but became rapidly antiquated by progress in research in protective measures against infectious diseases. It was emphasized that means should be provided for the building up of a chain of bacteriologic laboratories, widespread immunization should become an integral part of the working program of the official public health machinery, and means should be provided from public funds from which expenses connected with isolation of patients, suspects and carriers could be defrayed.

The second main topic dealt with a plan for the reorganization of public health service, presented recently by Dr. Albert. This plan calls for the concentration of the public health services around hospitals. Health officers are inclined to become bureaucratic when they have no direct contact with a purely medical institution. Diagnostic facilities available in public hospitals are of immense value for the application of measures of social hygiene in case the hospital physicians are properly oriented toward preventive work. The conference came to the conclusion that the plan might be practical in places where the direction of the hospital is in the hands of physicians who have an equally balanced interest in public health and in curative medicine.

The third point of the conference dealt with the organization of maternity service. There is a general tendency for the concentration of confinements in public institutions. In spite of that, for a long time a great number of confinements will be in the hands of midwives. The main difficulty lies in a proper distribution of competent midwives. They flock to cities, while in rural areas, where usually the birth rate is high, there is a scarcity of them. The conference formulated recommendations according to which the country should be divided into small areas where a certain number of paid confinements would be guaranteed to the midwife. She would have her income either insured from private practice or assured from insurance funds and, in the case of the poor, from public funds. The conference, which was of a private character, had a large attendance of physicians, governmental representatives, lay representatives of the sickness insurance, and the legislature.

Discussion on Prevention of Conception

The question of the limitation of pregnancies through natural means was considered at a recent meeting of the Association of Czech Physicians. Owing to the high percentage of Roman Catholics in Czechoslovakia the so called Ogino-Knaus method of limiting pregnancies came to be advocated in the country.

The theory back of this method is that impregnation of the ovum is possible only during certain days of each monthly cycle. Prof. Antonín Ostrčil at this meeting declared that according to his experience there is no time in the intermenstrual period that could be definitely declared as the safe period. According to him, ovulation and the whole monthly cycle are governed by many factors, which make any regularity impossible. Ovulation is influenced not only by hormones but also by nervous factors, which intermingle freely and do not admit any reliable prediction. In the general discussion, the experiences of practicing physicians were presented who have tried this method and have failed in most cases. The discussion may be summarized in the conclusion that according to present knowledge the prevention can be assured with some reliability only through artificial means.

Professor Vymola Honored

The seventieth birthday of Prof. Charles Vymola was celebrated recently by the Czechoslovakian Otolaryngologic Association. He is the president of this body and the oldest active representative of this specialty in Czechoslovakia. He began lecturing on otolaryngology in 1902 and became professor of this subject in 1913. His early work was concerned with the etiology of infectious rhinoscleroma. Many of his papers are concerned with questions of therapy, and he has had wide experience with otosclerosis. He is the founder of systematic care for deafmutes in Czechoslovakia. He started a small institution for them in 1917, which he ultimately enlarged in 1926 into a magnificent institution, attached to which is a cooperative institution for graduates which assists them during their whole life. At the meeting, his effort for establishing this work in children's hospitals, and his work for the soldiers in the war, were described.

Rebuilding of General Hospital at Prague

The hospital facilities of Greater Prague are becoming again insufficient, in spite of the recent addition of a new city hospital. The reconstruction of the old general hospital of Prague where both the Czech and German faculties are located, has been considered. The main reason for delay lies in the fact that an effort was made to keep all the departments and clinics nearby for the benefit of medical students. A site was found about 8 miles from the center of the city, where the second internal clinic of the Czech university of Prague will be housed. When this institution is completed, a section in the general hospital in Prague will be razed and a new building erected for other hospital clinics. In a similar way the whole general hospital is to be reconstructed. The funds for the beginning of the project are available. The fact that medical students will not be from now on concentrated in one hospital represents a new principle.

Marriages

- HARRY ERNEST HEINITSH JR., Spartanburg, S. C., to Mrs. Annette Blake Franklin of Charleston, April 17.
LESTER WHITE BAIRD, San Jose, Calif., to Miss Helen Keshner of Woodriver, Ill., March 31.
CHARLES E. VERDIER, New Orleans, to Miss Wanda Hies of Sugartown, La., March 21.
CHARLES BARTON ETTER to Miss Frances Durham, both of Memphis, Tenn., March 27.
HENRY H. RUBIN to Miss Dorothy E. Liebling, both of Chicago, Dec. 31, 1933.
ROBERT TENNANT JR., New Haven, Conn., to Miss Dorothy Davis of Essex, April 7.
AARON E. GREENBERG to Miss Shirley D. Fink, both of Brooklyn, April 15.

Deaths

William Henry Welch [®] President of the American Medical Association (1910-1911), one of the deans of American medicine, for fifty years an inspiration in American medical education, died in Johns Hopkins Hospital, Baltimore, April 30 aged 84 years. Throughout his life he exercised an almost magical influence on those who worked with him. His eightieth birthday was marked by a world-wide celebration such as has been accorded to few indeed of the great leaders of American medicine. Innumerable medical honors were bestowed upon him.

Dr Welch was born in Norfolk, Conn., April 8, 1850. His father was a doctor, as were also four uncles. He entered Yale University at 16 years of age, and in 1870 at the age of 20, received the degree of Bachelor of Arts. Then he spent a year teaching Greek and Latin, after which he entered the College of Physicians and Surgeons in New York. Behaving, however, that he required further training in chemistry, he returned to New Haven for further work in the Sheffield Scientific School. After a year of such graduate work, Dr Welch again entered the College of Physicians and Surgeons, where he worked in the dissecting room and became assistant to the professor of anatomy. In 1874 he became intern at Bellevue Hospital, receiving the degree M.D. from the College of Physicians and Surgeons of Columbia University in 1875. Then in 1876 he departed for study abroad, arriving in Europe in that epoch-making period which marked the establishment of pathology and the beginning of bacteriology as medical sciences. At Strasbourg he studied under Waldeyer, Hoppe Seyler and von Recklinghausen. After this foundation in histology and physiologic chemistry he continued his work in pathology in Strasbourg and at Leipzig, at Breslau he worked on the heart with Cohnheim, and at Vienna he studied pathology with Chiari, neurology with Meynert and diseases of the skin with Hebra. He continued his work in Paris and in London and returned to the United States in 1878.

Beginning his practice in New York, he was invited to lecture in pathology in his alma mater and to undertake research in the Bellevue Hospital Medical College. When Johns Hopkins Medical School was established in 1884 he was called to the chair of pathology. It has been said that Cohnheim made the suggestion for his appointment. In the meantime the work of Robert Koch and of Pasteur had come prominently to medical attention so that Dr Welch left for another visit abroad, studying principally from 1884 to 1885 with Koch and Flügge. Since the Johns Hopkins Hospital was not opened until 1889 and the medical school until 1893, a period intervened during which the laboratory of Dr Welch was the center of medical study in Baltimore. It was with his advice that Osler, Halsted and Kelly were appointed to the staff. It was during this period also that Dr Welch made his most significant contributions to the science of medicine, doing research on animal diseases, infections and immunity, and gas gangrene. It was also in this period that he published books on "The General Pathology of Fevers," and on "The Pathology of Bacteria Infections and Immunity."

From this time on the name of Dr Welch appears much more significantly as an administrator and as an adviser in the field of preventive medicine and public health. It is significant that many of the young men who were associated with him in his early days eventually achieved great fame in the field of medicine. Such names as those of Councilman, Mall, Nuttall, Abbott and Bolton are found among the first of his students. With the establishment of the Johns Hopkins University School of Medicine came a great inspiration for the raising of standards

in American medical education. By his leadership Dr Welch stimulated advancement of research, hospital organization, medical education and public health. Perhaps his inspiration helped to make the pathologic laboratory the center of the modern hospital and the medical school.

By 1894 his repute, although he was but 44 years of age, had already grown so that honorary degrees were given to him and continued to be awarded to him for many years. He received the honorary M.D. from the University of Pennsylvania in 1894 and LL.D. from Western Reserve University in the same year. Yale conferred this degree on him in 1896, Harvard in 1900, Toronto in 1903, Columbia in 1904, Jefferson Medical School in 1907, Princeton in 1910, Washington University in 1915, the University of Chicago in 1916, the University of Southern California in 1930, and the University of the State of New York in 1930. He also received the degree of Doctor of Sciences from Cambridge in 1923, Western Reserve in 1929 and the University of Pennsylvania in 1930. Moreover, he was awarded the doctorate of the University of Strasbourg in 1923.

Dr Welch was professor of pathology in Johns Hopkins University School of Medicine from 1884 to 1916 and dean of the medical faculty from 1893 to 1898. Coincidentally with his

teaching position in pathology he was pathologist to Johns Hopkins Hospital. He became director of the School of Hygiene and Public Health from 1916 to 1926, and on his retirement from that office was made professor of the history of medicine and in 1931 emeritus professor. The Institute of the History of Medicine in Johns Hopkins University School of Medicine contains a medical library named in his honor.

Especially significant in the life of William Henry Welch was his immediate contact and guiding influence in many organizations associated with medicine for social, humanitarian or philanthropic purposes. Thus, he was president of the State Board of Health of Maryland from 1898 to 1922 and continued as a member until 1929. He was continuously president of the board of directors of the Rockefeller Institute for Medical Research, 1901-1933. He served as a member of the International Health Board and of the China Medical Board of the Rockefeller Foundation and as trustee of the Carnegie Institution. He was frequently consulted by the League of Nations and by many foundations having medical interests. His conspicuous achievements were recognized by election to the presidencies of

important organizations, including the Congress of American Physicians and Surgeons in 1897, Association of American Physicians in 1901, American Association for the Advancement of Science 1906-1907, the National Tuberculosis Association 1910-1911, the National Academy of Sciences 1913-1916, the American Social Hygiene Association 1916-1919, the National Committee of Mental Hygiene and many similar bodies.

When the United States entered the World War in 1917 he was commissioned Major in the Medical Reserve Corps, advanced to Lieutenant Colonel in February 1918 and to Colonel in July 1918, finally being made Brigadier General in the Officers Reserve Corps in 1921. He served principally as adviser in the Surgeon General's Office and in the organization of the special services of pathology and preventive medicine.

His honorary memberships included distinguished medical and sanitary organizations in England, Scotland, Ireland, Austria, Germany, Belgium, France, Italy and Switzerland. Moreover, the governments of many foreign countries recognized him by decorations which include those of Japan, Norway, Serbia and France as well as the United States government.

In the American Medical Association Dr Welch may be said to have begun his career as President of the Medical Chirurgical Faculty of the State of Maryland in 1891-1892. He was a member of the House of Delegates from 1902 to 1903 and served as a trustee of the Association from 1903 to 1909. This service culminated with the Presidency in 1910-1911.



WILLIAM HENRY WELCH, M.D., 1850-1934

The occasion of his eightieth birthday was celebrated by distinguished gatherings not only in Washington but in many of the capitals of the world. Herbert Hoover, former President of the United States, made an address which was broadcast over the radio, and celebrations were held in scientific institutions. An exhibit of his medical writings in the John Crerar Library in 1930, on this occasion, included more than 350 articles. These were collected in three memorial volumes.

The influence of Dr. Welch on American medical education during the last twenty years is impossible to overestimate. Certainly, he played an important part in the development of the full time system of teaching in the clinical branches, in the establishment of schools of public health and hygiene, and in stimulating great financial contributions for the advancement of preventive medicine and public health. So significant was this influence that even during the last five years of his life when he was ill much of the time, his very spirit dominated the minds of many of those who had been associated with him. No doubt, much of his great influence was due to the remarkable gentility of his character. His personality was sparkling, his wit noted, and the twinkle of his eye characteristic. His friendships were abiding and he gave freely of himself to almost every demand that came upon him. His culture was notable and his familiarity with the literature, music and art of his time equal to that of many experts in all of these fields. Such men do not come often in any phase of human life, but when they do appear the humanistic quality of their greatness brings them universal recognition.

Frederick Newton Gisbourne Starr, Toronto, Ont., Canada, University of Toronto Faculty of Medicine 1889, professor emeritus of clinical surgery at his alma mater, general secretary, 1893-1901, member of the executive council, and in 1927 president of the Canadian Medical Association, counselor of the College of Physicians and Surgeons of Ontario 1907-1911, in 1926 president of the Toronto Academy of Medicine, president of the Royal College of Physicians and Surgeons of Canada, 1931-1933, formerly vice president of the British Medical Association, fellow and past vice president of the American Surgical Association and the American College of Surgeons, served in France as a major with the Royal Army Medical Corps during the World War and was created a commander of the military division of the Order of the British Empire, for many years consultant on the staffs of the General Hospital, St. John's Hospital, Western Hospital and the Hospital for Sick Children, contributed numerous articles to the various medical journals, aged 66, died, April 21.

J. George Dempsey, New Orleans, Tulane University of Louisiana Medical Department, New Orleans, 1899, member of the Louisiana State Medical Society, assistant professor of preventive medicine and public health, Louisiana State University Medical Center, served during the World War, professor of clinical pediatrics, Loyola University School of Medicine, Chicago, 1919-1925, since 1920 state registrar of vital statistics, state board of health, visiting pediatrician to the Touro Infirmary, 1899-1907, senior visiting surgeon to the division of gynecology and obstetrics, State Charity Hospital, 1907-1917, aged 61, died, February 4 of arteriosclerosis.

Edward Philip McCormac, New Orleans, University of Texas School of Medicine, Galveston, 1920, member of the American Urological Association, fellow of the American College of Surgeons, instructor in urology, Tulane University of Louisiana School of Medicine, visiting surgeon to the Charity and French hospitals, on the adjunct staff of the Hotel Dieu Hospital and the Touro Infirmary, aged 37, was found dead, March 3.

Edward Joseph Mahoney, Springfield, Mass., Georgetown University School of Medicine, Washington, D. C., 1895, member of the New England Surgical Society, fellow of the American College of Surgeons, formerly on the staffs of the House of Providence and the City Hospital, Holyoke, surgeon in chief to the Mercy Hospital, aged 64, died, March 26, of hypertensive heart disease and cerebral hemorrhage.

Charles Ross Bullock, Major, U. S. Army, retired, Atlanta, Ga., Atlanta School of Medicine, 1907, served during the World War, entered the medical corps of the regular army in 1920 as a captain and retired as a major in 1929 for disability in line of duty, city physician, aged 51, died, March 24 in a local hospital, of coronary occlusion and arteriosclerosis.

Armin Nettle, New York, Eclectic Medical College of the City of New York, 1901, Long Island College Hospital, Brooklyn, 1910, member of the Medical Society of the State of New York, on the staff of the Manhattan Eye, Ear and Throat

Hospital, aged 57, died, February 19, of arteriosclerosis and coronary thrombosis.

George Alexander Knowles, Philadelphia, University of Pennsylvania School of Medicine, Philadelphia, 1894, member of the House of Delegates of the American Medical Association, 1921-1922, assistant director of health, formerly on the staff of the Misericordia Hospital, aged 65, died, April 11, of heart disease.

John Oliver McDonald, Trenton, N. J., Columbia University College of Physicians and Surgeons, New York, 1909, for many years member of the state board of health, aged 49, died, March 29, in the Columbia Presbyterian Medical Center, New York, of embolism of the lung, following an operation.

Reverdy Edgar Hughson, Orient, Ohio, McGill University Faculty of Medicine, Montreal, Que., Canada, 1896, served during the World War, first assistant physician at the Institution for Feeble-minded since 1926, aged 62, died, March 24, in the Grunt Hospital, Columbus, of colitis and pneumonia.

Walter P. Mattox, Sullivan, Mo., Beaumont Hospital Medical College, St. Louis, 1897, member of the Missouri State Medical Association, president of the Franklin County Medical Society, aged 63, died, March 22, in the Missouri Baptist Hospital, St. Louis, of cerebral hemorrhage.

William S. Erdman, Buckingham, Pa., Medico Chirurgical College of Philadelphia, 1896, member of the Medical Society of the State of Pennsylvania, past president of the Bucks County Medical Society, aged 64, died, April 7, in the Lankenau Hospital, Philadelphia, of heart disease.

Frederick Ellsworth Lambert, Jersey City, N. J., Long Island College Hospital, Brooklyn, 1894, past president of the city board of health, past president of the Hudson County Medical Society on the staff of the Christ Hospital, aged 70, died, March 1, in Bryonne, of heart disease.

Thomas Fred Jackson, Dade City, Fla., Atlanta Medical College, 1914, past president and secretary of the Pasco County Medical Society, served during the World War, for many years proprietor of a hospital bearing his name, aged 45, died, March 21, of carcinoma of the leg.

Harry Willis Sutcliffe, Beverly Hills, Calif., Chicago Homeopathic Medical College, 1892, College of Physicians and Surgeons of Chicago, 1894, Rush Medical College, Chicago, 1895, formerly a practitioner in Chicago, aged 66, died, March 31 of arteriosclerosis.

John D. O'Garra, Urbana, Ohio, Starling Medical College, Columbus, 1903, member of the Ohio State Medical Association, president of the Champaign County Medical Society, aged 53, died, February 18, following an operation for gall stones.

Knox Bacon, San Diego, Calif., University of Minnesota College of Medicine and Surgery, Minneapolis, 1894, member of the Minnesota State Medical Association, served during the World War, aged 69, died, April 7, of coronary thrombosis.

Michael Joseph Costello, Asheville, N. C., Medico-Chirurgical College of Philadelphia, 1896, served during the World War, aged 68, died, March 21, in the U. S. Veterans Hospital, Oteen, of carcinoma and intestinal obstruction.

George Lucene Langworthy, Tyler, Texas, College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1906, served during the World War, aged 55, died, March 31, of cardiorenal disease.

James William Kelly, Chicago, Hahnemann Medical College and Hospital, Chicago, 1899, Rush Medical College, Chicago, 1900, on the staff of the Roseland Community Hospital, aged 59, died, April 4, of heart disease.

William Henry Skene, Portland, Ore., Long Island College Hospital, Brooklyn, 1888, served during the World War, fellow of the American College of Surgeons, aged 67, died, March 30, in St. Vincent's Hospital.

John Joseph Mayercik, Danbury, Conn., University of Cincinnati College of Medicine, 1928, on the staff of the Danbury Hospital, aged 31, was drowned, Dec. 15, 1933, at Stratford, while duck hunting.

Augustus Dennis Pitts, Point Arena, Calif., Long Island College Hospital, Brooklyn, 1892, aged 71, died, March 25, of cirrhosis of the liver.

Dennis Neville, Hildreth, Neb., Illinois Medical College, Chicago, 1900, aged 73, died, March 5, of lobar pneumonia.

James S. Koontz, Johnstown, Pa., College of Physicians and Surgeons, Baltimore, 1891, aged 75, died, January 15.

Bureau of Investigation

SLEEPY SALTS

Another High-Priced Saline Laxative

Seldom does there appear any element of originality in nostrum exploitation. Should some "patent medicine" concern appeal to public gullibility from a new angle with results that bring home the financial bacon, no time is lost by others in the same lines of business in imitating as nearly as possible the exploits of those that have struck pay-dirt in the exploitation of the ailing human.

The intensive radio advertising campaign that seems to have made "Crazy Crystals" such a financial success is probably responsible for the flooding of the market with innumerable other "crystals" and "salts," such as "Sane Crystals," "Calumet Crystals," "Certified Mineral Crystals," "Texas Mineral Crystals," and many more.

SLEEPY WATER

The public is now being bombarded with an advertising campaign for "Sleepy Salts," which are said to be put out by the exploiters of a mineral water, "Sleepy Water." A careless reading of the advertising might give one the impression that Sleepy Salts are the saline ingredients of Sleepy Water. Readers of THE JOURNAL with long memories may remember that there was published a brief editorial comment in the issue of November 18, 1916, under the title "Sleepy Water for Wide-Awake Doctors." This was at the time that Sleepy Water was being heavily advertised to the medical profession of Chicago under the claim that "This Highly Radioactive Water Cures Diabetes Bright's Disease, Many Other Ills." It was pointed out in the editorial comment that the exploiters of this nostrum were evidently familiar with the fact that such a claim as the one just quoted, if made on the trade package, would immediately subject the company to prosecution under the federal law, and that no such claims appeared on the trade package. Lying in newspapers and circulars while just as immoral, carries with it practically no risk of legal reprisal—thanks to our inadequate federal law. The same thing applies, of course, to lying over the radio, an art which has developed into America's most popular indoor sport.

The earlier claims for high radioactivity have apparently been dropped by the exploiters of Sleepy Water. Whether this is due to the fact that the claim is and always was false, as the water is not highly radioactive or whether the death of the industrialist, Mr. Byers, from the drinking of water containing in solution radium salt (not radium emanation) has caused the radium-water game to suffer a severe slump, is a question we cannot answer.

At this point the alleged composition of Sleepy Water should be a matter of interest. In the past sixteen years there have been different analyses published by the Sleepy Water Company of the water itself. The analyses are hopelessly at variance with each other. One analysis, said to have been made by "H. H. McCormack, Professor of Chemical Engineering, Armour Institute of Technology," gives the chief mineral constituents (parts per million) of Sleepy Water as follows:

Calcium sulphate	18.36
Sodium chloride	13.26
Aluminum sulphate	10.28
Ferrous sulphate	6.84

Another analysis distributed by the Sleepy Water Company and said to have been made by "S. H. Herzfeld, S. B. S. M. Chief Chemist" gives the following figures, also in parts per million:

Sodium bicarbonate	27.40
Sodium carbonate	23.50
Sodium chloride	13.20
Calcium carbonate	11.15

Apparently one can pay his money and take his choice!

SLEEPY SALTS

Within the last year or eighteen months the Sleepy Water concern has come to the public with its product Sleepy Salts. Part of the advertising consists of a newspaper-size eight-page broadside called the *Hot Springs News* which is distributed

free by the Sleepy Water Company "which has its headquarters at Hot Springs, Ark., and its 'midwest headquarters' in Chicago. In the *Hot Springs News* the public has been told:

Because of the high cost of shipping quantities of Sleepy Water the Sleepy Water Company sought for many years to find a way in which a so-called spa or health resort water could be brought directly into the home in a new form. Sleepy Salts synthetically developed after much painstaking effort from earthly minerals are proving unusually successful and of tremendous value in this direction.

Elsewhere, in discussing the alleged composition of Sleepy Salts, the same advertising broadside states:

Sleepy Salts are a synthetic proximation of the minerals found in the famous Sleepy Water.

Sleepy Salts the natural mineral combination.

These [Sleepy Salts] are a balanced synthetic formula which combine the pure earthly minerals in a scientific combination.

The trade package has given no information that has any meaning on the subject of composition. A circular which comes with the package has stated:

The formula for Sleepy Salts is very interesting and consists of the scientifically balanced combination of ingredients of the mineral elements which are found in the waters of the famous spas and health resorts of Europe and this country.

The same circular, under the heading "Your Doctor Will Approve," states:

For the benefit of physicians we are glad to send them the balanced formula of Sleepy Salts. The various styles of Sodium, Potassium and Magnesium that are balanced in Sleepy Salts promote the elimination of waste.

While the phrase "various styles of Sodium, Potassium and Magnesium" is wholly without meaning, the public doesn't know it and it presumably makes good advertising. A physician wrote to the Sleepy Salts concern in the middle of March, 1934, asking for the 'balanced formula.' The letter was addressed to the Sleepy Water Company at Chicago, an address that appears on the cartons of the package sold, at least, through the middle west. After some delay he got an answer from the Chicago office stating that as the city in which the physician lived "is the home of a number of reducing preparations," the Chicago branch had sent his letter to the home office at Hot Springs "so that they could decide whether the full information should be given." Apparently the home office decided against sending the information, as up to the date of writing the physician had received no reply.

The Bureau of Investigation of the American Medical Association wrote to the Sleepy Water Company at the home office, Hot Springs, Ark., asking them whether they cared to send the Bureau the formula for Sleepy Salts, as has been claimed they would do in their trade package. A letter was duly received, most of which was devoted to expressing complimentary opinions regarding the Bureau and its work. The statement was then made:

Sleepy Salts is composed of 35 per cent sodium citrate and citric acid and the balance potassium chloride, potassium sulphate, sodium sulphate, magnesium sulphate and sodium chloride.

After acknowledging the receipt of the company's statement another letter was received stating that the figure 35 in their statement should have been 15. In their second letter the company also stated: "We are not supplying at this time the exact quantities of each ingredient." So much for the claim of the concern that they would send 'the balanced formula of Sleepy Salts' to physicians.

In October, 1933, the federal officials of the Food and Drug Administration made two seizures of Sleepy Salts, charging that they were misbranded in violation of the National Food and Drug Acts. No claimant appeared for either seizure and the court held that the product was misbranded and ordered that the goods be destroyed. The government chemists analyzed Sleepy Salts and reported finding the following ingredients:

Sodium sulphate (Glauber's salt)	48.5 per cent
Magnesium sulphate (Epsom salt)	35.3 per cent
Sodium chloride (table salt)	10 per cent

The government's findings have been essentially confirmed by a report received from the U. S. Chemical Laboratory. In other words, Sleepy Salts according to these analyses is essentially a mixture of Glauber's salt and Epsom salt. Yet from the statement furnished the Bureau of Investigation by the Sleepy Salts concern itself one would naturally assume

BUREAU OF INVESTIGATION

JOUR. A. V. A.
MAY 5 1934

that sodium citrate and citric acid were the important ingredients. The actions of the Sleepy Salts exploiters are characteristic of the 'patent medicine' fraternity. A lack of frankness, false statements, and an apparent inborn desire to deceive seem to characterize the nostrum interests.

The exploiters of Sleepy Salts are under no legal obligation—although there certainly is a moral obligation—to give either the medical profession or the public any information regarding the composition of their nostrum. Yet they state definitely that they will send physicians 'the balanced formula' of the mixture. If they were honestly willing to do this, there was no reason for any hesitation in furnishing the Bureau of Investigation or any physician with that information. If such information were being sent frankly and truthfully to any physician who would write them, as the statement in the package indicated it would there could be no secrecy about the composition nor any reason for stating as they did in their letter to the American Medical Association that knowing the Bureau's attitude they felt that they would be justified in refusing to send information.

Needless to say the exploiters of this saline would not think of overlooking an obvious bet in advertising this product as an 'obesity cure'. From the popularity of the lady who suggests that we come up and see her some time and the fact that the fake "bust developers" are again being advertised, it is apparent that curves really are coming back. Yet it is a fact that many a woman still looks upon the hermaphrodite as typifying the ideal feminine figure. Hence the ease with which some women may be humbugged through the sale of alleged shortcuts to the sylph figure.

How to Lose Fat Quickly

Without Drugs
Without Starving
No Violent Exercise

Eat Big Meals, Yet
See Inches Melt Away
Fat Goes Fast Or No Cost

FEELS LIKE A
"NEW" WOMAN

Lose Ugly Fat—
But Build Health!

Some recent advertising of Sleepy Salts

The entire back page and no small proportion of the other pages of *Hot Springs News* are devoted to the alleged 'obesity cure' virtues of Sleepy Salts. Fat women are urged to 'Eat Big Meals, Yet See Bulky Inches Melt Away Fast'. After the money has been paid the purchaser of Sleepy Salts finds that the diet of which she may eat all she wants is a limited and hopelessly unbalanced one. She is told it is best not to eat any bacon, ham, pork, sugar, candy, pastry, cheese, cream, butter or potatoes and to eat little of white bread, milk, macaroni, parsnips, carrots, raisins, figs, onions, etc.

But the full-page advertisement in *Hot Springs News* must be very appealing to those women who persist in eating too much and exercising too little but crave a willow-like figure. They are told, for instance, that Alice Brown of Chicago not

only likes the taste of Sleepy Salts, but she has lost 39 pounds since she started using it two months ago, that Georg. Rose Carson of Chicago, lost 24 pounds in thirty days, that without getting any results, took Sleepy Salts for two months and lost 32 pounds that Betty Greines, a Chicago stenographer, lost 33 pounds—reduced from 203 to 170—in 23 days! The same advertisement declares Sleepy Salts "A combination of vital health salts of earthly metals blended together to produce the quickest safe results in reducing excess fat."

SLEEPY WATER
This Highly Radio-Active Water
CURES
Diabetes—Bright's Disease—Many Other Ills

Radium is the greatest discovery of the age! Its Miraculous Powers to cure the bodily ailments of Mankind have astounded the Medical World! Its Lifegiving Force de Leon's dream of an Elixir of Life nearly realized.

This is the way that Sleepy Water used to be advertised. Not on the trade package of course which would have subjected it to seizure under the Food and Drug Act but in the collateral advertising that is virtually free from legal control.

But it is not only obesity that Sleepy Salts will cure learn—again from *Hot Springs News*—that Sleepy 'Calms Nervousness,' 'Clears Bad Skin,' 'Rids Gas Pain,' 'Hits Rheumatism,' 'Stops Backache' and 'Relieves Constipation.' Yet in spite of these wonderful therapeutic possibilities and the further fact that the chief ingredients of the product are Glauber's salt and epsom salt, we are told that 'Sleepy Salts contains no drugs!'

Every 'patent medicine' must, of course, have a testimonial from a physician. Sleepy Salts is no exception. The *Hot Springs News* advertising broadside screams in huge black face type spread across the entire page: 'Doctors Acclaim Health Water.' Then in a subhead: 'Doctors Send Thousands of Men and Women to Hot Springs, Arkansas, to Correct Faulty Elimination of Kidneys and Intestinal Tract. Say This is Root of Most Common Ailments.' Technically, of course, this claim is correct. Used as it is by the Sleepy Water outfit, it is misleading. Sleepy Water itself does not come from Hot Springs, Ark., but from a location in the same general territory.

Sleepy Salts with which this advertisement deals, being a synthetic mixture originates, presumably, in a factory. It is significant in this connection that prior to December, 1933, the carton of this patent medicine carried in letters nearly an inch high the words 'SLEEPY SALTS' with the word 'brand' between them in letters so small as to be nearly undecipherable. Today the label carries the words 'SLEEPY BRAND SALTS' in large letters all of the same size. Furthermore, the picture of the Sleepy Water Company building at Hot Springs, Ark. that formed part of the carton up until last December has disappeared. In this way the carton which comes within the purview of the National Food and Drugs Act has been so modified as to remove the cruder misrepresentations in the matter of making the public believe that Sleepy Salts bears some relation to Sleepy Water.

In spite of the impression given that doctors generally recommend Sleepy Salts we have found in the advertising just one doctor who can be credited—if it is a credit—with a testimonial for this crude patent medicine. This doctor is Clarence W. Flint MD of Chicago. Dr. Flint is described by the Sleepy Salts concern as a well-known physician. The records of the American Medical Association show that Dr. Flint was born in 1890 holds a diploma from the Chicago College of Medicine and Surgery 1917 an Illinois license of the same year is not a member of the Chicago Medical Society or, of course of the American Medical Association. A search of medical journals during the past seventeen years fails to show that Dr. Flint has contributed anything to contemporary medical literature.

Summed up then it appears that Sleepy Salts has been so advertised as to lead the public to believe that it is a 'synthetic proximation' of Sleepy Water, which in the past according to

the advertising, has been given various compositions. The company, when written to asking for the information regarding the composition of Sleepy Salts, which their advertising claims they will send, states that Sleepy Salts is about 15 per cent sodium citrate and citric acid (neither of which substances of course, is to be found in any natural spring water). Government analysis shows that Sleepy Salts, like the great bulk of the high priced and extravagantly exploited salines on the market today, is essentially "horse salts" (sodium sulphate—Glauber's salt), with a proportion of epsom salt added. In other words, in buying Sleepy Salts one pays 75 cents for three and a half ounces of what is essentially a mixture of Glauber's salt and epsom salt. For this same amount one could buy enough Glauber's salt to last a year, but he would not be paying for the high-priced ballyhoo that goes with the exploitation of Sleepy Salts.

The high-pressure advertising campaign for saline cathartics, while doubtless bringing in vast sums of money to newspapers and broadcasting stations, is a pernicious influence on the public health. Few medicaments are more generally abused than are the salines. Fantus has well pointed out that these salts "belong among the habit-forming drugs and are responsible for a large proportion of cathartic habit." The same authority has called attention to the fact that such salines "are occasional accessory causes of death from ileus and appendical and other forms of peritonitis." A fact only too well known to the surgeon.

But the "patent medicine" industry is founded on the thesis that in order to sell secret mixtures of cheap and common drugs under extraordinary claims and at fantastically high prices, it is necessary to persuade well people that they are sick. Under our present inadequate Food and Drugs Act they can do this with impunity for it is only lies on or in the trade package that are subject to the penalties of that law. The advertising pages of newspapers and the radio programs of the broadcasting stations are subject to no such control—which doubtless explains the campaign of misrepresentation and vilification on the part of many supposedly reputable newspapers and magazines against the proposed extension of the National Food and Drugs Act to cover collateral advertising.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted on request.

DERMATITIS VENENATA

To the Editor—I have a patient a woman aged 44 who had a rash with small blebs beginning over the left leg and spreading over the entire surface of the body including the scalp. The local symptoms itching and burning were almost intolerable. The Wassermann test has been negative on several occasions at the time and since. There was no fever. This occurred in July 1932. In June 1933 she had a similar attack which began on the right elbow. Both of these attacks were so severe that the entire skin was involved the patient having new skin over the entire body. The face was intensely swollen. The patient had to stay in bed from four to five weeks on each occasion. She also lost two or three fingernails at these times. On the first occasion she had been to the southern part of Alabama. The last time she had not been away from town. I made a diagnosis of poison ivy dermatitis in July 1932 but did not give her the extract. I cautioned her to avoid all places where she might come in contact with this plant after the first recovery and also to avoid touching Coral vines which she has around her home here in town. She says that she did not come in contact with any vine the last time. I would try some of the skin tests but have been afraid to do so because of her marked susceptibility. Do you think it safe for me to do this without starting the trouble from my tests? If she should have another attack do you think that I would be warranted in giving her the poison ivy extract if I should find her positive for this reaction? Should I use it as a preventive? Please omit name for this reaction? M D Alabama

ANSWER—The symptoms and result of physical examination of this patient would seem to warrant the diagnosis of a dermatitis venenata probably due to the oleoresin of poison ivy (*Toxicodendron radicans*). However there are other plants such as sumach, poison oak and primrose (*primula*) which may be responsible for the symptoms. The leaves and oil from other plants, such as ragweeds, burweed, marsh elder and chrysanthemums have also been incriminated. The excitant of poison ivy is an oleoresin that is not toxic for lower animals and is probably

not an antigen. The vesicles may be produced experimentally by the application of the excitant to the uninjured skin.

Dermatitis venenata from these plants constitutes an example of contact dermatitis and is markedly different in several particulars from the ordinary allergic or atopic eczema. In allergic conditions of the skin, such as the eczema in children due to the eating of eggs, the usual high percentage of positive family history occurs. One gets positive skin tests by either the scratch or the intradermal method, and observes the positive transfer phenomena as elaborated by Prausnitz and Kustner. On the other hand, patients sensitive to poison ivy show no evidence of hereditary influences. Fully 60 to 70 per cent of all persons are susceptible to poison ivy. The intradermal injection of poison ivy extract does not give the usual characteristic wheal, provided none of the substance has been left in contact with the surface. Furthermore, no sensitizing bodies have been found in the blood of even the most susceptible persons, and the passive transfer test is therefore negative. Poison ivy dermatitis is no more common in allergic individuals than it is in normal persons.

From the foregoing facts it can be readily seen that the ordinary cutaneous or intracutaneous tests are not indicated in cases of poison ivy. Contact or patch tests, however, are distinctly indicated although great caution should be used because of the possibility of lighting up a dermatitis, which may last for many weeks. If the diagnosis is reasonably certain it would probably be better not to make a patch test with poison ivy in this particular patient because of her great susceptibility.

The fact that the patient did not touch the vines the last time is no proof, because it is well known that contact is not necessary. The more susceptible individuals are affected by the amount given off in the air.

Treatment is indicated in cases such as these and the susceptibility to poison ivy usually is greatly lessened by injections of the extract. These injections can be given both prophylactically and during an attack. They will usually shorten the duration of the attacks of dermatitis.

TOXICOLOGY OF SODIUM NITROPRUSSIDE

To the Editor—Will you kindly let me know the toxicology of sodium nitroprusside? Have deaths been reported due to nitroprussides? The double cyanides are apparently nontoxic especially in neutral or alkaline menstrua though in conjunction with acid the CN group may be freed to do its deadly work (Holland J. W. A Textbook of Medical Chemistry and Toxicology ed 4 Philadelphia W. B. Saunders Company, 1915). Neither Taylor (1928 edition) nor Holland nor Witthaus (Manual of Toxicology ed 2 London Bailliere Tindall and Cox 1911) quotes any specific case of nitroprusside (nitrosoferricyanide) poisoning though uncommon deaths due to the other metallocyanides such as potassium ferrocyanide are referred to. I am giving short notes of a case of accidental fatal poisoning with sodium nitroprusside. A child aged 3 years had a few small crystals three or more of sodium nitroprusside given solid, by the mouth on a full stomach. The accident was discovered in an hour. The child had already started intermittent screaming and staggered while walking for water to drink half an hour after the swallowing of the crystals. An emetic was given immediately on discovery and a good quantity of undigested food was vomited. The child was immediately taken to a hospital and a subcutaneous injection of epinephrine was administered on the way. There it had an ounce of alba mixture an injection of atropine and a glycerin enema and within an hour of admission some of the antidote made up of potassium carbonate, ferrous sulphate and magnesium. Immediately afterward the child became unconscious. In the meantime oxygen inhalation was started soon supplemented by carbon dioxide supported by cardiac stimulants. Under the influence of carbon dioxide the respirations became deeper and the heart which earlier seemed to lose its tone regained it remarkably but only temporarily. Even before the child became unconscious the pupils were widely dilated. The tongue and mouth were moist to the end. After unconsciousness the child reflexly passed urine, rejected the earlier glycerin given by rectum and had a momentary convulsion of the limbs. Respirations went on unhampered till the end nearly four hours after the administration but the heart failed not responding to galvanic stimulation before the child died. I should be obliged for enlightenment on the following points: 1. Witthaus concedes the toxicity of the double cyanides when taken into a hyperacid stomach or in association with acids though cyanic effects were not obtained in experiments on dogs and guinea pigs. Could the optimum conditions for the splitting of the double cyanide have been obtained on a full stomach? 2. Could the administration of alkalis immediately on discovery of the accident within the first hour have stopped the disintegration of the double salt? 3. Could the emesis have promoted the freeing of the cyanogen by removing the neutralizing effect of a full stomach? 4. Could a stomach wash by hydrogen dioxide or potassium permanganate on admission into hospital have detoxicated the poison by oxidation into the relatively harmless oxamide (Holland)? 5. What might be the cause of the screams shortly after the swallowing of the crystals? Please omit name and address.

M D India

ANSWER—Sodium nitroprusside $\text{Na Fe}(\text{NO})(\text{CN})_5 \cdot 2\text{H}_2\text{O}$ represents dark red crystals which are soluble in 2½ parts of water. When heated with alkali it decomposes into ferric hydroxide, sodium nitrite and sodium ferrous cyanide.

Generally it is assumed that the formation of cyanogen, (CN)₂, is the most important factor in the toxic action of sodium nitroprusside. Hermann (*Arch f d ges Physiol* 39 419, 1886) reported that the blood and tissues of animals killed by this salt had a distinct odor of cyanogen. This was confirmed by Davidsolin (Inaug Diss, Königsberg, 1887), who failed, however, to identify cyanogen by means of chemical reactions. Cromme (Inaug Diss, Kiel, 1891) also concluded that the formation of cyanogen was the fatal factor in sodium nitroprusside poisoning. Fonces-Dixon and Carquet (*Bull soc chim* 29 638, 1903) take the same view, although they appear to have some doubt as to the validity of this assumption. Arntz (Inaug Diss, Kiel, 1897) apparently was the first to express doubts as to cyanogen being the toxic factor in nitroprusside poisoning. Bahrdur (*Chem Zentralbl* 75 248, 1904) showed that sodium nitroprusside is not a very potent protoplasmic poison and Garassini (*Boll d Soc med chir di Parma* 84, 1905) was able to demonstrate the presence of cyanogen in the blood and tissues of animals only when much larger than minimal fatal doses were administered. Johnson (*Arch internat pharmacol et therap* 35 480, 1929) gives an excellent review on this subject. He also was unable to demonstrate the presence of cyanogen as long as large but nonfatal doses were used, and only with excessive doses could he note the odor of cyanogen in the expired air. Johnson (1929) pointed out that the formation of nitroso compounds closely related to nitrites may be the determining toxic factor which was confirmed by the pharmacologic analysis of the action of sodium nitroprusside. He found that the oral administration of 5 mg per kilogram the subcutaneous injection of 0.05 mg per kilogram and the intravenous injection of as little as 0.001 mg per kilogram caused in cats, rabbits and dogs a prompt and definite fall of the blood pressure, accompanied by a slight acceleration of the heart, increase of the leg volume and decrease of the volume of the kidney. Anxious symptoms were produced by the administration of nitrites. The rapid onset of these symptoms indicates a rapid absorption. Equivalent doses of sodium cyanide (164 mg per kilogram) gave an entirely different picture, indicating that the action of sodium nitroprusside was not due to the liberation of cyanogen. The typical reactions observed in mammals after the administration of sodium nitroprusside were a dilatation of the peripheral blood vessels with simultaneous passive constriction of the renal vessels and acceleration of the heart on account of the reduction of the peripheral resistance. There was no effect on the cardiac muscle, which remained responsive. From these experiments it appears that neither the sympathetic nor the vagus or the central nervous system is involved primarily, but experiments with isolated organs (intestine and uterus) indicate that sodium nitroprusside has a direct muscular effect, differing from that produced by sodium cyanide.

The symptoms observed in mammals with fatal doses the minimal fatal dose with oral administration for rabbits being 250 mg per kilogram, are vomiting, rapid respiration, rapid pulse, general excitation, tremors, twitchings of the muscles, convulsions of the medullary type, mydriasis (prior to the arrest of the respiration), cyanosis, collapse and cardiac arrest. The persistent low blood pressure results in anemia of the brain, causing finally cerebral paralysis and depression of the heart. Since death may be postponed by artificial respiration, asphyxia must be considered the main cause of death. The action of sodium nitroprusside, therefore, is nearly identical with that of sodium nitrite, with the difference, however, that the former is more potent and less apt to form methemoglobin.

Animal experiments indicate that the treatment with intravenous injection of dextrose or colloidal sulphur are ineffective, that cardiac stimulants, such as caffeine and digitalis, have little value, and that the injection of epinephrine in 6 per cent acacia or epinephrine have only temporary effect.

The symptoms observed in the present case agree fairly well with those reported by Johnson for animals. In the light of the pharmacologic observations it appears that from the therapeutic measures used in this instance only the use of emetics, the injection of epinephrine hydrochloride and the inhalation of oxygen and carbon dioxide would have been of therapeutic value.

As to the questions submitted for answering it appears that

1 It is quite possible that a full stomach may favor the formation of nitrite-like compounds, on account of the neutralization of the hydrochloric acid by the ingesta.

2 The administration of alkalis presumably would favor the formation of such compounds.

3 Emesis has presumably no effect on the decomposition.

4 Lavage of the stomach with oxidizing agents probably might have been beneficial by oxidizing the nitrite to nitrate.

5 The cause of the screams may have been the distress caused by the low blood pressure.

ROENTGENOLOGIC ECONOMY AND PAPER X-RAY FILMS

To the Editor—As a member of the American Medical Association and a specialist of roentgenology for many years I would greatly appreciate it if the Association would investigate the matter of the mass production of paper x-ray films which I believe is fostered by the National Tuberculosis Association. May I refer you to the recent editorial published in the December issue of *Radiology* entitled "Falsely Roentgenologic Economy." The idea of a general roentgenologic survey for tuberculosis is to be commended but the methods used bespeak of good salesmanship rather than actual scientific knowledge. It is a step backward instead of a step forward in roentgenologic diagnosis.

CHARLES W. PERKINS MD Norwalk, Conn

ANSWER—The paper x-ray films used for mass production first appeared in 1931 when they were produced by the Powers Photo Engraving Company in response to a demand from the Queensboro Tuberculosis and Health Association for a film at low cost which could be used in making x-ray records of the chests of 25,000 children every year for five years. This was intended purely as a study, not only of the incidence of lesions but also of the changes that occurred in these lesions over a five-year period. The Powers company produced an emulsion that could be used on paper. Even after a satisfactory emulsion was developed, which reduced the cost, the task of exposing by the usual method x-ray films of the chests of 25,000 children annually was too slow. Devices were then added to the x-ray equipment which reduced the time of operation so much that from 500 to 1,000 exposures of chests could be made in a single day. A special device was then perfected for developing the large rolls uniformly and quickly. In order to prevent waste of time in handling, a special viewing cabinet was improvised which would slowly unroll the film so that each picture could be interpreted in the shortest possible time.

The booklet to which the editorial in *Radiology* refers was found on investigation to be the report of a committee appointed by the late Alfred Henry of Indianapolis when he was president of the National Tuberculosis Association. This committee consisted of twelve men and women from various parts of the United States, ten of whom were physicians. The report of the committee was prepared after much investigation, numerous meetings and considerable deliberation. The members of the committee were not prejudiced for or against the various subjects which they presented in their report. They attempted to present the subjects in the light of the best knowledge of the time. On further investigation, one learns that neither the board of directors nor the executive committee of the National Tuberculosis Association has taken any formal action concerning paper films but they have expressed their sympathetic interest in the development of the experimental work going forward along this line. The opinion of the National Tuberculosis Association is one of belief in the effective usefulness of the paper film when used by those who have given it special study, particularly in comparison with transparent films of the same patient. Since the paper film is viewed by reflected rather than transmitted light, it requires the exercise of more trained discrimination on the part of the reader and implies an expert knowledge of the variations which could not be expected of the average interpreter. The National Tuberculosis Association has been impressed by a good many careful tests, which have shown that in expert hands variations in judgment amount to such an exceedingly small percentage as not to vitiate the value of the films when used in taking a large series of cases. Their undoubted economy and the speed with which they can be used to examine large groups are points definitely in their favor. Therefore it is obvious that the National Tuberculosis Association has not fostered the paper film but has kept an open mind and is in sympathy with the development of any method that will facilitate the diagnosis of a greater number of cases of tuberculosis.

One finds further that there now exist two distinct points of view concerning x-ray work. The one is held by those who limit themselves entirely to this field. They are deeply interested in refinement of technique such as increasing the speed of exposure so as to remove as much blurring from heart action as possible in order to reveal detail, all of which is laudable, and the past accomplishment of such effort definitely extended the possibilities of the x-rays in diagnostic work. This group is of the opinion that the use of any film that cannot be exposed with adequate speed to bring out as fine detail as is now seen on the celluloid film is a definite step backward.

The other view is held by those devoting their lives to chest diseases and other clinicians who are desirous of seeing large numbers of persons have the advantage of a x-ray film examination but who were unable financially to afford it at its previous cost. This group of workers insists that the x-ray film is only one part of an examination. Although they consider it an important part and all use it extensively, they point to its

limitations even when the latest equipment and the most recent celluloid film is used. They call attention to the fact that pulmonary tuberculosis begins in a microscopic way and that it usually exists for many months before it can be detected by the x-ray film, that is, before it is macroscopic. They call attention to the numerous reports of roentgenologists, which are indefinite, that is, the words "possible" and "probable" frequently occur. They also call attention to statements of pathologists, who have shown that in the childhood type of tuberculosis revealed at the postmortem table, x-ray interpreters failed to record any evidence of it in 75 per cent of the cases. This group objects to the view in the editorial in *Radiology* that only radiologists should interpret x-ray films. They are of the opinion that the interpretation of films should not be limited to a few but that all qualified physicians should make interpretations in their fields. To them it does not seem wise to limit any method of diagnosis to a few physicians expert in that particular field. This group also states that much of the refinement in technique with the celluloid film has developed in the past five years, yet radiologists of five years ago claimed considerable expertness in detecting minimal tuberculous lesions. Those who are expert in the use of the new paper film insist that it already reveals more detail than celluloid films did five years ago and that by its use they are now capable of detecting definite lesions as early as by the use of celluloid films.

CORONARY THROMBOSIS AFTER PREVIOUS HEART DISEASE

To the Editor—Recently at a clinical conference in a hospital in this city a case was presented in which the patient exhibited for a period of two years symptoms of intractable endocarditis ending in congestive heart failure whereupon a heart specialist was consulted who diagnosed coronary thrombosis. The patient died and unfortunately an autopsy was refused. I should like to know the frequency of thrombosis of the coronary artery in subjects previously exhibiting signs of cardiac disease as revealed by autopsy. This is an important question for cases have been reported in which only one attack occurred the patient eventually dying of something else. Other patients have had more attacks and these often were lifelong invalids. From my own observation I am of the opinion that it depends on the valve involved. The main coronary vessels are less often involved in mitral disease than the aortic or pulmonary and this is due to the propinquity of the origins of the huge vessels to the small purveyors to the heart muscle. The left is the one more frequently involved according to statistics this may be due to the fact that in this event death is usually instantaneous and an autopsy is necessary to ascertain the cause of death. Accurate statistics will not be arrived at until an autopsy is held after every death. It is well known that intercurrent infections cause thrombosis of arteries in diverse situations in those afflicted with endocarditis so why not the coronaries? I have searched through such literature as I have had access to and need some light on the following questions: What is the accepted probable etiology of coronary thrombosis? Is endocarditis regarded as a probable cause in some instances and if so what valves and in what proportions and ratio to cases of thrombosis not exhibiting previous cardiac disease? Gray states that the coronary vessels anastomose freely in the substance of the heart muscle. Our professor mentioned in the beginning of this query stated that there was free anastomosis of the coronaries in the fatty tissues surrounding them. Gray, in his description does not even mention fat as being present. He must have thought that it was negligible. In this as in many other instances in the march of progress Gray has served me rather scurvily and another idol of my early medical study I must regretfully turn away from to consult a progressive

THOMAS I O DRAIN MD Philadelphia

ANSWER—Thrombosis of the coronary arteries occurs quite frequently in cases that have previously shown evidences of cardiac disorder of some kind. Dr Max Hochrein in reviewing his cases of coronary thrombosis in the *Muenchener medizinische Wochenschrift*, Oct 20, 1933, states that 75 per cent showed either symptoms or signs of previous heart trouble or even of coronary disturbance.

Coronary thrombosis often appears without any previous warning but not as often as is supposed when the previous history is carefully considered. Coronary thrombosis often occurs in the course of mild intercurrent infections and may even occur during convalescence.

It is impossible to enter into a discussion of the probable etiology of coronary thrombosis. Nothing definite is known. It cannot be merely a function of coronary sclerosis for coronary sclerosis affects the two sexes almost equally while coronary thrombosis is much more prevalent in the male. The etiology is a matter of debate and there is no accepted theory. If the pathologic changes following an old rheumatic carditis are considered as endocarditis coronary thrombosis does occur rather frequently in such cases. It is not especially frequent in an acute bacterial endocarditis although thrombosis and emboli involving the coronaries do occur in such conditions.

Coronary vessels anastomose freely in the substance of the heart muscle these anastomoses increasing with age. There is also some increase in the collateral circulation with age.

There are many vessels entering the myocardium from the subpericardial fat and of course this supply also increases with age, with the progressive increase of subpericardial fat. This is discussed by Lewis Gross in "The Blood Supply to the Heart," published by Paul B Hoeber. Gray should by no means be displaced as the idol of one's early medical study, as so much detail could hardly be expected in one volume.

TREATMENT OF PRURITUS ANI

To the Editor—I am treating several persons for pruritus ani. I have been using an ointment that contains picric acid and benzocaine. I am informed that some of these cases at least are caused by epidermophytosis. I would appreciate it very much if you could suggest some treatment that would eventually lead to a permanent cure. Thus far I have been able only to treat the disease symptomatically.

D E CAMP, MD Farmersburg Iowa

ANSWER—The etiology of pruritus ani is complex. Among the causes are:

- 1 The irritation of even the slight amount of fecal matter not removed by dry toilet paper
- 2 Ringworm or yeast infections
- 3 Bacterial infections, such as by the colon bacillus or *Streptococcus faecalis*
- 4 Animal parasites, pinworms or other intestinal worms or amebae
- 5 Local ailments, fissures, hemorrhoids, fistulas, skin tags, polypi or spasm of the anal sphincter
- 6 Intestinal disease, cryptitis, proctitis, colitis
- 7 Intestinal stasis, causing fermentation, absorption of toxins and irritation of the anus by hard feces
- 8 Liver disease, cholecystitis, cirrhosis, carcinoma
- 9 Genito-urinary disease, nephritis, cystitis, prostatitis, urethritis, vesiculitis, endometritis
- 10 Anemia, diabetes, exophthalmic goiter, the menopause, pregnancy
- 11 Neuroses
- 12 The results of scratching, eczema, lichen simplex chronicus

The treatment should be directed to correction of the cause, if that can be determined. In many cases, careful cleansing after each stool with a soft cloth or soft toilet paper, wet with water or boric acid solution, will stop the itching. If this is not entirely successful, an antipruritic ointment, such as compound resorcin ointment, can be applied after cleansing and whenever a paroxysm of itching occurs. On no account should the patient yield to the temptation to scratch. Rough or tight clothing should not be worn and the patient should not sit too long at a time. The generous use of talcum powder after the cleansing helps to counteract the tendency to maceration.

Ringworm or yeast infection can be determined by collecting scales or macerated epithelium treating it for a time with 10 per cent potassium hydroxide solution, and examining with the high dry lens, or by culture on sugar mediums, with incubation at room temperature for a week. If such infection is found a weak Whitfield ointment can be used, 1 per cent salicylic acid and 2 per cent benzoic acid in ointment of rose water, or, if the parts are much macerated, painting them once or twice daily with 1 per cent solution of potassium permanganate.

In all cases, hot foods and condiments, rich foods and sweets should be avoided, and care should be taken that neither constipation nor a fluid bowel movement occurs. Fissures can be painted with silver nitrate solution, from 2 to 20 per cent, once in several days. The parts may be painted once a day with compound tincture of benzoin or the following:

	Gm or Cc.
Tannic acid	13
Alcohol	
Glycerin	aa 15.0
Water to make	120.0

Heat may be applied as douches, sitz baths, hot compresses or hot air douches.

Autogenous vaccines are held in esteem by some authorities. Alkali bromides by mouth may be necessary for some patients, and some may need more expert psychotherapy than can be furnished by the general practitioner. Injections of the patient's own blood from 5 to 20 cc, given intramuscularly once every five days may be helpful.

When the cause cannot be removed and milder methods fail radiotherapy can be resorted to with fair assurance of relief. One fourth erythema dose of unfiltered or mildly filtered roentgen rays are given once a week until the itching ceases or until eight such doses have been given. It is not advisable to exceed this dosage. Care must be taken that the adjacent surfaces of the buttocks do not receive too great a dose.

Surgical methods have long been in use, but the old method of dissecting away the skin about the anus in order to cut the nerves is out of favor, for the nerves regrow and the itching returns in a large percentage of cases. The injection of 95 per cent alcohol under general anesthesia, 0.1 or 0.2 cc in each place, just under the skin, the injections about one-fourth inch apart over the whole area, is more successful, sometimes affording relief for years.

MENINGITIS

To the Editor —In May 1933 J.S. a boy aged 10, complained of persistent headache vomiting photophobia stiff neck and back and retraction of the head with persistent deviation to the left. The past history was essentially negative except for the usual disorders of childhood. The syndrome came on gradually following a swimming expedition. The first attack occurred about four years ago and was followed by nearly ten similar attacks at average intervals of about three months. The vomiting is projectile and he has a fever of from 100 to 101 F. gradually declining to normal over a period of about one week. His mother states that there is usually a skin rash on the face accompanying each attack and in the May 1933 attack when I first saw him, this was a typical herpes zoster on the tip of the nose and upper lip. At that time also physical examination was negative except for the complete picture of meningism. The reflexes are all entirely normal except a suggestive Kernig's sign. The urine is normal. The white blood cells number 13,750. The red blood cell count is normal. The differential count is polymorphonuclears, 76 per cent small lymphocytes 22 per cent, large lymphocytes 1 per cent, eosinophils 0.5 per cent, basophils 0.5 per cent. The eyegrounds and pupils are normal. The abdomen and rectum are normal. The spinal fluid is under increased pressure and clear. The cell count is normal. The colloidal gold curve, Kahn test, albumin, globulin and sugar are normal. The blood Kahn reaction is negative. The patient gradually recovered and he had no further trouble until last week in a scuffle at school he was struck over the back of the neck. The entire syndrome is delineated established itself. The neck and back are stiff but not markedly retracted. All examinations are negative except for fever of 99.6 F. a left sided positive Kernig sign and a suggestive left sided positive Babinski reflex. Blood and spinal fluid studies have not as yet been done this time. He is improving greatly under a low fluid intake and hypertonic high enema regimen. This time also he has the recurrent herpes over the bridge of his nose. He is a very intelligent youngster and I would greatly appreciate a discussion of his case with suggestions for investigation. I may say that there are no paralyses partial or total, and no nerve interference as evidenced by loss of pain and temperature, joint and tendon or tactile properties. Please omit name.

M.D. Michener

MD. MICHIGAN

ANSWER—The significant points in the query are the recurrent attacks of meningeal symptoms, with recovery after an attack of one week's duration. The condition described corresponds to Quincke's description of meningitis serosa. The correspondent states that he believes this condition to be due to an increase of intracranial fluid in the subpial spaces and within the ventricles, and that each attack is due to an acute increase of intracranial fluid characterized by sudden onset of symptoms. It has been suggested, on the other hand, that this form of meningeal disturbance may be due to a delay in the absorption of cerebrospinal fluid, and that there results a disproportion in the amount produced and in the amount absorbed, thus giving rise to an excess fluid in the ventricles and subarachnoid spaces. Changes of the nature referred to have not been verified by careful pathologic studies. In some cases serous meningitis undoubtedly represents an acute exacerbation of a previously existing or chronic hydrocephalus. It has been observed that serous meningitis may occur with remissions and exacerbations over a long period of years. In some of these cases a congenital hydrocephalus is present.

Trauma to the head may cause serous meningitis and in the mild cases the symptoms may not be recognized, whereas in some of the severe injuries a considerable time may elapse before the characteristic symptoms appear. Serous meningitis may be associated with nearly all the acute infectious diseases. It may occur during or after scarlet fever, measles, diphtheria, tonsillitis, mumps, influenza, pneumonia and whooping cough, as well as in the intestinal diseases of childhood. It occurs rarely before the first year of life and occurs most commonly between 1 and 5 years, though it has been recorded as late as the thirtieth year or even later.

Symptoms of serous meningitis may simulate those which occur in brain tumors without severe local manifestations or they may simulate meningitis, as they do in the patient referred to in the query. In the meningeal form the symptoms are rigidity of the neck, slow pulse, moderate fever (though it may be absent), nausea, vomiting, stupor, coma and delirium symptoms that occur in any form of meningitis. The pupils react sluggishly. They are often unequal. Most alarming of all the symptoms is the visual disturbance. Indeed, in some cases complete loss of vision may occur. The ophthalmoscopic examination may show choked disk similar to the condition found in brain tumor, or optic neuritis or optic atrophy may be observed. Paralysis of the cranial nerves is sometimes encountered, espe-

crilly of the abducens and the oculomotor nerves. Nystagmus, too, sometimes occurs. It has been suggested that this symptom is due to increased intracranial pressure caused by the hydrocephalic fluid, affecting the labyrinth. Sometimes the patients complain of partial deafness. In the severer cases resembling brain tumor the greatly increased intracranial pressure may bring about a fatal issue. If a spinal puncture is made, the fluid generally escapes under increased pressure and it is increased in quantity. It is clear and shows normal cell content and no organisms. The symptoms tend to recede after spinal puncture. There are a few cases in the literature in which herpes has been described in serous meningitis.

CHANGES IN NASAL MUCOUS MEMBRANE DURING MENSTRUATION

To the Editor—A woman aged 32, has a troublesome postnasal soreness either just before or just after each menstrual period. There is absolutely no nasal abnormality that can be demonstrated the nose never gives any trouble the patient rarely has a cold. This condition started some nine months ago and has become worse since tonsillectomy six months ago. She has moderately severe cramps and backache before menstruation begins, which are relieved when the flow starts. She has two children the youngest 7 years of age. She has a mild retroflexion but no cervicitis. The periods are regularly thirty-one days apart and last the normal time with normal character of flow. There is no history of syphilis and the Wassermann reaction is negative. The postnasal soreness never occurs during active menstruation. Just what connection is there between the postnasal area and the female generative organs? What would you suggest in the way of treatment? Please omit name.

M.D. Vienna.

M D, Virginia.

ANSWER—It has been known for a long time that during menstruation and pregnancy certain changes in the nasal mucous membrane may appear. Often it is merely a congestion of the mucosa, especially that covering the turbinates, particularly the inferior turbinates, and also the upper portion of the septum in the region of the so-called tuberculum septi. Furthermore, congestion of the pharynx and nasopharynx has been observed in some systemic conditions involving the general circulation. While the nasopharynx does not contain genital areas such as have been ascribed to the tuberculum septi and to the inferior turbinates, it is nevertheless possible that in some individuals these areas may be more sensitive at the time of menstrual periods. Some years ago, Eliess in his publications stated that the pains in the pelvis and lower portion of the back present at the time of menstruation could be relieved in many cases by application of a 5 per cent solution of cocaine in the upper portion of the septum and the inferior turbinate. It might not be amiss in this case to apply the solution carefully to the region of the posterior end of the nose and nasopharynx, to see whether any relief of symptoms can be obtained.

PAIN IN SHOULDER AND ARM AFTER REMOVAL OF BREAST CANCER

To the Editor—I have under my care a woman aged 74 who was operated on last June for cancer of the breast. I did not perform the operation. There was complete removal of the right breast and thorough cleaning out of the right axilla. Since her discharge from the hospital her case has fallen into my hands. The patient is suffering intense pain starting in the right shoulder and going down the arm into the fingers. There is also marked edema of the limb. The case is somewhat baffling and I am at a loss as to just what to do to reduce the swelling and relieve the pain, the latter seeming to be worse at night. By elevation of the arm I was able to reduce the swelling somewhat but because of the pain over the scar tissue due to the drawing I imagine, the patient is unable to maintain the elevation for any length of time. Can you advise me as to an efficient method of treatment for the pain and the reduction of the swelling? Kindly omit name and address

M D Michigan

MD Michigan

ANSWER—There are three possible causes for the pain from which the patient suffers (1) vertebral metastasis with pressure on the cord, (2) recurrent disease in the axilla with involvement of or pressure on the brachial plexus, and (3) lymphedema. Roentgen examination of the cervical and thoracic spine should help to establish or exclude the first possibility. Physical examination for recurrent nodules and the course of the disease may indicate recurrence. When these two possibilities are excluded there remains the condition of lymphedema. The exact causes of postoperative lymphedema not due to recurrent disease are not fully understood. It is suspected that a mild postoperative infection may be an important causative agent. The treatment has not been satisfactory. Elevation of the arm and gentle massage from the wrist toward the shoulder are of some help. In severe cases the Kondoleon operation has been resorted to, and some surgeons have reported successful results.

PSITTACOSIS

To the Editor—For the past two weeks and particularly the past week I have received numerous inquiries concerning the Pittsburgh psittacosis situation. I understand that one must have direct contact with the bird or person having the disease in order to contract it. Please advise whether I am correct in this assumption and if there is any possibility of any one contracting the disease by visiting or being employed in the stores that have had infected birds. M D Pittsburgh

ANSWER—In the majority of cases, psittacosis appears to have been transmitted from sick parrots. Occasional instances of apparent transmission from one person to another have been recorded. Knowledge of the exact mechanisms of transmission of psittacosis is imperfect and at the present time the possibility that one might contract the disease "by visiting or being employed in the stores that have had infected birds" cannot be denied.

PAIN AND NUMBNESS OF HAND AND FOREARM

To the Editor—A woman aged 50 suffers with pain or numbness in the right hand and forearm with stiffness and at times loss of touch sensation and slight edema. This condition started about seven years ago as a tingling in the hand and forearm as though it were asleep. It has grown progressively worse until there is now a great impairment to the usefulness of this member. She had an operation about five years ago at which time the left tube and ovary and the appendix were removed and also an amputation of the cervix and anterior and posterior colporrhaphy were done. Tonsillectomy and submucous resection were done fourteen years ago. The patient had typhoid twenty-three years ago. She has four children living and in good health. After the laparotomy she was relieved for about twelve months, which relief was probably obtained from not using the hand and arm. At present the discomfort is always present and is made worse by use. It seems to be worse during the night and keeps the patient from sleeping. She gets relief by applying cold to the extensor surface of her hand and over the area supplied by the median nerve. Heat aggravates the condition. She gets no relief from salicylates. She had an abscessed tooth removed two months ago but has seen no change in her condition. Roentgenograms of all the other teeth are negative with the exception of an impacted third canine tooth on the right side. This was found on routine roentgen examination and is causing no discomfort and is not abscessed (Her mother had a third canine.) General physical examination now is essentially negative. The blood picture is negative and the Wassermann reaction is negative. The blood pressure is 130 systolic 80 diastolic in both arms and the pulse is equal in the two wrists. There is no history of injury. Please omit name. M D, North Carolina

ANSWER—The question contains little information concerning the results of a neurologic examination. The only features mentioned are pain, numbness, occasional loss of touch sensibility, slight edema and stiffness. These suggest a possible irritation in the region of the brachial plexus or roots. Studies of the exact distribution of sensory and muscular disturbances might yield clues to a more exact localization of a lesion, and thus to a study of the region indicated for source of irritation, e.g., cervical rib or enlarged lymph nodes. A comparison of the sphygmographic curves and comparative studies of sweating on the two sides might yield suggestions of vascular or sympathetic changes, in connection with the latter it would be well to study carefully the reaction of the pupils.

THERAPEUTICS OF MALARIA

To the Editor—The following copies of prescriptions were given to a druggist to fill

Quin sulph	drs IISS	Sod bicarb	ozs III
Citric acid	ozs ISS	Sod citrate	ozs II
Mag sulph	ozs III	Calcium carb	drs I
Aquae q s	ad ozs VVI	Aquae q s	ozs VVIII
M		M	
S 2 tablespoonfuls t i d		S 2 tablespoonfuls 15 minutes	
Adrenalin 20 minims in water if vomiting		before other mixture	
		Atabrine tablets No 15	
		S One t i d p e	

At the time it was explained that the whole constituted a treatment for malaria as used by army doctors in some nearby camps of the Civilian Conservation Corps and that it was the accepted treatment as used in the army. Kindly comment in full on prescriptions and state the rationale for this treatment. Is it used as a standard treatment by the army medical corps men. Please omit name. M D Florida.

ANSWER—The same amount of quinine, 0.3 Gm three times a day, in the form of capsules or tablets will have just as good effect and save a lot of trouble, expense and unpleasantness to the patient. Any physician who prescribes quinine in this or other similar unpleasant solution should have to take a few doses of his own medicine. More than likely he would change his prescription.

Atabrine is a new but effective remedy for malaria. It relieves the clinical symptoms almost or quite as effectively and quickly as quinine. Many recent reports indicate that relapses are less frequent following a short period (one week) of treatment with atabrine than following a similar period with quinine.

The prescription for atabrine is entirely satisfactory. The combination of 0.3 Gm of quinine sulphate three times a day with the atabrine is better than either one alone.

SYPHILIS AND DIABETES

To the Editor—A white man married aged 52 had a course of antisyphilitic treatment six months ago. His syphilitic condition was picked up in the course of a routine examination. He had no recollection of a primary sore. Weekly urinalyses during the treatment were negative. At this time the second course of treatment was to be started as a routine. Urinalysis was done which showed 4 plus sugar. Blood sugar fasting was 274 mg. The Wassermann reaction was 2 plus. The twenty-four hour quantitative sugar was 20 Gm. The patient was placed on a diet antisyphilitic treatment was not started. One month later urinalysis showed sugar 4 plus. Blood sugar fasting was 178 mg. The quantitative twenty-four hour sugar was 15 Gm. Apparently a diet will not render the urine sugar free. Should I place him on a graduated diet and work out an insulin dosage to keep the urine sugar free? Then could his treatment be started while he is taking insulin or should antisyphilitic treatment be discontinued indefinitely? Searle's neoarsphenamine was used. Is there a possibility of the neoarsphenamine being an etiologic factor in the diabetes? What is the prognosis as to the progress of syphilis to advanced stages? Any suggestions will be appreciated. Kindly omit name. M D, Rhode Island

ANSWER—The case is evidently one of fairly mild diabetes, because the blood sugar tests are not particularly high. Evidence is lacking to show that the disease will not respond to diet, because values for carbohydrate, protein and fat are not recorded.

There is general agreement that diabetic patients today should take insulin unless they tolerate at least 100 Gm of carbohydrate and enough protein and fat to maintain a satisfactory body weight.

Antisyphilitic treatment could be started any time and begun quite independently of insulin or of diabetes. In fact there is a distinct possibility that the antisyphilitic treatment will help not only the syphilis but the diabetes as well. There is no probability of neoarsphenamine being an etiologic factor of the latter.

The prognosis of syphilis in a patient with diabetes is no different from that in one without diabetes.

THROMBOSIS AND SLOWING OF BLOOD STREAM AFTER THYROIDECTOMY

To the Editor—I would greatly appreciate any information you may be able to give me concerning the biochemical changes that may occur in the blood by the slowing of the stream following total ablation of the thyroid with their probable effects on thrombosis and pulmonary edema. My understanding of the events favoring thrombosis as obtained from the literature in these cases is as follows: Starlinger has shown that slowing of the blood stream favors agglutination of the platelets and a decrease in their electronegative charge. It favors a change in the albumin globulin ratio of the serum in favor of increased globulin which also causes a decrease in the electronegativity of the platelets favoring thrombosis. Also the change in the acid-base equilibrium increasing the carbon dioxide favors thrombosis by the lowering of the electronegative charge of the platelets and increases their number thus aiding in shifting the blood proteins to the globulin side. I should also like to know what biochemical effect if any slowing of the blood stream with its concomitant changes would have in favoring pulmonary edema. Please omit name and address. M D Massachusetts

ANSWER—The correspondent's understanding of the biochemical changes favoring thrombosis by a local or systemic slowing of the blood flow appears to be the last word in an extensive consideration of this subject. Observations favoring such a view are suggestive but ought to be substantiated by other investigators to a greater extent than they have been before the hypothesis can be registered as a fact. The incidence of thrombosis and emboli of the lung after thyroidectomy is less than after any other major operation. In Professor Quervain's clinic in Bern statistics show an incidence of fatal emboli of the lungs in 0.07 per cent of the cases as compared with 0.04 per cent in exploratory laparotomy and an average of 0.69 per cent in a total of 20,779 major operations.

Blumgart and his associates stated that the velocity of blood flow is directly determined by the metabolic demands of the body which is gaged by the basal metabolic rate. The main biochemical change after total ablation of the thyroid gland is reduction of the thyrotoxic substance, resulting in a marked drop in the basal metabolic rate. In many cases following thyroidectomy marked improvement in signs and symptoms of cardiovascular insufficiency with an increase in the vital capacity of the lungs may be noted. This occurs in spite of the fact that a definite decrease in the velocity of blood flow takes place. When edema of the lungs occurs in these cases it might be explained on the basis of complete exhaustion of the cardiac reserve.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD OF DERMATOLOGY AND SYPHILIGOLOGY Oral Cleveland June 11 12 Sec Dr C Guy Lane 416 Marlboro St Boston

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY Oral (all candidates) Cleveland June 12 Sec Dr Paul Titus 1015 Highland Bldg Pittsburgh

AMERICAN BOARD OF OPHTHALMOLOGY Cleveland June 11 and Butte Mont July 16 Application must be filed at least 60 days prior to date of examination Sec Dr William H Wilder, 122 S Michigan Blvd Chicago

AMERICAN BOARD OF OTOLARYNGOLOGY Cleveland June 11 Sec Dr W P Wherry 1500 Medical Arts Bldg Omaha

ARIZONA Basic Science Tucson June 19 Sec Board of Basic Examiners Dr Robert I Nugent University of Arizona Tucson

ARKANSAS Basic Science Little Rock May 7 Sec Mr Louis F Gebauer 701 Main St Little Rock Regular Little Rock May 14 15 Sec Dr A S Buchanan Prescott Homeopathic Little Rock May 8 Sec Dr Allison A Pringle Iuka Springs Eclectic Little Rock May 8 Sec Dr I I Marshall 820 W 14th St Little Rock

CALIFORNIA Reciprocity San Francisco May 16 Sec Dr Charles B Pinkham 420 State Office Bldg Sacramento

CONNECTICUT Basic Science New Haven June 9 Prerequisite to license examination Address State Board of Healing Arts 1895 Yale Station New Haven

DELAWARE Wilmington June 12 14 Sec Medical Council of Delaware Dr Harold I Springer 1013 Washington St Wilmington

FLORIDA Jacksonville June 11 12 Sec Dr William M Rowlett Box 786 Tampa

INDIANA Indianapolis June 19 21 Sec Board of Medical Registration and Examination Dr William R Davidson Room 5 State House Annex Indianapolis

IOWA Iowa City June 5 7 Dir Division of Licensure and Registration Mr H W Crete Capitol Bldg Des Moines

KANSAS Topeka June 19 20 Sec Board of Medical Registration and Examination Dr C H Irving Iarned

MARYLAND Homeopathic Baltimore June 12 13 Sec Dr John A Farns 612 W 40th St Baltimore Regular Baltimore June 19 22 Sec Dr Henry M Fitzhugh 1211 Cathedral St Baltimore

MISSOURI St Louis June 14 16 State Health Commissioner Dr E T McLaughlin State Capitol Bldg Jefferson City

NATIONAL BOARD OF MEDICAL EXAMINERS The examinations in Parts I and II will be held at centers in the United States where there are five or more candidates, May 7 9 (limited to a few centers) June 25 27 and Sept 12 14 Ex Sec Mr Everett S Plwood 225 S 15th St Philadelphia

NEBRASKA Omaha June 8 9 Application must be filed at least fifteen days prior to date of examination Dir Bureau of Examining Boards Mrs Clark Perkins State House Lincoln

NEVADA Carson City May 7 Sec Dr Edward L Haimer Carson City

NEW JERSEY Trenton June 19 20 Sec Dr James J McGuire 28 W State St Trenton

NORTH CAROLINA Raleigh June 18 Sec Dr B J Lawrence 503 Professional Bldg Raleigh

OHIO Columbus June 5 8 Sec Dr H M Platter 21 W Broad St Columbus

OKLAHOMA Oklahoma City June 6 7 Sec Dr J M Byrum Minimoth Bldg Shawnee

OREGON Basic Science Portland May 19 Acting Sec State Board of Higher Education Mr Charles D Byrne Eugene

TEXAS Fort Worth June 21 23 Sec Dr T J Crowe 918 919 920 Mercantile Bank Bldg Dallas

VERMONT Burlington June 20 22 Sec Board of Medical Registration Dr W Scott Nay Underhill

VIRGINIA Richmond June 20 22 Sec Dr J W Preston 28 1/2 Franklin Road Roanoke

WYOMING Cheyenne June 4 Sec Dr W H Hassel Capitol Bldg Cheyenne

Alabama January Report

Dr J N Baker, secretary, Alabama State Board of Medical Examiners, reports the written examination held in Montgomery, Jan 9-12, 1934. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Ten candidates were examined, all of whom passed. The following schools were represented:

School	PASSED	Year Grad	Per Cent
Rush Medical College		(1933)	90.7
University of Louisville School of Medicine		(1933)	86
Tulane University of Louisiana School of Medicine		(1932)	83.8
(1933) 80.4, 86.9 87			
University of Minnesota Medical School		(1933)	89.3
Medical College of the State of South Carolina		(1933)	85
Vanderbilt University School of Medicine		(1933)	83.3
University of Virginia Department of Medicine		(1933)	88.1

Two physicians were licensed by reciprocity from January 2 to January 8. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
University of Georgia School of Medicine		(1932)	Georgia
University of Tennessee College of Medicine		(1932)	Tennessee

District of Columbia January Examination

Dr W C Fowler, secretary, Commission on Licensure, reports the written examination held in Washington Jan. 8-9, 1934. The examination included 60 questions. An average of 75 per cent was required to pass. Eighteen candidates were examined, all of whom passed. The following schools were represented:

School	PASSED	Year Grad	Per Cent
George Washington University School of Medicine		(1931)	84.1
(1932) 85.1 85.3 86 88.2 88.6 89.9			
Georgetown University School of Medicine		(1932)	85.4
Howard University College of Medicine		(1937) 85.3	91.6
Lincoln University School of Medicine		(1929)	84.8
Indiana University School of Medicine		(1931)	84.7
Johns Hopkins University School of Medicine		(1930)	77.8
Harvard University Medical School		(1926) 83.7	76.3
Medico-Chirurgical College of Philadelphia		(1915)	83.1
University of Pennsylvania School of Medicine		(1932)	81.6
University of Virginia Department of Medicine		(1930)	85

California Reciprocity and Endorsement Report

Dr Charles B Pinkham, secretary, Board of Medical Examiners, reports 4 physicians licensed by reciprocity and 2 by endorsement, Jan 2, 1934. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Rush Medical College		(1921)	S Dakota
University of Buffalo School of Medicine		(1920)	New York
Ohio State University College of Medicine		(1917)	Ohio
Eberhard Karls Universität Medizinische Fakultät		(1912)*	New York
Tübingen Germany			
School	LICENSED BY ENDORSEMENT	Year Grad	Endorsement of
Stanford University School of Medicine		(1937)	U S Navy
Harvard University Medical School		(1923)	A B M Ex

* Verification of graduation in process

Book Notices

Diets at Four Levels of Nutritive Content and Cost. By Hazel K. Stiebeling Senior Food Economist and Medora M Ward Assistant Economist Economics Division Bureau of Home Economics United States Department of Agriculture Circular No 296 Paper Price 5 cents Pp 59 with 9 illustrations Washington D C Supt of Doc Government Printing Office 1933

The circular presents for each of four planned diets—a restricted diet for emergency use, an adequate diet at minimum cost, an adequate diet at moderate cost, and a liberal diet—(1) the quantities of foods or food groups required (2) the nutritive value of the diet, and (3) the retail cost of the food supply as a whole. The data are presented in per capita figures as well as for individuals classified according to age, sex and activity, and for family groups. The prominence assigned to different kinds of food varies from diet to diet, because in comparison with their cost some foods and groups of foods yield better returns in nutritive values than others. Grain products, dried legumes and potatoes are given special prominence in the two diets of low cost. Other vegetables, fruits, lean meats, fish and eggs in the two diets of highest nutritive content and cost. Milk and other dairy products are emphasized in all diets and are given special prominence in the three adequate diets.

The nutritive values of the four diets are compared with one another and with tentative dietary standards. The restricted diet for emergency use provides approximately the minimal requirements of the body for the various nutrients and allows but little margin for safety. The minimal and moderate cost adequate diets provide enough of the different nutrients to cover average requirements for maintenance and growth and to furnish a fair margin of safety. The liberal diet is fully adequate. It includes items from different food groups in such quantities and proportions as to promote better than average nutrition.

Both the nutritive values and the costs of the four suggested diets may be modified by the selection made among individual articles of food within each food group. Costs are also greatly affected by the quality of the foods selected. Therefore a brief summary of quality and size grades for many foods has been included. Some of the other factors affecting costs are discussed briefly including the packaging of food, the size of

purchase, the seasonal variations in food prices, and local and general price levels. Many of these points are illustrated by tables and graphs.

The circular will be especially helpful for the planning of diets for institutions and public welfare relief. The literature cited is listed.

Case Studies in the Psychopathology of Crime. By Ben Karpman M.D. Psychotherapist St. Elizabeths Hospital Washington D. C. Volume 1. Cases I-V. Cloth. Price \$12. Pp 1042. Washington D. C. Mimeoform Press 1933.

The author, psychotherapist at St. Elizabeths Hospital, the United States hospital for the insane, at Washington D. C., and professor of psychiatry at the medical school of Howard University, is endeavoring to develop a better understanding of some of the problems of criminology, through intensive studies of criminals, seeking to discover particularly the psychogenic factors behind their criminal actions proper. The lives of only five persons, wards of the department of criminal insane at St. Elizabeths Hospital, fill this book of more than a thousand pages, each page $8\frac{1}{4}$ by $10\frac{1}{4}$ inches. A second volume is to be devoted to a discussion from a psychogenic standpoint of the data here recorded. These data include not only case histories such as are common to inmates of hospitals for the insane but in each case an autobiographic sketch by the inmate whose case history is recorded, the opinions that some of his fellow inmates have entertained concerning him, and intimate information as to his heredity, family environment, sex life, court records and other material gathered from all available sources. The distribution of the book is limited to persons having professional interests in its subject matter.

The prodigious and painstaking labor involved in the preparation of this volume are apparent in its size and detail. It is perhaps unfortunate that the data assembled concerning each person investigated are not arranged in chronological tables, so as to permit convenient study of his environment at each period of his life, and his reaction at that time. The present arrangement makes it difficult to detect and evaluate sequences of cause and effect and to distinguish them from merely chance sequences of time, so as to see better the evolution of criminality and insanity. Unfortunately, the study of the lives of any five insane criminals by any one person, however competent and well poised that person may be, can hardly be expected to yield results of the first importance. If the research on which the author has entered is to lead to such results, it seems desirable that his plan of investigation have the approval of other scientists working elsewhere in the field of criminology, with sane criminals as well as those that are insane, and that they participate actively in assembling case histories that are accurately comparable, and in synthesizing, analyzing and comparing all case histories assembled. Only in that way can the chances of error inherent in conclusions drawn from the study of as few as five persons, and the danger growing out of a possible unconscious bias on the part of a single investigator, be reduced to a minimum.

Diet and the Teeth. An Experimental Study. Part III. The Effect of Diet on Dental Structure and Disease in Man. By May Mellanby. Medical Research Council Special Report Series No 191. Paper. Price 5s. Pp 180 with illustrations. London. His Majesty's Stationery Office 1934.

This is the third of a series of reports on the subject of teeth with a view to determining whether dental disease, especially caries, is chiefly a problem of nutrition and if so whether this scourge can be prevented by a planned diet. The studies are a pioneer work marking a definite advance in knowledge of causes of dental decay and methods of prevention. The author concludes from her studies that liability of teeth to decay depends largely on perfection of structure, which in turn is to a great extent dependent on nutritional influences during growth, both prenatal and postnatal. Ill formed (hypoplastic) teeth are common and are particularly liable to invasion by bacteria. Tooth formation requires abundant supplies of calcium, phosphorus and vitamin D. These factors are necessary throughout life, especially for the natural processes of 'healing' of which teeth are capable and on which arrest of caries depends. The report gives evidence that two main conditions control the onset of caries: resistance due to structure and resistance due to constitution of the diet. The chemical agencies

of food leading to well calcified teeth are, at least in part, the same as those which increase or maintain the degree of immunity to caries in later life. Present knowledge of what foods produce well or badly calcified teeth can be applied to increase resistance of developed teeth and often arrest decay of diseased teeth. Major changes in the diet of pregnant and lactating women, of infants, and of children during the whole period of dental development and indeed during the whole life are recommended. The consumption of milk, eggs, cheese, animal and fish fats, and vegetables should be greatly increased and the consumption of cereals diminished and for children abolished. The novelty of the conclusions has subjected the work on which they are based to vigorous criticism and often disbelief. This report, as well as the preceding reports, is particularly important for stimulating further research into the possible nutritional causes of defective and diseased teeth and for modifying the diet of the public to take advantage of what has been learned for promoting better teeth.

The Carnegie Foundation for the Advancement of Teaching. Twenty Eighth Annual Report of the President and of the Treasurer. Paper. Pp 189. New York 1933.

This report will bring to many readers a heightened interest as well as profound regret because it represents the last professional activity of the late president of the foundation, Henry Suzzalo. He urges that among institutions of higher learning the spirit of rivalry give place to one of cooperation and that for the competitive individualism of the past there be substituted a consciousness of national responsibility. His plea for unrestricted educational opportunity for all through the lower collegiate division or junior college and a stringent limitation of attendance in the upper division or senior college will provoke more dissenting opinions than the suggestion that professional and graduate schools should be so limited.

In a chapter entitled "Is Education on the Right Track?" Dr. Pritchett, president emeritus of the foundation, declares that "the school has become a cramming place rather than an agency for training boys and girls to use their minds. In spite of fine buildings and an ever-growing list of studies, and of mounting cost, the typical child reads and speaks his native tongue badly. His handwriting is slipshod and formless. His command of elementary mathematical reasoning is weak. He has not learned to read books. In comparison with the training of the children in the elementary schools of France and Germany or of the board schools in England, he has learned none of these fundamentals thoroughly. Furthermore, in comparison with the foreign schools, both teachers and pupils are in a slavish dependence upon textbooks and on routine lessons out of textbooks. All these facts have long been admitted by those most concerned with education."

In another chapter Dr. Pritchett deplors the proposal to create a department of education with a secretary in the cabinet, and large appropriations under his control. "Such authority vested in the central government would be the most powerful machinery that could be devised for bending the beliefs and convictions of all communities to the purpose and will of a central autocratic power. Whenever such power to education has been entrusted to a central authority, local initiative and personal freedom have disappeared. Even religion, in a state-controlled system of education can be bent to the purposes of the state."

Formal education in our country in the last generation has gone through a period of inflation comparable to some of the processes of business inflation. Schools of every grade, from elementary school to the university, have sought to teach too many subjects in a superficial and demoralizing fashion. The typical graduate of our higher schools does not write or speak his own language correctly, nor reason through the simpler processes of arithmetic nor read good literature. What we need first of all in every state in the Union is a return to that ideal of teaching which shall make for simplicity, sincerity and thoroughness. The acquiring of a sound education lies in training the habits and powers of the mind. This is begun by learning a few subjects thoroughly, not by sampling many subjects. The attempt to equalize education throughout the Union would mean a continuation of the process of educational inflation in which the true aims of education are either

lost or obscured and all schools are forced to the uniform type of textbook education."

Other sections of the report deal with the system of teachers' retirement allowances, experiments in educational measurements in the state of Pennsylvania, a discussion on "The Learned Professions and Their Organization," and the routine reports of the officers of the foundation.

Lessons on the Surgical Diseases of Childhood. By William Rankin M.B. Ch.B. Paper Price, 21/- 1 p 190 with illustrations. Glasgow: Alex. MacDougall 1934.

This represents a collection of twenty lectures and demonstrations given to students of the Glasgow University on the subject of surgical diseases of children; it does not pretend to cover the subject thoroughly but to lay a foundation for a further study and to familiarize the student with the most common surgical conditions in childhood. It contains chapters on harelip, cleft palate, nevus, torticollis, tonsils, spina bifida, common chest and abdominal lesions, genitourinary conditions, surgical tuberculosis, fractures and anesthesia. The weak spot of the presentation of the subject lies in the fact that the lessons are based on the older surgery exclusively, ignoring completely new methods of approach, such as treatment of hemangiomas with radium or carbon dioxide snow, few will agree with the author claiming that in such conditions a fine household needle heated in an alcohol lamp is not equaled by any more expensive apparatus for this purpose. Recommendation to use a rigid right angled Herth's tonsillotomy and chloroform for removal of the tonsils will hardly meet with the approval of American surgeons. Certain abbreviations, such as P. S. T. or G. P. T. dressings, are not familiar to an American reader. Advocating rib resection in every case of empyema in children seems to be, to say the least, too radical. Several sketches are rather primitive, while some of the numerous beautiful reproductions of photographs lack explanatory notes. An uncritical description of a wide array of methods may be confusing and bewildering to a novice, but a one-sided presentation based on ultraconservatism certainly is misleading and not sufficiently instructive. The book may supplement lectures on surgical diseases in children and merely in this capacity it may be recommended to students.

Wilhelm Conrad Röntgen and the Early History of the Roentgen Rays. By Otto Glasser. Director Radiation Research Department Cleveland Clinic. With a chapter Personal Reminiscences of W. C. Röntgen. By Margaret Boveri. Cloth Price \$6. Pp 494 with 96 illustrations. Springfield Ill. & Baltimore Md. Charles C. Thomas, 1934.

If ever there was an epoch-making discovery in medicine, it was the development of the X-rays, primarily through the fundamental discoveries of Roentgen. In this book Dr. Glasser traces that discovery from the fundamental investigations made by earlier investigators to the present status of roentgenology as a science. When the German edition first appeared, it was recognized as a significant contribution to medical biography. Not only is the book well written but it is authentic. It is presented in the English edition on a fine stock. The book is full of handsome original illustrations, well reproduced, and is supplemented by an excellent bibliography and an index. The numerous anecdotes and quotations from correspondence and original writings in the chapter of personal reminiscences of Roentgen by Margaret Boveri make this contribution an intensely human document.

The Teaching of Preventive Medicine in Europe. By Carl Prausnitz M.D. M.R.C.S., L.R.C.P. Professor of Hygiene in the University of Breslau. University of London Health Clark Lectures 1932 delivered at the London School of Hygiene and Tropical Medicine. Cloth Price \$3.75. Pp 186 with 37 illustrations. New York & London: Oxford University Press 1933.

The University of London, in arranging these lectures, determined that their general scope should be "the educational, cultural and humanistic aspects of preventive medicine, as distinct from the technical and manipulative training essential to its practice and progress." The objective pointed out by Sir George Newman "is a wider outlook on the physical art of living, the advance of personal hygiene, and the origin and development of preventive medicine, together with its sanitary and social evolution, both in temperate climates and in the tropics." The organization and discipline of the various types

of workers engaged in public health in a number of European countries are described. France, Spain and Greece are but lightly touched on. Italy is not mentioned. Germany and England come in for a comprehensive analysis. The most interesting part of the book, however, is that which deals with the more recently undertaken activities of Poland, Hungary, Czechoslovakia and Yugoslavia. These countries, recognizing the nation's health as a major objective, have been able largely to consolidate all the agencies directed to this end and so avoid the complexity and inefficiency that inhere in many of the older systems of administration. In Russia, efforts to establish a national health service are of course vigorous and unconventional. The results cannot yet be appraised. For the student of public health administration, the book contains much that is of interest.

Recent Advances in Endocrinology. By A. T. Cameron M.A. D.Sc. F.R.C. Professor of Biochemistry Faculty of Medicine University of Manitoba. Cloth Price \$3.50. Pp 365 with 54 illustrations. Philadelphia: P. Blakiston's Son & Company, Inc. 1934.

This addition to the valuable "recent advances" series represents a serious attempt to prepare in brief form a critical summary of the newer concepts of glandular physiology. The author has included a tremendous amount of information previously unavailable within the compass of a single book. While some of the sections appear to be excellent, the work as a whole is characterized by uneven treatment in selection and in critical analysis of the material.

The author proposes the following statement as a fundamental concept: "In the different pathological states of a gland it may produce too much or too little of [the] specific compounds, but it does not produce abnormal compounds." Considering the present precarious state of our knowledge of the chemical constitution of glandular secretions, such a claim is premature. Its value even as a working hypothesis must be questioned, it may lead readily to unfortunate conclusions. Cameron's remarks on the deplorable state of endocrinologic nomenclature are pertinent, yet it cannot be said that the names used by him (such as "adrenine," "pituitrin") are in all cases well chosen. His objection to the widespread misuse of the word "hormone" is commendable, but a more strict delimitation of its employment or even its abolition would be desirable.

The priority of Hanson in making a potent extract of the parathyroid glands is admitted with apparent reluctance, but credit for establishing the presence of an active principle is given to Collip. The author quotes the work of Bazett, who claimed that suprarenalectomy in cats resulted in a fall of blood pressure with death six hours later. Rogoff has demonstrated that cats suprarenalectomized with adequate surgical technique live for several weeks. Bazett's animals must therefore have been in surgical shock, in which condition blood pressure determinations would be of no value whatever in proving the thesis of epinephrine deficiency.

For conservative claims in original papers, the author appears to penalize some investigators by discounting their statements in large part or completely, while extravagant claims made by others receive his full credence. In reporting the recent work on the suprarenal cortex, for instance, he states that the extract of Rogoff and Stewart has produced "slight, but only very slight, improvement." Reference to the original paper indicates that the results obtained, far from being "very slight," were quite promising. Subsequent papers by Rogoff giving further data on the preparation and the clinical use of his extract are omitted altogether. Yet the astonishing claims of Hartman and of Swingle and Pfaffner are reported voluminously. Their methods of making allegedly highly potent extracts are described, that of Swingle and Pfaffner in meticulous detail. No mention is made of the work of Eagle, who has shown that extracts made by the Swingle-Pfaffner method are contaminated with significant amounts of choline, thus rendering worthless many of the investigations conducted with these preparations. The use of a solution containing choline in the treatment of Addison's disease must be viewed with alarm by any one acquainted with the pharmacologic potentialities of this amine. Nor does the writer include a description of Rogoff's fundamental contribution in the experimental production of the Addison syndrome in animals.

The sections devoted to the pituitary principles and to the ovarian and placental factors leave much to be desired, even in view of the limitations of space imposed in a volume of this sort. The material on clinical application of these preparations is incomplete, uncritical and, although tending toward the conservative, still unpardonably optimistic.

Space forbids a more detailed discussion of the many other serious lapses in choice of source material and in critical judgment that occur throughout the book. Despite its wealth of information, this work adds further evidence to the thesis that the field of "endocrinology" is already too vast to be adequately treated in its entirety by any single investigator. By popularizing misconceptions, the author's efforts may do more harm than good.

Treatment of the Commoner Diseases Met With by the General Practitioner By Jewellys F. Barker M.D. Visiting Physician Johns Hopkins Hospital Baltimore. Cloth Price \$3. Pp. 319. Philadelphia & London J. B. Lippincott Company 1934.

The desirability of brief synopses of achievements in the special fields of medicine has been a long felt want by those engaged in general practice. This has been supplied in some measure by reviews, digests and abstracts in current medical journals. However, such a book as this will be welcomed by many physicians. The author is well equipped by virtue of his training and experience to anticipate the practical needs of those for whom he is writing. In these ten chapters only the most recent facts concerning the management of the common disorders are considered. They concern both factual data and point of view. For example, the author devotes the opening chapter to advances in the methods of studying patients and practicing medicine and in the following chapter considers some of the recent trends in infection and resistance. All the discussions are concise and practical. The writer makes no pretense at completeness or systematic organization. The text is decidedly an informal presentation, touching briefly on the recent trends in management of disorders in which the general practitioner might be interested. The bibliographic references are numerous and recent and serve a most useful purpose to those who wish to go beyond the confines of this book. The work is essentially an answer to the anticipated desire of the man engaged in the general practice for recent thought on the common diseases. It should be well received by those for whom it is intended.

If I Have Children By G. Francis Smith M.R.C.S. L.R.C.P. Cloth Price \$1.75. Pp. 133. New York & London Oxford University Press 1933.

The author of this concise treatise is a physician projecting himself in three dimensions in the roles of child father of a family and medical practitioner. He has fused the problems of these three roles so that the reader has a common sense perspective of fatherhood and motherhood. The book is refreshing in its sincerity and marred only slightly by the concluding last chapter on some prosaic aphorisms. The scope of the book includes the selection of the parents, the prenatal stage and the development of the child. Problems of childhood are adequately touched on for a book of this type and the author treats them with balanced sympathetic understanding. While the text is general, it is stimulating and worth reading.

A System of Clinical Medicine Dealing with the Diagnosis, Prognosis and Treatment of Disease for Students and Practitioners By Thomas Dixon Savill M.D. Edited by Agnes Savill M.D. Assisted by E. C. Warner M.D. Ninth edition. Cloth Price \$9. Pp. 1063 with 169 illustrations. Baltimore William Wood & Company 1933.

Since the first edition of this book appeared in 1905 there has been little alteration in the plan of presentation. This differs from most textbooks of general medicine in that it attempts to follow the mental steps taken in the gradual process of forming a diagnosis. Thus, the first chapter gives a general scheme for examination of a patient and deals with the general principles underlying methods of observation, diagnosis, prognosis and treatment. The succeeding chapters deal with symptoms and signs referable to several organs or anatomic regions of the body and the disease that may cause those symptoms. Much credit is due Dr. Agnes Savill for her splendid work in perpetuating the ideals of her husband without undue expansion

of the book. So many advances have taken place since the original plan of the book was formulated that careful editing was necessary to keep this from becoming an unwieldy volume. This has been accomplished in some measure by substituting tables for long discussions. While many phases of the book have undergone revision, the chapters on nervous diseases and diseases of the heart are the most noteworthy in this respect. Other chapters could have profitably been subject to the same degree of revision as they suffer by comparison in their present form. This work is not intended to serve the purpose of a reference book or comprehensive textbook of general medicine. Its greatest field of usefulness will be found by medical students and those starting the practice of medicine who can possess this book in addition to other textbooks of medicine that cover the various subjects in a more exhaustive manner. This volume serves a most useful purpose if it does nothing more than help the reader to systematize his knowledge for the purpose of applying it at the bedside.

Birth Control in Practice. Analysis of Ten Thousand Case Histories of the Birth Control Clinical Research Bureau. Text and Tables. By Marie E. Koop Ph.D. Prepared under the supervision of a Scientific Advisory Committee. With a foreword by Adolf Meyer M.D. Cloth Price \$3.75. Pp. 290. New York Robert M. McBride & Company 1934.

This as a record of 10,000 cases from the Margaret Sanger Birth Control Clinics. It supplies a great deal of information about those clinics but cannot be said to constitute a scientific document. The evidence would seem to indicate that all the common methods are successful if used correctly and that those methods which place the smallest burden on the intelligence of the user are likely to be most successful. There is a great deal of tabular matter providing the data of the clinics studied. It seems likely that the social data provided are of greater significance than the medical data.

Medicolegal

Basic Science Acts Exemption from Examination, Constitutionality—Shenk, a naturopath, applied to the Minnesota State Board of Examiners in the Basic Sciences for a certificate of registration, to be issued without examination, under the provision of the basic science act that exempts from examination every one who on the day the act took effect was lawfully authorized to practice the healing art and regularly licensed or registered in the manner then required by law. His application was rejected. He petitioned the district court, Hennepin County, for a writ compelling the board to issue the desired certificate. When the court rejected his petition, he appealed to the Supreme Court of Minnesota.

Shenk claimed that although he was not licensed or registered when the basic science act became a law he was at that time lawfully authorized to practice the healing art. He argued that the practice of drugless healing, of which naturopathy was a part, was not forbidden by the Minnesota medical practice act, that neither a license nor registration was then necessary to authorize the practice of naturopathy and that no law made it even possible to obtain a license or to register for the purpose of so practicing. Shenk contended that so much of the basic science act as purported to make licensing or registration a condition precedent to exemption from examination required of him an impossibility and should be regarded therefore as surplusage and void.

The Supreme Court held however, that Shenk, as a naturopath was unlawfully engaged in the practice of medicine within the meaning of the medical practice act when the basic science act took effect and that he was not entitled to the benefit of the provisions of the basic science act authorizing registration without examination. The practice of medicine said the court as defined by the medical practice act includes every one who shall for a fee prescribe direct or recommend for the use of any person any drug or medicine or other agency for the treatment or relief of any wound fracture or bodily injury, infirmity or disease. Naturopaths use herbs and other so-called natural methods for the alleviation of the ills of the human

body Naturopathic methods are, in any event, within the legislative inclusion of "other agency for the treatment or relief of any bodily injury, infirmity or disease." The Minnesota statute defining the practice of medicine was not enacted for the benefit of my profession or school or theory of medicine. Certain schools of healing are excepted by statutes from the category of the practice of medicine, which, but for the exempting statutes, would be within that category. The chiropractic practice act and the osteopathic practice act each declares expressly that its licentiates are not engaged in the practice of medicine or surgery. Naturopaths, however, have not yet been placed in a separate statutory classification. The statutory definition of the practice of medicine contained in the medical practice act is broad enough to include the activities of a naturopath.

Shenk claimed further that the basic science act bridged his privileges and denied him due process and equal protection of the law and that it was therefore unconstitutional. This claim, said the Supreme Court, is without merit. The act does not ban naturopathy, it regulates it. The basic science statute is the latest addition to regulatory legislation of this character. It departs somewhat from the older definition of the practice of medicine but of the newer and broader category of the practice of healing defined by the act naturopaths have no just complaint on constitutional grounds. Nothing has been brought to our attention said the court, to enable us to override the legislative judgment either as to the reasonableness of its regulation or the classification of the basic sciences. The practice of healing, as much as the practice of medicine if not more—postulating the existence of some real difference between them—imparts no right that is not subordinate to the police power of the states. In *State v. Brodus*, 181 Minn. 341, 232 N. W. 517, said the Supreme Court we sustained the basic science act against the objections then made based on its exclusions. What was then said is enough to dispose of the present objections to its inclusions.

The order of the court below sustaining the objection to Shenk's application for a certificate of registration in the basic sciences to be issued without examination, was affirmed—*State ex rel. Shenk v. State Board of Examiners in the Basic Sciences* (Minn.) 247 N. W. 392, *Rehearing* 250 N. W. 353.

Workmen's Compensation Acts Admissibility of Statements by Employee to Attending Physician—On April 26, 1929, a physician found that Helminsky's right testicle was swollen and that he had fever when he returned home from his day's work. Thereafter he was "not very well," but he worked from time to time. Later it was found that he had "tuberculosis of the chest" and he was sent to a hospital. He died, Nov. 3, 1929. Death was attributed to tuberculosis of the testicle, which was disclosed by autopsy. His widow, attributing his death to an accidental injury arising out of and in the course of his employment, instituted proceedings for compensation under the workmen's compensation act of New Jersey. A judgment of the court of common pleas, affirming an award in her favor by the workmen's compensation bureau, was reversed by the supreme court, and she then appealed to the Court of Errors and Appeals.

To substantiate her claim, the widow relied mainly on the testimony of the attending physician that the deceased employee had said that he fell against a wheel while he was at work. This testimony, said the Court of Errors and Appeals, was clearly inadmissible. The general rule in New Jersey is that statements made by an injured person to his physician for the purpose of treatment and diagnosis such as statements relating to symptoms and feelings, are admissible in evidence. But statements made to an attending physician as to the cause of an injury or as to the place where it occurred are inadmissible. The workmen's compensation bureau is not bound by technical rules of evidence, but it must ascertain the parties' substantial rights from competent evidence. Hearsay testimony may be received by the bureau without necessarily resulting in reversal but such hearsay testimony cannot form the basis of an award of compensation. Since there was no competent evidence that the employee's death in this case was due to an accident, the judgment of the supreme court disallowing compensation was affirmed—*Helminsky v. Ford Motor Co.* (N. J.) 168 A. 420.

Society Proceedings

COMING MEETINGS

- American Medical Association Cleveland June 11-15 Dr. Olin West
535 North Dearborn Street Chicago Secretary
- American Academy of Pediatrics Cleveland June 11-12 Dr. Clifford G. Grulee
636 Church Street Evanston Ill. Secretary
- American Association for the Study of Gout Cleveland June 13 Dr. J. R. Yung
670 Cherry Street Terre Haute Ind. Secretary
- American Association for the Study of Neoplastic Diseases, Baltimore, June 21-23 Dr. Eugene R. Whitmore, 2139 Wyoming Avenue N.W. Washington D. C. Secretary
- American Association of Genito-Urinary Surgeons Hot Springs Va. May 14-16 Dr. Henry I. Sanford 1621 Euclid Avenue Cleveland, Secretary
- American Association of Medical Milk Commissions Cleveland June 11-12 Dr. Harris Mosk 360 Park Place Brooklyn Secretary
- American Association on Mental Deficiency, New York, May 26-29 Dr. Groves H. Smith Beverly Farms Godfrey Ill. Secretary
- American Branchoscopic Society Cleveland June 10 Dr. Louis H. Clerk 110 South 10th Street Philadelphia Acting Secretary
- American Clinical and Climatological Association Toronto Canada May 21-23 Dr. Francis W. Rackemann 263 Beacon Street Boston Secretary
- American Dermatological Association New York June 7-9 Dr. William H. Guy 500 Penn. Avenue Pittsburgh Secretary
- American Gynecological Society White Sulphur Springs W. Va. May 21-23 Dr. Otto H. Schwarz 630 South Kingshighway St. Louis Secretary
- American Heart Association Cleveland June 12 Dr. Irl C. Riggs, 50 West 50th Street New York Executive Secretary
- American Laryngological Association Cleveland June 7-9 Dr. William V. Mullin 9204 Euclid Avenue Cleveland Secretary
- American Neurological Association Atlantic City June 4-6 Dr. Henry Alcop Riley 117 East 72d Street New York Secretary
- American Orthopedic Association Rochester Minn. June 6-9 Dr. Ralph A. Ghormley Mayo Clinic Rochester Minn. Secretary
- American Pediatric Society Asheville N. C. May 3-5 Dr. Hugh McCulloch 325 North Euclid Avenue St. Louis Secretary
- American Physiotherapy Association Cleveland June 13-16 Mrs. Beatrice Searle 1430 West 77th Place Chicago Secretary
- American Proctologic Society Cleveland June 11-12 Dr. Frank G. Runyon 1361 Jerkison Avenue Reading Pa. Secretary
- American Psychiatric Association New York May 28-June 2 Dr. William C. Sandy State Education Building, Harrisburg Pa. Secretary
- American Society of Clinical Pathologists Cleveland June 8-11 Dr. A. S. Giordano 531 North Main Street South Bend, Ind. Secretary
- American Surgical Association Toronto Canada June 4-6 Dr. Vernon C. David 59 East Madison Street Chicago Secretary
- American Therapeutic Society Cleveland June 8-9 Dr. Oscar B. Hunter 1835 Eyc Street N.W. Washington D. C. Secretary
- American Urological Association Atlantic City May 22-24 Dr. Gilbert J. Thomas 1009 Nicollet Avenue Minneapolis Secretary
- Arizona State Medical Association Prescott June 7-9 Dr. D. F. Harbridge 822 Professional Building Phoenix Secretary
- Association for the Study of Allergy Cleveland June 11-12 Dr. Warren T. Vaughan, 808 Professional Building Richmond Va. Secretary
- Association for the Study of Internal Secretions Cleveland June 11-12 Dr. F. M. Pottenger, Pottenger Sanatorium, Montevia Calif. Secretary
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- Kansas Medical Society Wichita May 9-11 Dr. J. F. Hasag 804 Huron Building Kansas City Secretary
- Maine Medical Association Bangor May 28-29 Miss Rebekah Gardner 22 Arsenal Street Portland Secretary
- Massachusetts Medical Society Worcester June 4-6 Dr. Walter L. Burrage 182 Walnut Street Brookline Secretary
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- Nebraska State Medical Association Lincoln May 22-24 Dr. R. B. Adams Center McKinley Building Lincoln Secretary
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- New Jersey Medical Society of Atlantic City June 5-8 Dr. J. B. Morrison 66 Milford Avenue Newark Secretary
- New York Medical Society of the State of Utica May 14-16 Dr. D. S. Dougherty 2 East 103d Street New York Secretary
- North Dakota State Medical Association Fargo May 28-29 Dr. Albert W. Skelsey 20 1/2 Broadway Fargo Secretary
- Oklahoma State Medical Association Tulsa May 21-23 Dr. L. S. Willour Ainsworth Building McAlester Secretary
- Pacific Northwest Medical Association Salt Lake City June 21-23 Dr. C. W. Countryman 407 Riverside Avenue Spokane Wash. Secretary
- Rhode Island Medical Society Providence June 7 Dr. J. W. Leach 167 Angell Street Providence Secretary
- South Dakota State Medical Association Mitchell, May 14-16 Dr. John F. D. Cook, Langford Secretary
- Texas State Medical Association of San Antonio May 14-17 Dr. Holman Taylor Medical Arts Building Fort Worth Secretary
- Utah State Medical Association Salt Lake City June 21-23 Dr. Leland R. Cowan 305 Medical Arts Building Salt Lake City Secretary
- West Virginia State Medical Association Huntington May 14-16 Mr. Joe W. Savage Public Library Building Charleston Executive Secretary

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AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

9 283 420 (Feb.) 1934

- Heart Disease from Point of View of Public Health—1933 A E Cohn and Claire Lings New York—p 283
- *Unusual Sinus Tachycardia with Observations on Vagal Activity Direct Electrical Stimulation of Vagus Nerves in Man H Field Jr P S Barker and J Alexander Ann Arbor Mich—p 298
- Congenital Complete Heart Block Account of Eight Cases M Campbell and S S Suzman London England—p 304
- Rupture of Right Auricle of Heart Case Report with Electrocardiographic and Postmortem Findings G M Clowe E Kellert Schenectady N Y and L W Gorham Albany N Y—p 324
- *Changes in RST Component of Electrocardiogram Produced by Experimental Rupture of Auricle of Dog's Heart and by Pericardial Injection F S Randles L W Gorham and M Dresbach Albany N Y—p 333
- Relation of Intrapleural Pressure to Mechanics of the Circulation G K Coonse and O E Aufranc Boston—p 347
- Deformity of Chest Associated with Extreme Dilatation of the Left Auricle Report of Two Cases Evelyn Holt New York—p 363
- *Significance of Jugular Pulse in Clinical Diagnosis of Ventricular Tachycardia M Prinzmetal and F Kellogg San Francisco—p 370
- Creatine Content of Myocardium of Normal and Abnormal Human Hearts D W Cowan Iowa City—p 378
- Diabetes and Coronary Thrombosis Analysis of Cases Which Came to Necropsy M Enklewitz New York—p 386
- Blood Pressure of Chinese Living in Eastern Canada A Krakower Montreal—p 396
- Electrocardiogram of Low Voltage Report of Fifty Autopsied Cases L G Steuer Cleveland—p 405

Unusual Sinus Tachycardia—Field and his associates present a case in which there was a remarkably rapid sinus tachycardia—200 per minute and more. The extreme tachycardia, thought at first to be paroxysmal auricular tachycardia, persisted for four weeks and led to advanced congestive cardiac failure in an otherwise healthy man 40 years of age. After the usual methods of interrupting an attack of paroxysmal tachycardia had failed, an attempt was made to terminate the rapid heart action by exposing the vagus nerves in the neck and stimulating them electrically. There was however no demonstrable effect on the heart. Subsequently, partial heart block due to digitalis, resulted in slowing of the ventricles and was followed by improvement. Eventually the auricles gradually slowed the heart block disappeared the cardiac response to vagal activity returned and the patient recovered. This course of events strongly suggests that the tachycardia was in reality an extreme sinus tachycardia due to failure of vagus inhibition.

Electrocardiogram Produced by Experimental Rupture of Auricle—Randles and his associates describe experiments that show that alterations in the RST component of the electrocardiogram simulating those associated with coronary occlusion may be produced by experimental auricular rupture with resulting hemopericardium. These electrocardiographic changes have not been found immediately after producing a hemopericardium but only following an interval of several hours. The changes have been observed to persist for some time after the absorption or withdrawal of the fluid from the pericardial sac. The variations in the RST component were not due to the auricular injury but were associated with considerable amounts of fluid in the pericardial cavity. The authors cannot give a complete explanation of the mechanism of the production of the electrocardiographic changes in their experiments although the development of thrombema as previously discussed may well be a most important factor. Another method of producing RST changes in the electrocardiogram has been reported which

adds to the existing evidence that the so called coronary T wave is not pathognomonic of coronary occlusion.

Jugular Pulse in Diagnosis of Ventricular Tachycardia—Prinzmetal and Kellogg state that paroxysmal ventricular tachycardia may often be differentiated clinically from auricular tachycardia when jugular pulsations at a slower rate than the apical rate are present. They report a case in which a diagnosis of paroxysmal ventricular tachycardia could not be definitely made from the electrocardiogram but in which the diagnosis was made by the presence of jugular pulsations. It is suggested that there may be many similar cases in which this clinical sign alone could make a positive diagnosis or in which it would be a necessary supplement to the electrocardiogram in diagnosis. During ventricular tachycardia the most common auricular rhythms in the order of frequency are an independent rhythm, auricular fibrillation and retrograde rhythm with partial block. The authors conclude that the sign has limitations but is applicable to about two thirds of the reported cases. The coexistence of auricular fibrillation is the only important condition that renders the sign valueless.

American Journal of Anatomy, Philadelphia

54 1176 (Jan 15) 1934

- Progressive Nerve Degeneration and Its Rate in Lateral Line Nerve of the Catfish G H Parker and Virginia L Paine Cambridge Mass—p 1
- Structure of Human Vaginal Mucosa in Relation to Menstrual Cycle and to Pregnancy B G Smith and E A Brunner New York—p 27
- Distribution of Parietal Cells in the Stomach Histotopographic Study F H Berger Rochester Minn—p 87
- Hematopoietic Disturbances Induced in Albino Rat by Administration of Thyroxine J S Latta and Miriam Crowell Benner Omaha—p 115
- Comparative Studies on Morphology and Distribution of Brachial Plexus Ruth A Miller New York—p 143

American Journal of Cancer, New York

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- Diagnosis of Early Carcinoma of the Cervix C C Norris Philadelphia—p 295
- Myoblastoma of the Striated Muscle P Klempner New York—p 324
- *Tumors of the Adrenals E M Burke Buffalo—p 338
- Neoplastic Disease of the Kidney of the Frog Rana Pipiens B Lucke Philadelphia—p 352
- Development of Multiple Tumors in Tarded and Rarified Animals M C Reinhard and A A Thibaudau Buffalo—p 380
- Possible Effect of Oil of Gaultheria in Diet of Mice Susceptible to Spontaneous Carcinoma of the Breast II Latent Period? L C Strong Bar Harbor Maine—p 387
- Observations on Digestion of Shells of the Eggs of *Tremia taeniæformis* F D Bullock W F Dunning and M R Curtis New York—p 390
- Rhabdomyosarcoma of Spermathecal Cord (Funiculus Spermathecae) E F Hirsch Chicago—p 398
- Has the Cancer Cell Any Differential Characteristics? W C MacCarty and Eva Haumeder Rochester Minn—p 403
- *Simultaneous Occurrence of Malignancy and Tuberculosis A A Thibaudau Buffalo—p 408
- Multiple Primary Cancer as Observed at the State Institute for the Study of Malignant Disease B F Schreiner and W H Wehr Buffalo—p 418

Tumors of Suprarenals—Burke's survey of 371 cases coming to necropsy shows that the suprarenal is a site of metastatic involvement in a relatively high proportion of malignant tumors. The majority of malignant tumors will metastasize to the suprarenal and his series shows primary lesions in various locations in the body. Certain types of tumor however metastasize more readily to the suprarenal than do others. Either suprarenal may be involved depending on the location of the original lesion. The suprarenal shows metastases in many cases in which there is no general dissemination. The medulla is more frequently the site of metastatic neoplasm than the cortex.

Simultaneous Occurrence of Malignant Disorders and Tuberculosis—In a review of more than 15,000 cases at the clinic for the diagnosis and treatment of tumors Thibaudau found only twenty-two cases in which there was definite association of cancer and tuberculosis. Diagnosis of the tuberculous process was made roentgenologically or by positive finding of the tubercle bacillus in the sputum or section while the malignant condition was established in each case by histo-

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logic examination. It seems probable that many actual cases of tuberculosis have not been recognized, owing to the difficulty of interpretation of roentgenograms when a malignant process is coexistent or to the difficulty of securing proper material for laboratory examination. The author concludes that the coexistence of an active malignant growth and tuberculosis in the same patient is uncommon. On the other hand the fact that the two conditions are found at times in the same patient and often closely associated in the same organ, would seem to argue against an antagonism between them. It may even be plausible to suppose that the chronic irritation produced by a tuberculous lesion might be the exciting cause in the production of a malignant neoplasm.

American Journal of Diseases of Children, Chicago

- 17 261 476 (Feb.) 1934
The Blood During the First Year of Life. H. Anemia of Prematurity. Arthur H. Merritt and I. T. Davidson with technical assistance of R. Bennett. New York—p. 261
Mineral Growth of the Human Fetus. Vernon Job and W. W. Swanson. Chicago—p. 302
Four Years' Experience with Examination of Material Obtained by Gastric Lavage. I. Demonstration of Tubercle Bacilli and Its Significance in Prognosis Therapy and Estimation of Degree of Infection. V. Poulsen and A. O. Andersen. Copenhagen. Denmark—p. 307
II. Demonstration of Tubercle Bacilli. Vera Lester. Copenhagen. Denmark—p. 322
Relief of Oliguria in Dehydration in Infants by Intravenous Injections of Dextrose. Eleanor Myrles and H. Cohen. New York and II. Talamo. Worcester. Mass.—p. 331
Indications That Malignoid Inhibitory Is a Genetic Mutation of Degenerative Type. A. Bleyer. St. Louis—p. 342
A Drill for Lateral Ventricular Puncture. F. I. Schwenker. New York—p. 349
Continued Spinal Drainage. F. I. Schwenker. New York—p. 351
Transverse Bands in the Bones of a Tuberculous Child. F. I. Miller and I. Rubell. Chicago—p. 354

Relief of Oliguria in Dehydration in Infants—Myrles

her associates tried to test the efficacy of hypertonic solutions of dextrose in stimulating diuresis using solutions from 23 per cent in an effort to find an optimal concentration of dextrose content of the blood and that of the urine were determined in fifteen infants presenting severe gastro intestinal ation with diarrhea dehydration and acidosis after the m to see if there was any relation between diuresis and glycemia or between diuresis and glycosuria. The principal acid and base constituents of the blood were determined before and after treatment to supplement a clinical evaluation of the efficacy of the therapy. The authors observed that the stage of gastro intestinal intoxication is largely responsible for the accompanying acidosis since it leads to a retention of acid ions in the body. The primary aim of the initial treatment should therefore be the restoration of an adequate flow of urine. Hypertonic solutions of dextrose administered intravenously serve this purpose. When combined with hypodermoclyses of saline solution they furnish fluid and electrolytes and stimulate renal function. Improvement in the clinical condition and acid-base status of the blood has resulted from this treatment.

Transverse Bands in Bones of Tuberculous Child—

Miller and Rubell state that, according to the literature disturbances in the growth of the bones such as they describe in their case may be caused by deficiency diseases (rickets, scurvy or any chronic debilitating condition). From a study of the case it would be fair to assume that the hindrance to the growth of the bones took place between the age of 2 and 3 years, because only three centers of ossification are seen in the wrist and foot which exhibit the curved bands corresponding to the transverse bands in the long bones and because the centers that ossified at a later date do not reveal these transverse bands. From the history and physical examination there is no evidence that the patient ever suffered from rickets or scurvy. No phosphorus was ever administered to the child may have been given. As the patient now suffers from a proved active tuberculosis of the hip joint the authors are tempted to assume that the tuberculous infection may have been present in a latent form since early childhood and that it constituted

the etiologic factor. They hesitate to consider this case as offering definite proof of a correlation of tuberculosis with the formation of these transverse bands. They feel, however, that in this case, in which no evidence exists other than the known tuberculosis of the hip joint, there may be a definite relationship between the two.

American J Obstetrics and Gynecology, St. Louis

- 27 157 316 (Feb.) 1934
Polycystic Ovaries in the New Born and Early Infancy and Their Relation to Structure of Endometrium. Mary Spivack. Chicago—p. 157
Tuberculosis of the Uterus and Fallopian Tubes. Report of Two Cases Treated with X Rays. E. M. Jameson. Saranac Lake. N. Y.—p. 173
Pathology of Intracranial Hemorrhage in the New Born Child. E. M. Jameson. New Orleans—p. 184
Birth Injury of the Occipital Bone. Report of Thirty Two Cases. I. A. Hemsath. New York—p. 194
Puerperal Findings in the Uterus During Labor and the Early Puerperium. R. G. Douglas and Henrietta S. Rbers. New York—p. 203
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and F. C. Hartley. St. Paul—p. 257
Malignant Neoplasms of Ovary. Analysis of One Hundred and Fifty Cases. A. W. Jacob. New York—p. 257
Missed Abortion with Superimposed Pregnancy. Case of Compound Intra Uterine Gestation. A. K. Forster. Hammond. Ind.—p. 260
Induction of Labor by Rupture of Membranes. L. Wilson. New York—p. 265
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Simple Device for Rupturing Membranes. R. P. Little. Santa Paul. Calif.—p. 273
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and C. Brehman. Reading. Pa.—p. 276
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Chronic Appendicitis Simulating Chronic Adnexitis Due to Appendicectomy. J. S. Diasio. New York—p. 297
Ovarian Cyst and Preeclamptic Toxemia Complicating the Same Pregnancy. W. T. Slacy. St. Joseph. Mo.—p. 299
Use of Diethylene in Control of Afterpain in Hemorrhoidectomy. A. E. Hertzler. Haleslead. Kan.—p. 301

Birth Injury of the Occipital Bone—Hemsath reports

thirty-two cases of separation of the posterior intra occipital synchondrosis and calls attention to the fragility of the base of the skull in the full term fetus. The synchondrosis between the squamous and lateral portion of the occipital bone, because of its weakness and close proximity to the medulla oblongata, makes the base of the fetal skull susceptible of grave traumatic injury during delivery. This injury consists of a separation which may be called an osteodiasis since the term fracture is inapplicable. The thirty-two cases of osteodiasis occur in 166 consecutive necropsies performed by the author on viable fresh stillbirths and neonatal deaths during a period of two years. The necropsy rate was 71 per cent of the necropsies on viable delivered by version and breech extraction in 33 per cent each of forceps deliveries and of primary breech extractions and in 23 per cent of spontaneous deliveries. Of the injuries 72 per cent showed the squama depressed beneath and overriding the lateral portion and 38 per cent showed gross traumatic injury of the cerebellum. In forty-eight consecutive necropsies delivered by version and extraction and by primary breech extraction occipital osteodiasis occurred in 42 per cent a

frequency equal to that of subdural cerebral hemorrhage and of tentorial laceration and twice that of fracture of the vertebra. In forceps deliveries this occipital injury was found in one third of the thirty cases examined post mortem. Its occurrence in low forceps delivery was rare. The injury was found twice in spontaneous vertex deliveries when extreme difficulty was encountered in the delivery of the shoulders. In preventing occipital osteodystasia in forceps deliveries, careful cephalic application should be made and the line of traction should not force the occiput directly against the symphysis. In delivery of the after-coming head the occiput should be protected at the symphysis by attention to the direction and force of traction. Manual traction on the head for the delivery of shoulders should be applied to the sides of the head, the occiput being avoided.

Calcium in Treatment of Dysmenorrhea—Boynton and Hartley state that, of forty-nine cases of essential dysmenorrhea treated with calcium or with calcium and viosterol thirty-three were greatly benefited and sixteen seemed to receive no relief. The symptom of bruising easily seems to indicate, in cases of essential dysmenorrhea, that a more favorable response to calcium therapy may be expected than in cases not showing this symptom. The calcium was administered in the form of calcium gluconate by mouth. It was given daily in doses of 60 grains (3.9 Gm) for from ten to fourteen days before the onset of the menstrual period and continued through the first two days of the period. When viosterol was given with the calcium gluconate the dosage was 30 drops daily during the same period. An alkaline mixture, which was used alone in a few cases and with calcium gluconate in other cases, consisted of equal parts of magnesium carbonate and sodium bicarbonate. The dosage used was 60 grains three times a day for ten days before the onset of menstruation. What the effect of magnesium carbonate in preventing dysmenorrhea may be is unknown. Carswell and Winter have shown that with adequate phosphorus intake magnesium appears to favor calcium storage instead of causing calcium loss. There seems to be little therapeutic difference with variations of the drugs. In the cases reported, the drug was taken before two or more menstrual periods.

Missed Abortion with Superimposed Pregnancy—Forster observed a case of missed abortion in which a second pregnancy supervened within a month and went on to term. The patient continued to carry both a living and a dead fetus for nine months, until delivered by cesarean section the dead fetus having been carried for fourteen months, five months as a living fetus and nine months as a dead one. The second or superimposed pregnancy pursued a normal gestation of nine months. Convalescence was uneventful and a rapid recovery was made. The child is well and has developed normally. The mother has since had her gallbladder removed for cholelithiasis and has just recently delivered spontaneously a living female child, following a normal gestation.

New Method of Reading Friedman Test—In performing the Friedman modification of the Aschheim-Zondek test by the routine technic, Davis and his associates recorded the pupillary reaction of the rabbit immediately after injecting the urine into the marginal ear vein and then checked the result by the accustomed operation on the animal. A positive report was correct in 134 of 148 reports (90.6 per cent) and a negative report was correct in seventy-seven of ninety-four reports (81.8 per cent). The pupil of the rabbit reacts in a variety of ways. It will frequently contract to a size of about 2 mm while the urine is still being injected. In most cases however the pupils in the positive cases will react in from one to five minutes the contraction lasting from one to ten minutes. The dilatation of the pupil occurs in the same manner. In reading the test the authors read as positives only those cases which showed a decided contraction of the pupil paying no attention to dilatation of the pupil. Among the last 125 cases there have been fifteen in which a dilatation of the pupil occurred and the test was positive on operation on the animal. This error undoubtedly accounts for a few of the false negative reports. With reference to the false positive reports, they have no explanation at the present time except that eight of them occurred at about the same time on one group of eight rabbits that came into the laboratory together.

American Journal of Orthopsychiatry, Menasha, Wis

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- Psychoanalytic Treatment of a Child with a Stealing Compulsion Estelle Levy —p 1
Psychoanalysis of Older Offenders W Healy Boston —p 24
Rorschach Test in Manic Depressive Psychosis D M Levy New York and S J Beck Boston —p 31
Conversion Syndromes E Liss New York —p 43
Continuity of Neurotic Processes I S Wile Lucy Neary Louise Novograd Lola Mace and Rose Davis New York —p 49
Serum Calcium in Juvenile Delinquents M Molitch and A K Eccles Jamesburg N J —p 73
Incidence and Intercorrelations of Enuresis and Other Neuropathic Traits in So Called Normal Children J J Michaels Boston and Sylvia E Goodman Ann Arbor Mich —p 79
Prevention or Cure The Work of the Church Esther Colby Sweet Cambridge Mass —p 107
Treatment of Behavior Problems I Some Illustrations of Variations in Treatment Approach L G Lowrey New York —p 120
Mental Health Emphasis in Education Qualitative Study H C Patey and G S Stevenson New York —p 138

American Review of Tuberculosis, New York

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- Silicosis and Its Relationship to Tuberculosis L U Gardner Saranac Lake N Y —p 1
Prevalence of Silicosis in the General Population and Its Effects on Incidence of Tuberculosis A J Lanza and R J Vane New York —p 8
Silicosis in Gold Miners and Coal Miners or Miners Dyspnea and Miners Phthisis S L Cummins Cardiff Wales —p 17
Clinical Aspects of Simple Silicosis and Silicosis with Tuberculosis A R Riddell Toronto —p 36
Roentgenologic Aspects of Simple Silicosis and Silicotuberculosis H K Pancoast and E P Pendergrass Philadelphia —p 43
Occupational History and How to Make It R R Sayers Washington D C —p 61
Chemical Study of Bacteria Studies on Complex Carbohydrates Isolated from Culture Medium and Its Ultrafiltrate After the Growth of Tubercle Bacilli Florence E Hooper, Alice G Renfrew and Treat B Johnson New Haven Conn —p 66
Hematologic Retrospect of Tuberculosis Patients W H Oatway Jr Waukesha Wis —p 73
Anatomic Contributions to Primary and Postprimary Human Pulmonary Tuberculosis K Terplan Buffalo —p 77
Primary Tuberculosis Among Nurses E K Geer St Paul —p 88
Observations on Pulmonary Tuberculosis Among Members of the Same Families P Dufault and D Robinson Rutland Mass —p 98

Silicosis and Its Relation to Tuberculosis—Gardner points out that at least 75 per cent of human beings who develop silicosis die of tuberculosis, which may make its appearance at any stage of the disease. The infection may already exist in a latent form when the individual takes up his occupation in the dusty industry, or it may be acquired subsequently. In some instances it may not become manifest until years after the exposure to dust has ceased. Animal experiments have demonstrated that partially healed primary foci of tuberculosis may be reactivated and rendered progressive by inhalation of silica. Serial roentgenograms of human beings exposed to silica have demonstrated reactivation of latent apical tuberculosis in the same manner. It seems probable that if lesions contain living tubercle bacilli, the dust will ultimately cause the lesions to become progressive. In the silicotic experimental animal, subsequent infection with attenuated tubercle bacilli tends to produce a rapid type of disease, which terminates fatally within three or four months. The nonsilicotic controls practically never die of such infections. When the practice of employing in silica industries only men whose chest roentgenograms are normal has been in force for some years the relationship between silicosis and the complicating infection should become more clearly defined. In the roentgenogram of silicosis complicated by early tuberculosis the alteration in the character of the nodules is manifested by a peculiar fluffiness and haziness or their outlines. Furthermore at some point in the lung the characteristic uniformity of distribution is interrupted and there is a marked tendency to aggregation of the nodules. When the process is far advanced the localized massive leathery fibrosis casts dense shadows with ill defined radiating borders. Often such changes are symmetrically located in the subclavicular or middle portions of both lungs. The combination of silicosis and tuberculosis is a new condition and not merely a combination or a superimposition of one process on the other. The combined disease sometimes progresses rapidly and terminates fatally within a few months at other times it is chronic.

length, lead increased in the excreta during acidosis and diminished greatly under calcium therapy. The value of calcium therapy was shown in the patient with neuromyelitis optica. Calcium stopped the advancing myelitis and caused lead to disappear from the spinal fluid. It is too early for the authors to state whether or not calcium is a satisfactory therapeutic agent in multiple sclerosis. They cannot state dogmatically that because lead is found in the central nervous system in the spinal fluid in the bones and liver and in the excreta it is therefore the cause of the disease. The constant association, however, of lead in every case of multiple sclerosis of the type under discussion that they have studied builds a rather strong meriting argument, provided they have not overlooked some fault in methods and have not interpreted their observations wrongly. More evidence may be brought to bear on the subject by experimental work now under way by further study of cases and by investigations in other clinics. They believe that their work to date suggests lead as the possible etiologic agent in multiple sclerosis of the exacerbating and remitting type.

Alcoholic Myelopathy Associated with Alcoholic Encephalopathy—In a previous report by Schilder and Bender (the author) a series of five cases of alcoholic encephalopathy (hemorrhagic poliencephalitis superior of Wernicke) were reported, and several different clinical groups were discussed and correlated with the neuropathologic changes in the brain stem and cortex. The author discusses clinically five more cases of alcoholic encephalopathy and gives the histopathologic changes of the brain stem and cortex as before. In addition, studies of the spinal cord were made. In every case of alcoholic encephalopathy in which the spinal cord was studied a myelopathy was found that appeared to be an extension of the same type of lesion that was found in the upper brain stem and dependent in its distribution on the same factors, namely the proximity to the spinal fluid about the spinal cord and the distribution of the vascular supply to the spinal cord. The lesion also shows a specific electivity for the vegetative centers being most severe in and about the lateral horns and Clarke's nuclei and the posterior horns of the thoracic level but also involving other parts of the cord especially the dorsal columns and the periphery of these columns. Schilder and the author showed the correlation between the clinical features in the psychic, motor and vegetative fields of the various clinical groups of alcoholic encephalopathy and the pathologic changes in the cerebral and cerebellar cortices and in the brain stem. The author now shows a comparable correlation between the motor, sensory and vegetative disturbances and the lesions in the spinal cords in all cases of alcoholic encephalopathy in which the spinal cord has been examined.

California and Western Medicine, San Francisco

40 73 144 (Feb) 1934

- Carcinoma of the Cervix Its Adequate Treatment L C Kinney San Diego—p 73
Reflex Nerve Control of Coronary Blood Flow C W Greene Columbia Mo—p 78
Pregangrenous Arteriosclerotic and Thrombo Angiatic Ischemia Control of Pain Therein F L Reichert San Francisco—p 81
Rectal Diseases Their Injection Treatment Economic Problem W H Daniel Los Angeles—p 85
Neutropenic State Its Medical Aspects B O Raulston Los Angeles—p 88
Psychic Factors in Anesthesia H G Mehrtens and Pearl S Pouppirt San Francisco—p 93
*Mixture of Novocain and Nupercaine in Intradural Block (Spinal) Anesthesia H C Holder San Diego—p 9
Diverticulosis and Diverticulitis of the Colon A C Hunt Los Angeles—p 98
Spinal Fluid Findings in Syphilis N N Epstein J M Graves S R Sherman and L K Gay San Francisco—p 102
Inadequate Nasal Respiration Corrective Measure C W Walker Fresno—p 107

Procaine Hydrochloride and Nupercaine in Intradural Block Anesthesia—Holder uses a combination of nupercaine and procaine hydrochloride in block anesthesia so as to derive the advantages of both and perhaps do away with their disadvantages. In a patient properly prepared for spinal anesthesia i.e. with the administration of 50 mg of ephedrine in lower abdominal cases and 100 mg in upper abdominal cases fifteen minutes before lumbar puncture the lumbar tap is made with a fine gauge needle in the second or third lumbar space

as outlined by Huff, then 50 mg of procaine hydrochloride crystals is dissolved in 2 cc of a 1:200 solution of nupercaine. Of the seventy-four cases forty-four showed an average fall of systolic blood pressure of 20.4 mm of mercury, fourteen were stabilized without fall or elevation, and sixteen showed an average elevation of blood pressure from the preanesthetic level of 23.6 mm of mercury.

Delaware State Medical Journal, Wilmington

6 23-44 (Feb) 1934

- Old Age Its Prevention and Care C P Noble Philadelphia—p 23
The Family Doctor and His Responsibility to Pre-tuberculous Child J P Wales Wilmington—p 31

Endocrinology, Los Angeles

18 1160 (Jan Feb) 1934

- *Complete Recovery of Gonadotropic Substances from Urine of Pregnant Women Leila Davy Madison Wis—p 1
Clinical Use of Prolactin R Kurzrok R W Bates O Riddle and E G Miller Jr New York—p 18
Endocrine Studies XLII Note on Acromegaly with Report of Case A W Rowe and H Mortimer Boston—p 20
Studies on Physiology of Lactation III Reciprocal Hypophyseal Ovarian Relationship as a Factor in Control of Lactation W O Nelson Chicago—p 33
*Treatment of Sexual Underdevelopment in the Human Male with Anterior Pituitary Like Hormone of Urine of Pregnancy D L Sexton St Louis—p 47
Histologic Findings of Hypophysis in Cancer G A Welch New York—p 59
Chemical Nature of Emmenin J B Collip J S I Browne and D L Thomson Montreal—p 71
Glucose Tolerance Studies in Children and in Adolescents H J John Cleveland—p 75
Effect of Daily Hypophyseal Implants into Adult but Sexually Inactive Male Ground Squirrels G E Johnson E L Gann M A Foster and R M Coco Manhattan Kan—p 86
Blood Chemistry of Adrenal Insufficiency in Crisis R L Zwemer and Ruth C Sullivan New York—p 97
Biochemical Studies on Male Hormone as Obtained from Urine T F Gallagher and F C Koch Chicago—p 107
*Effect of Pregnancy Urine Extract and Ovarian Follicular Hormone on Hyperthyroidism P Starr and Helen Patton Chicago—p 113
Some Endocrine Observations on Advanced Ossification in Children W A Reilly San Francisco—p 117
Studies in Physiology of Prostate Gland R L Johnston Chicago—p 123

Recovery of Gonadotropic Substances from Urine of Pregnant Women—Davy proposes a method for preparing extracts of gonadotropic substances from urine of pregnant women which involves shaking acidified urine with Lloyd's reagent elution of the dried residue with 50 per cent aqueous pyridine, precipitation of the active material by acetone at 95 per cent and suspension of the active solids in water for injection. Extracts prepared by this method have been assayed with controls of whole urine. Approximately duplicate ovarian effects are secured with equivalent doses. The injection of the equivalent of 1,000 cc of urine gave no toxic effects. The extracts are apparently free from follicular hormone, since they have no effect on the uteri of immature castrated female rats. In eliminating variation in the response to gonadotropic substances rats weighing from 35 to 45 Gm 24 days of age are injected once daily for five days. At necropsy on the sixth day the ovaries are examined for increases of 100 per cent in weight and for corpora lutea. The titration of minimal effective doses with a small number of test animals is facilitated by this scheme. The author states that incomplete recoveries of gonadotropic substance are due to losses rather than to inactivation. Decreased potency after low temperature evaporation is due chiefly to retention of active material on urinary solids. Acetone precipitations are incomplete unless the final concentration is from 94 to 95 per cent.

Treatment of Sexual Underdevelopment—Sexton treated thirteen boys presenting genital underdevelopment and ranging in age from 10 to 21 years with intramuscular injections of the anterior pituitary like hormone of pregnancy urine. Eleven of the subjects responded to treatment by an increase in the size of the external genitalia and the appearance of secondary sex characteristics. These eleven were obese while the two who failed to respond were thin. The treatment instituted in these two cases was limited. Cryptorchism was present in six of the thirteen patients and in four of these six the

testicles localized in the scrotum after treatment. In one, a boy 18 years of age, the right testicle was the size of a grapefruit seed localized high in the inguinal canal, while the left testicle was undefined. After daily injections of 300 units over a period of four months, both testicles were well defined in the scrotum. After continued daily injections for another four months, the testicles developed to the size of hazelnuts and a sprinkling of pubic hair appeared for the first time. Another boy with testicles in the canals that were differentiated only by local thickening was 15 years 9 months old when injections of 300 units, five days a week, were begun. After six months the testicles had increased to the size of hickory nuts and lay just out of the scrotum. Pubic and axillary hair, not present before, had appeared. The dosage and duration of treatment were dependent on the degree of underdevelopment and the age, those in early adolescence responding most favorably.

Effect of Pregnancy Urine Extract on Hyperthyroidism.—The studies of Starr and Patton show that three patients of menopausal age and a boy of 17 years suffering from hyperthyroidism were not benefited by intramuscular injections of pregnancy urine extract. Four of five women younger than menopausal age were benefited by such treatment. The most marked improvement was in a moderately severe case of hyperthyroidism in a girl of 17, who was given pregnancy urine extract (antutrin-S) after and ovarian follicular hormone (theelin) before menses. After the diagnosis of hyperthyroidism was established pregnancy urine extract was given intramuscularly three times a week 1 or 2 cc, standardized as 100 rat units per cubic centimeter. The medication was given either during the fortnight preceding menstruation or that following it or continuously in all cases beyond the menopause and in some of those menstruating. The injections were discontinued when the metabolic rate fell below +10 per cent.

Illinois Medical Journal, Chicago

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- Deep Neck Infection. Surgical Approach. H. I. Ford, Champaign—p. 117.
Medical Economics. R. R. Ferguson, Chicago—p. 128.
Classification of Heart Disease. N. S. Davis, Jr., Chicago—p. 131.
Acute Infectious Myocarditis. J. G. Carr and J. A. Walsh, Evanston—p. 134.
Coronary Artery Disease. D. C. Sutton, Chicago—p. 138.
Auricular Fibrillation. C. C. Maher, Chicago—p. 140.
Pre- and Post-natal Uses of Quinidine. I. W. Woodruff, Joliet—p. 144.
Nonsurgical Chronic Abdominal Pain. D. Deal, Springfield—p. 149.
Private Sanatoriums and Rest Homes for Care of Mental Patients in Illinois. J. M. Grimes, Chicago—p. 154.
Ophthalmoscopic Findings in Conditions of Hypertension. J. F. Leben, Joliet, Chicago—p. 156.
Surgical Treatment of Gastric and Duodenal Ulcer. H. M. Richter, Chicago—p. 159.
Importance of Immunization in Control of Acute Contagious Disease. H. S. Houston, Springfield—p. 161.

Surgical Treatment of Gastric and Duodenal Ulcer.—The surgical treatment that Richter presents is to be regarded as limited in its application to cases that are resistant to adequate medical care. He points out that the segment of the gastrointestinal tract including the lesser curvature and the first portion of the duodenum constitutes an organ analogous to the gallbladder. It is an organ and, whatever may be the underlying cause of ulcer, manifests itself by a lesion in that structure. The author's suggestion is to regard that structure as the organ to be removed as one would remove a gallbladder. It is a solid organ. Its surface is covered by mucous membrane. It can be removed without any more damage to the body than that of the gallbladder and its removal obviates the opportunity or ability of the ulcer to recur.

Indiana State Medical Assn. Journal, Indianapolis

27 53 96 (Feb. 1) 1934

- Management of Diabetes. J. H. Warvel, Indianapolis—p. 53.
Coronary Occlusion. R. A. Flack, Lafayette—p. 57.
Diphtheria Control. J. S. Skobba, Fort Wayne—p. 63.
Preoperative and Postoperative Treatment of Exophthalmic Goiter and of Hyperfunctioning Adenomatous Goiter. H. F. Dunlap, Rochester, Minn.—p. 64.
Arthritis of the Spine with Reference to Nerve Root Symptoms. J. D. Bisgard, Omaha—p. 67.
Zinc Stearate Poisoning in Infancy. H. B. Mettel, Indianapolis—p. 69.

Iowa State Medical Society Journal, Des Moines

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- Additional Data on Uterine Cancer. R. M. Collins, Iowa City—p. 71.
Agranulocytosis. F. H. Lamb, Davenport—p. 75.
Clinical Observations in Tbc Douloureux. F. A. Ely, Des Moines—p. 81.
Renal Aneurysm. J. F. Brinkman, Waterloo—p. 84.
Aspects of Lowered Resistance and Tuberculosis as a Foundation for Compensation Under Workmen's Compensation Acts. K. Grave, Los Angeles—p. 86.
Prophylaxis and Treatment of Gas Gangrene. T. J. Irish, Forest City—p. 93.
Infantile Lezemy. H. C. Willeit, Des Moines—p. 96.
Acute Perforation of Duodenal Ulcer. Report of Nine Cases. M. J. McGrane, New Hampton—p. 98.

Journal of Bacteriology, Baltimore

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- Growth of *Bacillus Vegetierium* in Relation to the Oxidation-Reduction Potential and the Oxygen Content of the Medium. G. Knaysi and S. R. Ducky, Ithaca, New York—p. 109.
Studies on Disinfection of Certain Piratyphoid Bacilli. Role of Vanadates in Precipitation of Calcium Sulphate. Mary E. Caldwell, Chicago—p. 121.
Bacteriophage for *Clostridium Tetani*. P. B. Cowles, New Haven Conn.—p. 163.
Bacterial Motility. E. O. Jordan, Mary E. Caldwell and Dorothy Reiter, Chicago—p. 165.
Differentiation of Living from Dead Bacteria by Staining Reactions. F. P. Gray and A. R. Clark, New York—p. 175.
Failure of *Bacterium Coli* from Human Feces to Grow at 46 Degrees in the Eijkman or the Bulur Tests. C. E. Skinner and J. W. Brown, Minneapolis—p. 191.
Interchange of Bacteria Between the Fresh Water and the Sea. V. Burke, Pullman, Wash.—p. 201.
Unknown Factor Stimulating the Formation of Butyl Alcohol by Certain *Micrococcus Acidophilus*. E. L. Tatum, W. H. Peter and E. B. Fred, Madison, Wis.—p. 207.

Journal of Comparative Neurology, Philadelphia

58 541 762 (Dec. 15) 1933

- Histologic Study of Tissues of Animals Surviving Complete Exclusion of Thoracolumbar Autonomic Impulses. S. L. Clark, Nashville, Tenn.—p. 557.
Posterior Calcarine Fissure in the Dog. H. A. Cohn, Rochester, N. Y., and J. W. Papez, New York—p. 593.
Correlation Between Development of Behavior and Neuromuscular Differentiation in Embryos of *Erebia Foetida*. Sav. C. L. Chesser, Baltimore—p. 603.
Neurofibrillar Development in the Central Nervous System of Cat Embryos Between 8 and 12 Mm. Long. W. F. Windle, Chicago—p. 643.
Mobile Spasm of the Neck Muscles and Its Pathologic Basis. O. Loerster, Breslau, Prussia—p. 725.
The Amphibian Forebrain. VIII. Cerebral Hemispheres and Pallidum. C. J. Herrick, Chicago—p. 737.

Journal of Immunology, Baltimore

26 81 160 (Feb.) 1934

- Action of Bacterial Toxins. A. Wadsworth, Albany, N. Y.—p. 81.
Immune Serum Production in Poliomyelitis Refractory Animals. E. W. Schultz and L. P. Gebhardt, Stanford University, Calif.—p. 93.
Is the Eberlein Colloidal Gold Test Specific for Poliomyelitis Antibodies? F. W. Schultz, C. E. Chilton, L. P. Gebhardt and J. V. Chambers, Stanford University, Calif.—p. 119.
Meningococcus Toxin and Antitoxin. III. Further Tests on Monkeys. N. S. Ferry, Detroit—p. 133.
Id. IV. Further Tests on Guinea Pigs and Rabbits. N. S. Ferry and P. J. Schornack, Detroit—p. 143.

Immune Serum Production in Poliomyelitis Refractory Animals.—Schultz and Gebhardt studied the serologic responsiveness of various poliomyelitis refractory animals injected with the virus of poliomyelitis. To this end three guinea-pigs, four rabbits, one dog, two sheep, one goat and one horse were given repeated injections of suspensions of ground poliomyelitic cords over periods ranging from about six months to approximately two years. Virucidal tests were carried out on the serums of these animals at varying intervals during and after the period of more intensive virus injections. These virucidal tests were carried out by mixing 1 cc of virus suspension with an equal volume of undiluted or previously diluted serum following which the serum virus mixtures were injected intracerebrally into monkeys. Titration of the virus suspension as well as the serum was carried out on several occasions. The authors' results confirm the observations of other investigators with reference to the degree in which poliomyelitis refractory animals respond as antiserum producers, the majority responding poorly or not at all to

virus injections Individual animals may, however, respond exceedingly well A horse included in their series proved exceptionally responsive, producing a serum that contained sufficient immune substance per cubic centimeter to neutralize at least 25,000 minimal infecting doses of virus

Journal of Lab and Clinical Medicine, St Louis

19 339 452 (Jan) 1934

- Surgical Maggots in Treatment of Infected Wounds Recent Apparatus and Methods in Maggot Production and Research W Robinson and S W Simmons Washington D C—p 339
- *Hypoleukocytic Angina Unusual Form of Infectious Leukopenia N Rosenthal and M A Kugel New York—p 344
- Gram Property of Acid Fast Form of Tubercle Bacillus O S Kretschmer Denver—p 350
- Variation of Solubility of Cervical Mucus in Relation to Menstrual Cycle G L Moench New York—p 358
- Clinical Study of Blood Iron and Hemoglobin C W Dowden and C McNeill Louisville Ky with technical assistance of J D McNeill—p 362
- Blood Studies in Hyperthyroidism R Gottlieb Montreal—p 371
- Moniliasis of Biliary Tract Report of Case J M Mirman Hartford Conn—p 379
- Studies on Rubber Glove Sterilization and Use of Sterility Indicators A Hoyt Los Angeles—p 382
- Variability in Corn Component of a Rachitogenic Diet R S Harris and J W M Bunker Boston—p 390
- Relation of Blood Glutathione to Hemoglobin and Amount of Red Cells R J Pickard and C S Marsden Jr San Diego Calif—p 395
- Inactivation of Growth Hormone II As a Result of Exposure to Air H S Rubinstein Baltimore—p 404
- Determination of Hemoglobin by Iron Content Method R L Haden Cleveland—p 406
- Observations on Lipokrit Method for Determination of Lipoid Content of Blood L G Herrmann A Ames and R J Tapke Cincinnati—p 411
- Modified Gram Stain of Muc O S Kretschmer Denver—p 422
- *Evaluation of Three Methods for Demonstration of Tubercle Bacilli for Use in Hospital Routine Special Study of Several Simple Culture Mediums Nell Hirschberg Chicago—p 429
- Modified Technique for Making Wright's Blood Stain Z Bercovitz Pyongyang Chosen—p 438

Unusual Form of Infectious Leukopenia—Rosenthal and Kugel discuss three cases of severe infection associated with necrotic lesions of the mucous membranes and an unusual type of leukopenia Clinically these cases resembled agranulocytosis At the height of the disease, the blood picture showed a profound leukopenia with several unique features Although there was a marked depression in the total white cell count, the differential count retained the usual relations The hemoglobin, red cell count and platelets were unaffected In one case the bone marrow was found to be hyperplastic, with an abundance of mature and immature myeloid cells This is in striking contrast to true agranulocytic angina in which at the height of the disease there is ordinarily a complete disappearance of the granulocytes from the blood stream as well as from the bone marrow

Methods for Demonstration of Tubercle Bacilli—The comparison by Hirschberg of direct smear, guinea-pig inoculation and culture methods for the demonstration of tubercle bacilli in various types of specimens indicated that culture methods give a greater proportion of positive results more quickly than either of the other two methods A study of various mediums for the isolation of the tubercle bacillus proved the mediums of Corper Hohn and Miraglia to be suitable for routine diagnostic cultures Hohns and Miraglia's mediums gave larger numbers of positive results in less time than did Corper's medium Either of these two mediums may be used with equal efficiency Corper's medium however is sufficiently sensitive and becomes contaminated less often than the egg mediums and therefore should be included in routine culture methods

Journal of Nervous and Mental Disease, New York

79 128 248 (Feb) 1934

- Barrier Between Blood and Cerebrospinal Fluid with Especial Reference to Relation Between Fluctuation in This Barrier and Protein Content of Cerebrospinal Fluid M Malamud W R Miller and B M Mullins Iowa City—p 125
- Psychoanalytic Interpretation of Constitution in Graves Syndrome A Lorand and E Moschcowitz New York—p 136
- Ligation of Anterior Cerebral Artery in Monkeys J W Watts New Haven Conn—p 183
- Effect of Section of Corpus Callosum on Motor Performance of Monkeys Margaret A Kennard and J W Watts New Haven Conn—p 189

Barrier Between Blood and Cerebrospinal Fluid—Malamud and his associates studied the bromide distribution ratio as determined by the Walter test in 643 cases of mental disease with the following results 1 The schizophrenias showed a predominance of quotients above 320, a smaller amount ranging between 320 and 280 and few below 280 2 The psychoneuroses, psychopathic personalities and paranoid states showed a predominance of quotients between 320 and 280, with some cases above and below these limits The manic-depressive psychoses followed the same pattern but with less of the cases above 320 and more below 280 3 The toxic psychoses and the cases of untreated dementia paralytica showed quotients mainly below 280 and none above 320 In 530 of the cases the protein content of the cerebrospinal fluid was determined simultaneously with the permeability quotient and it was found that (1) there was a tendency toward a general correlation between the two values but this was not consistent, and, (2) in the cases of organic psychoses and in the schizophrenic patients, this correlation was of a higher degree than in the psychoneuroses and manic depressive psychoses

Journal of Pharmacology & Exper Therap, Baltimore

50 1130 (Jan) 1934

- Action of Certain Ethers of β Alkyl Choline Derivatives A Simonart Philadelphia—p 1
- Comparison of Pharmacologic Action of Atropine and Its Optical Isomers, Levo-hyoscyamine and Dextro-hyoscyamine W F von Oettingen and I H Marshall Cleveland—p 15
- Effect of Cyanide on Primary Muscle Types C J Bellis Minneapolis—p 21
- Action of Cinchophen on Nitrogen Metabolism G P Grabfield and V G Gray New Haven Conn—p 28
- Absorption of Methyl Salicylate by the Human Skin E W Brown and W O Scott Edgewood Arsenal Md—p 32
- *Effect of Pathologic States on Minimal Lethal Dose of Procaine Intracranially F W Co Tui New York—p 51
- Some Pharmacologic Actions of Glycine Ethyl Ester Hydrochloride J H Weatherly and H R Hulpieu Indianapolis—p 61
- Contributing Factors to the Pulse Changes Resulting from Injection of Epinephrine in Rabbits W F Allen Portland Ore—p 70
- Reversal Effect of Chorda Tympani Stimulation G W Stavraky Montreal—p 79
- Narcotic Potency of the Aliphatic Ayclic Acetals P A Knoefel San Francisco—p 88
- Toxicity of Alpha Nicotines and Beta Nicotines and Nornicotines Inquiry into Chemopharmacodynamic Relationships D I Macht and Mary E Davis Baltimore—p 93
- Pharmacologic Action of Alkaloids of Fumaraceous Plants I Isocordine R A Waud London Ont—p 100
- Influence of Liver Degeneration and Recuperation on Acid Base Equilibrium of the Blood W deB MacNider Chapel Hill N C—p 108
- Studies on Denervated Kidney I Action of Cinchophen on Uric Acid and Allantoin Excretion in Dogs and Its Effect on Nitrogen and Sulphur Excretion G P Grabfield and Mildred G Gray Boston—p 123

Minimal Lethal Dose of Procaine Hydrochloride Intracranially—Co-Tui studied the effect of different pathologic states on the minimal lethal dose of procaine hydrochloride injected into the cisterna magna in dogs Pneumonia, marked postoperative infection and certain hypotensive states produced by hemorrhage, amyl nitrite and histamine all reduced the lethal dose of procaine sufficiently to cause paralysis of the respiratory center The probability of a relationship between anoxia and this reduction of the lethal dose of procaine is pointed out

Medical Bull of Veterans' Adm, Washington, D C

10 173 264 (Jan) 1934

- *Simplified Oleothorax A Josewich—p 173
- Advantages of X-Ray Examination of Chest in Lateral Recumbency E Korol and H A Scott—p 187
- Difficulties of Estimating Kidney Function in Outpatient Service E M Barne—p 191
- Coexistence of Two Acute Unrelated Major Diseases Report of Cases E T Gallagher and H Freed—p 195
- Habit Forming Drugs P B Matz—p 198
- Neurophilis Certain Aspects of Its Evolution C L Whitmore—p 212
- *Refinement in Coagulation Time Technique S Hoechstetter—p 228
- Conduct and Behavior Study S Sargenich—p 229

Simplified Oleothorax—Josewich feels that the simplification of technique and the use of collod materials may lead the profession to a more general acceptance of oleothorax treatment Liquid petrolatum of the best quality should be employed One may have a choice of aromatic oils or antiseptics to be added to the liquid petrolatum The author uses oil of capcut, U S P X rectified It is well to incorporate as necessary

in proper amount, various dyes or antiseptics to assist in the early detection of pleuropulmonary perforations or to add antiseptic properties to the solution. The principal change in technique is the use of a preparation in colloid form. Any disinfectant value which may be ascribed to the substances employed is based on the proposition that to be effective, a disinfectant must be absorbed by the bacteria. Since any of the injections may result in reactions, it is considered advisable to inject from 1 to 4 cc of a 1 to 5 per cent solution of the essential oil in liquid petrolatum as the initial dose. In contrast to the use of the ordinary oil, one finds in using the colloid solution that it permits the use of needles of the smallest caliber. Subsequent quantities are injected in arithmetical progression at intervals of one week or longer. If pus is present, moderate amounts should be removed at each treatment. One must not be over-enthusiastic about obliterating the pneumothorax pocket, as the persistence of a small air pocket serves as a buffer in the event of increased hydrostatic pressure due to the production of exudates resulting from irritation of the pleura by the oil. This lessens the possibility of perforation and tearing. The most reliable means of checking the status of the oleothorax is fluoroscopic control before and after the injection of the oil, as well as in the interim. Manometric readings are usually obtained, but they may be and frequently are misleading and subject to alarming change within a few minutes or hours.

Refinement in Coagulation Time Technic—Hochstetter points out that the disadvantages of the accepted method of determining the coagulation time of blood may be overcome by drawing the blood about half the length of a rather large bore capillary tube. In place of breaking the tube at intervals of fifteen seconds the tube is inverted at intervals of fifteen seconds and the time is noted when the column ceases to flow. This is recorded as the coagulation time. In checking the foregoing modification, the author performed determinations by both methods on fifty neuropsychiatric patients chosen at random. The lowest time recorded was one minute and fifteen seconds by both methods, and the highest time was four minutes and thirty seconds by both methods. In twenty-nine instances the coagulation times were identical by the two methods. In nineteen instances the coagulation times were fifteen seconds shorter by the gravity method. In two instances the coagulation time was fifteen seconds shorter by the fracture method. It should be noted that in no case did the discrepancy exceed fifteen seconds.

Minnesota Medicine, St Paul

17 53 104 (Feb.) 1934

- Cancer J. Ewing, New York—p. 53
Transurethral Electric Resection of the Prostate H. L. Kretschmer Chicago—p. 58
Lipoma of Capsule of the Joint Removed Successfully Presentation of Three Cases R. K. Ghormley Rochester—p. 62
Occiput Obliquely Posterior G. F. Hudson Minneapolis—p. 64
Meckel's Diverticulum in a Hernia Report of Case H. K. Gray Rochester—p. 68
The Care of the Premature Infant A. V. Stoesser and E. C. Perlman Minneapolis—p. 70
Paroxysmal Tachycardia and Related States E. L. Tuohy Duluth—p. 76
Psychoneuroses F. Whitmore, St Paul—p. 79

New England Journal of Medicine, Boston

210 237 286 (Feb. 1) 1934

- *Type I Pneumococcal Infections with Especial Reference to Specific Serum Treatment W. D. Sutliff Chicago, and M. Finland Boston—p. 237
Cervical Cesarean Section Analysis Based on Study of Five Hundred and Fifteen Personal Operations L. E. Phineuf Boston—p. 245
Beriberi Secondary to Short Circuited Small Intestine T. V. Urmy B. H. Ragle, A. W. Allen and C. M. Jones Boston—p. 251
Oxygen Therapy by Open Box Method A. M. Burgess A. S. Briggs Providence R. I. and A. M. Burgess Jr Boston—p. 254
Four Synchronous Cancers of Small Intestine Case Report J. F. Baldwin Columbus Ohio—p. 259
Progress in Tuberculosis 1932-1933 J. B. Hawes 2d and M. J. Stone Boston—p. 260

Type I Pneumococcal Infections Specific Serum Treatment—The results of Sutliff and Finland and those obtained by other observers leave no room to doubt that concentrated type I antipneumococcus serum exerts a striking

symptomatic effect and reduces the death rate by one half in type I lobar pneumonia in adults. Repeated studies have also shown that the effects are type specific, that treatment early in the course of the disease is more effective than later, that treatment is equally effective at all ages, and that bacteremia as a symptom and bacteremic cases as a group are especially amenable to specific therapy. The results that may be expected in patients treated before the end of ninety six hours of illness may be briefly summarized as a marked symptomatic change in two thirds of the recovered patients within thirty six hours of beginning treatment and a death rate approximating 10 per cent.

New Jersey Medical Society Journal, Orange

31 1 62 (Jan.) 1934

- Intelligence Tests and Intelligence Testing H. A. Davidson Newark—p. 7
Avoidable Factors in Maternal Mortality P. F. Williams Philadelphia—p. 11
Agranulocytosis (Pernicious Leukopenia) Including Report and History of a Primary Case Fatigue as an Etiologic Factor D. W. Scamlin, Atlantic City—p. 17
Diabetic Problem J. R. Scott New York—p. 23
*Pancreas as a Blood Pressure Regulator Preliminary Report H. Halprin Caldwell—p. 28
Relationship Between Hospital Trustees and the Medical Staff H. S. Cullman New York—p. 30
Vasomotor Rhinitis from Standpoint of the Allergist L. W. Brown Newark—p. 34
Ulceromembranous Stomatitis F. W. Lathrop Plainfield—p. 38
Indometronia Report of Case L. L. Leonard Asbury Park—p. 41

Pancreas as a Blood Pressure Regulator—To determine the relation of the pancreas to blood pressure, Halprin observed nine patients having old arteriosclerosis with nephritis, aortic disease or essential hypertension. They complained of occipital headache, dizziness, spots in front of the eyes and shortness of breath. They were permitted to go one week without medication but were given a regular diet, when they returned to the clinic the following week they were given a diet that was salt poor and high in carbohydrate. In addition, each patient was given a 4 ounce bottle of a pancreatic extract, for oral use, prepared especially for this purpose from the fresh (not frozen) gland without heating, drying or using alcohol extractives. This pancreatic substance given to a normal patient whose blood sugar was 120, on a starving stomach, reduced the blood sugar to 100 after a breakfast of one orange, a bowl of cereal, two eggs two rolls and butter. The patients were told to take 2 drachms of the extract in milk or water with each meal. Those who were unable to follow the diet were advised to eat their regular daily meals and to add three oranges or three apples to their diet. The result after one month showed that each patient lost from 2 to 4 pounds. They all felt generally better, headaches were less. Blood pressures invariably showed a drop in the diastolic pressure to below 100. Four patients showed a drop of from 10 to 20 mm of mercury in the systolic pressure after five months. All these patients are symptomatically better, all express themselves as feeling better now than in the past one or two years. The diastolic pressures have stayed lower and the systolic pressures have either remained unchanged (in the old sclerotic cases) or dropped from 10 to 30 mm of mercury in the cases of essential hypertension and have remained so. The patients were picked at random in the cardiac clinic of the author's hospital.

New Orleans Medical and Surgical Journal

86 525 598 (Feb.) 1934

- Surgical Ethic in Malignant Disease U. Maes and Elizabeth M. McPetridge New Orleans—p. 525
The Constitution of the Cancer Patient E. Von Haam New Orleans—p. 529
Role of the Roentgenologist in Malignancy E. C. Samuel and E. R. Bowie New Orleans—p. 533
Spinal Anesthesia H. A. Whittington Natchez, Miss—p. 535
Dangers of Promiscuous Use of Spinal Analgesia H. R. Unsworth New Orleans—p. 543
Chronic Peptic Ulcer W. H. Sutherland Booneville Miss—p. 545
Arthritis C. Brooks New Orleans—p. 551
Postoperative Aseptic Fever Report of Cases J. T. Nix and M. M. Garcia New Orleans—p. 557
Arteriovenous Fistula of the Left Internal Carotid Artery and Jugular Vein D. R. McIntyre Shreveport La—p. 559

New York State Journal of Medicine, New York

34 85 128 (Feb 1) 1934

- Radiotherapy in Disseminated Spinal Arachnoiditis H Selinsky and W Harris New York—p 85
Cranial Neuritis S Brock and S B Wortis New York—p 88
Anxiety as a Medical Problem S Lorand New York—p 92
Colloidal Chemistry and Psychiatry H B Lang New York—p 95
Neurologic and Mental Symptoms of Pernicious Anemia E L Hunt New York—p 99
Influence of Natural Carbonated Mineral Water Baths on Blood Pressure and Pulse Rates W S McClellan E F Joslin and Grace V Maguire Saratoga Springs—p 101
Directorship of the School Health Program F L Patry New York—p 105

Ohio State Medical Journal, Columbus

30 65 128 (Feb 1) 1934

- Some Essential Factors in the Differentiation of Functional and Organic Disorders of the Central Nervous System H H Drysdale Cleveland—p 85
Hypoglycemia Its Growing Clinical Importance A B Brower Dayton—p 90
Psychoanalytic Treatment of Neuroses Simulating Medical Conditions A D Finlayson, Cleveland—p 94
Treatment of Postpartum Hemorrhage S J Goodman Columbus—p 98
The Value of Vital Facts I C Plummer Columbus—p 99

Pennsylvania Medical Journal, Harrisburg

37 365 452 (Feb) 1934

- Medical Service to Paupers in Contradistinction to Those on Emergency Relief E S Buyers Norristown—p 365
Acute Empyema G J Heuer New York—p 370
Nutrition in Normal and Abnormal Pregnancy New Developments in Relation Thereto J C Hirst Philadelphia—p 377
Hemorrhagic Disease of the Thymus Case Reports N D Gannon Erie—p 379
Unusual Case of Retropharyngeal Abscess R R Spahr Mechanicsburg—p 380
Unfavorable Actions of Some Common Drugs O H P Pepper Philadelphia—p 381
Cancer of the Lip Results of Treatment by Electrocoagulation and Irradiation G E Pfahler and J H Vastine Philadelphia—p 385
Conservative Treatment in Perforating Wounds of the Eyeball S L Rhode Reading—p 389
Paroxysmal Hemoglobinuria Report of Two Cases H T Kelly Philadelphia—p 393
Mastoiditis Its Logical Treatment L T Buckman, Wilkes Barre—p 395
Diseases of the Eyelids A A Schlegel Pittsburgh—p 400
Prevention of Disease Practical Considerations H E Hall Uniontown—p 403
Use of Autolyzed Liver in Anemia and Other Conditions W F Herron and W S McElroy Pittsburgh—p 406

Treatment of Cancer of Lip by Electrocoagulation and Irradiation—Pfahler and Vastine state that successful treatment of carcinoma of the lip consists in early adequate destruction. Early cases with no palpable nodes are treated by surrounding the lesion with a line of local destruction by electrodesiccation, after local anesthesia with procaine hydrochloride, then the removal of a specimen for biopsy and immediate destruction of the remainder of the primary growth. This is all done at one time. Removal of the primary growth is followed by the administration of high voltage roentgen rays generated with 200 kilovolts and filtered through 0.5 mm of copper, directed through the lip the submaxillary and submental regions, producing a crossfiring effect on the cervical nodes. This irradiation is given in repeated doses until a total of about 1,400 roentgens has been administered through each portal, the saturation (Pfahler) technic being employed. In lesions of the upper lip with no palpable nodes, it is important to irradiate thoroughly through lateral fields as a prophylactic measure. Extensive lesions, greater than 1.5 cm in diameter, require greater individualization of the treatment. In extensive lesions in which destruction by electrocoagulation is not practical, radium element, administered both interstitially and on the surface is employed. A filtration of from 0.3 to 0.5 mm. of platinum is employed in the radium needles for interstitial use and a filtration of 2 mm. of platinum is used in surface applications. The number of milligram hours depends on the size of the lesion. High voltage roentgen therapy is administered to the regional areas of lymph drainage either alone or combined with radium packs at a distance of from 4 to 6 cm. depending on the presence of palpable lymph nodes. If there is manifest disease in the nodes surface applications of radium

are combined with interstitial irradiation by means of needles of radium element inserted about the diseased nodes. The authors employed the foregoing methods in 275 cases of epithelioma, 226 of the patients are living and are free from evidence of the disease, thirty-nine are dead and ten were well when seen last but could not be traced.

Philippine Islands Med Association Journal, Manila

14 136 (Jan) 1934

- The Physician's Responsibilities F Murphy—p 1
The Medical Octopus Problem and Challenge A Villarama Manila—p 4
Effective Method of Correcting Retroversion of the Uterus F Calderon Manila—p 9
Cancer Survey of the Philippine Islands in 1930 C Reyes Manila—p 12
Blackwater Fever in the Philippine Islands C M Hasselmann Manila—p 18

Public Health Reports, Washington D C

49 111 140 (Jan 26) 1934

- Occurrence of Tick Parasites in Nature in Southern Idaho R A Cooley—p 111
49 141 182 (Feb 2) 1934
Amebic Dysentery Problems Presented by the Outbreak in 1933 G W McCoy—p 141
Gas Hazards in Sewers and Sewage Treatment Plants R R Sayers—p 145

Surgery, Gynecology and Obstetrics, Chicago

58 129 254 (Feb 1) 1934

- Reduction of Old or Irreducible Dislocations of the Shoulder Joint W R Cubbins J J Callahan and C S Seuder Chicago—p 129
Experimental Study of Effect of Histamine on Healing of Gastric Defects Artificial Gastric Ulcer C A Flood and E L Howes New York—p 136
Histopathology of Anal Crypts C C Tucker and C A Hellwig Wichita Kan—p 145
Intra Abdominal Pressures Created by Voluntary Muscular Effort III Relation to Body Measurements with a Comment on Etiology of Genital Prolapse W F Mengert and D P Murphy Philadelphia—p 150
New Treatment of Osteomyelitis Preliminary Report M A Stewart Houston Texas—p 155
Contusion of Cartilage as an Etiologic Factor in Chronic Arthritis J A Key St Louis—p 166
Radical Excision of the Breast J Fraser Edinburgh Scotland—p 171
The Z Plastic or Web Splitting Operation for Relief of Scar Contractures of Extremities H T Jones Los Angeles—p 178
Operative Correction of Metatarsus Varus Primus in Hallux Valgus P W Lapidus New York—p 183
Diagnosis of Trichomonas vaginalis Vaginitis Preliminary Report on a New Method Ruth E Ewing and Marguerite LeMoine New York—p 192
Internal Fixation of Fractures A Simplified (New) Method E B Mumford Indianapolis—p 194
Flap Operation for Treatment of Acute Empyema Thoracis A Nicoll New York—p 206
Primary Carcinoma of the Ureter W W Scott Rochester N Y—p 215
Care of the Surgical Diabetic Report of Two Hundred and Two Cases Elaine P Ralli and S Standard New York—p 228
Five Year Results of Suprapubic Radium Implantation into Bladder Tumors E L Reyes New York—p 233

New Treatment of Osteomyelitis—Stewart experimented to determine how maggots cure osteomyelitis. He made extractions of living sterile maggots using water, alcohol, acetone and other chemicals as extracting agents. It was found that maggots (*Lucilia sericata* Meig) exude calcium carbonate through their body walls. 100 maggots will excrete an average of 0.6 mg of this substance every twenty four hours. Calcium carbonate was eliminated constantly into the wound. Calcium ions stimulate phagocytosis. The leukocidin excreted by the bacteria had to be eliminated rapidly or rendered inert otherwise the phagocytes would be killed about as rapidly as they appeared at the focus of infection. This the author attempted by experimentation on animals with a 0.25 per cent saturated aqueous solution of trinitrophenol containing 8 per cent glycerin and also an autoclaved aqueous suspension of calcium carbonate, 20 Gm of calcium carbonate to 215 cc of distilled water. The technic consisted of removing the necrotic bone surgically, the excavation being made long and as narrow as possible so that the strength of the shaft may be retained and so that the cavity might close much more quickly. Following the operation the wound is packed for twenty four hours with petrolatum gauze.

in order to allow the trauma to subside somewhat. At the end of this period the packing is removed and the wound is thoroughly irrigated with the trinitrophenol glycerin solution by means of a syringe. This solution penetrates quickly to every crypt in the wound and thereby gains access to the leukocidin and some of the bacteria as well, and within a few seconds an aqueous suspension of calcium carbonate is sprayed into the wound by means of a nasal atomizer until a thin layer of precipitate is laid down over the osseous and soft tissues. The calcium carbonate combines with the trinitrophenol solution and forms calcium picrate. The trinitrophenol is given an opportunity to reach the greater quantity of the leukocidin and apparently acts on it immediately, and then as the calcium carbonate is added, forming calcium picrate, the calcium ions are rendered available to stimulate phagocytosis. Calcium carbonate controls acidity by maintaining a neutral or even alkaline condition, the degree of which depends on the condition of the wound and the amount of calcium carbonate present. The author has observed in twenty-eight cases that the rate of drainage increases rapidly, thereby inhibiting the dangerous pushing back, into the rigid bone of the defensive barrier as well as removing debris. Moreover, calcium picrate has very definite analgesic properties with consequent relief to the patient. After the calcium carbonate suspension is applied the wound is packed with dry gauze in order to prevent closure. When the foci of infection are deep the trinitrophenol solution and the calcium carbonate suspension are applied through Dakin tubes with the ends cut off, or through male catheters, which are placed in the wound and packed in place with petrolatum gauze or pushed down through the sinus tracts as needed. Ordinarily these treatments are given three times a week, but in severe acute cases they are usually given daily for the first week or two. In every instance improvement has been clearly observed in not more than a week after the first treatment. After the first week of treatment the drainage usually becomes less copious, bone destruction is arrested and the soft tissue shows healthy granulations. Frequently in cases of osteomyelitis of the tibia a sloughing of the soft tissue occurs after the wound has been granulating for some time. In an attempt to check this sloughing an aqueous suspension of one part of thiophenol and ten parts of distilled water may be applied to the wound with a cotton applicator. The water is boiled before the thiophenol is added in order to eliminate the free oxygen. One, and at the most three, applications suffice to check the sloughing, and granulation continues as before.

Diagnosis of Trichomonas Vaginalis Vaginitis—Ewing and LeMoine state that *Trichomonas vaginalis vaginitis* can be diagnosed from a dry smear by a simple phenol fuchsin stain. In making phenol fuchsin stains, thin smears are made. They are fixed in air not fixed; the slides are covered with phenol fuchsin (about 20 to 25 drops), 20 drops of distilled water are added and allowed to stand for three minutes; the slides are washed with distilled water and dried between filter or blotting papers, and the examination is made under an oil immersion lens. Two dry smears and a hanging drop are taken in every case. One dry smear is stained by the usual gram stain method and the other by phenol fuchsin. A diagnosis is made from these before the result of the hanging drop, done by another technician, is known. Of ninety smears examined, 66 per cent were found positive and 34 per cent were found negative for *Trichomonas vaginalis* of these ninety smears the hanging drop examinations were positive in 41 per cent and negative in 51 per cent. In 8 per cent of the cases, no hanging drop examination was made. Positive observations in hanging drop examinations were shown in only 63 per cent of the cases with positive smears.

Flap Operation for Treatment of Acute Empyema Thoracis—Nicoll offers a flap operation for the treatment of acute empyema which he believes has the following points to recommend its use: 1 It is physiologic in that it takes into consideration the normal condition of negative pressure within the pleural cavity. 2 It is a closed method of drainage and remains so from the beginning to the end of treatment. 3 It affords adequate drainage because of a generous opening into the pleural cavity made possible by rib resection, with the fur-

ther "reaming" action of drainage apparatus. 4 It permits early operation in empyema before adhesions in abnormal positions of the lung have occurred, without the dangers resulting from "mediastinal flutter" and collapse of compressed lung. 5 It can be done under local anesthesia in adults, the youngest patient was 13. 6 Because it is completely a closed drainage, it can be done safely in children under ether anesthesia. 7 It abruptly cuts short the sepsis due to undrained or incompletely drained pus, thus relieving the organs of excretion of their overheavy burden. 8 It shortens convalescence. One case was entirely healed in ten days, in spite of a chest that held the maximum of pus at operation. The author presents a summary of thirty-five cases in which he employed the flap operation.

Texas State Journal of Medicine, Fort Worth

29 547 608 (Jan) 1934

- Some of the Principles Underlying the Surgery of Visceral Nerves. H. M. Moore Galveston—p. 524
- Contraction Ring Complicating Labor. C. R. Hannah and W. E. Massey Dallas—p. 559
- Epididymitis. R. G. Giles Temple—p. 562
- Adult Scurvy: Clinical and Hematologic Study. W. W. Bondurant, Jr. San Antonio—p. 565
- Cesarean Section. I. W. Potter, Buffalo—p. 570
- Safety Factors in Subtotal Supravaginal Hysterectomy. A. C. Scott, Jr. Temple—p. 573
- Responsibility of Health Departments in the Control of Syphilis. E. C. Fox Dallas—p. 577
- Practical Use of Audiometer. B. P. Woodson Temple—p. 580
- Functional Hyperparathyroidism: Report of Eight Cases. H. V. Leopold San Antonio—p. 582
- Acute Endocarditis in Infants: Case Report. C. B. Sanders, Galveston—p. 585
- Vincent's Infection or Trench Mouth. J. J. Crume Amarillo—p. 587
- Focal Infection. E. Dunlap Dallas—p. 589

29 609 670 (Feb) 1934

- Reconstructive Surgery in Ophthalmology and Otolaryngology. W. D. Cill San Antonio—p. 616
- Personal Experiences in Gastric Surgery. I. Cohn New Orleans—p. 622
- Biliary Surgery: Analysis of Five Hundred Cases. A. H. Braden and J. P. Byrnes Houston—p. 631
- Management of Burns. H. L. D. Kirkham Houston—p. 636
- Treatment of Extensive Cutaneous Burns. J. H. Camp Pecos—p. 639
- Tuberclema in Texas. V. E. Schulze Shiner and W. L. Marr Galveston—p. 643
- Significance of Lingual Tonsillar Affections. J. G. McLaurin, Dallas—p. 646
- Eye Injuries in the East Texas Oil Fields. V. R. Hurst Longview—p. 651

Functional Hyperparathyroidism—Leopold reports five cases of hyperparathyroidism in all of which the following clinical syndrome is exhibited: insomnia, vasospastic phenomena, anorexia, absent or greatly diminished reflexes, weakness, myotonia, subacidity or acidosis, in most cases decreased or absent circulation of the extremities, pains in the legs and bones, and polyuria. In treating these cases calcium gluconate has been given as a routine, usually 15 Gm daily, the amount being gradually reduced as the blood calcium became lower. Acidosis has been managed in the usual fashion, with acid orally. High calcium diets have been used. Cod liver oil products and ultraviolet therapy have been avoided. Rest and massage have been emphasized and irradiation was used in one case. It has been particularly interesting to note the return of reflexes, the correction of insomnia and parallel stabilization of parathyroid activity as measured by blood calcium estimations. Thyroid administration was strictly avoided in these cases, and basal rates estimated in several cases on apparent recovery became normal without its use.

Yale Journal of Biology and Medicine, New Haven

6 89 208 (Dec) 1933

- Pathology of Abnormal Uterine Bleeding. A. H. Morse New Haven Conn—p. 89
- Role of Thyroid and of Diet in Acetonitrile Test. Esther H. Montgomery, Narberth Pa—p. 101
- Peripheral Paralysis of Vasomotor System Induced by Benzol. L. Dautrebande, Liege, Belgium—p. 111
- Attempt to Reproduce Celiac Disease Experimentally in Young Animals by Excluding External Pancreatic Secretion from the Intestine. J. Greenberg, New Haven Conn—p. 121
- Health Survey of Seminole Indians. H. Hamlin New Haven Conn—p. 155

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1 89 132 (Jan 20) 1934

Some Alarming Seizures J A Ryle—p 89
Mease of Hereditary Blindness J M Bickerton—p 93
Classification of the Body Constituents by Water Content H G Close—p 98

*Sympathetic Ganglionectomy for Gangrene Due to Thrombo Angitis Obliterans H H Stewart—p 100
Relation of Thrombophlebitis Migrans to Thrombo Angitis Obliterans A L d Ahreu—p 101

*Increased Intra Ocular Tension in Young Persons as a Cause of Severe Frontal Headache R L Raymond—p 102

Sympathetic Ganglionectomy for Gangrene Due to Thrombo-Angitis Obliterans—Stewart reports a case of gangrene due to thrombo-angitis obliterans in which both upper limbs were saved from gangrene by sympathetic ganglionectomy. Both lower limbs had been lost previously from the disease. The posterior route through the chest for the removal of the inferior cervical and first thoracic ganglions, is considered to be better than the anterior approach. The exposure is superior, and incomplete removal of the first thoracic ganglion, liable to occur by the anterior route, is by this means unlikely. The removal of these ganglions on both sides was not accompanied by any permanent ill effects on the brain, eyes or heart.

Increased Intra-Ocular Tension as Cause of Headache—Raymond presents four cases with the belief that they represent a symptom complex that is not commonly recognized. Each patient complained of frontal and temporal headache of varying degree and radiation, each was a young man between the ages of 20 and 30, and before the typical glaucoma age. In each case frontal sinusitis, tic douloureux, incipient herpes ophthalmicus, migraine, and so on, were considered and as far as possible eliminated. In each case the pain was increased by pressure on the eyeball, and the tension of the eyeball, as estimated by digital examination, was thought to be higher than that in the other eye. There was no other constant abnormality in the eyes. The pupils, except in one case, were equal and round and reacted equally to light. Visual acuity was normal to the individual patients. Two patients resented the glare of the ophthalmoscope, and the author was unable to see the disk. Homatropine was avoided for fear of increasing the symptoms. The author has since examined the fundi of each patient under homatropine. Acting on the assumption that this increased intra ocular tension might be the cause of the referred neuralgia, scopolamine was instilled into the eye in each case, with the result that the condition cleared up in from five weeks to three months. There was one recurrence.

1 133 178 (Jan 27) 1934

Bodily Diseases in Mental Disorders A J Hall—p 133
Some Observations on Achlorhydria and Anemia S J Hartfall—p 136

Hematopoietic Response to Intramuscular Injections of Concentrated Human Gastric Juice P J Fouts O M Helmer and L G Zervas—p 141

Additional Symptomatology in Simple Achlorhydric Anemia A W Vaisey—p 143

Circumcision and Syphilis V E Lloyd and N L Lloyd—p 144
Nitrous Oxide History and Development H E G Boyle—p 153

Hematopoietic Response to Injections of Gastric Juice—Fouts and his associates state that their studies indicate that some change in fresh human gastric juice must take place before a hematopoietically active material can be demonstrated by the intramuscular injection into patients with pernicious anemia. 1 During the process of vacuum distillation the intrinsic factor acts on an extrinsic factor present in the gastric juice in too small amounts to be active when fed by mouth. The intrinsic factor is known to be present in fresh human gastric juice and has been demonstrated by the authors in another group of experiments to be present at the onset of the vacuum distillation in all the preparations that were made active by this procedure and in none of those that were not so made active. 2 During the process of concentration by vacuum distillation a material irritating or toxic to the hematopoietic system is produced. The prolonged and delayed reticulocyte response, the marked bone marrow irritation the delayed rise

in red blood cells and the fact that each patient who responded to the injection of the concentrated gastric juice had a more or less severe reaction suggest this possibility. One of the authors' cases is of especial interest in that after the injection the temperature rose to 106 F, the red blood cell count decreased 0.55 million and there was an increase in icterus. There was no rise in red blood cells until after a prolonged reticulocytosis. 3 During the concentration by vacuum distillation, a hormone is released or activated. In their opinion the hematopoietically active substance must be formed by the action of the intrinsic factor on an extrinsic factor in the gastric juice, or by the production of a substance irritating or toxic to the hematopoietic system.

Lancet, London

1 117 168 (Jan 20) 1934

What Can We Do to Diminish the Number of Tonsil Operations? T B Layton—p 117

Treatment of λ Ray Carcinoma and λ Ray Dermatitis W S Handley—p 120

*Familial Chondrodystrophy with Rheostosis Treated by λ Ray Therapy Gwenda Hilton—p 122

Relation of Impedance Angle Test for Thyrotoxicosis to Changes in Basal Metabolism M A B Brazier and F M Grant—p 125

Effect of Light Treatment on Laryngeal Tuberculosis O Strandberg and J Gravesen—p 128

Acute Yellow Atrophy in Pulmonary Tuberculosis A Lynn and J S B Mackay—p 130

*Celiac Disease in an Adult Treated with Sugarless Milk Bananas and Meat C G Roberts—p 130

Concentration Method for Bacteriologic Examination of Water J W Edington—p 132

Familial Chondrodystrophy Treated by Roentgen Therapy—Hilton discusses the case of a girl of 10 presenting deficient growth and painful tumors at the lower end of both femurs, the roentgen appearances were those of a rheostosis of certain bones, together with signs of chondrodystrophy. Histologic appearances are described. The mother of the patient and two maternal aunts are also affected. The name suggested for the syndrome is familial chondrodystrophy with multiple rheostoses. The differential diagnosis is made from (1) melorheostosis, (2) metaplastic and hyperplastic malacia, (3) ossifying periostitis, (4) osteoblastic osteogenic sarcoma, (5) multiple exostoses (diaphyseal aclasis) and (6) osteopathia hyperostotica multiplex infantilis. The response to roentgen therapy was rapid and satisfactory.

Celiac Disease in an Adult Treated with Sugarless Milk, Bananas and Meat—Roberts treated a case of celiac disease in an adult by putting the patient on a sugarless milk, banana and meat diet. The ordinary forms of carbohydrate were absent. Although such carbohydrates themselves are absorbed and were at no time found undigested in the feces, they appear to arouse the symptoms of celiac disease including interference with calcium metabolism and resulting tetany and impairment of the utilization of other foodstuffs. The banana is helpful in celiac disease. Its carbohydrate can be used it seems, indefinitely without giving rise to the symptoms of the complaint, which is not the case with other carbohydrates. With the banana the proportion of carbohydrate protein and fat can be balanced satisfactorily and utilized. The diet when established has a high fat content most of which was absorbed. In a research on another patient passing large fatty stools it was found that milk fat was more easily absorbed than other forms of fat. When this patient recovered fifteen years ago on a meat diet it was then possible to use ordinary general foods beginning with bread and butter in moderation. The same is found in other cases of this disease on the regimen described by the author. It is important, however not to try such an addition until after at least six months of health on the special diet.

1 169 220 (Jan 27) 1934

Diverticula of Duodenum and Jejunum H C Edwards—p 169

*Sighing Respiration as a Symptom Doris M Baker—p 174

Postoperative Results in Thyrotoxicosis M Silverstone—p 177

Treatment of Malignant Gravis with Ephedrine D McAlpine—p 180

Blood Count in Rulella with Especial Reference to Plasma Cells and Turk Cells J V Carroll—p 182

*Method of Injection of Facial Nerve J Whillis—p 184

Carcinoma of the Bladder with Intraperitoneal Perforation D Egan—p 185

Sighing Respiration as a Symptom—Baker describes a disorder of breathing that is so common as almost to have

passed unnoticed in symptomatology. It affects patients without physical signs of disease and is generally associated with a group of symptoms expressive of physical or nervous exhaustion. The disorder is frequently described by patients incorrectly as "breathlessness." The importance is shown of inquiring into the character of the breathlessness, as, if of the "suspirious" type, it will aid in assessing the part played by the nervous system in whatever condition may be found, particularly in those cases in which it may happen to be associated with organic disease. If, however, the patient's statement is accepted without inquiry the resulting misinterpretation of the symptom will confuse the diagnosis. Degrees in the severity of this symptom from an occasional forced sigh to an attack lasting for hours or even days are illustrated by four typical cases. The etiology is obscure, but it has been suggested that it is associated with a spasm of the diaphragm. In support of this is the fact that the end of each inspiration is achieved with effort as if against some obstruction and further that constriction of the thorax or the abdomen gives rise to deepening of respiration. The absence of any organic basis for the disorder makes prognosis as to life good, but the symptom is often resistant to present forms of treatment and is liable to recur with recurrence of nervous stress or ill health. All the evidence points to this disorder as being of nervous origin, and in no circumstances is there an indication of cardiovascular disease.

Method of Injection of Facial Nerve.—Whillis outlines a method for the injection of the facial nerve which aims at injection of the trunk of the nerve just as it leaves the stylomastoid foramen. After preliminary infiltration of the skin with procaine hydrochloride the needle is entered just behind and about one-fourth to one eighth inch above the tip of the mastoid process of the temporal bone. A few minims of procaine hydrochloride is injected and the needle is pushed on in close contact with the deep surface of the mastoid. The point to be aimed at in both upward and inward directions is the nasion. Having reached a depth varying between 1 and 1½ inches, the point of the needle will be felt to strike the base of the styloid process. The needle is now withdrawn slightly and the point tilted upward so as to engage in the stylomastoid foramen. When this has been reached fairly severe facial spasms usually occur. The immediate abolition of these spasms by the injection of a few minims of procaine hydrochloride gives a dramatic indication that the nerve has been reached. Another syringe containing alcohol is attached and a small quantity injected into the nerve. It is important in carrying out this method to aim exactly for the nasion, as, if the needle passes too far medially, it misses the styloid and may enter the internal jugular vein. It is safer before making any injection to make sure that this has not happened by attaching an empty syringe to the needle and aspirating gently.

Medical Journal of Australia, Sydney

x 136 (Jan 6) 1934

Recent Intracapsular Fractures of Neck of Femur. Critical Consideration of Their Treatment and a Description of a New Technique. T. King—p. 5
Physiology of the Large Intestine. H. W. Davies—p. 15

1 3780 (Jan 13) 1934

*Calcium and Phosphorus Metabolism in Diseases of Thyroparathyroid Apparatus. Part I. Calcium, Phosphorus and Total Metabolism in Hyperthyroidism and the Part Played by Parathyroid Glands. F. S. Hansman and F. H. Wilson—p. 37

Calcium and Phosphorus Metabolism in Diseases of Thyroparathyroid Apparatus.—Hansman and Wilson state that the thesis of Aub and his co-workers and that of Hunter that thyroxine has a direct catabolic effect on the calcium deposits in the bones cannot be accepted on the evidence they present. The authors observed seven patients suffering from hyperthyroidism, and an analysis of their experimental data provides definite evidence in favor of an associated hyperparathyroidism being the direct cause of the excessive mobilization and excretion of calcium and phosphorus. Two patients suffering from hyperthyroidism presenting an associated hypoparathyroidism were studied. Both patients were in calcium and phosphorus equilibrium. Hyperthyroidism is frequently but not invariably accompanied by a negative calcium and phosphorus

balance. It is possible for calcium and phosphorus equilibrium or a positive calcium and phosphorus balance to be present. Hyperthyroidism alone has no specific effect on calcium and phosphorus metabolism. The authors were unable to confirm the observations of Aub and his co-workers and of Hunter that the excretion of the mobilized calcium is predominantly fecal. Their experimental results showed that, if hyperthyroid patients receive a diet that satisfies the special requirements of the hyperthyroid state, the mobilized calcium and phosphorus are excreted in a similar manner to that obtaining in other diseases associated with a negative calcium and phosphorus balance.

Presse Médicale, Paris

42 289 312 (Feb 21) 1934

*Peripheral Neurolymphomatosis in Man. Jean Lhermitte and J.-O. Trelles—p. 289
Diagnosis of Diaphragmatic Hernia of Stomach. F. Tremolieres, A. Tardieu and G. Caquot—p. 292
*Technic of Resection of Knee by Primary Section of Femur Without Opening Articulation. L. Sabadini—p. 297
*Cervical Adenopathies and Pulmonary Tuberculosis. Paths of Exogenous Superinfection. A. Campani—p. 300
Symptomologic Importance of Electrocardiogram in Course of Myocardial Coronary Injuries. D. Roulier and J. Lequime—p. 304
Cervical Abscess Complicated by Fatal Meningitis. A. Sicard and J. Brunhes—p. 308

Peripheral Neurolymphomatosis.—The case of a woman, aged 67, showing symptoms of peripheral nerve disease is described by Lhermitte and Trelles. Both median nerves were irresponsive to the electric current. All signs indicated a degenerative change in the nerves of the forearm and hands involving both sensory and motor tracts. The patient died of bronchopneumonia. A necropsy revealed increase in size, irregularity and cottony feeling of both median nerves. Examination of the viscera revealed only atherosclerosis with nephrosclerosis, a liver slightly cirrhotic and a slight increase in the size of the spleen with visible malpighian follicles. Histologically a lymphoblastic infiltration of the median nerves was found strictly localized to the antibrachial and carpal portions of the nerve. The authors conclude from other studies of neurolymphomatosis that it is related to an infectious process. It is not yet possible to settle the morphology of the causative virus. All that can be said is that the virus placed in contact with glycerin is destroyed in nine days in the icebox.

Technic of Resection of Knee.—Sabadini describes his technic for resection of the knee in tuberculosis. The skin over the anterior portion of the knee is incised at about the level of the lower border of the patella. The skin over the patella is dissected back and the quadriceps tendon and ligaments are sectioned. The femur is sawed from front to back and the dissection continued posteriorly without opening the capsule of the knee. Finally, the tibia is sawed through from back to front and the entire joint can then be removed without having been opened. The cut surfaces of femur and tibia are placed in apposition either with or without a metal joint. The cut quadriceps femoris is sutured to the vastus and the fascia lata and especially to the pretibial aponeurosis. Finally the skin is sutured in a horizontal line. The author has obtained excellent results with this procedure and feels that the only contraindication is the general condition of the patient.

Cervical Adenopathies and Pulmonary Tuberculosis.—Campani studied 138 patients with purulent processes of the cutaneous or mucous membrane, e.g., acne vulgaris, who developed homolateral tuberculosis. These patients could be divided into seven categories. The first group (consisting of forty-one cases) presented a pyogenous process with cervical lymphatic reaction in the region of the head. The second (thirty-seven cases) presented chronic suppurations of the upper limb with axillary adenitis. The third (four cases) included septic processes of the throat. Oral sepsis and infections of the mouth and teeth comprised the fourth group. The fifth included otitis and suppurations of the external ear. The sixth and seventh groups were suppurations of the eye and scrofulous manifestations in the neck, respectively. The author feels that these studies help to confirm certain laws. These are the laws of the absolute numerical predominance of scrofulous cervical adenitis over all other adenitides of the same nature, the law

of the frequency of preceding homolateral septic lesions, the law of victory and evolutionary character of the pulmonary process as opposed to the preexisting superficial septic cutaneous processes and, finally, the law of the pathologic binomial following which the tuberculous reinfection is the fact of a concurrence with another local morbid state, especially of septic nature, and always involving the lymphatic routes

Schweizerische medizinische Wochenschrift, Basel

64 157 180 (Feb 24) 1934

Investigations on Changes in Blood Picture Following Subcutaneous Injection of Tuberculin Preparation in Cases of Surgical Tuberculosis F L Dumont and E Stockmann—p 157

*Immunobiologic Characteristics of Tuberculous Infiltrates P Spiro—p 164

*Incidence of Tuberculosis of Oral Mucous Membrane in Cases of Open Cervical Glands J L Burckhardt and E Bahl—p 167

*Phrenicectomy as Substitution for Pneumothorax W Froehlich—p 173

Reaction of Vernet in Surgical Tuberculosis Comparison of Its Results with Those of Sedimentation M Wasserfallen and J L Tuescher—p 175

Significance of Intermediate Layer Between Erythrocytes and Plasma in Centrifugated Citrated Blood Grete Cohn—p 179

Tuberculous Infiltrates—According to Spiro, it was Redeker who first advanced the theory that the development of tuberculous infiltrates is the manifestation of an allergic condition, that is, of an exogenous or endogenous sensitization. The author was able to corroborate Redeker's opinion by laboratory methods. He found that infiltrative tuberculosis a term under which he combines early infiltrates, late infiltrates and the so-called secondary infiltrations, is characterized not only by an allergic change in the blood picture by eosinophilia but also by typical allergic changes in the alimentary blood sugar curve. The latter is characterized by a slightly retarded ascending line and by a noticeably heightened apex. The fact that the same changes are also occasionally noticeable in caseous cavernous tuberculosis but not in productive-indurative tuberculosis makes it appear probable that the infiltrative tuberculosis, as regards its immunobiologic basis, is a preliminary stage of caseous-cavernous tuberculosis.

Incidence of Tuberculosis of Oral Mucous Membrane with Open Cervical Glands—Burckhardt and Bahl describe the histories of fifteen children with tuberculosis of the oral mucous membrane. They detected this number among sixty eight children with open cervical glands. This is a comparatively high incidence. The occurrence of nodules in a slightly reddish mucous membrane is particularly suspicious of tuberculosis, and the authors think that this ulcerous, miliary tuberculosis or gingival miliary tuberculosis is often overlooked and they advise that more attention be given to it. The disorder seems to be connected most frequently with dental caries, suppurations of the roots, dental fistulas or parodontitis. The infection may be either exogenous or hematogenous (more probably the latter). It appears that nonspecific dental disorders also exacerbate and prolong tuberculosis of the cervical lymph nodes. The authors advise that in children with tuberculosis the teeth and the mouth be given attention and treatment given if it is required, and that even the deciduous teeth be cared for.

Phrenicectomy as Substitution for Pneumothorax—Froehlich presents three case reports in which pneumothorax proved unsuccessful and in which cure was effected with phrenicectomy. He thinks that occasionally it is preferable to substitute phrenicectomy for an ineffective pneumothorax particularly when the latter has to be improved by the detachment of numerous adhesions, a method that is often hazardous and not without danger.

Semana Medica, Buenos Aires

41 553 624 (Feb 22) 1934 Partial Index

Neocercal Tuberculosis Clinical Forms and Treatment M M Brea—p 553

The Visual Field in Chiasmic Tumors J Milbrun—p 569

Relation Between Basal Metabolism and Erythrocyte Sedimentation Rate

Three Hundred Determinations L. Goldemberg—p 595

Thirst Fever in New Born Infant Ca c M A Zarate—p 618

Relation Between Basal Metabolism and Erythrocyte Sedimentation Rate—Goldemberg found a direct relation between the basal metabolism and the erythrocyte sedimentation

rate in 77 per cent of the patients suffering from hyperthyroidism, that is, the increase of the basal metabolism corresponded proportionally to that of the erythrocyte sedimentation rate. In 69 per cent of the group of persons with normal thyroids the basal metabolism and the erythrocyte sedimentation rate were normal. The erythrocyte sedimentation test (Farhacus's test) may serve as an aid to the test of the basal metabolism for the serial study of the effects of fluoride therapy (Goldemberg) or roentgen therapy (Tateka and Goldmann) in patients suffering from hyperthyroidism. The diagnosis of hyperthyroidism cannot be based only on the presence of a high sedimentation speed of the erythrocytes if the clinical symptoms, which are the most important are not taken into consideration, because the speed of the sedimentation may be due to many other causes, such as cancer, pregnancy, the presence of bacillary or other infections and syphilis. The erythrocyte sedimentation caused by hyperthyroidism is of a moderate velocity and ranges from 14 to 45 mm during the first hour, while that due to extrathyroid conditions is higher and may even reach 120 mm in the first hour, as seen in carcinoma. A hyperthyroidism with high basal metabolism and high speed of the sedimentation rate is of grave prognosis and reacts to the treatment by fluoride slower than hyperthyroidism with elevated basal metabolism and normal erythrocyte sedimentation rate. A normal sedimentation of the erythrocytes does not exclude, by itself, hyperthyroidism, but it does so when associated with a normal basal metabolism.

Archiv fur Dermatologie und Syphilis, Berlin

169 459 587 (Feb 22) 1934

Tuberculosis Nodosa Haemorrhagica (Equivalent to Dermatitis Nodularis Necrotica of Werther?) F Poor—p 459

Lichen Sclerosus (Atrophicus) Primitivus F Kogoj—p 465

Problem of Acute Vulvar Ulcer (Lipschutz) D Assnin and G Sutejew—p 470

Histologic Examination of Skin of Preputial Sac with Especial Consideration of Lipoids and of Cornification Processes Under Normal and Pathologic Processes H Reiss—p 478

Simultaneous Occurrence of Ichthyosis and Psoriasis J Gerke—p 485

*Influence of Experimental Dermatitis on Functional Conditions of Internal Organs W Milbradt—p 494

Experiments with Vesicular Contents of Patients with Cutaneous Tuberculosis K Sipos—p 507

Chickenpox in Leukemic Lymphadenosis A Philadelphia and L Haslhofer—p 512

Fluorescence of Fungi in Vitro A S von Mallinckrodt Haupt and C Carrie—p 519

Problem of Spontaneous Congenital Bullosis and of Spontaneous Development of Vesicles in Epidermolysis Bullosa H W Siemens—p 527

Aspects of Cutaneous Lymphosarcoma S Szathmari—p 539

Protection Against Psoriasis by Measles K Steiner—p 543

Langerhans Cells in Epidermis R Bezeany—p 544

Chronic Irritation of Reticulo Endothelial System—Hindrance to Cancer C Jacobsen—p 562

New Fungus of Endothrix Group Trichophyton Floriforme K. Beintema—p 577

Systematized Nevi and Nevoid Dermatoses R Lewith—p 582

Influence of Experimental Dermatitis on Internal Organs—Milbradt observed after extensive chemical and physical cutaneous inflammations characteristic disturbances in the carbohydrate metabolism, that is, a tendency to increased blood sugar values during fasting. He interprets the more pronounced Staub-Traugott effect not as an increased functional activity of the pancreas but rather as an impairment of the liver. The impairment of this organ is made still more probable by the outcome of Althausen's test, by the epinephrine tolerance test and by an increased arsphenamine susceptibility. In herbivorous animals (rabbits and guinea pigs) the liver is the organ that becomes most easily impaired. The kidney on the other hand, so far as its functions could be determined on the behavior of the rest nitrogen becomes insufficient shortly before death when it no longer can eliminate the waste products of protein metabolism. Uric acid and amino acids are generally reduced. In the blood a considerable disintegration of cells takes place for the erythrocytes decrease gradually and there are signs of strong regeneration such as polychromatophilia vital granulation and young forms. In the beginning the aspects of secondary anemia predominate. Only during the phases of spontaneous remission does the color index increase occasionally above the initial value. During the later stage there develops a toxic impairment of the erythropoietic

apparatus, indicated by anemia and the absence of signs of regeneration. The blood, on the other hand, shows a considerable leukocytosis with relative or absolute lymphopenia and shows no impairment even at the end. The author's investigations indicate what metabolic disturbances may develop secondarily in extensive dermatoses. He emphasizes that these investigations do not permit generalizations and that it would be wrong to consider all such metabolic disturbances as secondary. His investigations indicate only possibilities. The real connection between cutaneous and metabolic disturbances must be studied in each case by careful clinical analysis. The author's studies, however, opened interesting perspectives on the connections between each other due to protein bodies death from extensive experimental dermatitis and death from burns.

Klinische Wochenschrift, Berlin

17 281 320 (Feb. 24) 1934

- Modification of Fat Metabolism by Hypophyseal Substances W. Rath —p. 281
- *Clinical Investigations on Porphyrin. Their Quantitative and Qualitative Method R. Fikentscher and K. Franke —p. 285
- *Diagnostic Value of Determination of Blood Cholesterol Following Cholesterol Tolerance Test P. Barreda —p. 290
- Tumor Immunity H. J. Lucas —p. 292
- Problem of Sterilization F. Fenz —p. 294
- Internal or Surgical Therapy of Pylorospasm A. Felsstein —p. 295
- Clinical Determinability of Arterial So-Called Dynamic Median Pressure I. Kisch —p. 297
- Further Investigations on Tonsils and Growth S. Feller —p. 299
- Blood Coagulation Following Injection of Congo Red C. H. Beltr —p. 300
- *Simple and Rapid Chemicohormonic Pregnancy Reaction F. Cuboni —p. 302
- Cutaneous Reaction with Eranthum S. Fleck —p. 303
- Trimethylamine Oxide in Human Urine W. Lintzel —p. 304
- Influence of Spleen on Water Exchange. Action of Spleen Extracts on Diuresis R. Tislowitz —p. 304
- Anesthesia with a Sodium Salt of a Barbituric Derivative in Major Surgery K. von Sailer —p. 305

Clinical Investigation on Porphyrin—Fikentscher and Franke point out that, since it has been proved that porphyrin plays an important part in blood pigment metabolism, a number of methods have been devised for its quantitative and qualitative determination. The authors show that satisfactory quantitative values can be determined with the spectrophotometric method of Selum, Schreuss and Caric and with the measurements of luminescence according to Fikentscher or according to Hyman van den Bergh and Grotpass. The authors state that the method of Fikentscher, which is based on the characteristic red fluorescence in the ultraviolet is the most sensitive. It makes possible the detection of as little as 1 microgram per hundred cubic centimeters in the hydrochloric acid extract. Moreover, the method requires only small quantities of material. For the quantitative determination of ether soluble porphyrins in the urine the authors describe special measures. The daily elimination of porphyrin in the urine ordinarily does not exceed 30 micrograms. The determination of the exact type of the porphyrin encounters considerable difficulties in the clinical examinations. The ideal method is the chemical analysis described by W. Fischer, but it has the disadvantage that it requires larger quantities of porphyrin than those available in clinical examinations. The authors describe a method that permits the use of the smallest amounts of porphyrin and employs the simple apparatus of the quantitative luminescence analysis. The method is based on a procedure described by Fink, which permits the identification of the various porphyrins by means of the so-called pH fluorescence curves.

Diagnostic Value of Cholesterol Tolerance Test—Barreda duplicated Burger's cholesterol tolerance test on eighteen persons without metabolic disturbances. The technique of the test is as follows: The person to be tested is given 5 Gm. of cholesterol, dissolved in 100 cc. of hot olive oil, while the stomach is empty. On the day of the experiment and also on the preceding day the person receives a diet that has a low fat and cholesterol content. Specimens of blood are withdrawn before the intake of the cholesterol and also four, eight and twenty-four hours after the intake. The serum of these specimens is then examined for free cholesterol and for the total amount of cholesterol. On the basis of this tolerance test, Burger and his collaborator reached the conclusion that in persons without metabolic disturbances there always develops

a hypercholesterolemia. Barreda, however, reaches the opposite conclusion, for in none of the normal persons tested by him did the cholesterol content increase following the ingestion of the cholesterol, and he maintains that the outcome of this tolerance test does not permit a definite estimation of the condition of the cholesterol metabolism.

Chemicohormonic Pregnancy Reaction in Mares—Cuboni points out that the hormone content of the urine of pregnant mares differs from that of pregnant women in that the urine of mares shows a predominance of the follicular hormone over the hypophyseal hormones, the follicular hormone amounting to from 90 to 95 per cent of the total hormone content. This observation and the fact that in mares the biologic pregnancy test encounters certain difficulties induced the author to employ a chemical reaction for the diagnosis of pregnancy in mares. The test is based on Kober's observation that a fluorescence appears on treating the follicular hormone with bent and with concentrated sulphuric acid. After the urine has been filtered, 1 cc. of concentrated hydrochloric acid is added to 5 cc. of the urine, and the test tube containing this mixture is placed for ten minutes in the boiling water bath. Then, after the test tube has been cooled under the water tap, 6 cc. of benzene is added. This mixture is shaken, the urine is drawn off, and the layer of benzene above it is gathered in a tube and, if necessary, is filtered through paper. Of this benzene extract 3 cc. is then dried and to the residue is added 0.8 cc. of concentrated sulphuric acid. This is heated for several minutes in a water bath of from 70 to 80 C. and the results are read. In case of a negative reaction (absence of pregnancy) the fluid shows either the red coloration of malaga wine or reddish brown or brown and is never fluorescent. In case of a positive reaction (presence of pregnancy), the fluid, when observed while the light shines through it may show one of the aforementioned color nuances, but if observed while the light falls on it, for instance if the observer turns his back to the window, a clearly greenish coloration becomes visible through the fluorescence. The author emphasizes that the reaction is inexpensive and can be completed in from fifteen to twenty minutes. Tests on thirty-five pregnant mares gave 100 per cent positive results. In nonpregnant mares, in castrated animals and in stallions the results were 100 per cent negative.

Munchener medizinische Wochenschrift, Munich

81 235 270 (Feb. 16) 1934

- *Treatment of Malignant Tumors by Roentgen Irradiation Adapted to Radium Therapy H. Chaoul —p. 235
- *Expectant or Operative Treatment in Severe Hemorrhages from Gastric or Duodenal Ulcers M. Friedemann —p. 239
- Total Resection of Stomach W. Lobenhoffer —p. 241
- Dignosis Therapy H. Passler —p. 243
- Estimation and Treatment of Heart Disease R. Siebeck —p. 246
- Gastric Ferment in Treatment of Dyspepsia of Stomach and Intestine. T. Brock —p. 248
- Postoperative Treatment Following Abdominal Interventions Treatment of Intestinal Spasms E. Reinhardt —p. 249
- Technic of Venesection G. Nutz —p. 250
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- Effective Fight Against Cancer Lonne —p. 253
- Position of Clinical Specialties in Medical Curriculum F. Schieck —p. 255
- Use of Sodium Salt of Barbituric Acid (Eupan) Contraindicated in Patients with Asthma P. Feldweg —p. 257

Treatment of Malignant Tumors by Roentgen Rays Adapted to Radium Rays—Chaoul points out that radium rays are superior to roentgen rays in the treatment of tumors. This superiority of radium treatment is noticeable particularly in tumors of the lips, the tongue, the buccal mucous membrane, the floor of the mouth and the female genitalia. Since the supply of radium in German hospitals is less than 9 per cent of the amount that is required if the accepted standard of 25 Gm. per million of population is accepted, efforts were made to adapt roentgen rays so that their action would be like that of radium rays. To accomplish this changes had to be made in the time factor, in the spatial distribution of the rays and in the dosage. The author shows that Coutard's method of fractional, protracted roentgen irradiation, which gave attention to the time factor, was the first step in the adaptation of the roentgen to the radium rays. To adapt the spatial distribution of roentgen treatment to that of radium therapy, it was necessary to limit the ray action both in surface and in depth. This

was done by reducing the focus distance to 4 cm, applying the rays to smaller fields and using softer rays. The author found that a tube tension of from 50 to 100 kilovolts and filtration through 1 mm of aluminum or 0.5 mm of copper are equal to all requirements. The third factor that has to be considered in the adaptation of roentgen to radium rays is the increase of the total dosage. In combination with the other adjustments this was readily possible, for total doses of from 15,000 to 20,000 roentgens were administered (with intercalation of rest periods) and were tolerated without serious impairment. The retrogression of the tumors generally set in at the end of the treatment, rarely before from 4,000 to 5,000 roentgens had been applied. The author employed this modified roentgen treatment in fifty-eight cases, with complete freedom from symptoms in fifty-five. This result appears the more favorable when it is considered that in more than half of the cases the cancers were of the severest type.

Treatment of Hemorrhages from Gastric or Duodenal Ulcer—Friedemann objects to the standpoint taken by Schlecht, who expressed the opinion that an acute severe hemorrhage from a gastric or duodenal ulcer is never an indication for immediate surgical intervention because the operative mortality is high, while a fatal hemorrhage is extremely rare. He gives case reports showing on the one hand that fatal hemorrhage is not unusual if an expectant attitude is assumed and on the other hand that the operation is not as dangerous as has been assumed. However, it is not the author's aim to recommend surgical treatment as the only suitable one for bleeding ulcers.

Zeitschrift für Immunitätsforschung, Jena

81 377 528 (Feb 15) 1934

- *Investigations on Henry's Serum Flocculation Reaction for Malaria. W. Voigtlander—p. 377
- Criticism of Friedberger Oshikawa's Immunization Method. S. Belak and J. Pater—p. 401
- Action of Digitalis on Formation Capacity of Agglutinins in Rabbits. J. Pater—p. 403
- Epidemiologic Significance of Weil-Felix Reaction of Exanthematous Typhus. M. P. Isaholinski, R. M. Sohalewa, N. J. Stratanowitsch, S. L. Riwkina and T. A. Moskalewa—p. 405
- Serologic Differentiation of Gray and White Substance of Nervous System. H. Reichner and E. Witelsky—p. 410
- Modification of Diphtheria Immunity in Guinea Pigs by Feeding with Vitamin and by Quartz Lamp Irradiation. Chin Kuk Choun—p. 432
- Practical Significance of Landsteiner Levine's M and N Factors. Johanna Puschel—p. 445
- Demonstration of Cowpox Vaccine in Rabbit Organs and Behavior of This Vaccine Toward Hydrogen Ion Concentration. E. G. Dresel and F. Sander—p. 457
- Serologic Demonstration of Syphilis by Means of Kahn's Extract in Centrifugation Method. C. Schlessmann—p. 467
- Relation Between Antitoxin Content and Toxin Resistance of Guinea Pigs Following Active Immunization Against Diphtheria Toxin. S. Schmidt and I. Fjord Nielsen—p. 473
- Absence of Antigenic Function of Spirochaeta Pallida in Tissues in Contradistinction to Antigenic Action of Pure Culture Syphilis Spirochetes. F. Plaut—p. 479
- Alcaligena Abortus Infections in Students and Several Laboratory Infections. O. Herrmann, A. Mursabekjan and R. Megrabjan—p. 500
- Seasonal Fluctuations of Several Spontaneous Infections of Guinea Pigs. T. Hjar—p. 511
- Mechanism of Fixation of Bacterial Agglutinins. Agglutinin Fixation of Bacteria Modified by Influence of Heat. G. Ivanovic—p. 518

Flocculation Test for Malaria—Voigtlander considers Henry's flocculation reaction for malaria particularly valuable because this test gives positive results in acute chronic and latent cases. The test is a specific antigen-antibody reaction. The plasmodia of malaria destroy the erythrocytes and transform the hemoglobin into melanin which contains iron. The melanin, serving as antigen is prepared from the choroid of the eyes of oxen. The author thinks it best to use a ready prepared antigen. Five test tubes are used for the examination. The first one contains 0.1 cc of serum and 0.5 cc of melanin A (melanin A consists of 0.05 cc of the original antigen and 0.45 cc of redistilled water). The second tube contains 0.1 cc of serum and 0.5 cc of melanin B (melanin B having half the concentration of melanin A). The third tube (control) contains 0.1 cc of serum and 0.5 cc of redistilled water that has been treated with solution of formaldehyde. This so-called formalized water is prepared by mixing 200 parts of water and 1 part of a 35 per cent solution of formaldehyde and by adding to 0.05 cc of this 0.45 cc of redistilled water. The fourth tube contains 0.1 cc of serum and 0.5 cc of melanin A. Melanin A

consists of 0.05 cc of the original antigen, plus 0.05 cc. of a 0.6 per cent solution of sodium chloride plus 0.4 cc. of a 0.3 per cent solution of sodium chloride. The fifth tube (control) contains 0.1 cc of serum and 0.5 cc of formalized sodium chloride solution. The latter is prepared from 0.05 cc of a formalized 0.3 per cent solution of sodium chloride plus 0.45 cc of a 0.3 per cent solution of sodium chloride. The tubes are placed for two and one-half hours into a water bath of 37° C and then they are kept at room temperature for another half hour. The reaction is read by means of the agglutinoscope. In case of a positive reaction, tubes 1, 2 and 4 show flocculation, but in weakly positive serums the flocculation may appear only in the first tube. If autoflocculation of the serum is absent, the sediment is finely flocculated. But if there is autoflocculation, the finely flocculated sediment that is specific for a positive reaction is covered by the coarse floccules of the autoflocculation. In these cases the control in the formalized refracted water likewise shows flocculation, and only the reaction in the sodium chloride solution is demonstrative. If the sodium chloride control should also show flocculation, Henry advises an increase in the sodium chloride content, but the author has never found this necessary. The positive flocculation looks in the agglutinoscope like snowflakes. Diffuse, veil-like precipitates or finely granulated flocculations are non-specific. The author studied this test on 224 serums. He obtained positive reactions in acute malaria in human subjects, and in acute latent and chronic malaria in canaries. In persons with other diseases the reaction was generally negative, but in a patient with secondary syphilis a positive result was obtained. In canine piroplasmiasis and in other animal diseases that resemble malaria (Halteridium infection) the reaction was negative. In malaria therapy of patients with dementia paralytica, the test gave a comparatively exact picture of the development. The reaction was negative before the inoculation, during the incubation and during the first two attacks. After the third attack it became positive. Following completion of the malaria therapy it became gradually weaker and reached the zero point after from four to six weeks.

Zeitschrift für Kinderheilkunde, Berlin

56 1 142 (Feb 19) 1934

- *Pathogenesis of Goat's Milk Anemia. P. Gorgy—p. 1
- Hypophyseal Tumor and Thyrotropic Hormone. Charlotte Peters—p. 14
- Further Reports on Arrest of Specific Cure for Rickets by Exogenic and Endogenic Factors. E. Wieland—p. 19
- *Prodromal Angina of Measles. Symptomatology and Pathogenesis. E. Mayerhofer—p. 42
- Modification of Action of Viosterol by Thyroidal Preparations. Grete Sehaal—p. 55
- Problem of Starvation Ketonuria in Nurslings. H. Beumer and H. Peters—p. 61
- Influence of Puberty on Relapse Frequency of Acute Polyarthritis. E. von Eickstedt—p. 64
- Investigations on Bone System in the New Born. K. U. Toverud—p. 66
- Investigations on Mechanical Behavior of Cutaneous Tissues (Cutis and Subcutis) with New Method. J. Jochims—p. 81
- *Periodic Vomiting During Childhood. S. A. Siwe—p. 98
- Microscopic Examination of Intramural Gastric Nerves in Pylorospasm. Charlotte Herbst—p. 122
- Cure of Case of Heart Block Following Diphtheria. P. von Koss—p. 136
- Arrhinencephalia with Disturbance of Heat Regulation. Eva Heschl—p. 140

Pathogenesis of Goat's Milk Anemia—Gorgy points out that a one-sided milk diet often causes in nurslings and small children more or less pronounced anemic blood changes. It has been observed that feeding with goat's milk results in anemia more often than does feeding with cow's milk, and leads to it more rapidly, that is the latent period is shorter. Goat's milk anemia is hyperchromatic and the author assumes that it resembles pernicious anemia in still other symptoms. Iron or iron and copper have no effect on goat's milk anemia but it yields to liver therapy in a comparatively short time even if the goat's milk feeding is continued. Goat's milk anemia as a rule is not accompanied by achylia so that the gastroenteric theory of pernicious anemia cannot be applied to it. However its genesis is closely related to the deficiency of the so-called extrinsic factor of Castle—occasionally accompanied by lack of iron. This theory of pathogenesis is borne out by the fact that goat's milk anemia responds not only to liver therapy but also to yeast extract.

Prodromal Angina of Measles—Mayerhofer differentiates the prodromal angina of measles from the angina morbillosa known to the older physicians and from the tonsillitis of measles described by Grumann. He considers the two latter forms identical but shows that his prodromal form differs from them in that they develop during the period when the exanthem first appears, while his prodromal form develops much earlier. He shows that a careful study of the incubation period occasionally reveals a fever curve with several peaks. The first attacks of fever (first to fourth day) after the infection represent in measles just as in some other infectious diseases, the primary, that is the nonallergic initial fever. After the fourth day new temperature increases may develop and the author considers them allergic, particularly in those cases in which they appear combined with the prodromal angina of measles. This condition develops not often between the fourth and eighth days after infection, but more frequently between the ninth and twelfth days, and always before the development of the exanthem. Occasionally the prodromal angina of measles concurs with pseudo-appendicitis. The tonsils as well as the appendix contain many giant cells. The vascular endothelium likewise may form giant cells and as a result, small blood vessels may become obliterated and there may be an extravasation of blood pigment. The author thinks that this explains the chocolate color of the prodromal angina of measles to which attention had been called by Veilchenblau. He considers the prodromal angina of measles the expression of an allergic reaction that involves the entire lymphatic system of the oral cavity and is more or less analogous to the accompanying anginas of vaccination, of serum disease of idiopathic glandular fever of leukemia, of agranulocytosis, of many septic infections and of other infectious diseases. The author shows that the prodromal angina of measles is a misleading symptom rather than a leading symptom in the early diagnosis of measles. Only an exact knowledge of the prodromal angina of measles may make it valuable for the diagnosis of measles.

Periodic Vomiting During Childhood—Sive shows that in the periodically recurring attacks of vomiting with acetoneuria there exists a hepatic dysfunction with increased elimination of the products of metabolism among them ketone bodies. This disturbance which resembles that in carbohydrate deficiency or in an excessive one-sided fat diet cannot be due to a glycogen deficiency, for epinephrine mobilizes a normal quantity of sugar in the blood. During the attacks of vomiting the blood sugar is not necessarily reduced and in the cases observed by the author it is not below the values that are found in healthy children (particularly in nervous ones) after fasting. The vomiting shows no regular and direct relation with the values of the blood sugar or the acid elimination. Administration of epinephrine as well as of sugar always exerts a favorable influence on the general condition, and in some cases the predisposition to vomiting is likewise reduced by medication with epinephrine. The administration of sugar is always facilitated by the epinephrine medication and, if sugar is given repeatedly after suitable intervals it may have a curative effect. During the attack-free intervals a ketogenic diet reveals no disturbance in the hepatic function, but in two out of nine cases it was possible to produce typical attacks with such a diet. The liver reacts normally also to sugar tolerance tests during the symptom-free interval. It is significant for the clinical course that attacks nearly always are preceded by premonitory symptoms. The attention of the parents and of the patients should be called to these signs for, if sugar is given early enough the attacks of vomiting can be prevented. The fact that children with acetoneuric vomiting frequently have an aversion to sweets and show a preference for fatty foods is of especial interest.

Finska Lakaresällskapetets Handlingar, Helsingfors

76 105 191 (Feb.) 1934

Recent Investigations on Mechanism of Albuminuria. K. Holmberg—p. 111

*Contribution to Question of Treatment of Abscesses of Brain According to Lemaitre. E. Wolff—p. 122

*Sclerodema Adultorum (Buschke). G. A. Björkenheim—p. 134

*Osteitis Deformans Paget. Case. B. von Bonsdorff—p. 147

Treatment of Abscesses of Brain—Wolff reports a case of abscess in the frontal lobe operated on according to Lemaitre. The patient recovered. With regard to diagnosis, attention is called to the difference of twenty beats per minute in the pulse in reclining and sitting positions, a phenomenon first mentioned by Goldstein and established by Kaila in disturbances of the circulation of the spinal fluid of acute onset.

Sclerodema Adultorum (Buschke)—Björkenheim reports a case believed to be the first seen in Finland, in a woman aged 34, observed by him both before and during the disorder and closely examined two years later after complete recovery. The clinical picture agrees with the typical symptoms of this disorder as described in the literature. After one and one half years the patient was practically without symptoms. The typical marked lymphocytosis has completely disappeared. An endocrine disturbance seemed probable. Thyroid therapy was without definite effect.

Osteitis Deformans Paget—In von Bonsdorff's instance in a woman, now aged 59, the symptoms of avitaminosis and signs of endocrine disorder were so marked that an etiologic significance is ascribed to them.

Hospitalstudende, Copenhagen

77 185 212 (Feb. 13) 1934

Sarcoid of Boeck Treated with Agent for Leprosy (Antileprol). Twelve Cases. S. Lomholt—p. 187

*Infantile Scurvy Treated with Ascorbic Acid. Elisabeth Svendsgaard—p. 209

Sarcoid of Boeck Treated with Agent for Leprosy—Lomholt asserts that in the twelve cases of typical sarcoid of Boeck treatment with chaulmoogra oil was followed in eight cases by disappearance of the specific infiltrations in the skin and in four by improvement. Lymphomas present also disappeared and lesions of the mucous membrane of the nose and mouth cavity were influenced favorably. As a rule, daily intravenous injections of 15 cc of chaulmoogra oil was given and was on the whole well borne. Intramuscular injections in the buttocks seemed to act even better than the intravenous injections but often caused pain and in one case abscess formation. A similar effect of the chaulmoogra oil was seen in other cases of granulation tissue with tuberculoid structure, as in granuloma annulare but far less marked in tuberculous lymphomas. In almost all the patients the injections produced an eosinophilia sometimes marked which developed slowly but disappeared rapidly. The regularity and nature of the clinical effect of the agent the author says, call for continued systematic investigations.

Infantile Scurvy Treated with Ascorbic Acid—In the two cases of marked scurvy reported by Svendsgaard, recovery occurred in a few days, with a diet absolutely deficient in vitamin C on treatment with ascorbic acid in a dosage of 30 mg daily by mouth.

77 213 240 (Feb. 20) 1934

*Spontaneous Recovery in Pernicious Anemia? H. C. A. Lassen—p. 213

Suppurative Pericarditis Treated Operatively. A. Sennels—p. 220

*Recurring Histologically Benign Tumor of Breast (Addendum to

Report in Hospitalstudende 1933 p. 835). Case. E. Husted—p. 226

Modern Wheat Milling and Possibility and Desirability of Improvement of Wheat Flour from Nutritive Point of View. P. Vogt Müller—p. 227

Spontaneous Recovery in Pernicious Anemia?—Lassen reports a case believed to be true pernicious anemia in a woman, aged 61 with spontaneous remission for fully nine years. The patient has never had liver or liver preparations. On recent examination a positive congo red reaction was found after injection of histamine, on four repeated later examinations the congo red reaction was negative and the maximum total acidity was 10. Since there is a slight megalocytosis and the patient has acroparesthesia the author thinks that she has had and has a 'pernicious anemia with anemia.' There are no other symptoms attributable to an anemic myelopathy.

Recurring, Histologically Benign Tumor of Breast—Husted now reports the transition into a sarcoma of this tumor, originally an intracanalicular fibroadenoma of typical appearance. The patient died from extensive metastases.

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CIRCULATORY STASIS OF INTRAPERICARDIAL ORIGIN

THE CLINICAL AND SURGICAL ASPECTS OF THE
PICK SYNDROME

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CLEVELAND

In referring to the various disorders of the pericardium, one is accustomed to use such terms as pericarditis with effusion, adhesive pericarditis, callous pericarditis, purulent pericarditis, hydropericardium, hemopericardium and pneumopericardium. These anatomic conditions, diversified as they are, have a common physiologic relationship. They produce two closely related clinical syndromes. These are the syndromes of acute and chronic intrapericardial pressure. It is our purpose to describe these clinical syndromes and recommend the adoption of this physiologic concept. We believe this would aid in the diagnosis of pericardial lesions in much the same way as the physiologic conception of intracranial disorders has aided in the diagnosis of intracranial lesions. The syndromes of acute and chronic intracranial pressure are well understood and their physiologic aspects have been of great importance in furnishing the guide to specific anatomic diagnoses. For example, a patient who is unconscious, with Cheyne-Stokes respiration, a high blood pressure, a slow pulse rate, and possibly choked disks, has acute intracranial pressure, while a patient who is toxic, weak and drowsy, with choked disks, has chronic intracranial pressure. It requires further data to determine whether the first patient has an intracranial infection, tumor or hemorrhage, and whether the second patient has a space-occupying tumor, a block of the cerebrospinal fluid system, an infection or a slow hemorrhage. The correct lead to the diagnosis lies first in the recognition of the pressure syndrome. The diagnosis of pericardial lesions is frequently overlooked. If the syndromes of acute and chronic intrapericardial pressure were generally recognized we believe that the specific anatomic diagnosis would be made more frequently.

THE SYNDROMES OF ACUTE AND OF CHRONIC INTRAPERICARDIAL PRESSURE

In order to understand the mechanism producing these clinical conditions, it is advisable to refer to certain pressure relationships that exist within the chest. Under normal conditions of respiration the pressure

within the pleural cavity is always negative (by about 8 or 10 cm. of water). This negative pressure originates from the elastic recoil of the lungs. It is transmitted to all the intrathoracic viscera. The mediastinal space and the intrapericardial space, being bounded by soft, nonrigid walls, likewise carry a negative pressure. The pressure in the venae cavae and right auricle is negative by about 3 or 4 cm. of water. Under normal conditions the blood meets no obstruction at the point where the venae cavae pass through the pericardium. Under certain abnormal conditions the pressure on the heart and the short segments of venae cavae that lie within the pericardial cavity is increased. This mechanism can easily strangle the circulation and can bring it to a partial or complete standstill. When the intrapericardial pressure increases suddenly, the circulation is immediately stopped and the blood collects in the venous reservoirs. In a few moments these reservoirs are filled and the pressure that is built up may become great enough to break through the pericardial barrier. In this event the circulation starts up again. The amount of blood entering the heart may be greatly cut down, but the vasomotor center is so efficient that, with only 50 per cent of the normal amount of blood entering the heart, the arterial pressure may show little if any reduction.¹ If the venous reservoirs cannot build up sufficient pressure to break through the pericardial barrier, the circulation comes to a complete standstill. In other words, it is incompatible with life for the pressure within the pericardium to exceed the pressure in the venae cavae.

The most common barrier is produced by fluid. The fluid may be an exudate or a transudate; it may be sterile or infected; it may be bloodstained or whole blood. The heart may be compressed also by a tight envelop of scar tissue or by a deposit of calcium; it may be pressed on by a neoplasm or by a collection of gas in the pericardial cavity. The gas may consist of air or it may be produced by gas-forming bacteria.

Acute intrapericardial pressure is usually caused by hemorrhage from wounds of the heart or coronary vessels or from rupture of a weakened myocardium, or from an aneurysm. It is sometimes seen with a rapidly progressing suppurative infection. The clinical picture is exactly what one would expect from an acute strangulation of the heart. The veins are full of blood. Their walls have not been stretched by chronic pressure and they are not prominent, but the venous pressure is elevated by as much as 15 cm. of water. There has not been sufficient time for ascites, hydrothorax or edema to develop. On the arterial side of the circulation the vasomotor center is doing what it can to maintain an

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I. Beck, C. S. and E. H. C. A. Intrapericardial Tamponade. A Study of Arterial Pressure, Negative Pressure and Intracavitary Pressure upon the Heart. *J. Thoracic Surg.* 1: 124 (Dec.) 1931.

CIRCULATORY STASIS—BECK AND CUSHING

JOUR. A. N. A.
MAY 12 1924

adequate pressure.² As the arterial circulation fails, the body cools and the skin becomes moist, cold and pale. The patient at first may go through a period of excitement and anxiety but, as the brain becomes anemic consciousness is lost. Examination of the precordium shows little. The cardiac sounds are faint and distant or may be inaudible. There is no pulsation of the precordium. The area of cardiopericardial dullness shows little or no perceptible increase. It is unnecessary and may be unwise to spend the time taking a roentgenogram if urgent surgical treatment is to be carried out.

If the strangulation of the circulation takes place more slowly and does not become complete, the clinical picture of chronic intrapericardial pressure develops. In the chronic condition a considerably greater pressure can be tolerated than in the acute condition. A high venous pressure is built up as a protection and this pressure may be as high as 30 to 34 cm of physiologic solution of sodium chloride. The veins dilate in response to the prolonged pressure and they sometimes stand out like goose quills.

If the intrapericardial barrier is fluid, the pericardium dilates gradually and may contain as much as several liters of fluid. The liver and spleen enlarge. Ascites and hydrothorax develop. Subcutaneous edema may occur, but this is not marked and appears later.

Cyanosis, weakness, and dyspnea on exertion are present. The arterial and pulse pressures are reduced. The systolic pressure may be about 90 to 100 mm of mercury and the diastolic pressure about 70 to 80 mm of mercury. Pulsus paradoxus is present. The minute volume output of the heart is reduced. The vital capacity is reduced. The response to exercise shows a delayed return of pulse and arterial pressures to former levels. The electrocardiogram shows low voltage and shunting of the QRS complex in all leads from clinical examination of the precordium and from the roentgen examination depend on the pathologic process that is present. As already stated, this may be due to fluid or scar or to a combination of fluid and scar (fig 2). If fluid is present, the precordial shadow is increased, the contour of the cardiopericardial shadow changes as the patient is moved from the erect to the recumbent position, and the amplitude of cardiac pulsation is reduced. If scar is present, the size of the cardiopericardial shadow may be approximately normal,

it may be larger or smaller than normal, there may be fixation to the sternum, the pulsation may be reduced or absent and the venae cavae are distended. A pericardial paracentesis may yield additional evidence as to the presence of pericardial scar, calcification or fluid. If scar is present, the needle will encounter firm resistance when the pericardium is reached and if inserted into the scar, will be dragged back and forth with each cardiac cycle. The scar may be so tough that it is impossible to penetrate it with the needle.

The clinical picture of chronic intrapericardial pressure was described by Friedel Pick³ in 1896. He deserves credit for diverting attention from the liver to the pericardium as the primary seat of the trouble, but it is doubtful whether the continued use of the term "Pick's disease" is advisable in referring to this group of diversified conditions. It is more informative to refer to the mechanism producing the condition as, for example, the syndrome of chronic intrapericardial pressure produced by scar tissue, of chronic intrapericardial pressure produced by a tuberculous effusion, of chronic intrapericardial pressure produced by a sterile effusion or of acute intrapericardial pressure produced by a ruptured aneurysm.

This syndrome of chronic intrapericardial pressure is a type of circulatory failure that frequently can be cured by operation. It is important that this type of circulatory decompensation be diagnosed correctly so that operative treatment can be carried out in appropriate cases. Although its occurrence is rare when compared to that of excessive large group of patients suffering from cardiac failure nevertheless there are probably in this country several hundred cases of chronic intrapericardial pressure. The vast majority of these are not recognized and accordingly they are denied proper treatment. The operation for the relief of chronic pressure is a task with which the surgeon may be relatively unfamiliar. Few operators acquire experience in operating on the heart. Unlike any other organ in the body, the heart is in constant motion, and the surgeon must establish a new set of reflexes for this

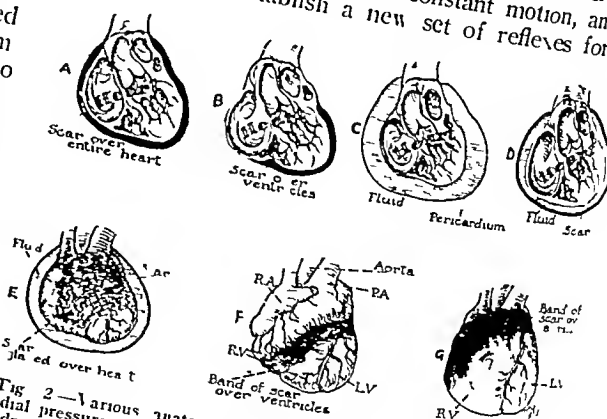


Fig 2—Various anatomical conditions that produce chronic intrapericardial pressure. Each of these conditions can produce the so-called Pick syndrome.

operation. This syndrome has been produced experimentally by the introduction of surgical solution of chlorinated soda into the pericardial cavity.⁴ The laboratory

² By common usage the term blood pressure seems to mean arterial pressure. In the syndromes of intrapericardial pressure the venous pressure is of relatively greater importance than the arterial pressure. We prefer to make venous pressure determinations by the direct method (fig 1).

³ Pick, Friedel. Ueber chronische unter dem Bilde der Leber cirrhose verlaufende Pericarditis (pericarditische Pseudolebercirrhose). *Klin Med* 29: 385, 1896.
⁴ Beck, C. S. The Effect of Surgical Solution of Chlorinated Soda in the Pericardial Cavity. *Arch Surg* 18: 167, (April) 1929.

ratory offers an invaluable opportunity to acquire experience in performing this operation

It is not our purpose in this paper to trace the successive steps that have been taken in the development of the surgical treatment and the results obtained. Suffice it to say that patients who have been bedridden have been restored to active life, that in a few cases the circulatory relief has been complete and apparently permanent, and that in the future with improved methods and experience the operation undoubtedly will lose much of its hazard

REPORT OF CASES

The following nine cases of chronic intrapericardial pressure are presented to show the similarity of the clinical pictures produced by dissimilar pathologic processes. Six of these patients were operated on

CASE 1—A boy, aged 13 years, complained of weakness, shortness of breath and pain in the upper part of the abdomen. These symptoms had been present for about one and one-half years, they had been insidious in onset and were becoming more marked. Several transient attacks of jaundice and epigastric pain without fever appeared during this period. There was no history of acute rheumatic fever, chorea or pneumonia. He had had frequent attacks of sore throat, and his tonsils had been removed eight years before.

The patient was bedridden, orthopneic, cyanotic and extremely weak. Ascites was marked. The liver and spleen were large and firm. Clinically there was no hydrothorax. Serotal edema was present, but there was no other subcutaneous edema. Arterial pressure was 90 mm of mercury systolic and 70 mm of mercury diastolic. The pulse pressure was 20 mm of mercury. The venous pressure was 35 cm of physiologic solution of sodium chloride. The vital capacity was 1,500 cc (calculated capacity 2,700 cc). Pulsus paradoxus was present. Electrocardiograms showed low voltage and slurring of the QRS complex in all leads. The T waves were iso electric in the first and second leads and inverted in the third lead. There was no shift of electrical axis with change of position. There were no cardiac murmurs. Fluoroscopic examination showed the amplitude of pulsation in each ventricle to be almost completely obliterated and the heart to be fixed in position.

Pericardiectomy was carried out Nov. 21, 1929. The parietal pericardium and epicardium were everywhere adherent. These structures were transformed into a layer of scar tissue several millimeters in thickness (fig. 2A). This scar was dissected from the heart. Under the microscope it showed only dense fibrous connective tissue without any evidence of tuberculous or rheumatic infection. There was dramatic improvement in the circulation as soon as the heart was liberated.

The patient has led an active life since operation without showing the slightest evidence of circulatory failure. March 15, 1934 there was no ascites, the liver and spleen were not palpable, there was no hydrothorax and no serotal edema. The arterial pressure was 120 mm of mercury systolic and 70 mm of mercury diastolic, the pulse pressure was 50 mm of mercury, the venous pressure was 4 cm of physiologic solution of sodium chloride, the vital capacity was 3,500 cc (normal). Pulsus paradoxus was absent. The electrocardiogram showed slight slurring of the QRS complex in the first lead, none in the other leads and marked increase in voltage. The T wave

was upright in the first lead and inverted in the second and third leads. There were no cardiac murmurs and the fluoroscopic examination showed normal pulsation in each of the cardiac chambers. Dr. David Steel said that under the fluoroscope one would not suspect that the heart had ever been pathological. A cardiac output determination by means of the acetylene method⁶ showed the following: pulse rate per minute 72, oxygen consumption 236 cc per minute, arterio-venous oxygen difference 57.3 cc per liter, cardiac output per minute, 4.11 liters, cardiac index, 2.4, stroke output of heart 57 cc. The result of this determination was in agreement with other determinations and showed the minute volume output and the stroke output of the heart to be normal. The operation was carried out four years ago, and the patient now shows no evidence of any circulatory abnormality, whereas before operation he was bedridden.

CASE 2—A man, aged 30, referred by Dr. H. N. Kenwell of Buffalo, was admitted to the Buffalo City Hospital April 1, 1931. Weakness and swelling of the abdomen had developed one month before admission. The examination showed a marked degree of ascites, slight edema of the serotum, eyelids and ankles, marked engorgement of the veins, cyanosis and dyspnea. He had a troublesome cough, some pulmonary edema and hydrothorax. He had no fever. The arterial pressure was 110 mm of mercury systolic and 90 mm of mercury diastolic. The pulse rate ranged from 90 to 100 per minute. The venous pressure was 35 cm of physiologic solution of sodium chloride. (This and subsequent determinations of the venous pressure on this patient were not corrected for capillarity. Glass tubing with a rather small bore was used and the readings may be as much as 4 cm too high.) Pulsus paradoxus was present. The heart and pericardium were larger than normal and a change in the contour was determined by fluoroscopic examination when the patient was changed from the erect to the reclining position. This indicated fluid in the pericardial cavity. The cardiac sounds were faint, there were no murmurs. The margin of the liver was four fingerbreadths below the costal margin. Tubercle bacilli could not be found in the sputum, the ascitic fluid or the intrapleural fluid when injected into a guinea pig. The electrocardiogram showed slurring of the QRS complex, notching of the P wave in lead I and inversion of the T wave in lead III.

He remained in the hospital continuously without showing any febrile response. The abdomen was tapped repeatedly. August 8 operation was carried out. An H-shaped incision was made over the precordium so that a bilateral exposure of the heart could be obtained. The third, fourth, fifth and sixth costal cartilages were removed on the left side. The parietal pericardium consisted of thick, tough scar tissue about 3 mm in thickness. The pericardial cavity contained 200 cc of bloody fluid. There were no intrapericardial adhesions. The heart, especially over the base, was covered by a layer of scar tissue measuring about 1 mm in thickness; this scar disappeared over the apex. The parietal pericardium was excised as widely as possible. The fluid was removed and an attempt was made to excise the epicardial scar. This was difficult to do because it required sharp dissection and repeatedly the dissection went into the myocardium. Four pieces were removed, each of which measured about 2 cm in each direction. The areas from which the scar had been removed were connected by linear incisions and the margin of the scar was undercut. After this was done the heart became larger and it was apparent that the restricting effect of the epicardial scar was reduced. The mechanism producing this clinical syndrome consisted of a thickened parietal pericardial scar that could not stretch, fluid in the pericardial cavity that pressed on the heart and venae cavae and an epicardial scar that compressed the heart and limited the diastolic excursion (fig. 2E). A drain was placed in the wound.

The circulation was definitely improved during and after operation. The cyanosis at times was completely absent. Arterial pressure was 100 mm of mercury systolic, 70 mm of mercury diastolic. The pulse pressure was increased. Pulsus

⁵ Delorme, Edmund. Sur un traitement chirurgical de la symphyse cardiopericardique. *Gaz. d. hop.* 71: 1150, 1898. Volhard and Schmieden. Ueber Erkennung und Behandlung der Umklammerung des Herzens durch schiefelige Perikarditis. *Klin. Wchnschr.* 2: 5 (Jan. 1) 1923. Schmieden. Ueber die Exstirpation des Herzbeutels. *Zentralbl. f. Chir.* 51: 46 (Jan. 12) 1924. Die Heilung der schrumpfenden Pericardial-Synechie durch Exstirpation des Herzbeutels. *Acta chir. scandinav.* 5: 268, 1924. Neue Ergebnisse bei der Exstirpation des Herzbeutels. *Arch. f. Klin. Chir.* 138: 552, 1925. Technique of Cardiotomy. *Surg. Gynec. & Obs.* 43: 89-93 (July) 1926. Schmieden. V. and Fischer. H. Die Herbeutelentzündung und ihre Folgezustände. *Fachr. d. Chir. u. Orthop.* 19: 98-216, 1926. Churchill. E. D. Devascularization of the Heart (Delorme). For Adhesive Pericarditis. *Arch. Surg.* 19: 1457 (Dec.) 1919. Beck. C. S. and Griswold. R. V. Pericardiectomy in the Treatment of the Pick Syndrome. Experimental and Clinical Observation. *Arch. Surg.* 21: 1064-1111 (Dec. part 2) 1910.

⁶ We are indebted to Miss Alice J. Mahly for the cardiac output determinations.

palpable 11 cm below the costal margin. The spleen was not felt. There was no edema of the lower extremities. Roentgenologic examination showed an enlargement of the cardiac outline typical of pericardial effusion (fig 5). The pulsations were practically absent. The lung fields showed shadows characteristic of pulmonary tuberculosis. There were also shadows due to calcification in the region of the cervical lymph glands. Electrocardiograms showed slight right axis deviation, low voltage and slurring of the QRS complex in all leads. The venous pressure was 25 cm of physiologic solution of sodium chloride. The vital capacity was 50 per cent of normal. Cardiac output studies showed an output of 151 liters per minute. This was a decrease of 49.5 per cent of normal. Before fluid was aspirated from the pericardial cavity the intrapericardial pressure was 21 cm of water, and following removal of 250 cc of serosanguineous fluid the pressure fell to zero. Guinea-pigs were inoculated with this fluid but no evidence of tuberculosis was found. Abdominal paracentesis was also performed. Fluid reaccumulated rapidly in both abdominal and pericardial cavities. Sputum examination revealed tubercle bacilli. The patient presented evidence of circulatory stasis due to pericardial effusion (fig 2C). The effusion was most probably of tuberculous origin, and operative intervention was contraindicated with the coexisting active pulmonary lesions.

CASE 8—An intelligent man, aged 28, a teacher, referred by Dr W J Leahy of Mannington, W Va, had had ascites for eight years. He had had no illness preceding the onset of these symptoms. The abdominal swelling started insidiously and three exploratory laparotomies were performed. Ascitic fluid was injected into guinea-pigs and no evidence of tuberculosis was found. Except for nine months in 1929 the patient had had abdominal paracentesis every three weeks, and it was estimated that 780 liters of fluid had been removed. There was some weakness and dyspnea, but the patient occasionally played baseball and was able to complete, with honors, the work required for a college degree. A roentgenogram taken a year before admission to the Lakeside Hospital showed calcified deposits in the pericardium.

He was emaciated and slightly cyanotic and had a prominent abdomen. He weighed 170 pounds (77.1 Kg). There was



Fig 5 (case 7)—Pericardial effusion. The patient had active pulmonary tuberculosis.

Slight pitting edema was present in the lower extremities. The vital capacity was 52 per cent of the estimated normal. The venous pressure was 27 cm of physiologic solution of sodium chloride. Cardiac output studies showed an output of 211 liters per minute. This was 50.4 per cent below normal.

Fluoroscopic examination of the heart showed the pulsations to be barely visible. The heart was entirely encased in a capsule of calcium (fig 6). There was fluid in the left pleural

cavity. Electrocardiograms showed slight right axis deviation with slurring of the QRS complex in all leads and very low voltage. The electrical axis was almost fixed.

Pericardiectomy was performed, July 31, 1933. The pericardium was calcified. The calcium deposits extended over both ventricles, anteriorly and posteriorly (fig 2A) and surrounded the pulmonary artery like a ring. The pericardium was dissected from the anterior and lateral aspects of the heart. The calcium band about the pulmonary artery was removed with a rongeur. Histologic examination revealed densely fibrous and hyalinized connective tissue with many areas of calcium deposit. The heart dilated following the removal of the adherent pericardium and the arterial pressure was 115 mm of mercury systolic and 78 mm of mercury diastolic when the patient left the operating room.

He responded extremely well to the operative procedure, and three weeks after the first operation the hydrocele was repaired under local anesthesia. Cyanosis disappeared. The pulse pressure was increased. The arterial pressure became normal. The venous pressure fell to 12 cm of physiologic solution of sodium chloride but several weeks later rose almost to the preoperative level. Marked diuresis took place and the patient was discharged from the hospital eight weeks after pericardiectomy.

A report that was sent by the patient, dated November 12, says: "I feel better than I have for years. It seems that I have more energy in the last few days than I ever have had. My heart seems to beat well and the pulse is much stronger. My weight is 158 pounds [71.7 Kg]." As recently as April 1, 1934, the patient stated: "I feel excellent and have much energy. My color is better than it has been for ten years. The strength of the pulse is very much improved."

CASE 9—A man, aged 24, referred by Dr Roy W Scott of Cleveland, with the diagnosis of pericardial scar, presented a typical picture of chronic intrapericardial pressure due to scar tissue compressing the heart. The etiology was obscure. Tuberculosis was suspected but was not proved. The patient had become a chronic invalid and accepted the possibility of cure by operation. The operation was carried out April 7, 1934. The heart was compressed by a thickened adherent pericardium. The pericardial scar was dissected from the heart and a wide resection was carried out. After the pericardial scar was incised and dissected free from the heart, the circulation was improved. The heart enlarged and the heart beat was more forceful. At the present moment four days after operation, the patient is in good condition and the circulation shows improvement.

SUMMARY

1 The various anatomic disorders of the pericardium have a common physiologic relationship. Lesions of the pericardium produce the syndrome of either acute intrapericardial pressure or chronic intrapericardial pressure. We recommend the use of this conception of pericardial disorders.

2 The surgical aspects of chronic intrapericardial pressure have been presented. Operation was carried out in six of the nine cases reported.



Fig 6 (case 8)—Calcification in pericardium.

AN IMPROVED TEST FOR OCCULT
BLOOD, ESPECIALLY IN
THE URINE

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Orthotolidine¹ was first proposed by E B Phelps² in 1909 as a qualitative test for minute amounts of free chlorine or hypochlorites in water. It is a crystalline basic body of the aromatic series obtained by reduction from orthotoluidine. It has a melting point of 129-130 centigrade and is quite insoluble in distilled water. It is quite soluble in acid solutions and in alcohol and ether. Rutten and Hardisty³ in 1912 described the use of orthotolidine as a test for the detection of blood. They used a 4 per cent solution in glacial acetic acid and added a small amount of perhydrol (Merck) as an oxidizing agent to obtain a blue color in the presence of blood. They stated that the solution would detect hemoglobin in a dilution of one part in 7,000,000 parts of water in a dilution of one part in 24,000 parts of urine, in a dilution of one part in 100,000 parts of fecal material, and of one part in 30,000 parts of stomach contents.

In the course of a search for a new hemoglobin color standard, we have found orthotolidine useful in the detection of minute quantities of blood in urinary sediments. It is safe to say that the average laboratory urine report made by technicians rarely mentions the presence of red cells unless the presence of blood is grossly evident. Red blood cells in the sediment are often crenated or disintegrated in urine specimens a few hours old and are confused with leukocytes. The formed elements including red cells, are frequently disintegrated in alkaline urine. The continued presence of red blood cells in urinary sediments has important clinical significance in that it may attract attention to glomerular inflammatory changes which are frequently overlooked in the absence of albuminuria or other gross evidences of disturbance. Such observations have especial significance in latent stages of chronic hemorrhagic Bright's disease (glomerulonephritis). We have found frequently that red cells were excreted more or less constantly in patients with evident foci of infection. Such observations have important clinical implications of glomerular inflammation. The presence of a few red cells, leukocytes or casts, in the absence of other symptoms may have little significance following unusual exercise or exertion.

Addis⁴ examined a series of healthy students and found, by counting the red cells in the urine that for twelve-hour night periods the number averaged 65,000 cells. The individual highest count obtained was 425,000 red cells for a twelve-hour period. This would mean for an average twelve-hour night excretion of about 400 cc of urine that the number of red cells varied approximately between 150 and 1,000 per cubic centimeter. The persistent excretion of 1,000 red cells per cubic centimeter of urine in our experience would

not be considered within the limits of normal variation and would point toward some source of chronic glomerular irritation. The important point is that such numbers are not recoverable easily by centrifugation, since disintegration or solution frequently has occurred.

Our experiments show apparently that from 50 to 80 per cent of red cells are recoverable. This point need not be considered as settled, since varying degrees of alkalinity and preservation of specimens, as well as the rate of centrifugation may influence the result. We have considered that 50 per cent of the cells were recoverable as being a useful average in clinical work. The following experiment will illustrate the point.

To 15 cc of normal, neutral or slightly acid urine, which had been filtered twice and which contained no microscopic evidence of blood, 75,000 red cells were added. The concentration then was 5,000 cells per cubic centimeter of urine. The 15 cc quantity was centrifuged at 1,500 revolutions per minute for five minutes. The amount of sediment obtained was about 0.1 cc or 100 cmm, from which a count was made of the red cells. The count showed that the sediment contained 400 red cells per cubic millimeter. This would be equal to 40,000 red cells in approximately 0.1 cc of sediment representing 15 cc of urine. In other words, about 40,000 cells were recovered of the 75,000 cells originally present. Approximately then 50 per cent plus were recoverable by centrifugation at 1,500 revolutions per minute for five minutes. This may be expressed in formula as follows:

$$\frac{\text{Number of red cells per cmm} \times \text{millimeters of sediment} \times 2}{\text{Number of cc of urine used}}$$

For example 15 cc of urine placed in a 15 cc graduated centrifuge tube yielded 0.1 cc of sediment with 400 red cells per cubic millimeter. The estimation would be as follows:

$$\frac{400 \times 100 \times 2}{15} \text{ or } 5,333 \text{ red cells per cubic centimeter of urine}$$

The labor entailed in counting the red cells in urinary sediments restricts its usefulness in clinical work. We have found the following procedure useful:

1 Orthotolidine 1 per cent in chemically pure methyl alcohol (It dissolves with slight difficulty and keeps at least ten months.)

2 Glacial acetic acid one part and commercial hydrogen peroxide two parts. (This keeps for three or four months, probably longer.)

3 Fifteen cc of urine is centrifuged at about 1,500 revolutions per minute for five minutes. The supernatant fluid is poured off. A portion of the sediment is prepared for microscopic examination in the usual way. To the remaining sediment two drops of the orthotolidine solution is added plus two or three drops of the acid-peroxide solution. In the presence of blood cells aggregating 100 per cubic millimeter of sediment (approximately 1,350 per cubic centimeter of urine) a greenish blue color develops lasting about one minute. In the presence of from 300 to 500 red cells per cubic millimeter of sediment (approximately 4,000 to 6,500 cells per cubic centimeter of urine) a deeper blue color develops lasting about one minute. In the presence of larger numbers of red cells, aggregating 1,000 per cubic millimeter of sediment (approximately 13,000 per cubic centimeter of urine) as in hemorrhagic Bright's disease (glomerulonephritis) a deep blue color develops lasting two minutes or longer.

Undiluted blood serum 10 per cent sodium hydroxide strong trisodium phosphate solutions and probably other strong alkalis will give positive reactions. Pus cells or any of the common organic or inorganic constituents found in the urine do not give positive reactions.

5 In two recently observed cases of chronic cyanosis not of pulmonary or cardiac origin and without the presence of blood cells or hemoglobin in the urine delayed atypical reactions occurred. In both of these patients the urine gave a greenish color with orthotolidine and the acid peroxide mixture which developed slowly and did not fade for several hours. The significance of the reaction in chronic cyanosis is being studied further.

¹ Orthotolidine can be obtained from the Ketchikan Laboratory, Eastman Kodak Company, Rochester, N. Y. in quantities of 25 Gm at a cost of 75 cents.

² Phelps, E. B. quoted by Thierault, E. J. The Orthotolidine Reagent for Free Chlorine in Water. *J. Hyg. Health Rep.* 42: 668 (Jan. 22) 1922.

³ Rutten, R. F. and Hardisty, R. H. M. *Canad. M. A. J.* 2: 99 1912.

⁴ Addis, Thomas and Oliver, Jean. The Renal Lesion in Bright's Disease. New York: Paul B. Hoeber, Inc. 1931.

CONCLUSIONS

1 A 1 per cent solution of orthotolidine in chemically pure methyl alcohol and a mixture of one part of glacial acetic acid and two parts of commercial hydrogen peroxide are useful for an approximate quantitative determination of the number of red blood cells in the urine. These solutions are cheap and stable.

2 In a relatively large series of examinations of specimens of urine examined within six hours after voiding, no positive reaction has been obtained except when microscopic blood was present.

3 Specimens of urine containing as high as 5,000 red cells per cubic centimeter will in most instances be undetected by the usual microscopic examinations, since such numbers may represent only one or two cells per high power field.

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AMEBIC ABSCESS OF THE LIVER

REPORT OF CASES WITHOUT PREVIOUS MANIFESTATIONS OF AMEBIASIS

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DETROIT

The recent outbreak of amebic dysentery and the spread of infested persons throughout the country has awakened a lively interest in the disease and its sequelae. Diarrheas of every type are now viewed with suspicion. Many laboratories have been called on to do routine cultures of feces for amebas. It is of importance that attention be given to every person who has sojourned in known infested areas or has been exposed to possible carriers, even if that individual has not manifested any evidence of intestinal disturbance. Latent infections are well recognized by the profession and their danger to the host as well as the community is self-evident. Craig¹ has pointed out that diarrhea may never occur during the course of the infection. Rogers² in several articles emphasized this fact.

For the past few months, sequelae of amebic dysentery of serious types and definite importance have been developing among individuals who are widely scattered throughout the country. These patients, while carrying a latent infection, have been insidiously developing secondary complications, chief among which is abscess of the liver. This condition is a common complication of recognized amebic dysentery. It is generally accepted that it follows in about 20 per cent of cases, yet it is rarely known to appear without the previous knowledge of a recognized focus or without preexisting intestinal symptoms. The time of appearance of the hepatic abscess after the primary infestation of the patient with amebas varies widely. In acute amebiasis, areas of toxic necrosis of the liver parenchyma are frequently encountered at autopsy, and definite abscess formation has been reported as early as three weeks after the onset of the disease. On the other hand, liver abscess in chronic amebic dysentery may not appear for years. Merklen, Waltz, Albot and Kabaker³ recently discussed a case of chronic amebiasis in which recurrent

attacks of hepatitis with icterus occurred over a period of eleven years and at operation a chronic thick-walled abscess was evacuated.

During the past six months there has been a marked increase in the incidence of abscess of the liver in Harper Hospital. Eight cases have been diagnosed and operation performed at this writing since Oct 1, 1933. In the preceding five years only seventeen cases were recorded.

For comparison, attention is directed to a recent article by Gesner,⁴ who analyzed 100 cases of liver abscess that came under observation in the New Orleans Charity Hospital from 1916 to 1932. Of these, fifty-seven were amebic abscesses, a finding that might be expected in that region. On the other hand, Collins,⁵ in reviewing 18,300 autopsies in Minneapolis, reported only eleven cases in which liver abscess was the cause of death and stated that appendicitis and perihepatic inflammatory conditions were found to be the precursors of the abscesses.

Of the eight cases that have been studied, four were proved to be of amebic origin, two were characteristic of amebic liver abscess though the parasite was not found, and two were definitely not of amebic origin. Of the four proved cases, three failed to present any history of previous gastro-intestinal symptoms. Though each of these three cases could be traced to a definite source of contagion, it was impossible to elicit from the patient any history of symptoms of diarrhea, watery or bloody defecations, cramps or tenesmus. It seems of importance, therefore, that record be made of these three cases, which, following an indefinite latent period, have suddenly presented the symptoms and signs of liver abscess.

REPORT OF CASES

CASE 1.—F. P., a man, aged 45, white, a librarian, complained of a feeling of fatigue and lassitude, Feb 2, 1934. His appetite became poor and pain developed in the upper right quadrant. This was described as a feeling of soreness, extending over the margin of the ribs and radiating to his right shoulder. Turning from side to side aggravated the pain. February 3 he had a chill lasting fifteen minutes, the temperature rising to 101 F. The following day he had two chills of shorter duration. The malaise increased and the distress became localized in the region of the ninth and tenth ribs on the right side. There was no nausea nor vomiting, nor were there any intestinal complaints. He was not jaundiced. On physical examination the abdomen was moderately distended, the margin of the liver extended two finger breadths below the costal margin, the lung liver dullness was in the fourth interspace. Sharp direct percussion over the ribs elicited severe pain. The right thorax was somewhat hyperresonant. No rales were heard. The cardiovascular system was normal. The spleen was not palpable. The icteric index was 12. The van den Bergh test was slightly positive in the direct and positive in the indirect. The Wassermann reaction was negative. A flat plate revealed an enlarged liver with slight bulging of the convexity of the right leaf of the diaphragm. The costophrenic sinus was clear. The stools were negative for amebas and cysts. The blood count was: hemoglobin 85 per cent, red blood cells 4,480,000, white blood cells 23,500, polymorphonuclears 85 per cent, of which 68 per cent were unsegmented and 17 per cent segmented. The urine was normal. Operation was performed by Dr. Brooks, who made a gallbladder incision and on examining the colon found marked cecal inflammation. The appendix was very long, edematous and red. The gallbladder showed moderate distention, no stones were palpated and there were no adhesions. The stomach, duodenum and remainder of the colon were apparently normal. The spleen was slightly

From the Department of Internal Medicine, Harper Hospital.
1 Craig C. F. Parasitic Amoeba in Man. Philadelphia J. B. Lippincott Company 1911 p. 263. Am. J. Trop. Med. 11: 469-503, 1931.
2 Rogers L. Tropical Liver Hepatitis and Abscess. Practitioner 131: 117-133 (Aug.) 1933.
3 Merklen P., Waltz R., Albot G. and Kabaker J. Amebic Hepatitis. Bull. et mem. Soc. med. d. hop. de Paris 48: 1409-1413 (Nov. 14) 1932.

4 Gesner H. B. Abscess of the Liver. Am. J. Surg. 20: 683-689 (June) 1933.
5 Collins A. N. Liver Abscess. Minn. otol. Med. 15: 756-762 (Nov.) 1932.

enlarged, very firm, and surrounded by adhesions. The liver was about twice the normal size. The right lobe extended 3 inches below the umbilicus. In the right lobe well up toward the diaphragm, about 2 inches from the superior border, a softened area was found covered with thin exudate. Definite liver abscess was palpated. The appendix was removed. An aspirating needle was placed in the abscessed area and 15 cc of thick, greenish red pus was removed. A stab drain was inserted just below the lower border of the last rib for drainage of the abscess. The cavity was opened and about 1 quart of pus escaped. The pus was immediately examined but no amebas were found. Culture revealed *Staphylococcus aureus*. Cultures did not reveal amebas. Pathologic examination of the appendix revealed active chronic inflammation of the appendiceal mucosa with many plasma cells and eosinophils. Amebas were found in the lumen and wall of the appendix.

Convalescence has been uneventful. Subsequently amebas were found in the stool.

CASE 2—M. C., a woman, aged 19 years, white, a student, experienced a sudden, severe pain in the upper abdomen localized in the epigastrium, Feb. 18, 1934. It was relieved by lying still but aggravated by movement. There was no nausea or vomiting. The pain subsided somewhat during the night so that on the following day she attended school but she was forced to return home at noon to rest. During the next four days the pain remained stationary and she was about in her room. She did not consult a physician. February 28, the pain became more severe, radiating along the margin of the ribs on each side. The bowel movements were normal, formed, and occurred twice daily. The patient was admitted to the Harper Hospital, March 2, acutely ill. The temperature was 103, the pulse 120. At the time of examination she was lying on her right side suffering intensely from pain when she attempted to lie in a dorsal position. A well defined mass was felt high in the epigastrium, apparently connected with the liver. It was sharply circumscribed and exquisitely tender. The remainder of the abdomen was soft and pliable. The spleen was not felt. The lung liver dullness was not elevated. The lung fields and cardiovascular system were normal. Blood count revealed hemoglobin 77 per cent, red blood cells, 4,020,000, white blood cells 27,400, polymorphonuclears, 88 per cent, of which the segmented were 61 per cent and the non-segmented 27 per cent. The Wassermann reaction was negative. The icteric index was 4. The van den Bergh test was negative in direct and indirect. The urine was normal. A few fecal masses obtained with a colon tube were negative for amebas and for cysts.

Dr. MacAlpine made a midline incision from the ensiform cartilage to the umbilicus. The omentum was adherent to the anterior abdominal wall, just below the liver margin. When the adhesions were freed the right lobe of the liver was exposed, enormously engorged, dark red and somewhat mottled. A fluctuating area appeared 3 cm. above the inferior border, 200 cc of reddish lumpy, thick, purulent material was evacuated.

Previous examination of the colon revealed no thickening, redness or edema. Drainage of the abscess was all that was attempted, because of the patient's condition. No amebas were found in the pus. Culture was negative. The patient convalesced rapidly. Following saline catharsis, March 14, motile amebas were found in the stool.

CASE 3—A. A., a white man, an accountant, admitted to Harper Hospital, Oct. 14, 1933, suffered a sense of dull pain and discomfort in the upper right part of the abdomen while playing golf, September 27. He had a slight chill while taking a shower but later ate his dinner and was up and about all the evening though he felt miserable. At 4 a.m. September 28, he was awakened with a sharp cramplike pain in the upper right quadrant which was relieved by an opiate. There was no nausea nor vomiting. There had been no increase of bowel movements or other abdominal distress. On that day his temperature reached 102. The pulse was 100. The pain continued off and on and was localized chiefly over the area of the lower ribs. Breathing aggravated the pain. Fixation of the right thorax with adhesive straps relieved the pain. The temperature slowly subsided and the soreness in the region gradually diminished. He was able to be about and finally on

the twelfth day his family physician, thinking that the condition might be due to a cholecystitis, sent him for a gallbladder dye roentgenogram. Following this exertion and the taking of the dye, his symptoms suddenly became aggravated and his temperature rose to 101. He had no colicky pain but the distress was more constant and prevented him from lying on either side. The pain shifted more to the axillary line and was higher than it had previously been. At this time he entered Harper Hospital. On examination there was evidence of a slight bulging in the liver region and marked tenderness over the costal margin. Through a rather thick abdomen could be felt an indefinable mass suggesting either an enlarged liver or an empyema of the gallbladder. There were no jaundice and no clay colored stools. A flat plate of the abdomen revealed a uniformly enlarged liver. The hemoglobin was 84 per cent, red blood cells 4,100,000, white blood cells 17,800 and polymorphonuclears 88 per cent of which 32 per cent were non-segmented and 56 per cent segmented. The Wassermann reaction was negative. The stools were negative for amebas and cysts. The urine was normal.

Operation was performed by Dr. Ballin, who made a median laparotomy incision from the xiphoid process down. The gallbladder was thin walled, grayish blue and without stones. The appendix was edematous, it was not removed. The colon was thickened and edematous, such as is seen in mild colitis. There was no abscess formation and the colon did not resemble a dysenteric colon. Adhesions covered the surface of the liver, which, when separated, showed a thin wall covering a large abscess in the convexity of the liver. Reddish pus without odor was drained from a cavity about 5 cm. deep and admitting three fingers. A portion of the necrotic wall was removed. The pus did not show any amebas. A portion of the necrotic wall of the abscess was removed for pathologic examination, which revealed necrotic liver tissue, containing occasional amebas.

The patient made an uneventful convalescence.

COMMENT

The symptoms of liver abscess as exemplified in these three cases consist chiefly of sudden pain in the upper part of the abdomen and over the costal area adjacent to the liver. It may radiate upward and to the shoulder or along the costal margin. It is aggravated by body movement, especially when the patient attempts to turn from side to side. Breathing increases the pain. Nausea and vomiting are characteristically absent. Chills may occur, though they are not uniformly complained of or regular in their occurrence. A moderate degree of fever is present usually of the continuous type. The pulse is rapid and soft. The leukocyte count is uniformly high. Schlaver⁶ and Fletcher⁷ have pointed out that hyperleukocytosis is usually present. (The former considers it a valuable diagnostic sign. In eleven cases he reported an average of 25,000 before operation was performed.) Jaundice may or may not be present, if so, it is slight. Sharp percussion over the ribs may elicit acute pain. Bulging of the upper right side or a tumor mass may be visible and palpable. An x-ray film may reveal an enlarged liver and suggest the abscess.

These three patients give a definite history of having eaten in an infected area in September and October of 1933. In the first two cases the day of infection must have occurred in the first week of October. It is especially noteworthy that they suffered no intestinal symptoms whatever and manifested no signs or symptoms of liver abscess until February, an interval of at least four months following the date of exposure to the contagion.

6 Schlaver, G. Hyperleukocytosis in Amebic Liver Abscess. *Minnesota Med. Wechschr.* 1903.
7 Fletcher, T. B. Study of Cases of Amebic Dysentery Occurring in Johns Hopkins Hospital. *J. A. M. A.* 11: 480-489 (Aug. 22) 1903.

The third patient might have become infected in July, August or September. As the date of onset was in September, the interval between the invasion and the beginning of his symptoms was of shorter duration. In each case the organism lay dormant in the intestine, exciting nothing more than a mild inflammatory reaction insufficient to produce symptoms. The invasion of the liver, as MacCallum⁸ has pointed out, probably took place through the portal vein. The abscesses were thin walled in each instance. No multiple abscesses were found.

SUMMARY

Attention is directed to the recent increased incidence of liver abscess. It is especially noteworthy that amebic abscesses may occur in individuals who have manifested no previous signs or symptoms of intestinal disturbances. It is deserving of emphasis at this time that this important sequel of amebic dysentery may appear months and even years after the original contact with the source of the infection, that immediate operation is important, and that preventive treatment should be rigidly carried out in cases of latent amebiasis.

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TEMPORARY PHRENIC NERVE PARALYSIS

ITS ADVANTAGES OVER PERMANENT PARALYSIS IN THE TREATMENT OF PHTHISIS

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Surgical paralysis of the phrenic nerve has become so deservedly popular in the treatment of pulmonary tuberculosis that several thousands of such operations are now being performed in this country each year. Few physicians are aware that the function of the phrenic nerve may be stopped temporarily, for approximately six months, instead of permanently. During this time the clinical effect of the diaphragmatic paralysis may be tested and, if it is found to be unsatisfactory, the patient will again have the use of his diaphragm. If satisfactory, the paralysis may if necessary be made permanent or again be made temporary. Lack of this knowledge has caused widespread use of evulsion of the phrenic nerve or so-called phrenic exeresis or phrenicectomy, which produces an irrevocable paralysis of the diaphragm that has been shown by experience to be decidedly harmful to many patients.

The clinical results from phrenic paralysis are notoriously unpredictable. In some cases expected success is not realized, while in others healing of the lesions occurs when only improvement had been anticipated. Even when the disease is strictly confined to one lung, it is obviously undesirable that the patient should have a permanent paralysis of the diaphragm if this does not bring about the desired clinical effect. The importance of this is particularly evident in those many patients for whom a localized thoracoplasty of the upper ribs or an extrapleural pneumonolysis operation should later be used for cavernous lesions that the phrenic operation has failed to control.

When active tuberculous lesions are present in both lungs, the disadvantages of causing a permanent phrenic

paralysis are still more apparent. If this operation brings about healing in one lung and if the disease in the opposite lung progresses and later requires a phrenic paralysis, pneumothorax, extrapleural pneumonolysis or thoracoplasty, the expected reduction in vital capacity from the combination of the bilateral operations and bilateral pulmonary infiltration and fibrosis may be so great that the indicated operation for the opposite lung cannot be performed. I have seen many tragic instances in which a permanent phrenic paralysis has prevented the performance of a life-saving operation for lesions in the opposite lung which, at the time that the phrenic operation had been performed months or years before, had a relatively innocent appearance. This is especially true of young persons.

In bilateral lesions, a unilateral temporary rather than a permanent paralysis safeguards the patient's future and affords the physician wide latitude in the choice of future treatment. Bilateral apical thoracoplasty or extrapleural pneumonolysis in the presence of a single permanent phrenic paralysis might not leave sufficient reserve respiratory function to be safe. If a staged bilateral phrenic paralysis should be indicated and if the patient's vital capacity after the first operation should permit the second, the paralysis should be a temporary one on both sides, when diaphragmatic motion returns, a permanent paralysis might be performed on the side of the more advanced lesions if they have been satisfactorily influenced. For patients who require a bilateral phrenic paralysis for intractable hiccup, the temporary effect is obviously desirable, a number of cases have been reported in which both halves of the diaphragm have been permanently paralyzed.

A complicated but not rare condition, involving the use of phrenic paralysis and pneumothorax in bilateral tuberculosis, is importantly affected by the type of phrenic paralysis used. When bilateral lesions are sufficiently severe to require the use of bilateral collapse therapy measures, a permanent phrenic paralysis is sometimes wrongly first used on one side (e. g., the right) and a pneumothorax planned for the left side. If pleural adhesions should prevent the induction of the pneumothorax on the left and if the phrenic paralysis fails to control the lesions on the right, a left phrenic paralysis and a right pneumothorax would be indicated. If the right pneumothorax should need to be a large one, it might happen that this, together with extensive bilateral pulmonary infiltration and fibrosis and a coincident bilateral phrenic paralysis, would too greatly reduce the patient's vital capacity to be practicable. Had the right phrenic paralysis been a temporary one the desired plan of treatment could have been followed with relative safety after diaphragmatic movement had returned. The procedure that has just been outlined needs to be followed only if the patient should, mistakenly, have had a phrenic paralysis as the first collapse therapy measure. A far preferable plan in cases of bilateral severe lesions is first to attempt to produce a pneumothorax on the side of the more extensive lesions or the larger cavity and, if successful, use a temporary phrenic paralysis on the opposite side. If a pneumothorax cannot be induced, the phrenic paralysis should be used on this side and a pneumothorax attempted on the opposite side.

The examples that have been cited to illustrate the potential disadvantages of permanent phrenic paralysis are given with full realization of the fact that there are many patients with abundant respiratory reserve

⁸ MacCallum, W. G. Text Book of Pathology. Philadelphia: W. B. Saunders Company, 1924, p. 773.
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who do well under the various conditions that have been cited, in spite of a permanent phrenic paralysis. Not every primary phrenic operation should be a temporary one. If there are many lesions throughout only one lung and an attempted pneumothorax has failed, a permanent phrenic interruption is indicated, perhaps preliminary to a thoracoplasty. Another important indication for permanent phrenic paralysis is when a pneumothorax is being abandoned over a lung whose function has been largely destroyed by tuberculosis and fibrosis.

The availability of temporary phrenic nerve interruption has greatly extended the usefulness of diaphragmatic paralysis. Both patients and physicians are willing to undertake this revocable operation as a test of its effectiveness for lesions in which the chance of arrest is only reasonably good and in which they would hesitate to accept a permanent paralysis. Furthermore, it greatly extends the range of bilateral collapse therapy. Although 20 per cent or more of patients having had the temporary operation need to have a second operation to make the paralysis permanent or perhaps to repeat the temporary paralysis, this is a small inconvenience when compared with the disadvantages and dangers of a primary permanent paralysis, whose effect has not been tested for the particular patient. The percentage of primary temporary phrenic nerve operations has steadily increased in my clinic during the past five years and at present approximately 90 per cent of the initial operations are temporary.

In brief, the temporary operation should be used whenever there is reasonable doubt as to the result and especially when further unilateral or bilateral collapse therapy measures may be needed that might unduly reduce the vital capacity if the diaphragmatic paralysis remained permanent.

The chief objection that has been offered against the temporary operation is that the period of paralysis is highly variable and that usually it is too short to have the desired effect on the lesions. It is true that the duration of paralysis is uncertain when only the main trunk is dealt with and the accessory phrenic roots are neglected. When the complete operation is done, a paralysis of approximately six months' duration results, in rare instances the paralysis is permanent. The objection that temporary paralysis is insufficient in duration to control the lesions is not sound in that a second operation may readily be used to paralyze the diaphragm permanently or temporarily, according to the effect of the initial operation.

The operation of temporary interruption of the phrenic nerve is but little more difficult than phrenic eversion. The main phrenic trunk (sometimes double or triple) is thoroughly crushed with a hemostat in only one place, if the length of crushed nerve should be the width of several hemostats, the phrenic nerve axons might be unable to penetrate so broad a defect in the nerve. In the great majority of patients one two or, rarely more small nerves will be found emerging from the anterior or mesial surface of the fifth cervical root of the brachial plexus at or above the level of the upper border of the clavicle and passing inferiorly and slightly mesially on the anterior surface of the scalenus anticus muscle. These nerves are accessory roots of the phrenic nerve although one may be the nerve to the subclavius muscle which often contains an accessory phrenic root. The accessory phrenic root or roots join the main phrenic stem in the superior mediastinum and if they are not crushed or resected they have a strong tendency

gradually to assume sufficient independent function to motivate the diaphragm, even though the function of the main phrenic stem has been completely blocked.

It is preferable to resect small accessory phrenic roots for a distance of approximately 2 cm rather than to crush them. They are too small to be needed for full resumption of diaphragmatic movement after the main phrenic nerve has regenerated. If they were merely crushed, it would be necessary to find them again if a second temporary operation were needed, and this would be difficult because of the presence of scar tissue that had formed in the field of the first operation (the large main phrenic trunk usually is not difficult to find).

If the second operation is performed to produce a permanent phrenic paralysis resection of 3 cm of the main phrenic trunk is all that is needed if the accessory roots were resected at the original operation. If the accessories had been crushed at the original operation their function would be destroyed if not less than 10 or 12 cm of the main trunk was evulsed, but evulsion or phrenic eversion is a painful operation and reported cases of fatal mediastinal hemorrhage, mediastinal emphysema and torn pleura should serve as a warning against it.

Dr John B. Barnwell of the Department of Medicine of the University of Michigan Hospital presented before the 1932 annual meeting of the American Association for Thoracic Surgery a number of the objections to permanent phrenic paralysis that have been considered in this article. He will later publish a detailed study of the subject. The present article is intended only as a preliminary presentation.

MALARIAL THERAPY IN SYPHILITIC INTERSTITIAL KERATITIS

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Interstitial keratitis, which is a fairly common manifestation of hereditary syphilis, presents a major therapeutic problem to both the ophthalmologist and the syphilologist. That the usual antisypilitic treatment is inadequate is well known. Fisher,¹ in discussing the value of recent methods of treatment in the late stages of ocular syphilis, states that there is no evidence to show that treatment by either the older or the newer methods of antisypilitic therapy is capable of arresting or even of modifying the progress of the disorder. Others, including Stokes,² Carvill and Derby³ and Downing,⁴ maintain that arsphenamine reduces the time required for a cure and tends to prevent recurrences. More recently, bismuth preparations, particularly the soluble salts, have been shown to possess a distinct advantage over mercurial therapy. Wright and Perl-

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¹ Fisher, J. H. Discussion on the Value of Recent Methods of Treatment in the Late Stages of Ocular Syphilis. *Proc. Roy. Soc. Med.* 20: 954 (Sect. of Ophthalm. and Sect. of Neurol.) (April) 1927.

² Stokes, J. H. *Modern Clinical Syphilology*. Philadelphia: W. B. Saunders Company, 1926, p. 1064.

³ Carvill, W. and Derby, G. S. *Interstitial Keratitis*. Boston: W. & S. J. 193, 403 (Aug. 27) 1925.

⁴ Downing, J. A. *Interstitial Keratitis: Treatment, Results and Case Reports*. J. Iowa M. Soc. 15: 60 (Feb.) 1925.

man⁵ believe that the best treatment for interstitial keratitis consists in the conjoint use of neoarsphenamine and bismuth compounds. James⁶ recently reported six cases of interstitial keratitis successfully treated by a comparatively new preparation known as Stovarsol, (acetarsone N N R), but his results showed no great advantage over the better known methods.

From our own experience, it is believed that the therapeutic armamentarium against interstitial keratitis has been greatly increased by the aid of foreign protein therapy, especially intramuscular injections of milk or intravenous injections of typhoid vaccine. These observations concur with the opinions of Marchesani,⁷ Huber,⁸ Cowley⁹ and others.

Granting that the newer forms of antisyphilitic therapy possess an advantage over the older methods, especially if augmented by nonspecific protein therapy, there are still many cases of interstitial keratitis that respond very slowly.

During the last six years, seventeen patients with syphilitic interstitial keratitis have been treated by malarial inoculation at the Lakeside Hospital and the Cleveland City Hospitals. These have shown such uniformly excellent results that a report of the cases is considered justified.

The literature on the subject is meager. Although several foreign workers have reported excellent results by the method, there is apparently only one report relative to the subject appearing in the American literature. Dennie, Gilkey and Pakula¹⁰ in 1931 reported four cases of syphilitic interstitial keratitis treated by malaria, with rapid and excellent improvement in all four cases. They state that the improvement secured in from ten to twelve weeks was equal to the improvement secured in from six to nine months by other methods of treatment.

Schreiber,¹¹ one of the first to use malaria in the treatment of interstitial keratitis, in 1928 reported twenty-three cases treated by this method. He expressed the belief, after observing this series, that the course of the disease is greatly shortened and the iris more readily dilated but that the ground glass cornea is not changed. Marchesani⁷ successfully employed malaria in the treatment of interstitial keratitis. However, owing to the danger associated with the treatment, he later substituted typhoid vaccine. Other foreign authors who noted favorable experiences with the use of malaria in interstitial keratitis include Albrich,¹² Granstrom¹³ and Meller.¹⁴ All reports reviewed have been highly encouraging with the possible exception of one by Kufs,¹⁵ who saw a case of parenchymatous keratitis develop seven years after malaria therapy had been administered to a child with juvenile dementia paralytica.

⁵ Wright and Periman quoted by Cowley.⁹

⁶ James W. M. Stovarsol in the Treatment of Ocular Syphilis. *J. Missouri M. A.* 30:33 (Jan.) 1933.

⁷ Marchesani O. Beitrag zur unspezifischen oder Fiebertherapie der Keratitis parenchymatosa. *Arch. f. Augenh.* 99:207 (May) 1928.

⁸ Huber R. Klin. Monatsbl. f. Augenh. 75:252 1925 cited by Clapp C. A. Interstitial Keratitis. *Arch. Ophth.* 2:580 (Nov.) 1929.

⁹ Cowley R. H. Some Observations on the Treatment of Interstitial Keratitis. *Kentucky M. J.* 30:423 (Aug.) 1932.

¹⁰ Dennie C. C., Gilkey H. M. and Pakula S. E. The Antisyphilitic Action of the Malarial Parasite in Other Than Central Nervous System Syphilis. *Am. J. Syph.* 15:320 (July) 1931.

¹¹ Schreiber Z. *Ztschr. f. Augenh.* 66:316 1928 cited by Clapp.

¹² Albrich K. Ueber den Einfluss von Infektionskrankheiten auf Augenleiden. *Klin. Monatsbl. f. Augenh.* 81:61 (July 27) 1928.

¹³ Granstrom K. O. Malariabehandlung vid Keratitis Parenchymatosa. *Hygica* 92:830 (Nov. 15) 1930.

¹⁴ Meller J. Welchen Wert hat die Malaria-therapie beiluetischen Augenerkrankungen? *Aerzt. Praxis* 5:173 (June 15) 1931.

¹⁵ Kufs H. Keratitis parenchymatosa sieben Jahre nach der Malaria-behandlung einer juvenilen Paralyse. *Arch. f. Psychiat.* 93:552 1931.

TECHNIC EMPLOYED

Before malarial inoculation each patient is given a complete physical examination, and routine laboratory procedures are performed, namely, complete blood examination, blood Wassermann test, urinalysis and spinal fluid examination. As a rule, malarial therapy is not used in children under 11 years of age, because at this age the milder forms of fever therapy, such as typhoid vaccine, are usually quite successful. In our experience, young children tolerate malarial therapy poorly.

If no contraindication is found, from 5 to 10 cc of blood withdrawn from a patient undergoing malaria at the time is injected immediately into the vein of the recipient. With the onset of fever the blood pressure is taken twice daily, and blood counts are performed twice a week. Arbitrarily, the patient's condition is considered serious if the systolic pressure remains below 90 between the paroxysms or if the red blood count falls below 2,000,000, or a sudden marked increase in the number of malarial parasites is found in the blood smears. In uncomplicated cases from eight to ten chills are given. In patients showing a poor tolerance to malarial inoculation, due to daily paroxysms or other complications, a small dose of quinine sulphate (from 3 to 5 grains, or 0.2 to 0.3 Gm.) often will stop the chills temporarily, affording a rest of a few days, thus permitting the course to be completed. The malaria is terminated by administering quinine sulphate (10 grains, or 0.6 Gm., three times a day for from five to seven days).

All patients are given a high caloric diet, and fluids are forced. Local therapy, consisting of 1 per cent atropine, boric acid flushes and warm compresses to the eyes, is used throughout hospitalization.

REPORT OF CASES

CASE 1—J. D. L., a Negroess aged 11 years, admitted to the hospital May 28, 1926, complained of a severe bilateral interstitial keratitis of five weeks' duration. Both eyes showed a marked cloudiness of the cornea, circumcorneal injection, photophobia and lacrimation. Only light perception was present in the right eye. The blood Wassermann reaction was four plus. During the first three weeks of hospitalization, the patient received five intravenous injections, each of 0.1 Gm. of arsphenamine, eight mercury rubs and three injections of typhoid vaccine, without any apparent improvement. She was then inoculated with malaria and had fourteen chills. The acute symptoms rapidly subsided and when she was discharged from the hospital her eyes were remarkably improved. Follow up was unsuccessful and she was not seen again.

CASE 2—N. B. A., a white girl, aged 14 years, was admitted to the hospital July 28, 1926, with a diagnosis of congenital syphilis, juvenile dementia paralytica and interstitial keratitis. The eye trouble had begun one year before admission but had become much worse during the preceding two months. The child was poorly developed both physically and mentally. Both eyes showed marked photophobia. She had Hutchinson's teeth and rhagades about the mouth. The blood and spinal fluid Wassermann reactions were both four plus. The spinal fluid showed a trace of globulin and a cell count of thirteen. Inoculated with malaria on the day of admission, she was permitted to have eight chills. The eyes cleared remarkably after the fifth and sixth chills and continued to improve until they were apparently normal two months later. She was treated irregularly in the dispensary until Nov. 3, 1931, with no recurrences. The blood Wassermann reaction had become negative approximately two years after therapy was started. Permission for a repetition of the spinal fluid examination was refused.

CASE 3—L. H. A., a white woman aged 24, seen in the outpatient department in November 1923, had interstitial keratitis.

of the left eye. Arsphenamine and mercury were administered and she showed gradual improvement over a period of six months. In spite of continued antisyphilitic therapy the right eye became involved two years later. Treatment was continued without improvement for another year and on Nov. 26, 1926, three years after the onset of her illness, she entered the hospital for malarial therapy. There was extreme photophobia and lacrimation of the right eye. The left eye showed slight haziness of the cornea, otherwise it was normal. The teeth were Hutchinsonian in type. The blood Wassermann reaction was four plus. The spinal fluid was negative in all respects. The patient was inoculated with malaria and permitted to have nine paroxysms. Local therapy was not administered. After the fourth malarial chill there was a decided improvement in the appearance of the involved eye. Pain, photophobia and lacrimation completely disappeared. At the end of the malarial course the patient could distinguish objects with the affected eye, whereas before only light perception was present. The patient continued antisyphilitic therapy in the dispensary. Six weeks later, almost full vision had been restored. The blood Wassermann reaction became negative six months later. There had been no recurrence when last observed, May 26, 1932. Both corneas were perfectly clear and the Wassermann and Kline reactions on the blood were negative.

CASE 4—A S. A., a white girl, aged 7 years, entered the hospital, March 26, 1927, with interstitial keratitis of two months' duration. Examination showed diffuse cloudiness of both corneas and severe photophobia. No other clinical evidence of congenital syphilis was present. The blood Wassermann reaction was four plus. The spinal fluid was normal. The patient was inoculated with malaria and had three chills. During the third chill she became delirious and the temperature rose to 41.6 C (106.9 F). Because of her alarming condition, quinine and urea hydrochloride was given intramuscularly to terminate the malaria. In spite of her having had only three paroxysms, the eyes improved rapidly and she was discharged from the hospital two weeks later with both eyes apparently normal except for a slight haziness of the corneas. She was followed at regular intervals in the dispensary and received a total of fifty-one injections of arsphenamine, forty-two of a mercury compound and thirty-six of a bismuth compound, the last treatment being given Jan. 9, 1932. The Wassermann reaction became negative one year after the malarial therapy. When last seen July 12, there had been no recurrences, the vision was normal, and examination of the eyes showed no abnormality, except a small scar scarcely visible on the upper portion of the left cornea.

CASE 5—J. B. A., a white man, aged 20, was admitted to the hospital May 16, 1927. Three months prior to admission the left eye became red and painful. The pain had gradually become worse and was accompanied by loss of vision of the affected eye. Examination showed a fine cloudiness over the whole of the left cornea and a dense infiltration of the upper segment. The right eye was clear except for a mild conjunctivitis. The Wassermann reaction was four plus. He was inoculated with malaria and after the sixth chill it was terminated because of the extremely low blood pressure that developed. The eye improved rapidly and when the patient was discharged from the hospital, June 22, the photophobia and pain had disappeared and the vision was improved. The patient had never received any treatment previously nor has he received any treatment since the malarial inoculation. He was not seen again until almost five years afterward (Jan. 3, 1933), at which time no residue of keratitis could be seen and he stated that he had had no subsequent attacks in either eye.

CASE 6—E. P., a white man, aged 21, had been treated three months with arsphenamine and mercury for interstitial keratitis, during which time his symptoms had increased. His eye trouble had begun about one year before. Examination showed Hutchinsonian teeth and marked rhagades. The keratitis was so severe that he was able only to distinguish light from darkness. There were diffuse bilateral corneal opacities and ciliary injection. The blood Wassermann reaction was four plus. The spinal fluid was normal. Malarial therapy was instituted July 8, 1927, and a remarkable improvement was noted after the fourth chill. He was permitted to have four more chills after which he stated that he could see better than at any time

during the previous year. Two months after malarial therapy he had a mild flare up of interstitial keratitis, which subsided after two injections of sterile milk. He then received more or less regular antisyphilitic treatment until July 10, 1930, without further recurrences. When last seen, Jan. 3, 1933, the blood Wassermann reaction was negative and the eyes were normal.

CASE 7—F. S., a white girl, aged 14, admitted to the hospital, Oct. 3, 1927, complained of painful eyes and reduced vision. The right eye had become involved eight months before, the left eye became similarly involved only one month before. Examination showed right eye a nebulous opacity of the cornea, circumcorneal injection, marked conjunctivitis, and only light perception, left eye diffuse haziness over the cornea, moderate circumcorneal injection, and only light perception. She had Hutchinsonian teeth and a high (Gothic arch) palate. The blood Wassermann reaction was four plus. Without having any preliminary antisyphilitic therapy, she was inoculated with malaria and had seven severe paroxysms. The eyes made rapid improvement and she was discharged from the hospital, November 18, with but slight evidence of keratitis. Antisyphilitic therapy was then administered at weekly intervals for four years and the eyes have remained clear. She was last observed July 12, 1932.

CASE 8—A. B., a white man, aged 24, entered the hospital, June 1, 1928, complaining of sore eyes and loss of vision. He attributed his ailment to trauma of the left eye one week prior to admission. In the right eye there were numerous posterior synechiae and mild conjunctivitis. In the left eye there was a pteryctenule at the left side of the limbus, corneal vascularization, and only light perception. The blood Wassermann reaction was four plus. The spinal fluid examination was negative. The patient was inoculated with malaria and had fourteen chills. No improvement was noted until after the seventh chill. He then improved gradually until his discharge from the hospital July 20 when he was practically well. One month later the eye trouble returned, both eyes showing a typical interstitial keratitis. The patient was again hospitalized and showed gradual improvement with typhoid vaccine injections and arsphenamine therapy. He was discharged, October 10. November 12 there was another mild recurrence which again responded to typhoid vaccine. November 26, his eyes were clear and until last seen, Aug. 30, 1930, he remained well.

CASE 9—J. B., a white man, aged 22, entered the hospital, July 19, 1930, complaining of pain in the left eye and pain in the knees. Both symptoms had begun three weeks before. He had severe photophobia of the left eye with conjunctivitis and circumcorneal injection. The cornea was opaque. The right eye was normal. Both knees were swollen and tender, and the presence of fluid was demonstrated. The blood Wassermann reaction was four plus. A diagnosis of syphilitic hydrarthrosis of the knee joints (Clutton's joints) and syphilitic interstitial keratitis was made. Intensive antisyphilitic therapy, neoarsphenamine and bismuth compounds and shock therapy, typhoid vaccine, were administered. The knees rapidly improved but the keratitis gradually became worse and on October 10 the right eye also became involved. Neoarsphenamine, bismuth and mercury compounds, potassium iodide, typhoid vaccine and milk injections were continued until November 26, four months after admission to the hospital, at which time no improvement was noted in either eye. Visual acuity at that time was reported in the right eye as only light perception and in the left eye as 6/60. The patient was then inoculated with malaria, and after the fourth chill the improvement was so marked that the patient could see across the room with ease whereas before he had barely more than light perception. He was given ten malarial chills and was discharged from the hospital one week later. The patient returned regularly to the dispensary, where he received continuous antisyphilitic therapy, alternate courses of arsphenamine and bismuth preparations for eighteen months. Both eyes have remained clear and when last seen Nov. 8, 1932, only a few small corneal scars could be observed with an oblique light.

CASE 10—R. F., a Negress, aged 26, entered the hospital Dec. 12, 1930, with a bilateral interstitial keratitis and iritis of five months' duration. There was extreme photophobia and only light perception present in the left eye. With the right eye she could count fingers only within a distance of 4 inches.

Both eyes showed a marked conjunctivitis and a diffuse cloudiness of the cornea. The Wassermann and Kline tests of the blood were strongly positive. She had received no antisyphilitic treatment. The patient was inoculated with malaria but failed to have any elevation of temperature by the ninth day. However, malaria parasites were demonstrated in the blood smears. She was then given one injection of a sterile milk antigen, which activated the malaria, and there was a regular course of twelve chills. After the fourth chill there was a definite improvement, and by the sixth all subjective symptoms had subsided. When she was discharged from the hospital, Jan 11, 1931, both corneas were remarkably clear and she stated that her vision was as good as before the attack of interstitial keratitis. She was followed in the clinic at weekly intervals, where she received antisyphilitic therapy for twenty months. There was no recurrence and the vision has remained normal.

CASE 11—P B, a Negress, aged 35, was first seen at the Charity Hospital dispensary, Jan 14, 1931, with a marked interstitial keratitis of the left eye. There was no clinical evidence of congenital syphilis and no history of acquired syphilis. The blood Wassermann reaction was four plus. The spinal fluid was normal in all respects. She was given six injections of 0.4 Gm each of arsphenamine without improvement. She was then admitted to the Cleveland City Hospital, February 26, for more intensive therapy. The left cornea was of a steamy appearance, with sharply defined areas of exudate deep within the corneal substance. The right eye was normal, except for a mild conjunctivitis. She was treated with six 0.2 Gm doses of sodium bismuth thioglycollate and two typhoid vaccine chills, without improvement. She was then inoculated with malaria and allowed to have six paroxysms. There was an immediate response in the condition of the eye. She refused to take antisyphilitic treatment after her eye became well. When last seen Jan 3, 1933, she stated that she had had no further trouble with her eyes. There was a slight residual scarring of the upper and lower borders of the left cornea otherwise the eyes were normal.

CASE 12—J H, a white boy, aged 10 years, admitted to the hospital, April 23, 1931, complained of a bilateral interstitial keratitis of three weeks' duration. There was severe photophobia, both corneas were steamy to the point of opacity, with circumcorneal injection. The blood Wassermann reaction was four plus. No other clinical evidence of congenital syphilis was present. From April 23 to June 13 the patient received eleven injections of sodium bismuth thioglycollate, three injections of sterile milk and five intravenous injections of typhoid vaccine, without improvement. The patient was then inoculated with malaria and after six severe paroxysms he showed remarkable improvement. While the corneas were still cloudy all signs of acuteness had disappeared. He visited the clinic regularly until December 5, during which time the cloudiness of the corneas gradually improved.

CASE 13—E Z, a white woman, aged 21, entered the hospital, July 20, 1931, complaining that for one month the vision of the right eye had been blurred. There was a mild conjunctivitis of the right eye and a severe congestion of the blood vessels on the nasal side of the sclera. There was a dense opacity on the outer side of the cornea. The teeth were badly decayed and were suggestive of Hutchinson's type. There were rhagades about the mouth. The blood Wassermann and Kline reactions were four plus. An organic luetin test was strongly positive. The spinal fluid was normal. The patient was inoculated with malaria on the day of admission but remained afebrile for seven days. She was then given an intravenous injection of typhoid vaccine, which was followed by the beginning of the malarial chills. These continued regularly until quinine was administered, after the seventh chill. There was no change in the condition of the eye, until after the third chill, when a marked improvement was noted in the vision, and the subjective symptoms subsided. There had been no recurrence up to Nov 6 1932, fifteen months after malarial therapy. She received regular antisyphilitic treatment during this period of observation.

CASE 14—M M, a white girl, aged 17, had received more or less continuous antisyphilitic therapy for congenital syphilis from various physicians and clinics since the age of 1 year. The blood Wassermann reaction was said to have become nega-

tive at the age of 9, but because of frequent trouble with her eyes treatment was continued. The last attack of interstitial keratitis began one and one-half years previously, and in spite of continuous therapy her eyes had become progressively worse. Feb 18, 1932, she was referred to the Lakeside Hospital for malarial therapy. There was a marked blepharospasm, and both corneas presented the appearance of ground glass, with marked vascularization around the periphery. Only light perception was present in each eye. The blood Wassermann reaction was negative. The Kline test was three plus. The organic luetin test was strongly positive. No clinical evidence of congenital syphilis, other than the interstitial keratitis, could be demonstrated. Severe paroxysms started two days after malarial inoculation, and after the fifth chill the subjective symptoms abruptly ceased and the patient's vision had improved so greatly that she could recognize faces. The improvement continued steadily thereafter and after the eleventh chill, when the malaria was terminated, she could read coarse print. When last observed, seven months after the malarial therapy, there had been no recurrence and her vision was apparently normal. The haziness of both corneas was barely perceptible.

CASE 15—G H, a white woman, aged 21, entered the hospital May 29, 1932, because of a typical interstitial keratitis in the left eye of two months' duration. The left eye showed circumcorneal injection and complete opacity of the cornea. The right eye was apparently normal. She had Hutchinson's teeth. The eye became much less painful following the first malarial chill, and she was discharged, very much improved, after ten chills. No preliminary treatment was given, and only one injection of arsphenamine followed malarial therapy. In response to the follow up she was seen, Jan 3 1933, when the vision of the left eye was apparently normal and only a small corneal scar remained. The right eye had not become affected.

CASE 16—M W, a white girl, aged 19 entered the hospital January 15 1925, at which time a diagnosis of syphilitic periostitis of the tibia and of syphilitic interstitial keratitis was made. She was discharged without therapy, owing to lack of cooperation. Irregular treatment was administered which cured the periostitis but did not affect the eye condition. Nov 15 1931, she was readmitted because of the severity of the interstitial keratitis, which had become progressively worse during the six years. Again she was discharged without therapy. She then received antisyphilitic treatment from her physician until July 21, 1932, without benefiting the eye condition. She was readmitted, July 21, seven years after the onset of her illness. There was an intense photophobia and lacrimation of both eyes, and only light perception was present. Both corneas showed a dense cloudiness and vascularization. Malarial inoculation was performed and the patient was permitted to have eight chills. After the second chill the acute symptoms improved. When discharged she was much improved, although still unable to read large print. Both eyes continued to improve and when last seen, Jan 3 1933 she was able to read fine print without difficulty. No other treatment was administered after the malarial therapy.

CASE 17—T M, a white girl aged 15, entering the hospital, Oct 13 1932, complained that for the previous month she had suffered from a burning sensation and loss of vision in the left eye. She had received no antisyphilitic treatment. Examination showed the surface of the left cornea roughened. There were numerous irregular spots of infiltration over the central area in the deeper layers and a fine interstitial infiltration throughout the cornea. Only light perception was present. The right eye was normal. The blood Wassermann and Kline reactions were four plus. Other evidences of congenital syphilis were Hutchinson's teeth and a high arched palate. Following the fourth malarial chill the ocular condition began to improve. Eight chills were permitted and there was a gradual improvement noted each day. After her discharge from the hospital she visited the clinic for treatment and when last seen, Jan 3, 1933, she could read newspaper print with the affected eye. Only a small corneal scar could be seen. The right eye has remained uninvolved.

SUMMARY AND COMMENT

Seventeen patients with syphilitic interstitial keratitis, whose ages varied from 7 to 35 years, were treated by

means of malarial therapy, with uniformly good results. In every case the acute symptoms were relieved, usually early in the course of treatment. This rapid and complete cessation of pain, photophobia and lacrimation is emphasized as the most important finding of this study.

The final result in all cases was very good. Dennie and his co-workers,¹⁰ in their article on the antisyphilitic action of the malarial parasite in other than syphilis of the central nervous system, state that in old cases of chronic interstitial keratitis in which connective tissue is present in the cornea, no benefit could be expected from the use of malaria. All their cases were of comparatively recent origin when malaria was administered. From the results obtained in our series, it is found that malaria therapy is most gratifying when used in somewhat chronic cases. Four of the cases were of over one year's duration, case 16 having presented interstitial keratitis for seven years. In none of the cases was there a residual impairment of vision sufficient to cause an industrial handicap. Malaria is not advocated in cases showing only residual scarring of the cornea, but in chronic cases that still present pain and photophobia it invariably causes these symptoms to cease. It is believed that the corneal opacities are more rapidly and completely absorbed than with any other type of therapy.

Recurrences were noted in only two cases, in each instance they occurred a few weeks after the malarial therapy and responded well to the usual antisyphilitic treatment.

Five patients each had only one eye involved when malarial therapy was administered, in none did the second eye become involved.

Ten patients received varying amounts of antisyphilitic treatment prior to the malaria and seven had received no treatment of any kind. There was apparently no difference in the response of the two groups.

There were no fatalities, and in only one case did alarming symptoms develop which necessitated the termination of the malaria early in the course. This occurred in a child aged 7 years (patient 4), in whom the malaria was stopped after the third paroxysm.

CONCLUSIONS

Malarial therapy is considered to possess a distinct advantage over any other known treatment for syphilitic interstitial keratitis, and if proper safeguards are observed the associated danger is reduced to a minimum.

Whenever possible the patient with a resistant syphilitic interstitial keratitis should be given the benefit of malarial therapy in addition to the other usual forms of antisyphilitic treatment.

646 Metropolitan Building

Beriberi—Vitamin B₁ is the factor which is lacking in diets capable of causing the disease beriberi. Its richest sources are the germ of cereals and yeast, but it is widely distributed in a number of common foods so that symptoms of frank deficiency are not found in those who partake of a mixed diet including such items as eggs, fresh meat, pulses and fresh vegetables and fruit. One of the earliest and most characteristic symptoms of deficiency of this vitamin is loss of appetite and in experimental animals this is followed by disturbances in the functioning of the alimentary tract generally. This observation has led to the suggestion that partial deficiency of vitamin B is a common cause of constipation and other irregularities of intestinal function. The evidence for this view is conflicting.—Colwell S. I. *Vitamins in Clinical Medicine, Practitioner* 132: 15 (Jan.) 1934.

PYRETHRUM SENSITIZATION

ITS IMPORTANCE AND RELATION TO POLLEN ALLERGY

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CHICAGO

It is quite generally accepted now that the wind-borne pollens are responsible for the seasonal symptoms of hay fever and asthma. Insect-pollinated plants cannot be blamed for the causation of allergic manifestation by ordinary exposure. For these reasons the numerous insect-pollinated plants and flowers, among which are the roses, chrysanthemums, goldenrod and fruit trees, have been absolved from blame. However, some of these insect-borne pollens are toxic and are capable of producing allergic symptoms if contact with the mucous membranes is assured. In this group may be mentioned particularly the goldenrod and pyrethrum families.

The pyrethrum flower is a member of the large order of Carduales, to which the ragweeds also belong. Very close contact with the ordinary garden species of pyrethrum has been known to cause allergic reactions among gardeners. However, the most important source of allergy to pyrethrum is exposure to insecticides made from the latter. For this purpose commercial "Pyrethrum" is made by drying the flowers of *Chrysanthemum cinerariaefolium* and *Chrysanthemum coccineum*. In this material is to be found, of course, the pyrethrum pollen. Many of the common household insecticides, such as Black Flag and Flit, contain pyrethrum.

Apparently commercial pyrethrum contains three toxic principles. One is the pyrethrum ester, which gives this material its insecticidal properties and may result in symptoms of poisoning if ingested. This substance is peculiar to some of the species of pyrethrum flowers. A second toxic fraction is that responsible for dermatitis,¹ which may occur in the pyrethrum industries or among those handling insecticides or the pyrethrum flowers. This irritant is probably an oleoresin and is found in many of the members of the Carduales. The third toxic fraction is the specific allergen, which may give rise to symptoms of allergy, particularly in the respiratory tract.

It is curious that the importance and significance of allergy to pyrethrum has not been clearly emphasized in the literature. There are isolated reports of pyrethrum sensitization. Garratt and Bigger² in 1923 reported the occurrence of asthma attacks in a young woman following the use of insect powder on her bed. She gave a marked positive cutaneous reaction to the insecticide. They think that the powder contained pyrethrum. Ramirez³ in 1930 reported four instances of pyrethrum allergy. Although the protocols of his cases show definitely that in at least three there was clinical ragweed sensitization, he makes no reference to the possible significance of its relationship to pyrethrum sensitivity.

I have been impressed for a long time with the frequency of positive reactions to pyrethrum in ragweed sensitive patients. Possibly this has been evident because of the almost routine procedure I have practiced in performing complete skin tests with allergens.

1 McCord C. P., Kilker C. H. and Munster Dorothy K. *Pyrethrum Dermatitis: A Record of the Occurrence of Occupational Dermatoses Among Workers in the Pyrethrum Industry*. J. A. M. A. 77: 448 (Aug. 6) 1921. Sulzberger M. B. and Weinberg C. L. *Dermatitis Due to Insect Powder*. *ibid.* 93: 111 (July 12) 1930.
2 Garratt J. R. and Bigger J. W. *Asthma Due to Insect Powder*, *Brit. M. J.* 2: 764 (Oct. 27) 1923.
3 Ramirez M. A. *Pyrethrum: An Etiologic Factor in Vasomotor Rhinitis and Asthma*. *J. Allergy* 1: 149 (Jan.) 1930.

other than pollen in hay fever cases in the last few years. The advisability of the latter procedure is evident when statistics show that in 79 per cent of the hay fever cases additional reactions were obtained to other nonpollen materials (including pyrethrum).⁴

In a series of 225 patients sensitive to ragweed pollen, 104, or 46.2 per cent, gave cutaneous reactions with extracts of the commercial pyrethrum. In another series of 114 allergic cases, chiefly of asthma and hyperesthetic rhinitis, which were not sensitive to ragweed, a two plus reaction to pyrethrum was obtained in only one instance. In view of the fact that the pollen in commercial pyrethrum is diluted considerably with other portions of the flower, it might be expected that the pure pyrethrum pollen would give an even higher incidence of positive reactions in ragweed sensitive individuals. In a few of the ragweed sensitive patients who gave negative cutaneous tests with pyrethrum, intracutaneous tests gave positive reactions. This appears to indicate that the 46.2 per cent incidence of reactions could be enhanced if a more potent extract were used. Gelfand,⁵ in tabulating the incidence of nonpollen tests in forty cases of hay fever, includes fourteen positive reactions to "insecticides" but does not discuss the nature of the insecticide, the method of testing or the significance of the reactions.

The foregoing considerations would make it appear that sensitiveness to pyrethrum is a group sensitiveness, occurs only in ragweed sensitive individuals, and is probably present in the majority of the latter. The following experiments substantiate further the fact that it is a group allergen or one closely related that is involved.

The serums of patients who gave good reactions to both ragweed pollen and pyrethrum extract were used to sensitize the skin locally in several nonallergic individuals. Subsequent testing of the sensitized sites with both ragweed pollen and pyrethrum gave positive reactions. This was, of course, controlled by obtaining negative tests on nonsensitized areas of the same individuals. The reactions to the ragweed pollen was obtainable with higher dilutions than those with pyrethrum, as may be expected by the source of extracts of the latter. Several of the sensitized sites were desensitized to pyrethrum by from one to three injections of the latter. These areas, when subsequently tested with ragweed concentrations that had given good reactions on nondesensitized sites, failed to show positive reactions. This indicates that desensitization to pyrethrum resulted in desensitization to ragweed pollen. In similar trials, sites desensitized to ragweed failed to react to pyrethrum. These experiments furnish additional evidence suggestive of a common or related allergen in ragweed pollen and pyrethrum.

Instances of allergic attacks from exposure to pyrethrum are too numerous to cite individually. I have observed attacks in many ragweed sensitive persons outside of the ragweed season. They have been due to bedbug powders, roach powders, fly sprays and even sprays used in keeping fleas from canaries. The point to be emphasized is that these are not unusual, rare or individual occurrences. The ragweed sensitive individual must be warned about these insecticides. It is possible that many of the unexplained attacks of hay fever or asthma occurring in winter in cases in which most of the symptoms are seasonal may be due to the

common and general use of pyrethrum in the form of insecticides.

SUMMARY

From the evidence of completely tested patients and experiments in passive transfer of reagins it is evident that at least one half of ragweed sensitive individuals are sensitive to pyrethrum, which in varying forms has a tremendous consumption and widespread use in the preparation of insecticides. The allergenic substances of ragweed pollen and pyrethrum are closely related. The important, significant and practical fact to bear in mind is that a potential one or two million of ragweed sensitive people in this country are susceptible to allergic attacks at any time of the year, as the result of exposure to pyrethrum products. This source of allergy is deserving of special emphasis and consideration.

185 North Wabash Avenue

THE LEUKOCYTE CONTENT OF THE BLOOD

FOLLOWING OBSTETRIC ANALGESIA PRODUCED BY PENTOBARBITAL SODIUM

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Pentobarbital sodium given orally has been proved an effective drug for producing analgesia during labor. It is generally considered that this drug has no observably deleterious effect on the infant and that the margin of safety for the mother with its use is great. It is possible to produce complete amnesia with massive doses of pentobarbital sodium, but satisfactory analgesia can be obtained among the great majority of patients by no more than 10 grains (0.65 Gm.) given during the course of the first stage of labor. As with any drug, the patient should be kept under close observation and the dose should be individualized to her needs.

There has been some discussion in the literature recently concerning the possible relation between the administration of barbiturates and the production of granulocytopenia. Madison and Squire¹ reported thirteen cases in which they thought granulocytopenia was probably due to the use of benzene chain derivatives. Watkins² recently discussed the possible part played by the barbiturates and amidopyrine in the causation of leukopenic states. As we have employed pentobarbital sodium in our obstetric practice among the majority of patients who were given analgesic agents other than a mixture of oxygen and nitrous oxide with the occasional addition of ethylene, we were naturally interested in the possibility that some deleterious effect on the leukocytes might be produced.

There are many reports in the literature based on studies of leukocytes during pregnancy, parturition and the puerperium. Moleschott³ and Nasse in 1854 seem

From the Division of Obstetrics and Gynecology, the Mayo Clinic.
1 Madison F. W. and Squire T. L. The Etiology of Primary Granulocytopenia (Agranulocytic Angina). J. A. M. A. 102: 755-759 (March 10) 1934.

2 Watkins C. H. The Possible Role of Barbiturates and Amidopyrine in Causation of Leukopenic States. Proc. Staff Meet. Mayo Clin. 8: 713-714 (Nov. 22) 1933.

3 Moleschott J. Über das Verhalten der farblosen Blutzellen zu den farbigen in verschiedenen Zuständen des Menschen. Wien med. Wchnschr. 4: 113 1854.

4 Feinberg S. M. Allergy in General Practice. Philadelphia: Lea & Febiger, 1934.

5 Gelfand H. H. The Determination of Factors to Explain Marginal Failure in Hay Fever Desensitization. J. Allergy 1: 223 (March) 1930.

to have been the first to determine that there is leukocytosis during pregnancy. This has been confirmed by many investigators since, and there are numerous explanations for the condition. Virchow⁴ considered leukocytosis during pregnancy to be physiologic, and he believed that it might be the result of an increase in the size of lymph nodes and lymph vessels about the uterus. Dietrich⁵ has suggested that it is a reaction to the toxins of pregnancy.

It has been demonstrated that there is a definite increase in the number of leukocytes during labor. There is a shift to the left with a diminution in the number of lymphocytes, monocytes and eosinophils. There is also a considerable increase in leukocytes immediately after delivery, which reaches a peak according to most observers, at the end of the first twenty-four hours. At this time there is a marked shift of the neutrophils to the left, by the Arneth count, and also in Schilling's hemogram. Fauvet⁶ expressed the belief that leukocytosis in parturition is a "work leukocytosis." It is probable that a compensated acidosis exists during pregnancy and an uncompensated acidosis during parturition, and it has been shown that neutrophilic leukocytosis can be caused by acidosis. Experimentally, leukocytosis with a shift to the left can be demonstrated in acidosis caused by

TABLE 1—Dose of Pentobarbital Sodium Given During Labor

Priml gravidas	Dose		Multl gravidas	Dose	
	Grains	Grams		Grains	Grams
2	1½	0.1	4	1½	0.1
3	3	0.2	5	3	0.2
8	4½	0.27	7	4½	0.27
1	4½	0.27	5	6	0.4
4	6	0.4	2	7½	0.48
1	6	0.4	3	9	0.6
3	7½	0.48	3	10½	0.68
1	7½	0.48	1	10½	0.68
3	9	0.6	1	12	0.77
1	9+	0.6+			
1	15	1.0			

administration of ammonium nitrate. Other drugs are known to affect the Arneth count. Ponder and Flint⁷ have demonstrated that administration to rabbits of thyroid extract, thyroxine and other substances produces leukocytosis, with a shift of the Arneth count. Nye and Barrs⁸ were unable to find any variation in the percentage of granular leukocytes after rabbits were strapped down for prolonged periods or after the use of amytal as an anesthetic agent. Given⁹ was unable to detect any change in the number of leukocytes following administration of chloroform during labor.

In an attempt to determine whether there was a deleterious effect on leukocytes after the doses of pentobarbital sodium which we commonly employ for obstetric analgesia, studies were carried out on a group of fifty-nine parturient women. Twenty-eight of these were primigravidas and thirty-one were multigravidas. An additional ten patients who were given no analgesic

agent other than mixtures of nitrous oxide and oxygen with occasional addition of ethylene were studied as a control group. The counts in the control group were all within limits that are accepted as normal for uncomplicated labor and puerperium and will not be referred to again. The number of leukocytes was counted, and

TABLE 2—Average Number of Leukocytes per Cubic Millimeter of Blood of the Fifty-Nine Parturient Women Concerned in Table 1

During Labor		Post Partum	
Primiparas	Multiparas	Hours	Days
12,550	11,365		
20,342	15,793	5	
17,584	18,592	10	
14,080	10,913		1
12,837	10,560		2
11,632	10,793		3
10,733	9,233		4
10,571	9,319		5
10,710	9,709		6
10,293	9,403		7
11,063	9,703		8
10,366	9,182		9

a differential count performed during labor, before administration of pentobarbital sodium. These counts were repeated five hours post partum, ten hours post partum, and daily thereafter between 9:30 and 11 a.m. for ten days. In addition to pentobarbital sodium, which was given in doses (table 1) of from 1½ to 15 grains (0.1 to 1.0 Gm.), a mixture of nitrous oxide, oxygen and ethylene was administered during the last part of the second stage, colonic oil-ether was administered to four primigravidas and one multigravida during the first stage of labor.

As other observers have found there is a difference in the number of leukocytes of primiparas and of multiparas. The average number of leukocytes per cubic millimeter of blood for primiparas during labor was 12,550 and for multiparas (women in the second to the tenth pregnancy) 11,365 (table 2). The greatest leukocytosis was found five hours post partum, the

TABLE 3—Average Percentages of Different Leukocytes in Blood of the Fifty-Nine Parturient Women Concerned in Table 1

Time with Relationship to Labor	Lymphocytes*		Monocytes		Neutrophils†	
	Pri miparas	Mul tiparas	Pri miparas	Mul tiparas	Pri miparas	Mul tiparas
During labor	17.1	19.7	2.3	4.6	80.4	74.0
5 hours post partum	14.0	11.8	1.5	5.1	84.1	82.3
10 hours post partum	15.9	12.2	2.4	4.7	80.7	81.4
1 day post partum	16.4	16.2	2.8	3.1	77.3	80.1
2 days post partum	15.6	17.5	5.7	2.9	76.5	78.6
3 days post partum	17.5	20.6	2.1	3.2	78.7	75.2
4 days post partum	20.1	21.7	3.3	3.1	76.1	73.5
5 days post partum	20.9	21.5	5.9	4.2	71.7	72.3
6 days post partum	21.8	23.1	3.2	2.9	67.5	72.4
7 days post partum	23.2	26.5	1.7	2.5	70.2	67.8
8 days post partum	24.1	27.8	4.3	4.3	63.4	66.6
9 days post partum	22.5	28.2	4.1	3.7	63.8	67.7

* Lymphocytes in thousands

† Neutrophils in percentages

average number of leukocytes per cubic millimeter of blood reached 20,342 for primiparas and 15,793 for multiparas. The averages ten hours after labor were 17,584 and 13,592, respectively. The average for each group gradually diminished until the fourth day post partum and was 10,733 and 9,319 respectively. From then until the ninth day the average remained constant, averages on the ninth day were 10,366 for primiparas and 9,182 for multiparas. The majority of observers have reported a more gradual tapering of the averages

⁴ Virchow R. L. K. Die Cellularpathologie in ihrer Begründung auf physiologische und pathologische Gewebelehre. Berlin: A. Hirschwald, 1858.

⁵ Dietrich H. A. Studien über Blutveränderungen bei Schwangeren. Gendarmen und Wochenschriften Arch. f. Gynäk. 94: 383-401, 1911.

⁶ Fauvet E. Beitrag zur Kenntnis der Schwangerschafts- und Geburtsleukozytose. Monatsschr. f. Geburtsh. u. Gynäk. 90: 220-228 (Jan.) 1932.

⁷ Ponder Eric and Flint K. N. Studies on the Arneth Count. Physiol. 16: 393-398, 1927.

⁸ Nye R. A. and Barrs V. A. R. Effect of Prolonged Strapping Down and of Amytal on the Distribution of Granular Leukocytes in Rabbits. Folia haematol. 47: 410-415 (July) 1932.

⁹ Given J. C. M. Hematology of Pregnancy and the Puerperium. J. Obst. & Gynec. Brit. Emp. 9: 261-267 (April) 1906.

Studies of differential counts corroborate the numbers reported in the literature. The neutrophils reach their peak five hours post partum among both primiparas and multiparas and gradually diminish to normal proportions after five days among primiparas and four days among multiparas (table 3). As the percentage of neutrophils increased, the percentage of lymphocytes decreased. The percentage of monocytes varied little. The percentage of eosinophils and basophils was not noticeably altered. According to the Arneth count and the Schilling hemogram, the neutrophils shifted to the left.

The temperature of two patients was elevated during the postpartum period. One of these patients had a temperature of 101 F. on the seventh day and the other a temperature of 100.6 F. on the third day. In neither case was the leukocyte count above the average for the rest of the group of fifty-nine patients.

SUMMARY AND CONCLUSIONS

There has been nothing in the behavior of the mother or infant in any case in which pentobarbital sodium was administered to indicate any deleterious effect. Studies of the blood from this group of patients give no evidence of the production of a leukopenic condition with the amounts of pentobarbital sodium administered. This series of studies of leukocyte and differential counts indicates that the greatest leukocytosis occurs at the fifth hour post partum. The level of leukocytes falls steadily to the fourth day, when the number of leukocytes per cubic millimeter of blood remains constant until the last examination on the tenth day.

THERAPEUTIC PNEUMOCOCCUS TYPE VIII (COOPER) SERUM

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Pneumococcus type VIII (Cooper) is identical with the Thomas strain (closely related immunologically to pneumococcus type III) described by Sugg, Gaspari, Fleming and Neill,¹ and the strain classified as pneumococcus IV A by Johnson of Pittsburgh, which was common in Pittsburgh in 1927. Georgia Cooper² published her description of pneumococcus type VIII in March 1929.

Pneumococcus type VIII is culturally distinct from pneumococcus type III, and the course of the pneumonia it causes is different from that induced by pneumococcus type III. Differentiation between type III and type VIII is readily made by the "swelling" reaction of Neufeld, specific rabbit serum being used for type III and type VIII, and by the colonies. The type III colonies are large and mucoid, the type VIII colonies are smaller, with more surrounding hemolysis.

Until July 1, 1933, my associates and I observed at Harlem Hospital 133 cases of pneumococcal pneu-

monia due to pneumococcus type VIII, in 122 adults and 11 children.³ Thirty-seven adult cases were treated with serum, twenty-seven were nonbacteremic and none of the patients died. Among eighty-five cases not treated with serum, seventy patients were nonbacteremic and nine died, a mortality of 12.8 per cent.

A factor determining the outcome in pneumococcus pneumonia is invasion of the blood stream. Apparently the amount of invasion is significant. Invasion with a few organisms, as revealed by growth in the broth with none or only a few organisms on the agar plates, is apparently of less significance. In several instances

Type VIII Pneumococcus Pneumonia in 122 Adults 1928 to 1933

Treated with Serum			Not Treated with Serum		
Cases	Deaths	Percentage	Cases	Deaths	Percentage
37	2	5.4	83	14	16.4
10	2*	20.0*	15*	5†	33.3*

* Asterisk indicates positive blood culture cases.
† Two cases with colonies in postmortem blood excluded.

the organisms grew in chains. In one fatal nonserum case, chain formation present at first, was absent in later blood cultures.

Of the bacteremic cases, ten were treated with serum and two patients died, a mortality of 20 per cent, fifteen were treated without serum and five patients died, a mortality of 33 1/3 per cent.

In our nonserum cases, three patients died of the seven in whom a single colony occurred on agar or only the broth was positive. Two cases in which the organisms (in broth only) were recovered for the first time in postmortem blood from the heart were counted as nonbacteremic. In the serum series none of the five cases of slight invasion resulted fatally. Possibly the serum prevented severer invasion of the blood stream.

Among the more heavily invaded group that received no serum, there were eight cases and five deaths, in one of these cases, meningitis due to pneumococcus type VIII supervened three months after the pneumonia, which had been complicated with empyema.

In the serum group two of the four patients died. One had meningitis as well as pneumonia on admission, the other showed a marked reduction of the bacteremia after the serum but the treatment was discontinued because the stock of serum was exhausted.

The cases were accepted for treatment alternately in order of admission. There was no attempt to select early or favorable cases. Twenty-seven per cent of the serum cases were bacteremic, only twenty per cent of the nonserum cases were bacteremic.

The usual duration of the cases not treated with serum was from eight to nine days, most of the cases treated with serum terminated by the sixth day.

Twenty-nine cases treated with serum and thirty-six cases not treated with serum were studied for the presence of agglutination by the Sabin slide agglutination technic. The agglutinins were present much earlier in the serum cases than in the controls. The agglutinations were found as early as the third day in three cases treated with serum and on the fourth day in four cases not treated with serum. Agglutinins failed to develop in three cases not treated with serum. One of

From the Harlem Hospital Station of the Littauer Pneumonia Research Fund of New York University.

Our appreciation is expressed to loyal co-workers. Serum was produced through a grant from the Altman Foundation and the children were studied in part through financial assistance from the Commonwealth Fund. The Metropolitan Life Insurance Company assisted the study through its Influenza Commission.

1 Sugg, I. A., Gaspari, E. L., Fleming, W. J. and Neill, J. M. Studies on Immunological Relationships Among the Pneumococci. I. A Virulent Strain of Pneumococcus Which is Immunologically Related to but Not Identical with Typical Strains of Type III Pneumococci. J. Exper. Med. 47: 917 (June) 1928.

2 Cooper, Georgia. Edwards, Marguerite and Rosenstein, Carolyn. The Separation of Types Among the Pneumococci Hitherto Called Group IV and the Development of Therapeutic Antisera for These Types. J. Exper. Med. 19: 461 (March) 1929.

3 The increasing importance of pneumococcus type VIII is evidenced by the fact that during the current season in the nine months from July 1, 1933 until April 1, 1934 there have been in my service among the adults thirty-seven cases of pneumonia due to pneumococcus type VIII and one among the children in the pediatric service of Dr. Morris Gleich.

two fatal serum cases showed agglutinins on the third day, after this they were absent

The production of serum was commenced in 1928 in the laboratories of the New York City Department of Health. Seventeen horses have been under immunization, two have been immunized for more than two years. Four are being immunized at present. Miss Cooper reports that the mortality of the horses was unusually high, the titer of the antiserums comparatively low and the duration of immunization to obtain usable serum unusually long. The concentration procedure was the same as for type I serum.

At the Lederle Laboratories, Inc., five horses have been immunized. For from six to eight months they were immunized with pneumococcus types IV, V, VII and VIII, then types IV and V were discontinued. Three of the horses produced from 1,000 to 4,000 units against type VII, the same animals showed only from 100 to 200 units against type VIII. Two of these were carried from eighteen to forty-eight months.

Frequently we encountered thermal or anaphylactoid reactions with the first dose of serum in a patient though he did not react with a second and larger dose of the same serum given a few hours later. A patient receiving the same serum as previously may react to a subsequent dose of the same size with a chill.

CONCLUSIONS

The mortality was less in patients suffering from pneumococcal pneumonia type VIII treated with serum than in those treated without serum. The duration of the illness was shorter in the serum treated than in those who did not have serum.

62 West Eighty-Seventh Street

Clinical Notes, Suggestions and New Instruments

BACILLUS WELCHII PANOPHTHALMITIS

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Infections from *Bacillus welchii* in different parts of the body are not uncommon, in fact, they are often encountered in industrial practice. The statistics give a high mortality rate. The previous war experience has done little to control this situation. Owing to the rapidity of the spread of the infection and the destruction of tissue thereby, it would naturally be assumed that such an infection in or about the eye would be fatal. Such apparently is not the case.

To date there have been ten cases reported in the literature: five in Great Britain, four in France and one in the United States. James¹ made the clinical diagnosis by gas bubbles in the anterior chamber and eviscerated the contents of the globe. Heath² had a case of panophthalmitis in which he eviscerated the contents. Cultures yielded positive results. Ridley³ had a case of gas gangrene and panophthalmitis twenty-four hours after a penetrating wound of the eye. He eviscerated the contents. Hamilton⁴ had two cases: the first on the third day after infection and the second on the fourth day. He eviscerated in both cases. Chailous⁵ had two cases and Darier⁶ also had two. All four eyes were enucleated.

Berry⁷ of Brooklyn had a patient who had been hit in the right eye by a chip from a nut and eighteen hours thereafter an active panophthalmitis developed. A roentgenogram showed

a foreign body 2 by 4 mm and 20 mm back. Gas bubbles filled the whole anterior chamber and he reports that a dark substance followed the knife out of the wound. Two days later the eye was enucleated and laboratory examination was positive for *B. welchii*.

REPORT OF CASE

T. V., a man, aged 35, an automobile mechanic, referred to my office, Nov. 1, 1933, by Dr. Carls, had hit his left eye with something while pounding on an axle shaft of an automobile. He did not seek treatment until the following morning and when I saw him that day he had an intensely inflamed left eye with a beginning hypopyon. There was a small corneal wound at 5 o'clock on the dial near the limbus. The lens showed beginning cataract and no view of the deeper structures was possible on account of the cloudy media and lens changes. What appeared to be a very small bubble was seen in the anterior chamber at this time. A roentgenogram showed a piece of steel 1 by 3 mm, 10 mm back. The patient was sent to the hospital and the corneal wound was slightly enlarged with a cataract knife, which, when it was withdrawn, was followed by a coffee ground-like discharge. The magnet point was introduced and the steel extracted. Foreign protein was given and the patient was put to bed. In twenty-four hours there was a very marked panophthalmitis with boardlike induration of the bulbar conjunctiva. Evisceration of the globe was done at once and a drain inserted. Massive doses of *B. tetani* and *B. welchii* serum were given. The drain was left in for four days and hot moist compresses were applied to the socket. The patient made an uneventful recovery and left the hospital on the twelfth day.

Pus was taken from the eye for culture November 6. A specimen of 1 cc of thick yellow pus was sent to the laboratory. Gram stain showed many leukocytes. Frequent gram-positive, blunt bacilli both large and small were seen. Amorphous material and erythrocytes were present. With the Ziehl-Neelsen method no acid-fast bacilli were seen.

The specimen was inoculated on aerobic blood agar plates, endo plates, semianerobic blood agar slants and anaerobic blood agar slants. There was no growth of organisms in seventy-two hours.

The specimen inoculated into litmus milk under anaerobic conditions produced rapid acidification and coagulation. The production of a large amount of gas and a characteristic stormy fermentation was noted in twelve hours, at a temperature of 37°C.

A small amount of the specimen was inoculated into anaerobic beef heart broth and again a considerable production of gas and turbidity of broth were noticed. Stained smears of the litmus milk and beef heart broth demonstrated the presence of very large, thick gram-positive bacilli.

Solid dextrose agar tubes showed further the violent production of gas and isolated colonies of the gram-positive bacilli obtained. The organism was identified culturally as being *B. welchii*.

COMMENT

Jordan's textbook on bacteriology states that gas gangrene nearly always consists of mixed aerobes and anaerobes of several species. Cultures of *B. welchii* do not blacken brain and meat cultures normally, but the presence of metallic iron produces discoloration. This fact may and probably does explain the coffee-like secretion that was noted by Dr. Berry in his case and also in mine.

The striking thing is the rarity of *B. welchii* in perforating and lacerated wounds of the eye. During the last thirteen years I have operated on more than 400 patients with intraocular steel and as many with penetrating and lacerated wounds of the eye but this is my first case of *B. welchii* panophthalmitis. Most of these patients are from industrial plants and are exposed to different types of infection. Physicians in general industrial practice not infrequently have cases of *B. welchii* infection yet this is only the second reported case of ocular infection in the United States. The further fact that the mortality in *B. welchii* infection in other parts of the body is so high and yet in ten known cases of *B. welchii* in eye injuries there have been uneventful recoveries in every case is worthy of note and may be explained by the absence of muscle tissue infection. With the venae vorticosae and the deep ciliary

1 James R. R. Ophth. Rev. London 1910
2 Heath W. E. Brit. J. Ophth. 13: 574 (Nov.) 1929
3 Ridley I. Tr. Ophth. Soc. U. Kingdom 49: 221 1929
4 Hamilton I. B. Brit. J. Ophth. 14: 452 (Sept.) 1930
5 Chailous Paris 1904 1905
6 Darier A. Clin. opht. Paris 12: 227 1906
7 Berry E. N. Am. J. Ophth. 1932

vessels in close proximity, and possible exposure of the meninges through the optic nerve sheath, why there are no fatal cases is difficult to explain. Possibly earlier diagnosis and early removal of offending tissue may account for a portion, yet that in itself is not enough.

CONCLUSIONS

- 1 Intra-ocular steel is a potential carrier of *B. welchii*, even though rare.
- 2 Early diagnosis is apparently of prime importance.
- 3 *B. welchii* panophthalmitis apparently has not the grave prognosis that this infection has in other parts of the body.
- 4 The fact that the infection is limited to nonmuscular tissue may offer a better prognosis.
- 25 East Washington Street

OTOMYCOSIS REPORT OF CASE

OMAR C. AMSTUTZ, M.D., BELLEFONTAINE, OHIO

Among patients presenting themselves for treatment in southern Florida, particularly during the six weeks following the hurricane of Sept. 17 and 18, 1926, it was reported as not unusual for three or four new cases of otomycosis to be seen every day. In this locality, however, otologists of wide experience covering a number of years were certain that they had never recognized a case.

REPORT OF CASE

A woman, aged 23, a schoolteacher, complained that her left ear hurt, felt full and was slightly deaf. A dirty whitish layer was observed covering the drum and part of the adjacent auditory canal. A few drops of 5 per cent phenol in glycerin were placed in the ear and the patient was ordered to return. When the ear was examined two days later a few small black dots were visible, one of which was removed on the point of a paracetic bistoury. Microscopic examination confirmed a suspicion that it was a mold sporangium with its unbranched hyphae.

The remaining matted feltlike, mycelial mass was easily removed by irrigation with weak sodium bicarbonate solution and 10 drops of 70 per cent alcohol was placed in the external auditory canal. With the idea that, if the systemic use of iodides in such cases or even in pulmonary aspergillosis is justifiable, their local use might also be effective I dropped a weak mixture of potassium iodide in water and tincture of iodine into the ear. Seven days later however there was additional mycelial growth to be removed by irrigation. At this time daily instillations of 2 per cent salicylic acid in 95 per cent alcohol were instituted for one week and then weekly for one month at which time only a hard dry scaly material remained in the ear. Instillations of 5 per cent phenol in glycerin were resumed for a short while to loosen the material. The condition has not recurred during a three year period.

Through the courtesy of Dr. W. J. Kostir of Ohio State University, a potato culture transplant of the mold was identified as a mixture of *Aspergillus niger* (sooty mold) and *Rhizopus nigricans* (bread mold), of which the latter may or may not have been a contaminant.

Cultures were made on various mediums all showing a fairly luxuriant growth. This was interpreted as indicating that the organism was not highly specialized for a life in contact with living tissues and was thus only secondarily pathogenic.

Potato cultures were arbitrarily selected and treated with such substances as sweet oil, castor oil, glycerin and water to determine any possible effect of materials that people commonly use in their ears. No effect was noted. Other such cultures were treated with 70 per cent alcohol, 2 per cent salicylic acid in 95 per cent alcohol and 5 per cent phenol in glycerin. The alcoholic solutions exhibited an inhibitory and even a fungicidal effect. Certain other such cultures were treated with weak iodine solutions, which may have had some minor effect in delaying the formation of sporangia. This would hardly invalidate the systemic use of iodides.

COMMENT

Molds are known to grow better in acid than in alkaline mediums. It would therefore seem more rational in such cases

as this to irrigate with warm dilute sodium bicarbonate solution rather than with the commonly used boric acid solution. Moisture being necessary for mold growth, such irrigation should be followed by a strong alcoholic solution. An alkaline alcoholic solution might well form the basis of a new form of treatment. One author with a commendable view toward the comfort of his patient follows irrigation by instillation of 10 per cent cocaine in 1,000 epinephrine solution.

If as is believed, spores will not germinate in a normally healthy meatus but require some form of exudate on which to grow, the nonmycotic condition producing such an exudate may remain to be treated even after each spore or hypha is definitely killed. If this is true, silver nitrate is said to be one of the best antiseptics and astringents. If the growth has penetrated deeply into the epithelium, however, no single treatment can be trusted to bring about a complete cure.

While in this case the prognosis was favorable, it is more grave if the drum is perforated, as the organism may enter and develop in the tympanic cavity and even in the mastoid cells. Although early diagnosis may make appropriate treatment more rapidly effective, many cases are delayed because even extensive invasions may take place without subjective symptoms.

209 East Columbus Avenue

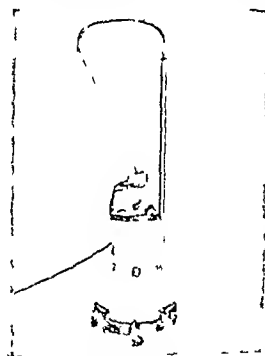
Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS

H. A. CARTER, Secretary

SUPER SELF-CONTAINED KROMAYER LAMP ACCEPTABLE

The Super Self-Contained Kromayer Lamp is manufactured by the Hanovia Chemical and Manufacturing Company, Newark, N. J. It is a water-cooled quartz mercury vapor arc lamp and is recommended for local application of ultraviolet radiation as a therapeutic measure.



Super Self-Contained Kromayer Lamp

The burner is a high pressure low voltage, mercury vapor arc enclosed in a transparent fused quartz envelope. This burner is surrounded by a double wall casing. Cooling water circulates between the walls, thus carrying away the excess heat generated by the burner. Two small circular quartz windows in the double wall casing (window in each wall) permit the passage of ultraviolet and visible radiation, but since the rays pass through the cooling water, the heat radiation is greatly inhibited. The unit is useful where close application to the skin is desirable. Suitably shaped quartz rods may be attached to the window, enabling the transmission of ultraviolet rays to inaccessible places.

The electrical characteristics are as follows:

Alternating Current

Line voltage 105 to 120 volts (60 to 25 cycles)
Starting amperage 10 amperes
Operating amperage (5 amperes 220 volt line)
(7 amperes 115 volt line)
Maximum burner voltage 120 volts
Minimum burner voltage 100 volts

Direct Current

Line voltage 220 volts
Operating amperage (120 volts 5.5 amperes)
(220 volts 4.5 amperes)
Starting amperage 10 amperes
Maximum burner voltage for 110 volt burner 70 volts
Minimum burner voltage for 220 volt burner 120 volts

One unit was investigated in a clinic acceptable to the Council. The claims for the product meet the requirements of the Council as stipulated in the Official Rules. The Super Self-Contained Kromayer Lamp, therefore, is included in the Council's list of acceptable devices.

LEPEL HIGH FREQUENCY COMBINATION MACHINES AND ULTRAVIOLET LIGHT ATTACHMENTS ACCEPTABLE

The Lepel High Frequency Laboratories Inc of 39 West Sixtieth Street, New York, manufactures the following equipment

Model 300 Lepel High Frequency Combination Machine designed for medical diathermy, surgical currents including underwater cutting, coagulation, desiccation, and for energizing ultraviolet generators for local or general irradiation (fig 1)

Model 310 this model being the same as 300 except that it is not equipped with cutting currents

Model 510, Electro Surgical Machine designed for surgery, cutting under water, cutting in air, coagulation, desiccation and also energizing Lepel Hand Lamps

Model 600 and Model 610 Lepel Coagulators for diathermy, coagulation, desiccation and autocondensation in combination with Lepel Cold Ultra Violet Light

Model 700 and Model 710 Short Wave Generator with Lepel Internal Ultra Violet Quartz Hand Lamps and Model 900 2 and Model 900 4 Multiple Diathermy Machines. The Multiple Diathermy Units are for hospital and physician's use

One complete unit was examined in a laboratory and in clinics acceptable to the Council on Physical Therapy. The laboratory report on the machine indicated that the mechanical make up and the electrical construction met the Council requirements for diathermy machines as published in THE JOURNAL Sept 2, 1933, page 776. The temperature rise in the transformer remained within the limits as specified by the American Institute of Electrical Engineers. The condensers, conductors, reactors, ammeter and wiring were reported satisfactory.

The firm claims that these machines will generate high frequency electrical currents in ample quantities for medical diathermy, autocondensation, coagulation and desiccation and that they will generate sufficient surgical cutting currents for use in both air and water. The Council's investigation substantiated these claims. The more powerful units are equipped with ultraviolet generators energized by high frequency currents produced by the diathermy machine. These ultraviolet lamps are designed

for both general and local irradiation. The ultraviolet equipment was investigated in a laboratory acceptable to the Council, and the report reads as follows:

The following data were obtained on the Lepel Ultraviolet Lamp

The device examined consists of a high frequency diathermy machine with attachments for operating an assortment of lamps

The lamp examined consists of a spherical quartz or Corex D bulb, about 3 inches (7.5 cm) diameter which is placed within a helical conductor that carries a high frequency current obtained from the transformer in a diathermy machine. The bulb is evacuated and contains a globule of mercury. There are no electrodes sealed into the bulb. The mercury vapor within the bulb is excited to luminescence by the high frequency electrodeless discharge from the 5000 volt secondary of the transformer, which discharges through the helix.

The emission spectrum is essentially that of the neutral mercury atom similar to that of the mercury arc (e.g. the Lyman) though close to the walls of the bulb there are some weak spectral lines, not present in the hot quartz mercury arc lamp. The spectral energy distribution and the erythemogenic efficiency of this lamp were found to be closely the same as that of the ordinary quartz mercury arc lamp. Practically the only difference is the energy flux density (intrinsic brightness) owing to the fact that in the quartz mercury arc lamp the luminous discharge is concentrated in a column that is less than 10 mm diameter, whereas in the electrodeless discharge the radiation fills the entire bulb 6 to 8 cm in diameter.

The primary of the transformer in the diathermy machine was operated on 115 volts 60 cycles under which conditions by a suitable regulating device the milliammeter in the secondary indicated the current in the secondary required to operate the lamp, the normal currents being 3000 milliamperes for the hand lamp and 4200 milliamperes for the body lamp.

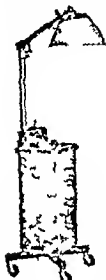


Fig. 1—Lepel High Frequency Combination Machine

Two kinds of lamps, a "hand lamp" and a "body lamp" and two kinds of lamp bulbs (of quartz, and of Corex D glass) were tested.

The following is a summary of the radiometric measurements of the ultraviolet radiant flux ($U \cdot V \cdot Q$) in microwatts per square centimeter ($\mu W/cm^2$) of wavelengths shorter than and including 313 millimicrons, emitted by these lamps.

I Hand Lamp Quartz Bulb

On 3000 M A $U \cdot V \cdot Q = 161 \mu W/cm^2$ at 24 (61 cm)
 $= 403 \mu W/cm^2$ at 12 (30.5 cm)
 Erythemogenic efficiency = 0.351 I E U = 57 $\mu W/cm^2$ for a 15 min exposure
 $= 14 \mu W/cm^2$ for a 60 min exposure

II Body Lamp Corex Bulb

On 4200 M A $U \cdot V \cdot Q = 242 \mu W/cm^2$ at 24 (61 cm)
 Erythemogenic efficiency = 0.272 I E U = 73 $\mu W/cm^2$ for a 15 min exposure
 $= 18.5 \mu W/cm^2$ for a 60 min exposure

III Body Lamp Quartz Bulb

Distance 24 (61 cm)
 On 4200 M A $U \cdot V \cdot W = 543 \mu W/cm^2$
 4000 M A $U \cdot V \cdot W = 494 \mu W/cm^2$
 3800 M A $U \cdot V \cdot W = 450 \mu W/cm^2$
 3500 M A $U \cdot V \cdot W = 357 \mu W/cm^2$
 slightly luminous
 $= 25 \mu W/cm^2$
 Erythemogenic efficiency (normal operation 4200 M A)
 $= 0.313, I E U = 64 \mu W/cm^2$ for a 15 min exposure,
 $= 16 \mu W/cm^2$ for a 60 min exposure

From the foregoing data it follows that

the Hand Lamp emits $(161 + 57) = 218 E U$ (Quartz bulb)
 the Body Lamp emits $(242 + 73) = 315 E U$ (Corex bulb)
 the Body Lamp emits $(543 + 64) = 607 E U$ (Quartz bulb)

From this it appears that at a distance of 24 inches (61 cm) from the center of the bulb in its reflector, the time to produce a minimum perceptible erythema is as follows: the hand lamp with quartz bulb 53 minutes, the body lamp with Corex bulb 45 minutes, and the body lamp with a quartz bulb, 175 minutes.

This is in good agreement with the manufacturer's claims for effectiveness in producing an erythema. As already stated, the spectral energy distribution of these two lamps is practically the same as that of the hot quartz mercury arc lamp. These two lamps are eligible for acceptance on the same basis as other quartz mercury arc lamps already accepted by the Council.

Small generators of ultraviolet radiation have been designed by the firm which are said to be useful in irradiation of the nose, sinus, trachea, middle ear, larynx, bladder, kidney, urethra, colon and stomach. The small lights come in diameters of 3, 5, 7 and 9 mm. The high frequency electric current generated by the units energizes the miniature quartz lamp bulbs,

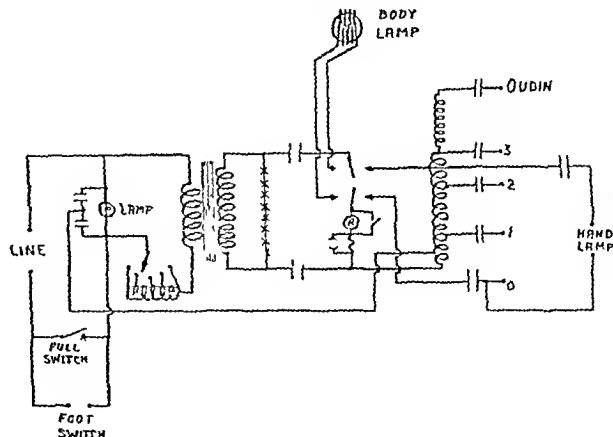


Fig. 2—Schematic diagram of circuit

which are mounted on the end of wired catheter tubes so that they can be inserted into small cavities. The firm claims. The Council has not received critical evidence substantiating the therapeutic value of these lamps and therefore does not recommend them for therapeutic purposes. However, the ultraviolet generators designed for general and official irradiation are acceptable. Figure 2 is a schematic diagram of the circuit.

As an adequate generator of high frequency current for medical and surgical diathermy, the unit appears satisfactory. The Council therefore includes the Lepel High Frequency Combination Machine and Ultraviolet Light Attachment in its list of accepted devices.

Council on Pharmacy and Chemistry**NEW AND NONOFFICIAL REMEDIES**

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH Secretary

POLLEN EXTRACTS-MULFORD (See New and Nonofficial Remedies, 1934, p 38)

The following additional products, marketed in 5 cc vials containing 2,000 pollen units per cubic centimeter, have been accepted

Live Oak Pollen Extract Mulford Red Clover Pollen Extract Mulford Sweet Clover Pollen Extract Mulford Southern Ragweed Pollen Extract Mulford

BISMUTH SUBSALICYLATE (See New and Nonofficial Remedies, 1934, p 116)

Ampules Bismuth Subsalsicylate 2 grams (0.13 Gm) in Oil 1 cc A suspension of bismuth subsalsicylate U S P 0.13 Gm camphor 0.1 Gm and creosote 0.1 Gm in sufficient olive oil to make 1 cc

Prepared by the Cheplin Biological Laboratories Inc Syracuse N Y No U S patent or trademark

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT
PAUL NICHOLAS LEECH Secretary

DI-HYDRANOL NOT ACCEPTABLE FOR N N R

Di-Hydranol was first presented for the Council's consideration by the manufacturer Sharp & Dohme, Inc, under its chemical name 2-4 dihydroxy phenyl n-heptane (June 25, 1930). At that time the firm stated that the substance was to be used as an "intestinal antiseptic" but gave no statement as to dosage or mode of administration. There was no mention of the name Di-Hydranol in that presentation. The product was again presented (Oct 7, 1930), this time under the name Di-Hydranol. The claims were as follows

- (1) Di Hydranol is more than 100 times as bactericidal as phenol
- (2) It is only absorbed to a small extent from the intestinal tract
- (3) It possesses a definite selective action against Gram positive organisms including the putrefactive flora of the intestine

The Council questioned whether the name Di-Hydranol is satisfactory and concluded (a) that the name Di-Hydranol be considered satisfactory for the product when and if it is accepted with the further approval of Leonard and Feirer¹ or others if necessary and the adoption of heptyl resorcinol as a synonym (b) that consideration of acceptance await evidence of its clinical effectiveness. The name was proposed by Leonard and Feirer¹ in 1931.

In a further report the Council raised the question of the clinical value of Di-Hydranol and pointed out that the paper of Leonard and Feirer¹ which was presented by Sharp & Dohme as evidence of the drug's usefulness as an intestinal antiseptic, was not sufficient to substantiate the claims made for the product. The Council voted that Di-Hydranol be held unacceptable because of lack of evidence of its clinical usefulness and adopted a statement setting forth the facts here summarized. However as a result of a letter (May 5, 1931) from Sharp & Dohme in which the firm acceded to this action of the Council, the Council voted to postpone publication of the statement of its consideration of Di-Hydranol and to postpone consideration of the product. The firm agreed to desist from active propaganda for Di-Hydranol to obtain further evidence of its usefulness from practicing physicians and to revise the labels and pamphlet in accordance with changes suggested by the Council.

Nov 23, 1933 the secretary of the Council wrote to Sharp & Dohme requesting clinical evidence current advertising and

labels. In reply to this letter Sharp & Dohme wrote (Dec 6, 1933)

"We have corrected our labels and booklet according to suggestions from the Council as you will note from the three copies of each we are enclosing with this letter."

We have supplied hundreds of clinical report blanks referred to in our letter of May 5 [1931], to physicians and have received dozens of favorable clinical reports from them on the use of Di-Hydranol but we now realize such reports would be looked upon by the Council as simply an expression of opinion from physicians and not acceptable clinical data. With this in mind we have since supplied an abundance of material to various investigators in most cases connected with medical schools but the gathering of properly controlled scientific clinical tests involves considerable expenditure of money which in many instances the institutions lacked during the past few years and which we were unable to supplement and keep within our budget requirements.

We have just been advised that an investigator located in Chicago has completed his preliminary survey with Di-Hydranol and that his results were so satisfactory he intends reading a paper on the subject in the spring in Cleveland and we understand this will be published at a later date. Obviously the results of this experimental work are not available for us to submit to the Council at the present time.

Inasmuch as we never have made any other claim than that Di-Hydranol destroys the putrefactive flora of the intestinal tract we suggest that the Council accept Di-Hydranol with the provision we make no claims other than that stated above and neither will we until we can submit acceptable clinical evidence to substantiate any further claims.

It will be noted that in the last paragraph the firm suggests acceptance of Di-Hydranol by the Council with the understanding that the only claim made for it be that it destroys the "putrefactive" flora of the intestinal tract.

Later, evidence became available that the firm is now circulating the profession on Di-Hydranol.

The labels and advertising booklet submitted by Sharp & Dohme, Inc, are in the same form as those revised according to their letter of May 5, 1931, and submitted to the Council on May 8 and May 14, 1931.

The labels indicate that the dosage forms are

- (a) 5 per cent solution of Di-Hydranol in olive oil
- (b) Soluble elastic capsules 0.15 Gm Di-Hydranol (a 25 per cent solution in olive oil)

The chief claim is stated on the label for the capsules as follows: "A powerfully germicidal substance possessing a selective bactericidal action against the putrefactive flora of the intestinal tract."

The first two sections of the booklet deal with the origin and chemical composition of Di-Hydranol. The third section, headed "Bactericidal Activity" makes the claims already considered by the Council. In addition, the last sentence of this section also mentions the possible use of Di-Hydranol as a protozoa acid drug.

The next section of the booklet deals with toxicity. The statement is made that in seventy-nine adults receiving repeated doses of Di-Hydranol in elastic gelatin capsules of olive oil solution no toxic result was observed except the occasional occurrence of slight diarrhea or constipation. In the next section, dealing with excretion the following statement is made:

When administered by mouth the bulk of each dose of Di-Hydranol passes through the alimentary canal unabsorbed and may be detected in the stools by Barbour's test (5). The drug appears in the urine in easily detectable concentration only after massive doses. The fact that Di-Hydranol remains largely unabsorbed first suggested its use as an intestinal antiseptic.

The remainder of the booklet summarizes the work of Leonard and Feirer¹ on the control of intestinal putrefaction in man by the oral administration of Di-Hydranol. This paper will be summarized and discussed later in this report. The last paragraph of the booklet states the indications for the drug as follows:

Di-Hydranol is indicated therefore in the treatment of cases in which benefit to the patient may be anticipated from the elimination of the putrefactive flora.

Hampil² has determined the phenol coefficient according to the U S Hygienic Laboratory method of the series of alkyl resorcinols to which heptyl resorcinol belongs. This author found that amyl hexyl, heptyl and octyl resorcinols have the greatest bactericidal activity and that the activity of hexyl heptyl and octyl resorcinols is greatly enhanced at 37 C. The decreased activity of compounds with longer carbon chains is

¹ Leonard V and Feirer W A Bull Johns Hopkins Hosp 48 25 (Jan) 1931

² Hampil B J Infect Dis 43 25 (Jul) 1928

presumably due to insolubility, for increase of temperature and alkaline reaction, both of which increase the solubility, also increase the bactericidal activity. The presence of gelatin as other protein material decreases the bactericidal activity of resorcinols considerably and with heptyl resorcinol this decrease is almost 90 per cent. In the light of the latter observation the statement in the advertising pamphlet that Di Hydranol has a bactericidal activity 100 times that of phenol at body temperature is rather misleading since the compound must act in the intestine in the presence of proteins and protein split products.

The alkyl resorcinols, especially hexyl, heptyl and octyl resorcinol, have a selective action on many bacteria belonging to the gram positive group as demonstrated in vitro by Hampil³ and in vivo by Ratchliffe⁴ and Leonard and Feirer.¹ Ratchliffe showed by means of bacterial plate counts on stools that the gram positive organisms of the acidophilus group are eliminated from the intestinal flora of rats under treatment with butyl, hexyl, heptyl and octyl resorcinols and that the gram-negative lactose fermenters of the coli-aerogenes group then become predominant. Leonard and Feirer appear to have shown the elimination of gram-positive spore forming anaerobes from the intestinal tract of human beings treated with heptyl resorcinol (Di-Hydranol). It is possible that these organisms were not always destroyed in the intestine but failed to grow in the stool cultures because of the bacteriostatic or bactericidal action of Di-Hydranol excreted in the feces. This point needs further investigation.

The toxic effects of Di Hydranol are those of alkyl resorcinols in general. Eustis⁴ reports colic and nausea with occasional vomiting in some of the cases treated with the drug in olive oil. Faust⁵ reports that the toxic effects in human beings are negligible. David and Johnstone⁶ report one case out of thirteen treated in which a number of watery stools followed the administration of Di Hydranol. All investigators seem to agree that the drug is too irritating to be given in the crystal line form but phenylsalicylate coated pills or olive oil solution may be administered in large amounts without serious toxic symptoms.

Robbins⁷ has made quantitative studies on the absorption and excretion of hexyl and heptyl resorcinol in dogs. This investigator found that after the administration of 1 Gm doses by mouth of crystalline hexyl resorcinol an average of 67 per cent was recovered from the feces and 29 per cent from the urine. Heptyl resorcinol was absorbed to a much smaller extent, 96 per cent being excreted in the feces and only 1 per cent recovered from the urine. When hexyl resorcinol is given in olive oil excretion in the urine is reduced from 29 per cent to 17 per cent. The drugs were recovered in the free state from the feces but the compounds excreted in the urine were in a nonbactericidal conjugated state. So far these observations coincide quite well with the claims made by the manufacturers of Di-Hydranol.

The claims of Sharp & Dohme Inc. for the use of Di Hydranol as an intestinal antiseptic are based largely on a paper by Leonard and Feirer.¹ These investigators assume no position in regard to the clinical importance of so called intestinal putrefaction. They do maintain, however, that true intestinal putrefaction is caused by the group of spore bearing anaerobes to which *Clostridium sporogenes* and *Clostridium putrificum* belong. As a result of tests on many normal subjects in which increasing dilutions of stools are added to tubes of Holman's cooked meat medium Leonard and Feirer conclude that the existence of any large numbers of putrefactive anaerobes in the intestine of human beings is comparatively rare. They treated twenty-eight subjects whose stools showed putrefactive anaerobes with Di-Hydranol over a period of from nineteen to twenty-nine days and observed the disappearance of *Clostridium sporogenes* and *Clostridium putrificum* from the feces. No return of the organisms occurred during a period of four months after treatment. These experiments although

not very extensive, do seem to warrant the conclusion of the authors that Di-Hydranol is effective in removing putrefactive anaerobes from the intestinal tract.

In regard to the clinical significance of these experiments, two questions must be raised.

1 Are the anaerobes *Clostridium sporogenes* and *Clostridium putrificum* solely responsible for the conditions called 'intestinal putrefaction,' 'chronic, intestinal toxemia' and 'auto-intoxication'?

2 Does putrefaction in the intestine have any clinical significance?

Leonard and Feirer apparently assume that the first question may be answered in the affirmative, but they give no references nor can any convincing evidence be found to support this position. Organisms of the colon-aerogenes group which are not affected by Di-Hydranol also produce ptomaine bases, amines, indole, skatole and phenol from the products of digestion in the intestine. A paper by Eustis⁴ describes the treatment of fourteen cases of obstinate intestinal toxemia with Di Hydranol over a period of from one to six months. This author used Salkowski's test for indicanuria (indole produced by the colon aerogenes group) as a guide to intestinal putrefaction. Improvement was noted in one of the cases but in the remaining thirteen cases no decrease in the indicanuria or evidences of clinical improvement were observed. This is the only direct clinical test of the value of Di-Hydranol in 'intestinal putrefaction' that can at present be found. Sharp & Dohme, Inc., state in the letter quoted that other investigations are now in progress but have not as yet been published.

The clinical importance of 'intestinal putrefaction' is at present and always has been a controversial subject, a fact admitted by Leonard and Feirer. The Council has held that the paper of Leonard and Feirer was insufficient to establish the clinical usefulness of Di-Hydranol.

Since the Council's last consideration of the drug, several papers have been written on the use of Di-Hydranol in the treatment of intestinal conditions other than "putrefaction." Leiva⁸ compared the effectiveness of Di-Hydranol with that of phenyl salicylate-methenamine in the treatment of cholera carriers and found that the two drugs were about equally effective. All but two of the seventy-two cases treated finally became negative most of them after from two to four days.

Favorable results have been reported by several investigators who used Di-Hydranol to treat intestinal protozoal infections in man and experimental animals.⁹ Most of the protozoa (including *Endamoeba histolytica* in carriers) were eliminated except those with resistant cyst capsules. *Endamoeba coli*, *Chilomastix* and *Giardia lamblia* were less amenable to the treatment. Faust points out that Di-Hydranol appears especially valuable for chronic carrier cases and for those in which hospitalization is not practical.

In the treatment of helminth infestations, Di-Hydranol seems to have little if any advantage over hexyl resorcinol.¹⁰ David and Johnstone in their paper quote two more investigators who report favorable results in the use of Di-Hydranol for intestinal protozoa and to a lesser extent for worms. The antihelminthic action of hexyl and heptyl resorcinols is greatly diminished when the drugs are given in olive oil; the best results being obtained with sugar coated or phenyl salicylate coated pills.

In conclusion it may be stated that Di-Hydranol appears to offer more promise in the treatment of infestations with intestinal parasites, especially protozoa, than it does for the treatment of that vague clinical condition 'intestinal putrefaction.' No further experimental evidence has been advanced by the manufacturer to justify the use of the drug in the latter condition other than that offered with the first presentation in 1931 and on this evidence the drug was found unacceptable.

The Council declared Di-Hydranol unacceptable for inclusion in New and Nonofficial Remedies because of lack of clinical evidence of its usefulness. This action was taken without prejudice against future reconsideration.

¹ Ratchliffe H L. *Am J Hyg* 10: 643 (Nov.) 1929

² Eustis A. *South M J* 25: 1231 (Dec.) 1932

³ Faust E C. *Proc Soc Exper Biol & Med* 27: 905 (June) 1930

⁴ David N A and Johnstone H C. *Am J Hyg* 17: 287 (Jan.) 1933

⁵ Robbins J. *Pharmacol & Exper Therap* 43: 325 1931

⁸ Leiva Lamberto. *Am J Trop Med* 12: 509 (Nov.) 1932

⁹ Faust E, David N A and Jerke C D. *Proc Soc Exper Biol & Med* 25: 196 (Nov.) 1930. Ratchliffe, H L. *Am J Trop Med* 11: 285 (July) 1931

¹⁰ Lamson P D, Caldwell C L, Brown H W and Ward C B. *Am J Hyg* 15: 306 (Jan.) 1932. David and Johnstone⁴

Committee on Foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG Secretary

NUEFUD

Manufacturer—Perewe Products Company, Brooklyn

Description—Small, noodle-like strips prepared from corn and potato starches and egg yolk

Manufacture—The potato and corn starches are sieved, mixed with liquid egg yolk until lumps are formed, kneaded to an elastic dough, rolled into sheets of one-sixteenth inch thickness, and thoroughly air dried. The dough sheets are shredded or cut into various forms, which are spread on canvas, dried at room temperature and packed into cartons

Analysis (submitted by manufacturer) —

	per cent
Moisture	12.5
Ash	1.3
Lipoids	26.0
Protein (N X 6.25)	12.5
Starch (diastase method)	47.5
Lipoid phosphoric acid (P O ₅)	0.66
Crude fiber	0.0
Carbohydrates (by difference)	47.0
Iron (Fe)	0.006
Magnesium (Mg)	0.01
Calcium (Ca)	0.05
Sodium (Na)	0.02
Potassium (K)	0.04

Calories—4.7 per gram 133 per ounce

Claims of Manufacturer—Rich in vitamins A and G, good source of vitamin B

GRIDDLE KING SELF-RISING PANCAKE FLOUR

Manufacturer—The Light Grain and Milling Company, Liberal, Kan

Description—A self-rising pancake flour containing winter wheat short patent flour, rye and corn flours, dextrose, calcium acid phosphate, sodium bicarbonate, salt, and dried skim milk

Manufacture—The ingredients are mixed in definite proportions in a batch mixer and automatically packed in fiber bags

Analysis (submitted by manufacturer) —

	per cent
Moisture	8.8
Ash	5.2
Fat (ether extraction method)	1.5
Protein (N X 5.7)	9.7
Reducing sugars as invert sugar	3.4
Sucrose (copper reduction method)	2.1
Crude fiber	0.9
Carbohydrates other than crude fiber (by difference)	73.9

Calories—3.5 per gram 99 per ounce

JELL-O

A GELATIN DESSERT

(CHERRY, LEMON, LIME, ORANGE RASPBERRY AND STRAWBERRY FLAVORS)

Manufacturer—The Jell-O Company, Inc., LeRoy, N. Y., Division of General Foods Corporation

Description—Dessert powders containing cane sugar, gelatin, tartaric or citric acid, fruit flavor, and natural color

Manufacture—The ingredients in definite proportions are mixed and automatically packed

Analysis (submitted by manufacturer) —

	per cent
Moisture	0.8
Ash	0.2
Protein (N X 5.55)	11.0
Sucrose	86.0
Tartaric or citric acid	2.0

Calories—3.9 per gram 111 per ounce

JELKE GOOD LUCK SHORTENING

Manufacturer—John F. Jelke Company, Chicago

Description—Mixture of oleo oil and cottonseed oil

Manufacture—The two oils are thoroughly mixed in a steam jacketed tank, solidified and printed into pound blocks

Analysis (submitted by manufacturer) —

	per cent
Fat (ether extract)	100
Protein (N X 6.25)	0.03
Ash	0.004

Calories—4 per gram 114 per ounce

GOLD CHAIN WHOLE WHEAT FLOUR

RED CHAIN WHOLE WHEAT FLOUR

Manufacturer—Universal Mills, Fort Worth, Texas

Description—Hard dark whole wheat flour

Manufacture—Whole wheat is cleaned, scoured, crushed and ground by the usual milling procedure. It is packed in packages for home use and sacks for commercial use

Analysis (submitted by manufacturer) —

	per cent
Moisture	12.13
Ash	1.8
Fat (ether extraction method)	2.0
Protein (N X 5.7)	16.0
Reducing sugars as invert sugar	2.0
Crude fiber	1.8
Carbohydrates other than crude fiber (by difference)	65.9

Calories—3.5 per gram 99 per ounce

Claims of Manufacturer—Conforms to the United States Department of Agriculture definition and standard

JELKE GOOD LUCK SANDWICH SPREAD

Manufacturer—John F. Jelke Company, Chicago

Description—Sandwich spread containing water, cottonseed (or corn) oil, sweet pickle relish, sucrose, distilled vinegar, corn starch, salt, eggs, tapioca flour and mustard

Manufacture—The ingredients in definite proportions are prepared and admired as described for Jelke Good Luck Salad Dressing (THE JOURNAL, May 5 1934, p. 1472)

Analysis (submitted by manufacturer) —

	per cent
Moisture	42.7
Total ash	3.7
Sodium chloride	3.4
Fat (ether extract)	32.6
Protein (N X 6.25)	1.0
Reducing sugar as invert sugar	2.0
Sucrose (copper reduction method)	12.5
Crude fiber	0.6
Carbohydrates other than crude fiber (by difference)	18.3
Titrate acidity as acetic acid	1.1
Lipoid phosphoric acid as P O ₅	0.027
Total phosphoric acid as P O ₅	0.029

Calories—3.8 per gram 108 per ounce

PLEE-ZING UNSWEETENED COOKING CHOCOLATE

Distributor—Plee-Zing, Inc., Chicago

Manufacturer—Moffat, Inc., Boston

Description—Ground cacao nibs or "chocolate liquor" in cake form. Same as Moffat Cooking Chocolate Unsweetened, THE JOURNAL, Jan. 20 1934, page 213

Claims of Manufacturer—Conforms to the United States Department of Agriculture definition and standard

OCCIDENT FLOUR

(BLEACHED OR UNBLEACHED)

Manufacturer—Russell Miller Milling Company, Minneapolis

Description—Hard wheat short patent flour, bleached or unbleached

Manufacture—Selected hard wheat is cleaned, washed, tempered and milled by essentially the same procedures as described in THE JOURNAL June 18, 1932 page 2210. Chosen flour streams are blended and bleached with nitrogen oxide and benzoyl peroxide or nitrogen trichloride

THE CLEVELAND SESSION

AMERICAN MEDICAL ASSOCIATION, EIGHTY-FIFTH ANNUAL SESSION
CLEVELAND, OHIO, JUNE 11-15, 1934

OFFICIAL CALL

TO THE OFFICERS, FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The eighty-fifth annual session of the American Medical Association will be held in Cleveland, June 11-15, 1934

The House of Delegates will convene at 10 a m, Monday, June 11 In the House the representation of the various constituent associations for 1932 1933 and 1934 is as follows

Alabama	3	New Hampshire	1
Arizona	1	New Jersey	4
Arkansas	2	New Mexico	4
California	7	New York	17
Colorado	2	North Carolina	3
Connecticut	2	North Dakota	1
Delaware	1	Ohio	7
District of Columbia	1	Oklahoma	3
Florida	2	Oregon	1
Georgia	3	Pennsylvania	10
Idaho	1	Rhode Island	1
Illinois	10	South Carolina	2
Indiana	4	South Dakota	1
Iowa	3	Tennessee	3
Kansas	2	Texas	5
Kentucky	3	Utah	1
Louisiana	2	Vermont	1
Maine	1	Virginia	3
Maryland	2	Washington	2
Massachusetts	6	West Virginia	2
Michigan	5	Wisconsin	3
Minnesota	3	Wyoming	1
Mississippi	2	Alaska	1
Missouri	5	Hawaii	1
Montana	1	Isthmian Canal Zone	1
Nebraska	2	Philippine Islands	1
Nevada	1	Puerto Rico	1

The fifteen scientific sections of the American Medical Association, the Medical Corps of the Army the Medical Corps of the Navy and the Public Health Service are entitled to one delegate each

The Scientific Assembly of the Association will open with the general meeting to be held at 8 p m, Tuesday, June 12 The sections will meet Wednesday, Thursday and Friday, June 13, 14 and 15 as follows

CONVENING AT 9 A M THE SECTIONS ON

Surgery, General and Abdominal	Nervous and Mental Diseases
Ophthalmology	Dermatology and Syphilology
Pediatrics	Gastro-Enterology and Proctology
Pharmacology and Therapeutics	Radiology

CONVENING AT 2 P M, THE SECTIONS ON

Practice of Medicine	Pathology and Physiology
Obstetrics Gynecology and Abdominal Surgery	Preventive and Industrial Medicine and Public Health
Laryngology Otology and Rhinology	Urology
Miscellaneous Topics	Orthopedic Surgery
Session on Forensic Medicine	
Session on Nutrition	

The Registration Department will be open from 8 30 a m until 5 30 p m Monday Tuesday Wednesday and Thursday June 11 12 13 and 14 and from 8 30 a m to 12 noon, Friday, June 15

DEAN LEWIS President
F C WARSHUIS, Speaker House of Delegates
OLIN WEST, Secretary

MEMBERS OF THE HOUSE OF DELEGATES

A Preliminary Roster of the Legislative Body of the American Medical Association

The list of members of the House of Delegates for the session is incomplete, as a number of the state associations are yet to hold their meetings at which delegates will be elected The following is a list of the holdover members of the House of Delegates and of the newly elected members who have been reported to the Secretary in time to be included

STATE DELEGATES

ALABAMA		MAINE	
C A Grote	Huntsville	Bertram L Bryant	Bangor
A A Walker	Birmingham	MARYLAND	
J N Baker	Montgomery	Randolph Winslow	Baltimore
ARIZONA		Alexius McGlannan	Baltimore
ARKANSAS		MASSACHUSETTS	
Leonce J Kosminsky	Texarkana	W H Robey	Boston
William R Brooks	Fort Smith	E F Cody	New Bedford
CALIFORNIA		R I Lee	Boston
C A Dukes	Oakland	J M Burnie	Springfield
J B Harris	Sacramento	C E Mongan	Somerville
W R Molony	Los Angeles	J F Burnham	Lawrence
E M Pallette	Los Angeles	MICHIGAN	
Lyell C Kinney	San Diego	C S Gorsline	Battle Creek
Fred B Clarke	Long Beach	J D Brook	Grandville
Elbridge J Best	San Francisco	H A Luce	Detroit
COLORADO		L J Hirschman	Detroit
John W Amesse	Denver	Carl F Moll	Flint
Crum Epler	Pueblo	MINNESOTA	
CONNECTICUT		H M Johnson	Dawson
Walter R Steiner	Hartford	W F Braasch	Rochester
George Blumer	New Haven	J T Christison	St Paul
DELAWARE		MISSISSIPPI	
James Beebe	Lewes	James M Acker Jr	Aberdeen
DISTRICT OF COLUMBIA		MISSOURI	
Henry C Macatee	Washington	Emmett P North	St Louis
FLORIDA		E J Goodwin	St Louis
GEORGIA		MONTANA	
William H Myers	Savannah	C T Pigot	Roundup
C W Roberts	Atlanta	NEBRASKA	
Olin H Weaver	Macon	R W Fouts	Omaha
IDAHO		B F Bailey	Lincoln
E N Roberts	Pocatello	NEVADA	
ILLINOIS		Horace J Brown	Reno
R L Green	Peoria	NEW HAMPSHIRE	
C S Skaggs	East St Louis	NEW JERSEY	
Mather Pfeiffer	Berger Altior	John F Hagerty	Newark
C E Humiston	Chicago	Walt P Conaway	Atlantic City
C B Reed	Chicago	Ephraim R Mulford	Burlington
INDIANA		A Haines Lippincott	Camden
H G Hamer	Indianapolis	NEW MEXICO	
R L Sensenich	South Bend	H A Miller	Clovis
Don F Cameron	Fort Wayne	NEW YORK	
F S Crockett	LaFayette	Thomas P Faumer	Syracuse
IOWA		Charles H Goodrich	Brooklyn
Fred Moore	Des Moines	Frederic E Sondern	New York
KANSAS		William D Johnson	Batavia
J D Colt Sr	Manhattan	Arthur J Bedell	Albany
KENTUCKY		Harry R Trick	Buffalo
Irvin Abell	Louisville	Edward R Cummin	New York
Virgil E Simpson	Louisville	Grant C Madill	Ogdensburg
A T McCormack	Louisville	Floyd S Winslow	Rochester
LOUISIANA		Thomas M Brennan	Brooklyn
Wm H Seemann	New Orleans	Daniel S Dougherty	New York
James Q Graves	Monroe	Nathan B Van Ethen	New York
		William H Ross	Brentwood
		George A Leitner	Piermont
		Orrin S Wightman	New York
		George M Fisher	Utica
		George W Kosmak	New York

NORTH CAROLINA
M L Stevens Asheville
D A Garrison Gastonia
G L Carrington Burlington

NORTH DAKOTA
Paul H Burton Fargo

OHIO
Wells Teachnor Sr Columbus
Ben R McClellan Xenia
E R Brush Zanesville
C W Stone Cleveland
J P DeWitt Canton
C E Kiely Cincinnati
C W Waggoner Toledo

OKLAHOMA
W Albert Cook Tulsa
Horace Reed Oklahoma City
McLain Rogers Clinton

OREGON
Ralph A Denton Portland

PENNSYLVANIA
Walter F Donaldson Pittsburgh
J Norman Henry Philadelphia
Samuel P Mengel Wilkes Barre
Arthur C Morgan Philadelphia
J Newton Hunsberger Norristown
William H Mayer Pittsburgh
Frank P Ivie Birdsboro
Howard C Frontz Huntingdon
Charles G Strickland Erie
J Allen Jackson Danville

RHODE ISLAND
Guy W Wells Providence

SOUTH CAROLINA
Edgar A Hines Seneca

SOUTH DAKOTA
W A Bates Aberdeen

TENNESSEE
H H Shoulders Nashville
E G Wood Knoxville
H B Everett Memphis

TEXAS
Holman Taylor Fort Worth
Felix P Miller El Paso

UTAH
E L Skidmore Salt Lake City

VERMONT
William G Ricker St Johnsbury

VIRGINIA
Warren F Draper Richmond
J C Flippin University
Hugh H Trout Roanoke

WASHINGTON
Brien King Seattle
John H O Shea Spokane

WEST VIRGINIA
James R Bloss Huntington
R H Walker Charleston

WISCONSIN
J Gurney Taylor Milwaukee
W F Dannen La Crosse
Joseph F Smith Wausau

WYOMING
George P Johnston Cheyenne

ALASKA
HAWAII
Alfred L Craig Honolulu

ISTHMIAN CANAL ZONE
Lewis B Bates Ancon

PHILIPPINE ISLANDS
PUERTO RICO
Oscar Costa Mandry San Juan

DELEGATES FROM THE SECTIONS AND GOVERNMENT SERVICES

PRACTICE OF MEDICINE
James S McLester Birmingham Ala

SURGERY GENERAL AND ABDOMINAL
J Tate Mason Seattle

OBSTETRICS GYNECOLOGY AND ABDOMINAL SURGERY
Arthur H Curtis Chicago

OPHTHALMOLOGY
Emory Hill Richmond Va

ENTOMOLOGY OTOLOGY AND RHINOLOGY
Burt R Shurly Detroit

PEDIATRICS
Isaac A Alt Chicago

PHARMACOLOGY AND THERAPEUTICS
A M Keith Rochester Minn

PATHOLOGY AND PHYSIOLOGY
D J Davis Chicago

NERVOUS AND MENTAL DISEASES
T B Throckmorton Des Moines Iowa

DERMATOLOGY AND SYPHILIOLOGY
Frank W Cregor, Indianapolis

PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH
Stanley H Osborn Hartford Conn

UROLOGY
H W E Walther New Orleans

ORTHOPEDIC SURGERY
Henry W Meyerding Rochester Minn

CASTROENTEROLOGY AND PROCTOLOGY
De-cum C McKenney Buffalo
RADIOLOGY
Albert Soland Los Angeles

UNITED STATES ARMY
Ross B Bretz Cleveland

UNITED STATES NAVY
Charles E Riggs Washington D C
UNITED STATES PUBLIC HEALTH SERVICE
I R Thompson Washington D C

OFFICERS OF THE AMERICAN MEDICAL ASSOCIATION, 1933-1934

PRESIDENT—Dean Lewis Baltimore

PRESIDENT ELECT—Walter L Bierring Des Moines Iowa

VICE PRESIDENT—John H Musser New Orleans

SECRETARY AND GENERAL MANAGER—Olin West Chicago

TREASURER—Herman L Kretschmer Chicago

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VICE SPEAKER HOUSE OF DELEGATES—Nathan B Van Eiten New York

EDITOR AND GENERAL MGR EMERITUS—George H Simmons Chicago

EDITOR—Morris Fishbein Chicago

BUSINESS MANAGER—Will C Braun Chicago

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ton Chicago 1937 Frederic A Washburn Boston 1938 Ray Lyman Wilbur Chairman Stanford University Calif 1939 J S McLester Birmingham Ala 1940 W D Cutter Secretary Chicago

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BUREAU OF LEGAL MEDICINE AND LEGISLATION—W C Woodward Director Chicago

BUREAU OF HEALTH AND PUBLIC INSTRUCTION—W W Bauer Director Chicago

BUREAU OF INVESTIGATION—Arthur J Cramp Director Chicago

BUREAU OF MEDICAL ECONOMICS—R G Leland Director Chicago

CHEMICAL LABORATORY—Paul Nicholas Leech Director Chicago

LIBRARY—Marjorie Hutchins Moore Librarian Chicago

CLEVELAND—THE CONVENTION CITY

Cleveland was a trading post on the Western Reserve frontier when Moses Cleaveland laid out the Public Square in 1796. Today it is the home of a million and a quarter people. The Public Square, which has always been the hub of its activities, was purchased by the Connecticut Land Company for \$175 in 1795. Today, a reasonable sale price would be \$20,000,000. Situated at the crossroads between the Atlantic States and the Middle West and founded by New Englanders, Cleveland has an atmosphere that places it somewhere between conservative New England and the breezier Middle West. Some of the smaller towns in the Western Reserve might easily be mistaken for New England villages, on casual inspection. Although numerically the sixth city in the United States, Cleveland has many of the comfortable attributes of the small town.

When the first cargo of iron ore from the Lake Superior region entered Cleveland's harbor in 1852, the immense lake traffic which is an important factor in the city's industrial life today was born. Visitors invariably find great fascination in the expanse of lake front with its busy wharves and ore docks, and the tug-escorted ore boats wending their tortuous way through the winding Cuyahoga River to the steel mills beyond.

Iron and steel have been Cleveland's premier industries since 1828, when the first smelter was established, and her present capacity is now over three million tons of pig iron annually. The industry now boasts continuous rolling mill equipment that is not equaled anywhere else in the world. The city also leads the world in production of wire nails, bolts and screws, malleable castings and heavy machinery and is one of the nation's largest hardware centers. Other leading Cleveland industries are multigraph and sewing machine manufacture, production of automotive bodies and parts, paints and varnish, ready-made clothing and knit goods, electrical machinery and apparatus, brick and tile. Ten thousand persons annually visit Nela Park to inspect the exhibits and demonstrations in this home of the National Lamp Works of the General Electric Company.

The branch banking system has reached its greatest development in Cleveland, and one of its banks has more depositors

than any other bank in any other American city. Cleveland's stores offer rarely excelled shopping opportunities. Euclid Avenue is one of the world's most famous shopping streets. One of its great stores sells more than \$50,000,000 worth of merchandise annually and is paid for it.

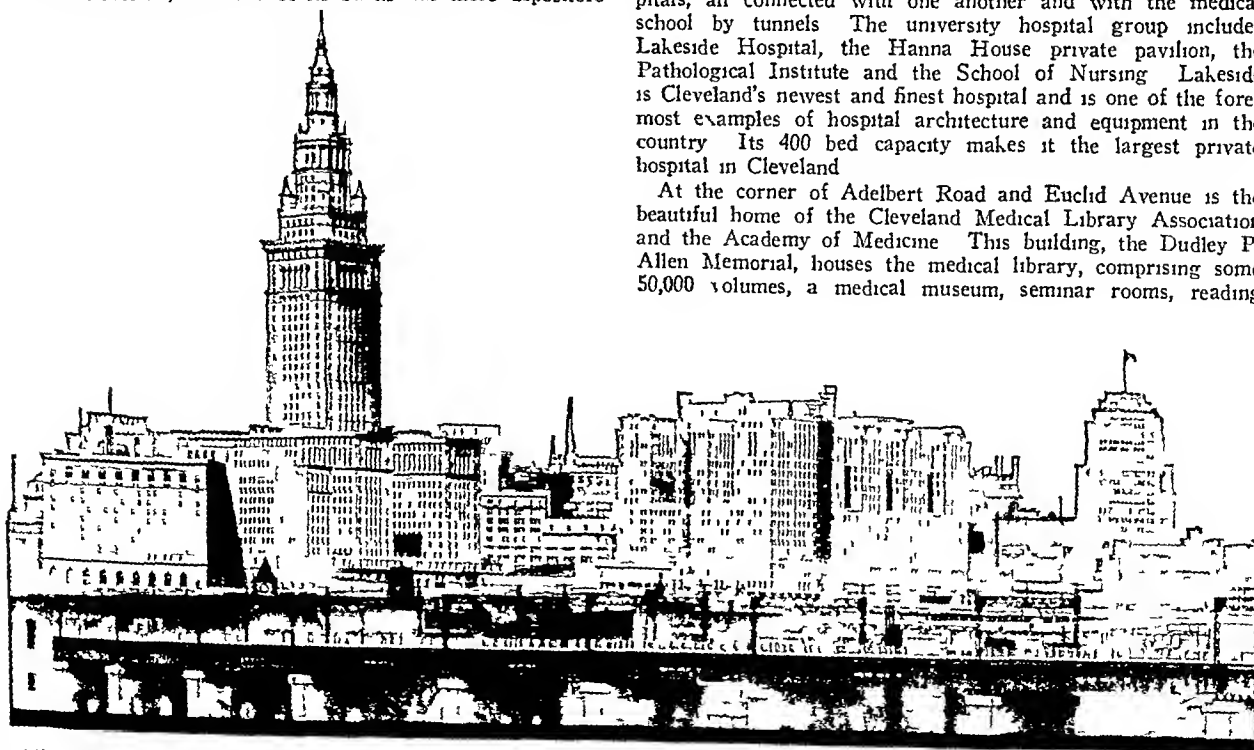
Two of Cleveland's noteworthy achievements in recent years are the development of the Mall, which extends from the lake front into the heart of the business district, and the completion of the mammoth Terminal group of buildings, which is a city within itself. The Mall, which is a huge T of 168 acres, will ultimately represent an investment of \$40,000,000 and includes the Federal Building, the Public Library, the Board of Education Building, the Public Auditorium, City Hall, the Cuyahoga County Court House, and the new municipal stadium on the lake.

The Public Hall, where all the meetings of the annual session will be held, is perhaps the most complete and serviceable municipal auditorium in the country. The huge main auditorium seats 12,500, while the Music Hall seats 3,000. As these two auditoriums have a common stage, 16,000 persons can be seated for a single event. The Ball Room and Little Theater have seating capacities of 1,500 and 700, respectively, and ten other halls range in seating capacity from 90 to 500. The Hall contains 200,000 square feet for exhibition purposes and every modern exhibit facility. It is located in the heart of the downtown district within easy walking distance of the principal hotels.

MEDICAL CLEVELAND

The School of Medicine of Western Reserve University and its affiliated hospitals form an important unit of medical Cleveland. The physical plant of the medical school is a modern five-story limestone building completed in 1924, the gift of the late Samuel Mather. It is located on a court off Adelbert Road near the campus of Adelbert College of Western Reserve University. Directly opposite the school are Babies and Childrens and Maternity hospitals, while several hundred yards to the north are the handsome buildings of the University Hospitals, all connected with one another and with the medical school by tunnels. The university hospital group includes Lakeside Hospital, the Hanna House private pavilion, the Pathological Institute and the School of Nursing. Lakeside is Cleveland's newest and finest hospital and is one of the foremost examples of hospital architecture and equipment in the country. Its 400 bed capacity makes it the largest private hospital in Cleveland.

At the corner of Adelbert Road and Euclid Avenue is the beautiful home of the Cleveland Medical Library Association and the Academy of Medicine. This building, the Dudley P. Allen Memorial, houses the medical library, comprising some 50,000 volumes, a medical museum, seminar rooms, reading



THE TERMINAL TOWER GROUP INCLUDING THE TERMINAL TOWER BUILDING THE HOTEL CLEVELAND THE MEDICAL ARTS BUILDING THE BUILDERS' EXCHANGE THE MIDLAND BANK A LARGE DEPARTMENT STORE AND RAILWAY TERMINAL FACILITIES THE BELL TELEPHONE BUILDING IS AT THE EXTREME RIGHT

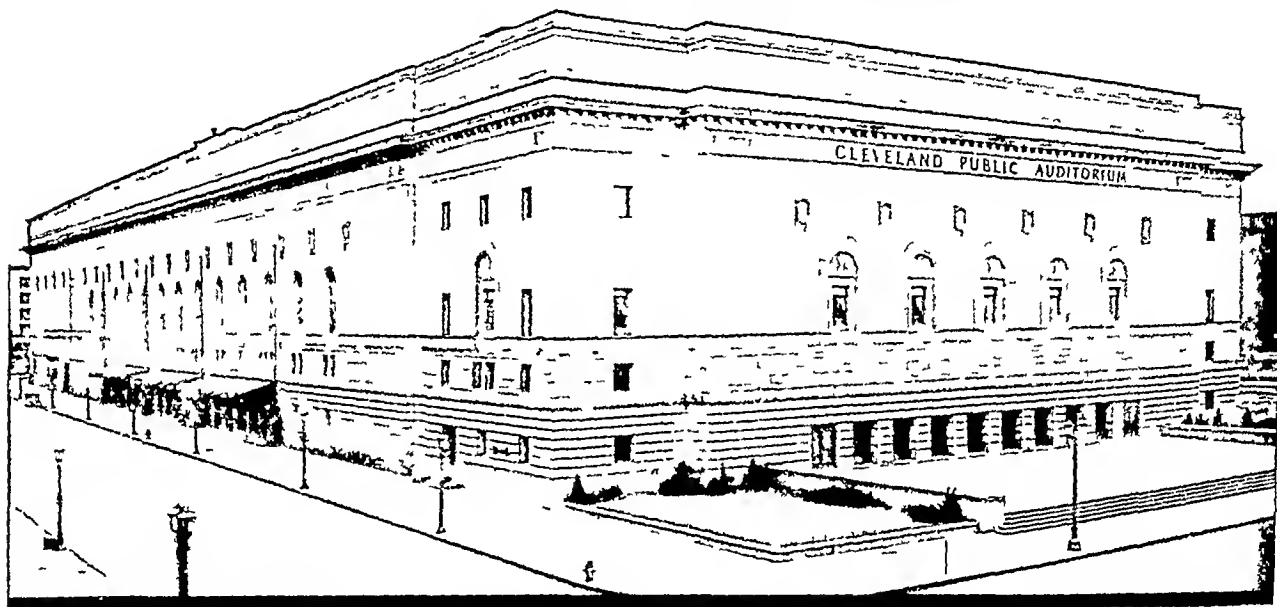
rooms, offices, executive offices of the Academy of Medicine and an auditorium seating 550. A short distance south of the medical group is the School of Dentistry, while surrounding it are the campus and various academic departments of the university and the Case School of Applied Sciences.

Within a stone's throw of the Medical Center are Severance Hall, the beautiful home of the Cleveland Orchestra, and the Museum of Art, with the Fine Arts Garden and Lagoons stretching before them. The Western Reserve Historical Museum and the School of Education are located on University Circle, a short distance from the Medical Center. The Museum of Natural History is located on Euclid Avenue farther in town.

The university district lies about three and a half miles east of Public Square, and only a short distance from the main uptown business district at Euclid Avenue and East One Hundred and Fifth Street. A quarter of a mile north of this district is Mount Sinai Hospital, Cleveland's third largest private hospital. Just below Mount Sinai Hospital, the broad expanse of Rockefeller Park winds its way northward to Lake

general wards for medical, surgical, pediatric and dermatologic patients, the Psychopathic Division, the Contagious Hospitals, the Pathological Laboratories, and the new Lowman Pavilion for Tuberculous Patients. The psychopathic and tuberculosis divisions serve as clearing houses for the acute cases coming within their specialties. After study, many of these patients are then transferred to appropriate city, county or state institutions for further care.

Aside from the municipal institution, Cleveland's hospitals and welfare activities are coordinated by the Welfare Federation, which has been faithfully administered for the past fifteen years by public spirited citizens. The community fund idea found its inception and greatest development in Cleveland. Through this agency millions of dollars have been subscribed annually for the hospitals and welfare activities of the community. The Welfare Federation supervises the budgeting and division of funds among the various agencies. The Hospital Council is a subsidiary organization which aids the participating hospitals in their common financial relations and in settling mutual administrative problems.



THE CLEVELAND PUBLIC AUDITORIUM
Headquarters of Annual Meeting of American Medical Association

Eric Women's Hospital also occupies this district. Half a mile to the west are the buildings of the Cleveland Clinic, which include a new clinic building, the hospital and the laboratories of the Clinic Research Foundation. The Cleveland Clinic, organized by Dr. George W. Crile and his associates ten years ago, is one of the largest and best known private clinics in the country.

CLEVELAND HOSPITALS

In addition to Lakeside and affiliated hospitals, medical students receive clinical instruction in Charity and City hospitals. Charity Hospital, which is one of Cleveland's pioneer institutions, remains as the only hospital in downtown Cleveland. It is located on East Twenty-Second Street four blocks south of Euclid Avenue. Charity Hospital has contributed greatly to the medical history of the community. It has a capacity of 300 beds. Within recent years, Lakeside, U. S. Marine, Huron Road and St. Luke's hospitals have left the downtown section for less crowded quarters in the outlying districts on the east side.

The department of welfare of the city of Cleveland has as its director David S. Ingalls, former assistant secretary of the navy. Under his direction are the various public health activities of the municipality, including the department of health, City Hospital, the City Correction Farm at Warrensville and Sunny Acres Tuberculosis Sanitarium. City Hospital houses 1,600 patients. The units included within its walls are the

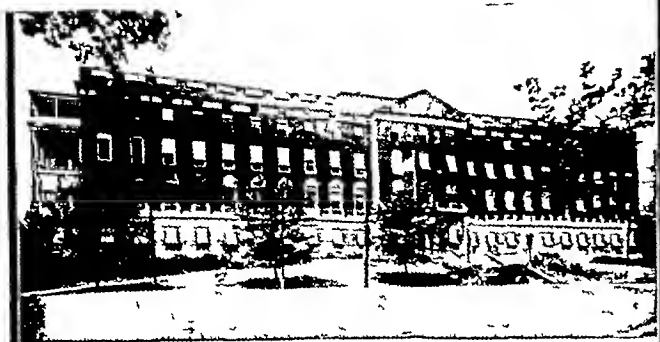
St. Luke's Hospital, affiliated with the Methodist Episcopal Church, occupies a monumental plant of recent completion on Shaker Boulevard, near the edge of Shaker Heights, in the southeastern part of the city. Its 390 bed capacity makes it the second largest private hospital.

St. Alexis Hospital, with its 220 bed capacity, is located in the steel mill district on the south side. It is one of the city's oldest hospitals. St. Alexis, Charity, St. John's and St. Ann's Maternity Hospital are the major Catholic hospitals of the community. St. John's Hospital is located on Detroit Avenue on the west side, and has 207 beds, while St. Ann's Maternity is located on lower Woodland Avenue.

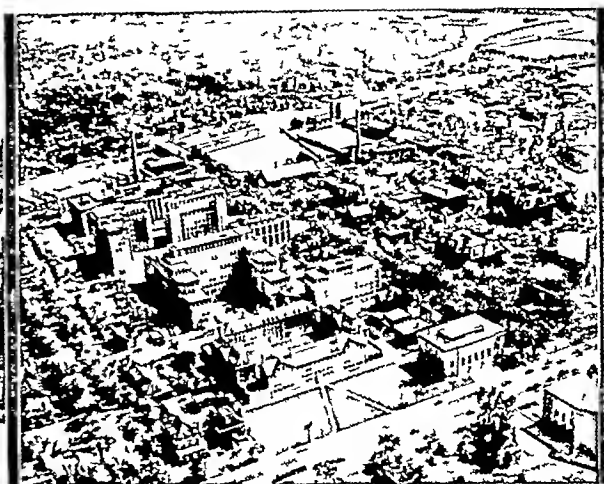
Among the other community fund hospitals are Lutheran and Fairview hospitals on the west side, Grace Hospital on the southwest, Evangelical Deaconess in Brooklyn, and Glenville Hospital in the northeastern part of the city. Rainbow Hospital, located in South Euclid, affiliated with the university, is a 125 bed convalescent hospital for chronic orthopedic and medical conditions among children. Huron Road Hospital has a new home nearing completion in East Cleveland.

THE ACADEMY OF MEDICINE

The Academy of Medicine of Cleveland is fortunate in having its own plant in conjunction with the Cleveland Medical Library. All its administrative offices and meeting rooms are located here. The scientific activities of the Academy include monthly general meetings and monthly or quarterly meetings.



MT SINAI HOSPITAL



WESTERN RESERVE

University Hospital Group The Academy of Medicine and Allen Memorial Medical Library Are in the Right Foreground



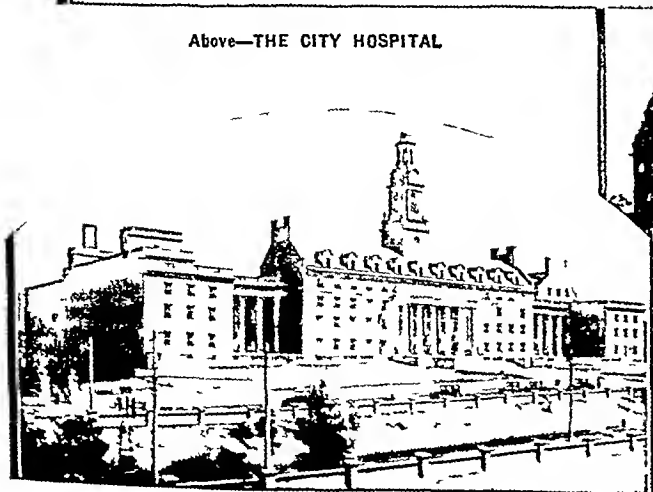
THE CHARITY HOSPITAL



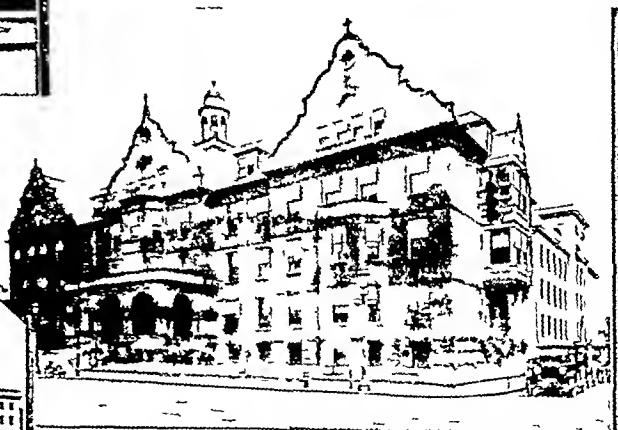
Above—THE CLEVELAND CLINIC HOSPITAL



Above—THE CITY HOSPITAL



Left—ST LUKE'S HOSPITAL



Above—THE ST ALEXIS HOSPITAL

SOME CLEVELAND HOSPITALS

of the following sections Clinical and Pathological, Otolaryngological and Ophthalmological, Obstetrical and Gynecological, Industrial and Orthopedic, Pediatric, Military, and Practice of Medicine

In addition to the usual organization committees, the Academy has an active economics committee, which is studying many pressing economic problems, making contacts with similar committees throughout the country, and advising the membership concerning problems studied. The Health Education Committee sponsors a series of educational lectures to the public annually and has sponsored radio programs. A committee on postgraduate study has presented courses on diseases of the respiratory tract and diseases of the gastro-intestinal tract, which have been well attended by the membership during the past two years. Special clinical demonstrations of latest methods of immunization were given the members prior to the preschool roundup last summer. A course on obstetrics and gynecology has been projected for next year.

The Academy has a full time executive office, a twenty-four hour call bureau service for members and information service for the public, and publishes a monthly bulletin. The Academy is responsible for developing the Cleveland Dispensary Admissions Plan, which has been widely copied elsewhere and which has been instrumental in maintaining in private practice thousands of patients who would otherwise have become dispensary clients. The Academy also put in effect a plan for rating patients of the "white collar class" and placing at their disposal a lower cost consultation service.

CLEVELAND AS A SUMMER RESORT

Lake Erie breezes help to maintain a comfortable temperature in Cleveland throughout practically the entire summer. This fact, together with the unequalled facilities for outdoor rest and recreation, make the city and surrounding country an ideal summer resort. The lake shore for many miles is dotted with summer colonies and several excellent amusement parks. Lake Erie provides admirable swimming, sailing, speed boating and fishing. Numerous day or overnight trips on the large lake steamers are available. In addition, there are numerous small lakes within a radius of fifty miles of the city which provide excellent swimming, boating and fishing, and several well stocked streams to tempt the angler. The district abounds in golf courses, some of them with as fine layouts as are to be found anywhere in the country. Many excellent clay courts are available for devotees of tennis. The Metropolitan Park system and city parks include miles of parkways and beauty spots for exploration on foot, horseback or motor. Many excellent stables and bridle paths which wind through the entire Cleveland district promise the horseman many hours of pleasant exploration. Hundreds of miles of excellent highways take the motorist through beautiful valleys, over hilly country or along the lake shore, and inns that provide excellent meals and comfortable lodging dot the countryside. In the city, theaters, night clubs and restaurants abound.

Cleveland is easily reached by water, rail, air and highway, being located on the main routes of all methods of travel, as is described in the item which follows.

TRANSPORTATION

Railroad Rates to Cleveland

Special rates have been granted for the benefit of members of the American Medical Association and dependent members of their families who will attend the annual session at Cleveland.

The Central, the New England, the Southwestern, the Transcontinental and the Western Passenger Associations as well as the Eastern Lines of the Canadian Passenger Association, have granted a rate of one and one-third fares. This rate is granted also by the Western Lines of the Canadian Passenger Association from Winnipeg and certain points in British Columbia.

To have the benefit of a return rate of one-third fare it will be necessary for each member to secure a **CERTIFICATE** from the railroad ticket agent when he purchases his ticket to Cleveland. The certificate must be certified to by the Secretary of the American Medical Association, which may be done at the registration Bureau, to be located in the Cleveland Public Auditorium, and must then be validated by a representative of the railroads. When the certificate is so certified and validated, it will entitle its holder to purchase a return ticket to his home, over the same route traveled to Cleveland, at one-third fare.

If the ticket agent at the member's home station does not have the certificate, he will furnish information as to where it may be obtained.

The certificate is not a receipt for money paid for a ticket, nor will a receipt entitle its holder to secure a return trip ticket at a reduced rate. Be sure to ask the ticket agent for a **CERTIFICATE**.

The dates of sale of tickets to Cleveland will be June 5 to 13 in the territory of the Eastern Lines of the Canadian Passenger Association as well as in the territories of the Central Passenger Association, the New England Passenger Association, the Transcontinental Passenger Association and the Western Passenger Association, and from Arkansas, Kansas, Louisiana,

Missouri, as well as Natchez, Miss., and Memphis, Tenn., in the territory of the Southwestern Passenger Association. The dates of sale of tickets from Oklahoma and Texas in the territory of the Southwestern Passenger Association will be June 4 to 12.

Certificates properly certified and validated will be honored for purchasing tickets for the return journey at one third fare up to and including June 19. No refund of fare will be made on account of failure to present validated certificate when purchasing return ticket. The return ticket must be used over the same route as that traveled going to Cleveland.

When you purchase your ticket to Cleveland, secure from the railroad ticket agent a **CERTIFICATE**, which, when properly certified to and validated will entitle you to purchase a return ticket to your home over the same route traveled to Cleveland, at one-third the fare paid for your ticket to Cleveland.

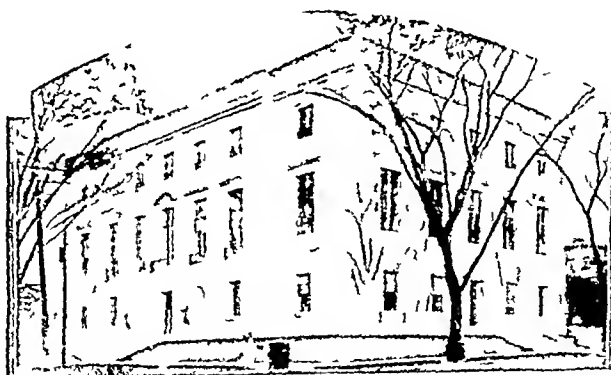
BE SURE TO ASK YOUR RAILROAD TICKET AGENT FOR A CERTIFICATE WHEN PURCHASING YOUR TICKET TO CLEVELAND

Summer Excursion Fares

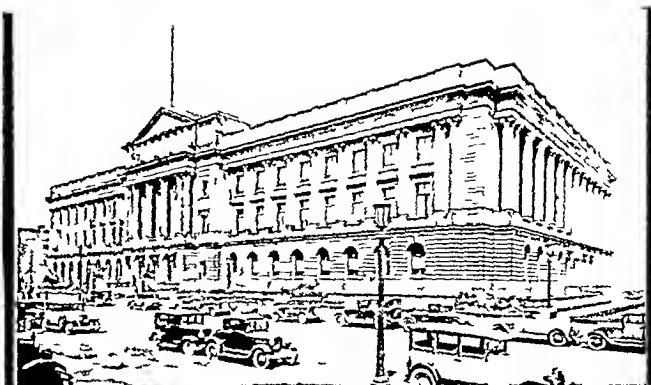
Summer excursion fares in the territories of the Transcontinental and Western Passenger Associations, which are on a lower basis than convention fares, will apply from the following territory: Arizona, British Columbia, California, Colorado (except Julesburg), Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming.

Boat Transportation Between Cleveland and Buffalo

The Cleveland and Buffalo Transit Company has announced that round trip rail tickets in either direction optionally provide rail or lake travel between Cleveland and Buffalo. Detailed information may be secured from the Cleveland and Buffalo Transit Company, Cleveland, Ohio.



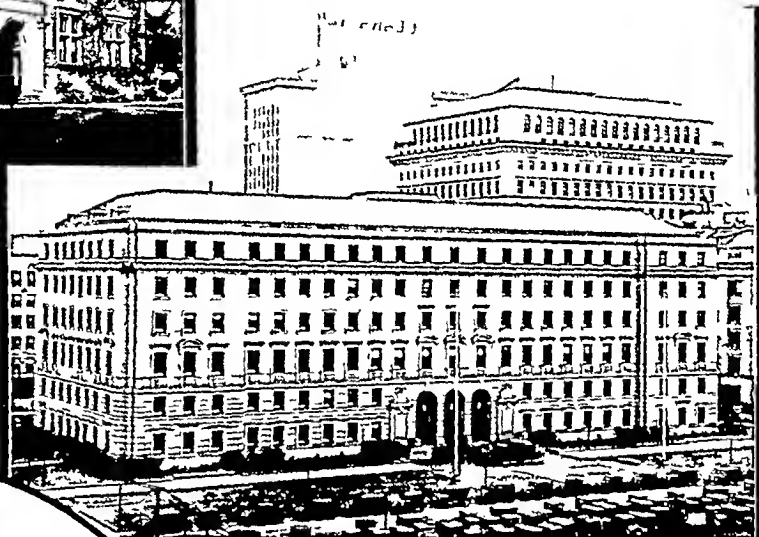
THE ALLEN MEMORIAL MEDICAL LIBRARY



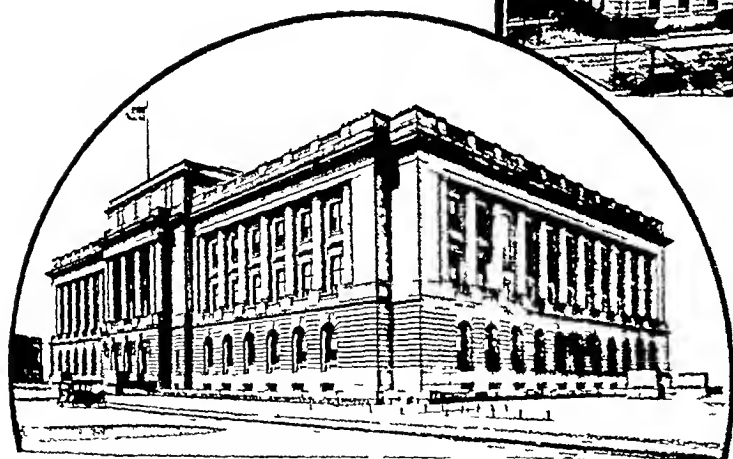
Above—The CUYAHOGA COUNTY COURT HOUSE



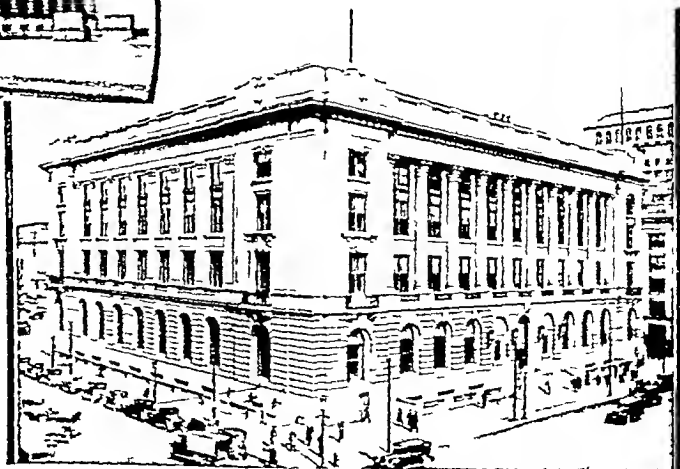
Above—THE CLEVELAND SCHOOL OF ART



THE BOARD OF EDUCATION BUILDING IN CLEVELAND



THE CLEVELAND CITY HALL



THE CLEVELAND PUBLIC LIBRARY

REGISTRATION

The Bureau of Registration will be located in the Cleveland Public Auditorium, Lakeside Avenue at East Sixth Street. Members of the Committee on Registration of the Local Committee on Arrangements will be on hand to assist those who desire to register. A branch postoffice in charge of government postoffice officials will be available for visitors and an information bureau will be operated in connection with the Bureau of Registration.

Who May Register

Only Fellows, Affiliate, Associate and Honorary Fellows, and Invited Guests may register and take part in the work of the sections. Fellows of the Scientific Assembly are those who have, on the prescribed form, applied for Fellowship, subscribed to THE JOURNAL, and paid their Fellowship dues for the current year. The annual Fellowship dues provide a subscription to THE JOURNAL for one year. Fellowship cards are sent to all Fellows after payment of annual dues, and these cards should be presented at the registration window. Any who have not received cards for 1934 should secure them at once by writing to the American Medical Association, 535 North Dearborn Street, Chicago.

Members in Good Standing Eligible to Fellowship

Members in good standing in component county medical societies are members of constituent state associations and of the American Medical Association. All members in good standing may apply for Fellowship in the Scientific Assembly and are urged to qualify as Fellows before leaving home in order that pocket cards may be secured and brought to Cleveland so that registration can be more easily and more promptly effected. Application forms may be had on request. Subscribers to THE JOURNAL who have not received pocket cards for 1934 should write to the American Medical Association for application blanks and information as to further requirements.

Register Early

Fellows living in Cleveland, as well as all other Fellows who are in Cleveland on Monday and Tuesday, should register as early as possible. The names of those who register will appear in the *Daily Bulletin* the next day, and this will enable visiting physicians to find friends if they have registered.

Suggestions That Will Facilitate Registration

Fellows should fill out completely the spaces on both sections of the front of the *white* registration card, which will be found on the tables in front of the Registration Bureau. Physicians who desire to qualify as Fellows should fill out completely the spaces on both sections of the front of the *blue* registration card, and sign the application on the back. These cards will be found on the tables. Entries on the registration cards should be written plainly, or printed, as the cards are given to the printer to use as "copy" for the *Daily Bulletin*, published on Tuesday, Wednesday, Thursday and Friday of the week of the session. Fellows who have their pocket cards with them can be registered with little or no delay. They should present the filled out *white* registration card, together with their pocket cards, at one of the windows marked "Registration by Pocket Card." There the clerk will compare the two cards, stamp the pocket card and return it, and supply the Fellow with a badge, a copy of the official program and other printed matter of interest to those attending the annual session.

As previously stated, it will assist in registering if those who desire to qualify as Fellows will file their applications and qualify as Fellows by writing directly to the American Medical Association, 535 North Dearborn Street, Chicago, so that their Fellowship may be entered not later than May 21. Any applications received later than May 21 will be given prompt attention, but the Fellowship pocket card may not reach the applicant in time for him to register at the Cleveland session.

It will be possible for members of the organization to qualify as Fellows at Cleveland. In order to do this, applicants for Fellowship will be required to fill out both sections of the front of the *blue* registration card and to sign the formal application that is printed on the reverse side of the card. As already stated, registration can be effected more easily and more promptly if members qualify as Fellows before leaving home.

It is suggested that those who apply for Fellowship at Cleveland provide themselves, before leaving home, with certificates signed by the secretaries of their state associations, attesting that they are members in good standing in state and county branches of the organization. A state membership card for 1934 will be acceptable. The certificate or membership card should be presented along with the filled in *blue* registration card at the window in the booth marked "Applicants for Fellowship and Invited Guests."

Registration for Delegates at the Hotel Statler

General Officers of the American Medical Association and members of the House of Delegates may register for the Scientific Assembly at a booth near the Ball Room of the Hotel Statler. This arrangement is made for the convenience of the members of the House of Delegates, which will convene on Monday morning at 10 o'clock in the Ball Room of the Hotel Statler. Delegates are requested to register for the Scientific Assembly before presenting credentials to the Reference Committee on Credentials of the House of Delegates. Registration of delegates for the Scientific Assembly will begin at 8 o'clock, Monday morning, June 11, and delegates are urged to register early so that all members of the House of Delegates may be seated in time for the opening session of the House.

CLEVELAND HOTELS

A list of Cleveland hotels is presented for the benefit of those who expect to attend the annual session of the American Medical Association, June 11-15. Dr. Hubert C. King is the chairman of the Subcommittee on Hotels of the Local Committee on Arrangements and may be addressed at 1604 Terminal Tower, Cleveland, Ohio. The advertising announcement and coupon for reservations appear on advertising page 95 of this issue.

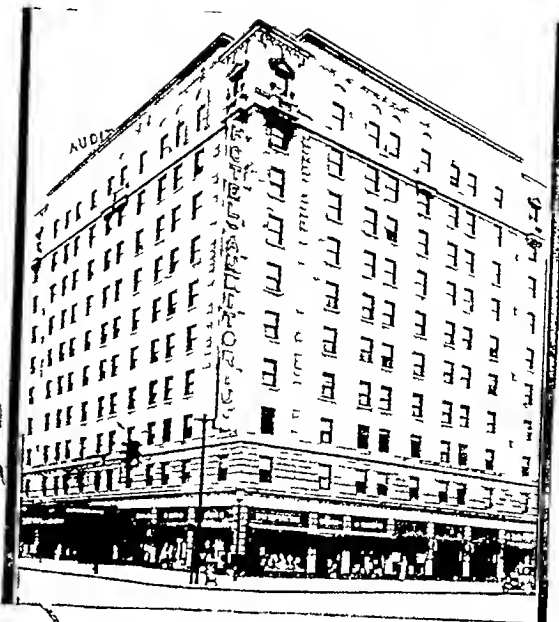
Hotels at Cleveland

NAME AND ADDRESS	Room— One Person		Room—Two Persons		
	Without Bath	With Bath	With out Bath	With Bath	
				Double Bed	Twin Beds
ALLERTON Chester Ave & E 13th St	\$2 00-2 50	\$3 00 3 50	\$3 00 4 00	\$4 00	\$4 50
AUDITORIUM St Clair Ave & E 6th St		2 00-3 00		3 50 4 50	5 00
CARTER Prospect Ave & E 9th St		2 50 5 00		4 00 6 00	5 50
CLEVELAND Public Square		2 50-6 00		4 00 5 00	5 10
COLONIAL 523 Prospect Avenue	1 50	2 50	2 50	3 00	3 50-4
FERN HALL 3250 Euclid Avenue		1 50 2 50		2 50 5 00	3 50
GILLESY 1811 E 9th Street	1 50	2 00 2 50	2 50	3 00 3 50	4 00
HOLLENBERG Superior Ave & E 6th St		2 50-6 00		3 50 7 00	5 12
MECCA 1862 E 9th Street		1 75 2 00		2 50 3 00	4 00
NEW AMSTERDAM Euclid Ave & E 22d St	1 50 2 00	2 50 3 50	2 50-3 00	3 50 4 50	4 50 5
OLMSTED Superior Ave & E 9th St		2 00-3 50		3 50 4 50	5 00
STATLER Euclid Ave & E 12th St		2 50 6 00		4 50 8 00	5-8
STERLING Prospect & E 30th St		2 00 3 00		3 00 4 00	3 50 5
RESIDENTIAL HOTELS					
ALCAZAR Surrey & Derbyshire Rds		3 00		5 00	5 00
BELMONT 3844 Euclid Avenue		2 50		4 00	5 00
BOLTON Carnegie Ave & E 89th St		2 00 3 00		3 00 3 50	
DEVON HALL 1588 Ansel Road	1 25		2 00		
LAKE SHORE 12506 Edgewater Drive		2 00 3 50		3 00 5 50	4 6
PARK LANE Park Lane & E 105th St		2 50 3 50			4 6
SOVEREIGN East Blvd & E 105th St		2 00		3 00	5 00
WADE PARK MANOR Park Lane & E 107th St		3 00 4 00			5-6
WESTLAKE Blount Road		2 50		4 00	4 50

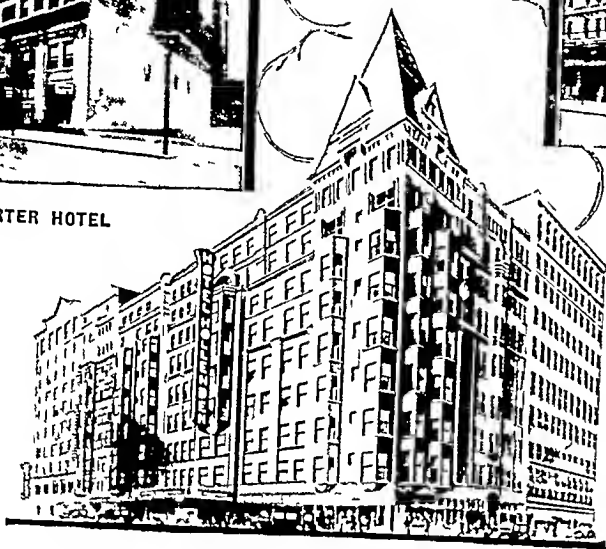
NOTE—A number of the lower priced single rooms are equipped with double beds. Many of these rooms are available for occupancy by a doctor and his wife at only \$1 more than the single rate.



THE CARTER HOTEL



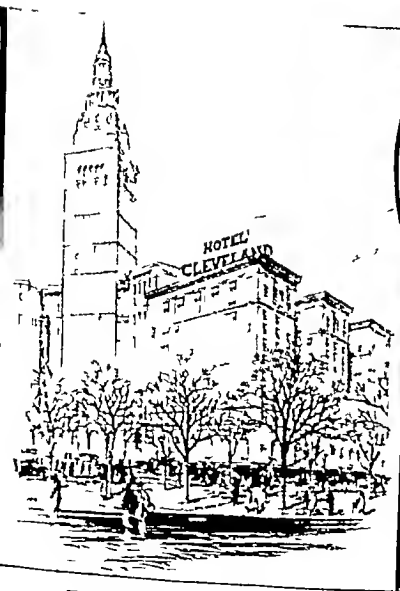
Above—THE HOTEL AUDITORIUM



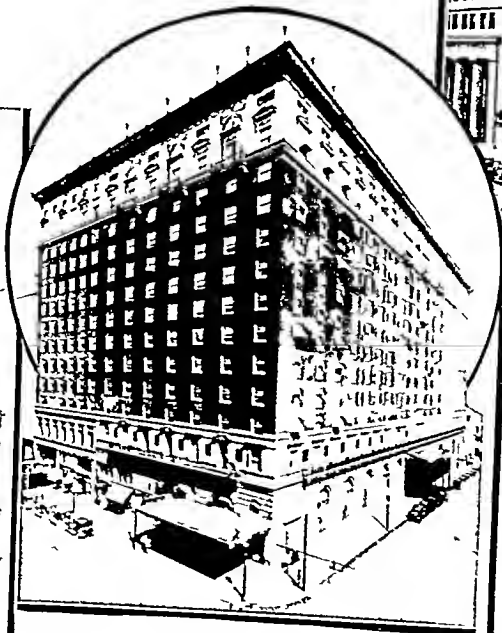
THE HOTEL HOLLENDEN



THE HOTEL OLMSTED



THE HOTEL CLEVELAND



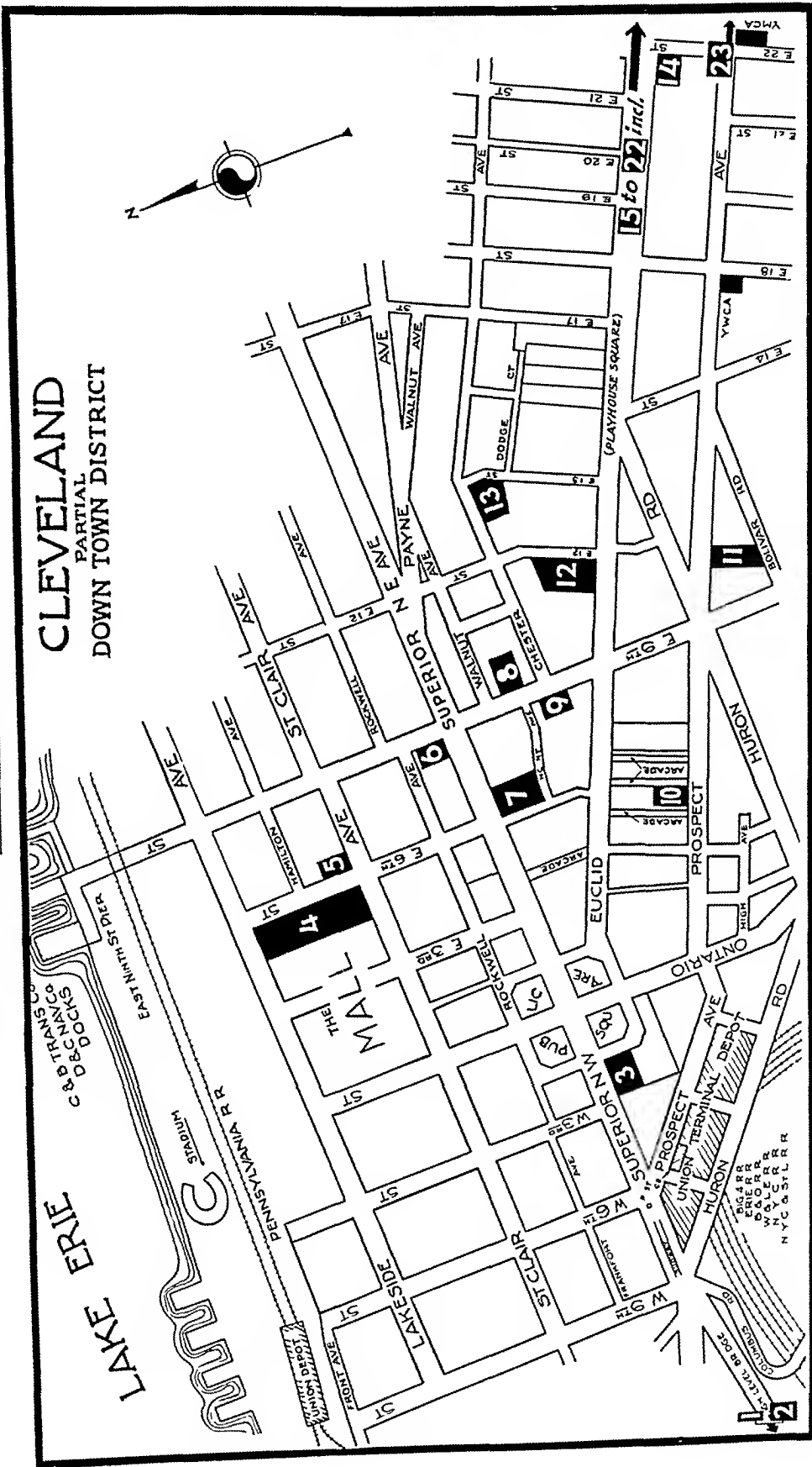
THE HOTEL STATLER



Right—THE ALLERTON HOTEL

SOME CLEVELAND HOTELS

MAP OF A PART OF CLEVELAND



KEY TO MAP

15	Colonial Hotel	10	Olmsted Hotel	6
13	Devon Hall	18	Park Lane Hotel	20
5	Fern Hall	19	Sovereign Hotel	21
16	Gilsey Hotel	8	Statler Hotel	12
17	Hollenden Hotel	7	Sterling Hotel	23
11	Lake Shore Hotel	1	Wade Park Manor	22
3	Mecca Hotel	9	Westlake Hotel	2
4	New Amsterdam Hotel	14		

GENERAL SCIENTIFIC MEETINGS

MONDAY, JUNE 11—2 P M

- Radiation in Cancer
ARTHUR C CHRISTIE, Washington, D C
- Silicosis (Various Forms of Pneumoconiosis and their Relation to Tuberculosis)
LEROY U GARDNER, Saranac Lake, N Y
- Artificial Pneumothorax
J A MYERS, Minneapolis
- Prostatic Hypertrophy
N G ALCOCK, Iowa City
- Bronchiectasis in Children
ISAAC A ABT, Chicago

TUESDAY, JUNE 12—9 30 A M

- Treatment of Chronic Bright's Disease
JAMES P O'HARE, Boston
- Goiter and Newer Developments in Management of Thyroid Disease
FRANK H LAHEY, Boston
- Dyspnea
JOHN C MEAKINS, Montreal

- Significance of Abdominal Pain
DEAN LEWIS, Baltimore
- New Methods in the Treatment of Syphilis
UDO J WILE, Ann Arbor, Mich

TUESDAY, JUNE 12—2 P M

- Epidemiology of Amebiasis
CHARLES F CRAIG, New Orleans
- Pathology of Amebiasis
HENRY E MELENEY, Nashville, Tenn
- Clinical Diagnosis of Amebiasis
SIDNEY K SIMON, New Orleans
- Laboratory Diagnosis of Amebiasis
T B MAGATH, Rochester, Minn
- Prophylaxis of Amebiasis
G W MCCOY, Washington, D C
- Treatment of Amebiasis
ALFRED C REED, San Francisco
- Prolonged Influences and Complications of Intestinal Amebiasis
KENNETH M LYNCH, Charleston, S C

MEETING PLACES

HOUSE OF DELEGATES Ballroom of the Hotel Statler, Euclid Avenue and East Twelfth Street

OPENING GENERAL MEETING Music Hall, Arena Floor, Cleveland Public Auditorium

GENERAL SCIENTIFIC MEETINGS Music Hall, Arena Floor, Cleveland Public Auditorium

SECTIONS OF SCIENTIFIC ASSEMBLY

PRACTICE OF MEDICINE Ballroom, Fourth Floor, Cleveland Public Auditorium

SURGERY, GENERAL AND ABDOMINAL Music Hall, Arena Floor, Cleveland Public Auditorium

OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY Music Hall, Arena Floor, Cleveland Public Auditorium

OPHTHALMOLOGY Little Theater, Arena Floor, Cleveland Public Auditorium

LARYNGOLOGY, OTOTOLOGY AND RHINOLOGY Little Theater, Arena Floor, Cleveland Public Auditorium

PEDIATRICS Ballroom, Fourth Floor, Cleveland Public Auditorium

PHARMACOLOGY AND THERAPEUTICS South Hall C, Fourth Floor, Cleveland Public Auditorium

PATHOLOGY AND PHYSIOLOGY South Hall C, Fourth Floor, Cleveland Public Auditorium

NERVOUS AND MENTAL DISEASES South Hall A, Second Floor, Cleveland Public Auditorium

DERMATOLOGY AND SYPHILOLOGY Club Room B Third Floor, Cleveland Public Auditorium

PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH South Hall B Third Floor, Cleveland Public Auditorium

UROLOGY Club Room B, Third Floor, Cleveland Public Auditorium

ORTHOPEDIC SURGERY South Hall A Second Floor, Cleveland Public Auditorium

GASTRO-ENTEROLOGY AND PROCTOLOGY South Hall B, Third Floor, Cleveland Public Auditorium

RADIOLOGY North Hall, Lower Level, Cleveland Public Auditorium

MISCELLANEOUS TOPICS, SESSION ON FORENSIC MEDICINE AND ON NUTRITION North Hall, Lower Level, Cleveland Public Auditorium

The Cleveland Public Auditorium is located on Lakeside Avenue at East Sixth Street

LOCAL COMMITTEE ON ARRANGEMENTS

CHARLES W STONE, Chairman

Subcommittee on Sections and Section Work H V Parvzek
Chairman

Practice of Medicine M A Blankenhorn

Surgery, General and Abdominal C H Lenhart

Obstetrics, Gynecology and Abdominal Surgery A J Skeel

Ophthalmology P G Moore

Laryngology, Otology and Rhinology W V Mullin

Pediatrics C W Burhans

Pharmacology and Therapeutics Torald Sollmann

Pathology and Physiology H T Karsner and C J Wiggers

Nervous and Mental Diseases H H Drysdale

Dermatology and Syphilology J R Driver

Preventive and Industrial Medicine and Public Health A G
Crunch and H L Rockwood.

Urology T P Shupe

Orthopedic Surgery W G Stern

Gastro Enterology and Proctology F C Oldenburg and
C C Perry

Radiology W C Hill and L A Pomeroy

Subcommittee on Registration Richard Dexter, Chairman

Subcommittee on Technical Exhibits M B Cohen, Chairman

Subcommittee on Scientific Exhibit R L Haden, Chairman

Subcommittee on Hotels H C King, Chairman

Subcommittee on Printing and Information D M Glover,
Chairman

Subcommittee on Publicity Mr H Van Y Caldwell, Chair-
man

Subcommittee on Transportation P V Duffy, Chairman

Subcommittee on Finance A A Jenkins, Chairman

Subcommittee on Women Physicians Anna May Young,
Chairman

Subcommittee on Entertainment

Dinner to Delegates C L Cummer and C W Stone

Alumni Dinners H D Piercy

Opening General Meeting H G Sloan

President's Reception and Ball H L Sanford

Golf J B Morgan

Women's Entertainment Mrs C L Cummer

ENTERTAINMENT

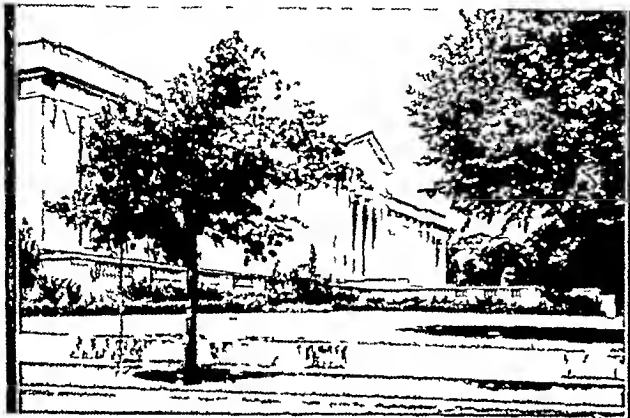
The Ohio State Medical Association and the Academy of Medicine of Cleveland are hosts to the convention and will maintain permanent information desks in the North Lobby of the Public Hall and the Lobby of the Hotel Carter, which is the headquarters for Women's Entertainment.

The Academy of Medicine will publish a special issue of its Bulletin for distribution to all members of the American Medical Association who register. It will contain a list of the entertainment features, together with descriptive material about points of interest in Cleveland and vicinity.

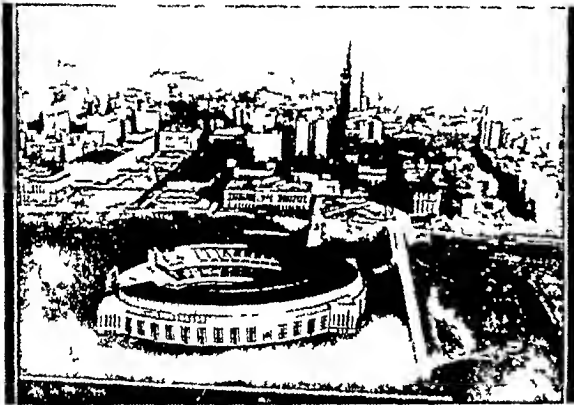
ner, which is sponsored by the Women's Entertainment Committee of the Academy of Medicine and the Woman's Auxiliary of the American Medical Association, will take place prior to the President's Reception and Ball. Members attending the convention who are not accompanied by their wives are also urged to attend.

Medical Women's National Association

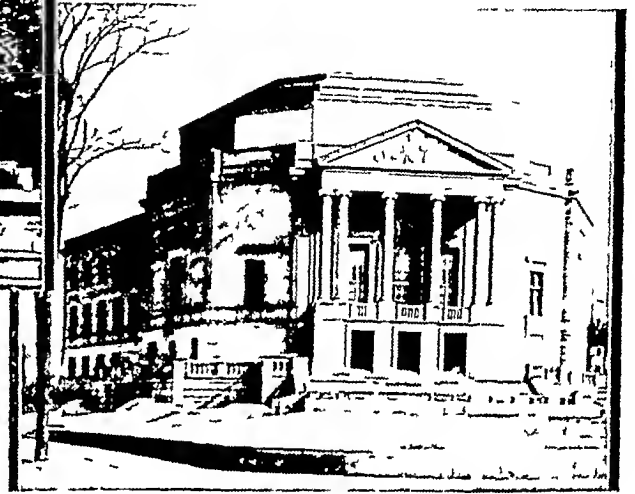
The Medical Women's National Association will hold its annual meeting in the Hotel Cleveland, June 10-12. Sessions



Left—The MUSEUM OF ART



Left—AIR VIEW OF LAKE FRONT SHOWING THE MUNICIPAL STADIUM. THE TERMINAL TOWER GROUP IS IN THE BACKGROUND



Above—SEVERANCE HALL THE HOME OF THE CLEVELAND ORCHESTRA

Opening General Meeting

The Opening General Meeting will take place on Tuesday evening, June 12, at 8 o'clock, in the Music Hall, Cleveland Public Auditorium.

President's Reception

The President of the American Medical Association will be honored with a reception and ball to be held Thursday evening, June 14, at 9 o'clock, in the ballroom of the Hotel Cleveland.

Dinner for General Officers and Delegates

The Ohio State Medical Association and the Academy of Medicine of Cleveland will be joint hosts on Monday evening, June 11 at 6 30, in the Union Club, where they will entertain the general officers and members of the House of Delegates of the American Medical Association with a dinner.

Medical Veterans

The Medical Veterans of the World War will be the guests of the Cleveland medical veterans on Wednesday evening, June 13, when they will be entertained with a smoker and buffet luncheon at Hotel Statler. A program of informal talks is being arranged.

"Bring-Your-Husband" Dinner

On Thursday evening, June 14 the annual "Bring-Your-Husband-Dinner" will be held at the Hotel Carter. This dinner

will open Sunday afternoon at 2 o'clock and close with the annual banquet on Tuesday, June 12, at 6 30 p. m.

Breakfast meetings will be held during the week at Hotel Cleveland.

Alumni Dinners

Notice has been received of the following alumni dinners to be held during the week of the convention:

University of Toronto, Wednesday, June 13, 6 30 p. m., Hotel Carter.

University of Minnesota, Wednesday, June 13, 6 00 p. m., Hotel Carter.

University of Pennsylvania, Wednesday, June 13, 6 30 p. m., Hotel Carter.

Western Reserve University, Wednesday, June 13, 6 30 p. m., Hotel Carter.

Creighton University, Wednesday, June 13, 6 30 p. m., Hotel Statler.

Missouri Medical College, Tuesday, June 12, 6 30 p. m., Hotel Statler.

St. Louis University School of Medicine, Wednesday, June 13, 6 30 p. m., Hotel Statler.

Rush Medical College, Wednesday, June 13, 6 30 p. m., Hotel Statler.

Johns Hopkins Medical School, Wednesday, June 13.

Dates in some cases are tentative and further information should be sought at the Academy of Medicine Information Desk at Public Hall.

Fraternity and Club Luncheons

The Alpha Kappa Kappa Fraternity will have its luncheon at the Hotel Hollenden, Wednesday, June 13, at 12 30 p m. The Alpha Mu Pi Omega fraternity luncheon will be held at the Hotel Cleveland, Wednesday noon, June 13.

Alumni of Phi Rho Sigma fraternity will meet for luncheon at 12 30 p m, Wednesday, June 13, in the Showboat Room of the Hotel Hollenden. On the mornings of June 11, 12 and 13 the visiting Phi Rhos may register and secure information at a desk on the mezzanine floor of the Hotel Statler.

The Phi Delta Epsilon medical fraternity will hold a luncheon for its members who will attend the annual session in Cleveland in the Showboat Room of the Hollenden Hotel, Thursday noon.

Visiting members of the various national luncheon clubs will be welcome at the luncheons of the local clubs as follows: Kiwanis Club Hotel Cleveland, Thursday noon, June 14; Rotary Club Hotel Statler Thursday noon June 14; Lions Club Hotel Carter, Thursday noon, June 14.

Program for Entertainment of Women Guests

HEADQUARTERS, HOTEL CARTER

MONDAY, JUNE 11

7 p m Dinner in honor of the National Board of the Woman's Auxiliary, wives of officers and delegates of the

American Medical Association. Women guests of the Association invited. Hotel Carter.

TUESDAY, JUNE 12

Luncheon, bridge and style show, Lake Shore Hotel.

WEDNESDAY, JUNE 13

8 15 p m Complimentary musicale and reception, Allen Memorial Medical Library.

THURSDAY, JUNE 14

Noon Luncheon The Country Club, Lander Road.

Afternoon Sight-seeing tour, including visit to garden at "Glenallen," home of Mr and Mrs Francis Fleury Prentiss. Evening "Bring-Your-Husband Dinner," Hotel Carter.

FRIDAY, JUNE 15

Morning and Afternoon Women's golf tournament, Westwood Country Club.

Woman's Auxiliary

Meetings of the Woman's Auxiliary of the American Medical Association are to be held at the Hotel Carter under the presidency of Mrs James Blake of Hopkins, Minn.



Above—THE COUNTRY CLUB



Above—ROCKY ISLAND AND PART OF THE CLEVELAND YACHT CLUBS FLEET

Right—A FAIRWAY AND GREEN



GOLF TOURNAMENT

The American Medical Golfing Association will hold its twentieth annual tournament at the Mayfield Country Club in Cleveland on Monday, June 11.

Thirty-six holes of golf will be played in competition for the fifty trophies and prizes in the eight events. The trophies include the Association Championship for thirty-six holes gross, the Association Handicap Championship for thirty-six holes net, the Choice Score Handicap Championship for thirty-six holes gross, the low gross Eighteen Hole Championship, the low net Eighteen Hole Handicap Championship, the Maturity Event limited to Fellows over 60 years of age, the Oldguard Championship limited to competition of past presidents, and the Kickers Handicap. The championship event has as its

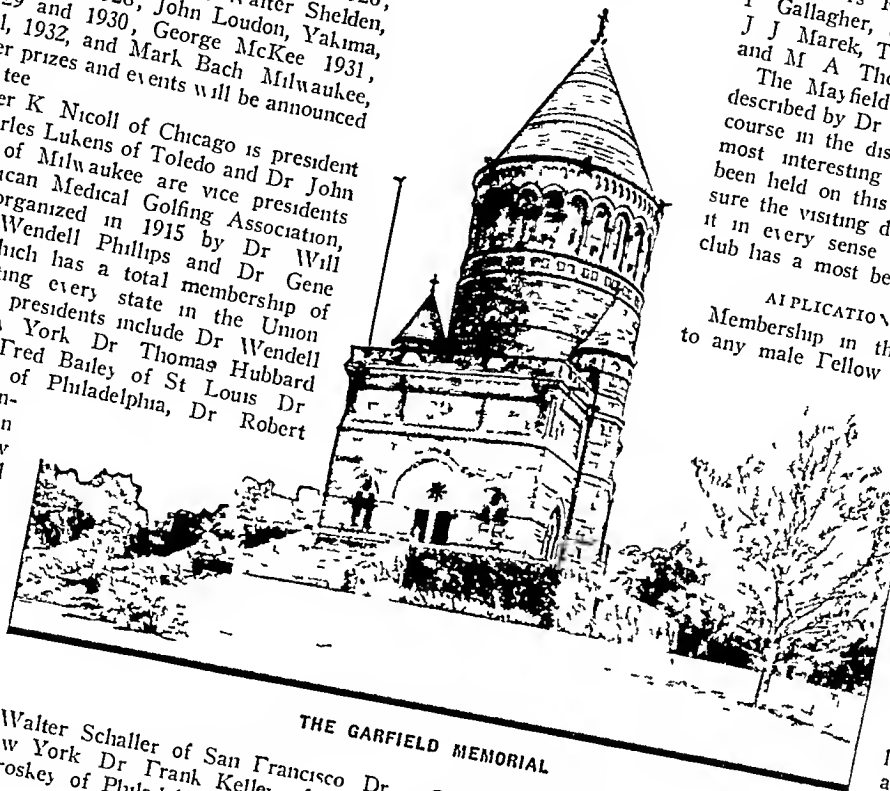
major prize the famous Will Walter Trophy, awarded since 1923 for low gross thirty-six holes. This trophy, designed by Edgar Millar and executed by the Cellini Shop, Evanston, Ill., symbolizes the evolution of medicine. The first handle depicts the age of primitive ignorance, with shaman witch doctor, spells and the invocation of nature gods to cure ailing mankind, from antiquity to 500 B C. The second handle shows the age of Greek thinkers, bearing the serpents symbolic of Aesculapius god of medicine—an age of thought and research, from 500 B C to 640 A D. The third handle represents the age of medieval superstition from 640 A D to 1500 A D with an astrologer, the physician common to the dark ages. The fire of incantation rises behind the figure as he traces a cabalistic sign in the air.

THE PROGRAMS OF THE SECTIONS

JOUR A M A
MAY 12 1934

The fourth handle depicts the age of modern medical research from the Renaissance to modern time, with increasing light spreading from a figure symbolic of an enlarging vision. Winners since the cup was placed in competition have been Drs E A Seaforth, San Francisco, 1923, George McKee, Pittsburgh, 1924, Homer Nicoll, Chicago, 1925, S M Hill, Dallas Texas, 1926, George McKee again in 1927, Walter Shelden, Rochester, Minn., 1928, John Loudon, Yakima, Wash., 1929 and 1930, George McKee 1931, S M Hill, 1932, and Mark Bach Milwaukee, 1933. Other prizes and events will be announced at the first tee.

Dr Homer K Nicoll of Chicago is president and Dr Charles Lukens of Toledo and Dr John W Powers of Milwaukee are vice presidents of the American Medical Golfing Association, which was organized in 1915 by Dr Will Walter, Dr Wendell Phillips and Dr Gene Lewis, and which has a total membership of 1,100 representing every state in the Union. The living past presidents include Dr Wendell Phillips of New York, Dr Thomas Hubbard of Toledo, Dr Fred Bailey of St Louis, Dr Edward Martin of Philadelphia, Dr Robert Moss of San Antonio, Dr Charlton Wallace of New York, Dr Will Walter of Charlottesville, Va., Dr James Eaves of San Francisco, Dr D Chester Brown of Danbury Conn., Dr Samuel Childs of Denver, Dr W D Shelden of Rochester Minn, Dr Walter Schaller of San Francisco, Dr Edwin Zabriskie of New York, Dr Frank Kelley of Detroit and Dr John Welsh Croskey of Philadelphia.



THE GARFIELD MEMORIAL

The Cleveland committee is under the chairmanship of Dr John B Morgan 1301 Medical Arts Building, Cleveland, Ohio. He will be assisted by Drs R H Birge, A V Boysen, E F Gallagher, Second Large, E P McNamee, J J Marek, Theodore Miller, U V Portmann, and M A Thomas.

The Mayfield Country Club of Cleveland is described by Dr Morgan as probably the finest course in the district, and certainly one of the most interesting. Many championships have been held on this course," he says "and I am sure the visiting doctors will be delighted with it in every sense of the word. This country club has a most beautiful club house."

APPLICATION FOR MEMBERSHIP
Membership in the A M G A is open to any male Fellow of the American Medical Association. Write the Executive Secretary, William J Burns, 4421 Woodward Avenue, Detroit, for an application blank. Participants in the A M G A tournament are required to furnish their home club handicap signed by the secretary. No handicap over 25 is allowed.

The twentieth tournament of the American Medical Association will be a gay affair, attended by some two hundred medical golfers from all parts of the United States.

PRELIMINARY PROGRAM OF THE SCIENTIFIC ASSEMBLY

PROGRAM OF THE OPENING GENERAL MEETING

Music Hall, Arena Floor, Cleveland Public Auditorium,
Tuesday, June 12, 8 p m

Music
Call to Order by the President, DEAN LEWIS
Welcome to Cleveland
HON HARRY L DAVIS Mayor of Cleveland
ALFRED A JENKINS, President Academy of Medicine of Cleveland
CLYDE L CUMMER, President, Ohio State Medical Association
Address HON ROY J BULKLEY, United States Senator from Ohio
Music
Introduction and Installation of PRESIDENT-ELECT WALTER L BIERRING Des Moines, Iowa
Address WALTER L BIERRING
Presentation of Medal to Retiring President DEAN LEWIS
J H J UPHAM, Chairman of the Board of Trustees
Music

THE PROGRAMS OF THE SECTIONS

Outline of the Scientific Proceedings—The Preliminary Program and the Official Program
The following papers are announced to be read before the various sections. The order here is not necessarily the order that will be followed in the Official Program nor is the list complete. The Official Program will be similar to the programs issued in previous years and will contain the final program of each section with abstracts of the papers as well as lists of committees program of the Opening General Meeting.

SECTION ON PRACTICE OF MEDICINE

MEETS IN BALLROOM FOURTH FLOOR, CLEVELAND PUBLIC AUDITORIUM

OFFICERS OF SECTION

Chairman—C T STONE Galveston, Texas
Vice Chairman—F W MADISON Milwaukee
Secretary—W J KERR San Francisco
Executive Committee—G GILL RICHARDS Salt Lake City,
REGINALD FITZ, Boston, C T STONE, Galveston, Texas.

Wednesday, June 13—2 p m

The Cause of Death in Adult Pneumonia
HARLOW BROOKS New York
Discussion to be opened by JAMES H MEANS Boston
L J MOORMAN Oklahoma City and MAXWELL FINLAND Boston

Congenital Polycystic Disease of the Lungs (Lantern Demonstration)
HARRY G WOOD Rochester Minn
Discussion to be opened by L J MOORMAN Oklahoma City

The Treatment of Emphysema (Lantern Demonstration)
JONATHAN C MEAKINS Montreal Canada
The Frank Billings Lecture
JAMES B HERRICK Chicago

Epidemic Encephalitis RALPH A KINSELLA, St Louis
Discussion to be opened by J P LEAKE Washington,
D C
A Review of Eighteen Months' Experience with Total Ablation of the Thyroid for Angina Pectoris and Congestive Failure (Lantern Demonstration)
HERRMANN L BLUMGART and DAVID D BERLIN, Boston
Discussion to be opened by SAMUEL A LEVINE and JAMES H MEANS, Boston, R R SNOWDEN Pittsburgh, WILLIAM B PORTER Richmond Va W O THOMPSON Chicago, GEORGE M CURTIS, Columbus, Ohio, and EMANUEL LIBMAN, New York

Thursday, June 14—2 p m

Recognition of Types of Arteriosclerosis by Oscillometry (Lantern Demonstration)
ALFRED FRIEDLANDER Cincinnati
Discussion to be opened by CARL J WIGGERS, Cleveland, and JAMES P O'HARE, Boston
Diabetic Complications LEA A RIELY, Oklahoma City
Discussion to be opened by PRISCILLA WHITE Boston, S EDWARD KING, New York, HENRY J JOHN Cleveland, and HENRY W MEYERDING, Rochester Minn
The Relation of Dentistry to Medicine L M S MINER, Boston
General Measures in the Treatment of Chronic Arthritis ERNEST E IRONS, Chicago
Treatment of Arthritis with Drugs and Vaccines (Lantern Demonstration) RUSSELL L CECIL, New York
Orthopedic and Physical Therapeutic Treatment of Chronic Arthritis LORING T SWAIN Boston
Discussion on papers of DRS IRONS, CECIL and SWAIN to be opened by WALTER BAUER, Boston, LINN J BOYD New York W PAUL HOLBROOK, Tucson, Ariz MAURICE F LAUTMAN, Hot Springs, Ark, S C WOLDENBERG and HEINRICH F WOLF New York, and WILLIAM J KERR, San Francisco

Friday, June 15—2 p m

Election of Officers
Treatment of Hemophilia (Lantern Demonstration)
HAROLD W JONES and LEANDRO M TOCANTINS, Philadelphia
Treatment of Hemolytic Jaundice by Liver Extract (Lantern Demonstration)
EDWARD C REIFENSTEIN and ELLERA G ALLEN, Syracuse, N Y
The Occurrence and Treatment of Neurologic Changes in Pernicious Anemia (Lantern Demonstration)
CYRUS C STURGIS and S M GOLDHAMER Ann Arbor, Mich
Discussion on papers of DRS JONES REIFENSTEIN and ALLEN and STURGIS to be opened by ADOLPH SACHS, Omaha, WANN LANGSTON, Oklahoma City V P SIDENSTRICKER, Augusta, Ga, and RUSSELL L HADEN Cleveland.
Chairman's Address C T STONE, Galveston, Texas
Prognosis in Arteriosclerotic Heart Disease (Lantern Demonstration) LOUIS E VIKO, Salt Lake City
Discussion to be opened by WALTER L BIERRING, Des Moines, Iowa R WESLEY SCOTT Cleveland, and WILL S HORN, Fort Worth, Texas
The Syndrome of Hypertonic and Atonic Colopathy (Lantern Demonstration) FRED H KRUSE, San Francisco
Discussion to be opened by LEWELLYS F BARKER Baltimore, WALTER L PALMER, Chicago ELMER L EGGLESTON, Battle Creek, Mich, and WILLIAM LINTZ, Brooklyn

SECTION ON SURGERY, GENERAL AND ABDOMINAL

MEETS IN MUSIC HALL, ARENA FLOOR, CLEVELAND PUBLIC AUDITORIUM

OFFICERS OF SECTION

Chairman—HAROLD BRUNN, San Francisco
Vice Chairman—ROY D MCCLURE Detroit
Secretary—HOWARD M CLUTE Boston
Executive Committee—HUBERT A ROYSTER Raleigh N C
FRED W RANKIN, Lexington, Ky HAROLD BRUNN San Francisco

Wednesday, June 13—9 a m

Femoral Hernia Operative Repair by Fascial Suture (Lantern Demonstration) R L PAINE, Norfolk, Va
Discussion to be opened by H W CAVE, New York, and F W BAILEY, St Louis
Contusions of the Heart (Lantern Demonstration) CLAUDE S BECK, Cleveland
Discussion to be opened by R L SANDERS Memphis, Tenn, and JOSEPH T WEARN, Cleveland
Surgical Treatment of Extensive Malignant Lesions of the Stomach (Lantern Demonstration) WALTER W WALTERS, Rochester, Minn
Discussion to be opened by FRANK H LAHEY, Boston, and GATEWOOD, Chicago
The Treatment of Perforated "Peptic" Ulcers HUGH H TROUT, Roanoke, Va
Discussion to be opened by ROY D MCCLURE, Detroit, and EDWARD J DONOVAN, New York
The Recognition and Treatment of Jejunal Ulceration (Lantern Demonstration) ROSCOE R GRAHAM, Toronto, Canada
Discussion to be opened by DEAN LEWIS Baltimore, and DONALD C BALFOUR, Rochester, Minn
The Surgical Treatment of Carcinoma of the Lungs and Bronchi (Lantern Demonstration) WILLIAM F RIENHOFF JR, Baltimore
Discussion to be opened by EVARTS A GRAHAM, St Louis, and CARL A HEDBLOM, Chicago

Thursday, June 14—9 a m

Chairman's Address Lung Abscess (Lantern Demonstration) HAROLD BRUNN San Francisco
The Bearing of Certain Physiologic Facts on Gastro-Intestinal Surgery (Lantern Demonstration) J SHELTON HORSLEY, Richmond, Va
Discussion to be opened by FRANK K BOLAND, Atlanta, Ga, and GEORGE W CRILE, Cleveland
The Management of Perforated Appendicitis JOHN F GILE and JOHN P BOWLER, Hanover, N H
Treatment of Appendicitis Associated with Peritonitis (Lantern Demonstration) FRED A COLLIER, Ann Arbor, Mich
Discussion on papers of DRS GILE and BOWLER and DR COLLIER to be opened by E STARR JUDD, Rochester Minn ALTON OCHSNER New Orleans, and LE GRAND GUERRY, Columbia, S C
Diagnosis and Treatment of Tumors of the Breast Clinically Benign and Clinically Malignant as Based on Biopsy (Lantern Demonstration) J C Bloodgood Baltimore
Discussion to be opened by IRVIN ABELL, Louisville, Ky, and MAX CUTLER, Chicago
Intestinal Rectal and Bladder Complication Resulting from Prolonged Radium and X-Ray Irradiation for Malignant Conditions of the Pelvis Surgical Treatment THOMAS E JONES Cleveland
Discussion to be opened by FLOYD E KEENE, Philadelphia, and GEORGE G WARD, New York

Friday, June 15—9 a m

Election of Officers
Alterations of Function in Biliary Tract Disease (Lantern Demonstration) I S RAVDIN and C G JOHNSTON, Philadelphia
Physiologic Principles to Be Considered in the Therapy of Biliary Tract Disease The Physiology of the Gallbladder, Some Principles to Be Considered in Therapy (Lantern Demonstration) A C IVI, Chicago
A Consideration of the Stoneless Gallbladder EVARTS A GRAHAM, St Louis
Discussion on papers of DRS RAVDIN and JOHNSTON, IVI and GRAHAM to be opened by URBAN MAES New Orleans, and WALTER W WALTERS, Rochester, Minn
Carcinoma of Cecum What Are the Chances for Cure (Lantern and Motion Picture Demonstration)? C F DIXON, Rochester, Minn
Discussion to be opened by JEROME M LYNCH New York and T M JOYCE Portland, Ore
Surgical Treatment of Ulcerative Colitis (Lantern Demonstration) R B CATTELL Boston
Discussion to be opened by F R PETERSON Iowa City, and ALFRED A STRAUSS Chicago

Present Status of Tetanus, with Special Regard to Treatment
(Lantern Demonstration)

RICHARD H. MILLER and HORATIO ROGERS, Boston
Discussion to be opened by J. M. Wainwright, Scranton,
Pa., and D. B. Pfeiffer, Philadelphia

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

MEETS IN MUSIC HALL, ARENA FLOOR, CLEVELAND
PUBLIC AUDITORIUM

OFFICERS OF SECTION

Chairman—JOSEPH B. DE LEE, Chicago
Vice Chairman—PAUL TITUS, Pittsburgh
Secretary—JAMES R. McCORD, Atlanta, Ga.
Executive Committee—FRED L. ADAIR, Chicago; BARTON
COOKE HIRST, Philadelphia; JOSEPH B. DE LEE, Chicago

Wednesday, June 13—2 p. m.

SYMPOSIUM ON MODERN INDICATIONS FOR THERAPEUTIC ABORTION

Neuropsychiatry CLARENCE O. CHENEY, New York
Ophthalmology (Lantern Demonstration)

HENRY P. WAGENER, Rochester, Minn.

Cardiology HAROLD E. B. PARDEE, New York

Nephrology (Lantern Demonstration)

W. W. HERRICK, New York

Pulmonology (Lantern Demonstration)

F. M. POTTINGER, Monrovia, Calif.

Discussion on paper of DR. CHENEY to be opened by
H. DOUGLAS SINGER, Chicago, on paper of DR.
WAGENER by ARTHUR J. BEDELL, Albany, N. Y.
on paper of DR. PARDEE by BURTON E. HAMILTON,
Boston, on paper of DR. HERRICK by ROBERT D.
MUSSEY, Rochester, Minn., and on paper of DR.
POTTINGER by FRED L. ADAIR, Chicago. General
discussion to be opened by FREDERICK J. TAUSSIG,
St. Louis.

Thursday, June 14—2 p. m.

The Advantages of Paraldehyde as a Basic Amnesic Agent
in Obstetrics (Lantern Demonstration)

R. A. BARTHOLOMEW, Atlanta, Ga.

Discussion to be opened by HAROLD H. ROSENFELD,
Boston.

Practical Measures in the Prevention and Treatment of
Puerperal Sepsis (Lantern Demonstration)

B. P. WATSON, New York.

Discussion to be opened by J. C. LITZENBERG, Minne-
apolis.

Chairman's Address JOSEPH B. DE LEE, Chicago

The Conservative Treatment of Eclampsia (Lantern Demon-
stration) LYLE G. MCNEILE, Los Angeles

Pregnancy Changes in the Vaginal Epithelium in Relation to
the Vaginal Cycle (Lantern Demonstration)

M. EDWARD DAVIS, Chicago

Discussion to be opened by CARL G. HARTMAN, Baltimore

Friday, June 15—2 p. m.

Election of Officers

Electrocoagulation of Cervical Erosions and Endocervicitis in
the Late Puerperium (Lantern Demonstration)

RALPH L. BARRETT, New York

Discussion to be opened by HAROLD A. MILLER, Pitts-
burgh

Factors Predisposing to Carcinoma of the Uterus (Lantern
Demonstration) J. I. HOFBAUER, Cincinnati

Discussion to be opened by J. P. GREENHILL, Chicago

Comments on One Hundred Cases of Ectopic Pregnancy
Encountered in Private Practice (Lantern Demonstra-
tion) CHESTER M. ECHOLS, Milwaukee

Discussion to be opened by JOSEPH D. HEIMAN, Cin-
cinnati

Early Histologic Diagnosis of Carcinoma of the Uterine Cervix
(Lantern Demonstration) HENRY SCHMITZ, Chicago

Discussion to be opened by EMIL NOVAK, Baltimore

Demonstration of the Endometrium in Relief with Thorium
Dioxide Sol (Lantern Demonstration)

J. DUANE MILLER, Grand Rapids, Mich.

Discussion to be opened by HARVEY B. MATTHEWS,
Brooklyn

SECTION ON OPHTHALMOLOGY

MEETS IN LITTLE THEATER, ARENA FLOOR,
CLEVELAND PUBLIC AUDITORIUM

OFFICERS OF SECTION

Chairman—WILLIAM C. FINNOFF, Denver

Vice Chairman—FRANK E. BURCH, St. Paul

Secretary—PARKER HEATH, Detroit

Executive Committee—HARRY FRIEDENWALD, Baltimore,
FREDERICK H. VERHOEFF, Boston, WILLIAM C. FINNOFF,
Denver

Wednesday, June 13—9 a. m.

Chairman's Address WILLIAM C. FINNOFF, Denver

The Ocular Lesions Resulting from Thallium Acetate Poison-
ing as Determined by Experimental Research (Lantern
Demonstration) CHARLES M. SWAB, Omaha

SYMPOSIUM ON TREATMENT OF RETINAL DETACH- MENT BY ELECTRICAL COAGULATION

Clinical Observations (Lantern Demonstration)

MARK J. SCHOENBERG, New York.

A New Technic and Case Reports (Lantern Demonstration)

CLIFFORD B. WALKER, Los Angeles

Blepharochalasis (Lantern Demonstration)

BENNETT Y. ALVIS, St. Louis

Diabetic Cataract (Lantern Demonstration)

C. S. O'BRIEN, Iowa City

Thursday, June 14—9 a. m.

Anterior Lenticonus (Lantern Demonstration)

BENJAMIN RONES, Baltimore

Transcranial Approach for Removal of Cavemous Hemangioma
of the Orbit (Lantern Demonstration)

A. W. ADSON and WILLIAM L. BENEDICT, Rochester,
Minn.

Observations of Four Thousand Optic Foramina in Human
Skulls of Known Origin (Lantern Demonstration)

JOHN E. L. KEYES, Youngstown, Ohio

Unilateral Central and Annular Scotoma Produced by Fracture
of the Optic Canal. Report of Two Cases (Lantern
Demonstration)

WALTER I. LILLIE, Philadelphia

Some Factors Concerned in the Correction of Aphakia

ALFRED COWAN, Philadelphia

Pulsating Exophthalmos Due to Internal Carotid Jugular
Aneurysm (Lantern Demonstration)

T. L. TERRY, Boston

Exhibition of Instruments and Appliances

Friday, June 15—9 a. m.

Election of Officers

Bacteriologic and Immunologic Considerations of Chronic
Uveitis ALBERT L. BROWN, Cincinnati

SYMPOSIUM ON STRABISMUS

Practical Details in the Orthoptic Treatment of Strabismus
(Lantern Demonstration) GEORGE P. GUIBOR, Chicago

Routine Muscle Examination Its Practical Application (Lan-
tern Demonstration)

JAMES WATSON WHITE, New York

Etiologic Diagnosis of Conjunctivitis (Lantern Demonstration)

PHILLIPS THYGESON, Iowa City

Occurrence of Malignant Conditions of the Eyeball Following
Trauma (Lantern Demonstration)

EDWARD STIEREN, Pittsburgh

SECTION ON LARYNGOLOGY, OTOTOLOGY AND RHINOLOGY

MEETS IN LITTLE THEATER, ARENA FLOOR,
CLEVELAND PUBLIC AUDITORIUM

OFFICERS OF SECTION

Chairman—WILLIAM P. WHERRY, Omaha

Vice Chairman—ROBERT F. RIDPATH, Philadelphia

Secretary—JOHN J. SHEA, Memphis, Tenn.

Executive Committee—GABRIEL TUCKER, Philadelphia, HAR-
RIS P. MOSHER, Boston, WILLIAM P. WHERRY, Omaha

Wednesday, June 13—2 p m

- Chairman's Address (Lantern Demonstration)
WILLIAM P WHERRY, Omaha
- The Tonsils, Their Function and Indications for Their Removal (Lantern Demonstration) L W DEAN, St Louis
- The Structure of the Secondary Nodule of the Tonsil (Lantern Demonstration) FRANK J NOVAK JR, Chicago
- The Use of Reconstructive Surgery in Certain Types of Deformities of the Face (Lantern Demonstration)
GORDON B NEW, Rochester, Minn
- The Importance of Allergy in the Etiology and Treatment of Nasal Mucous Polyps (Lantern Demonstration)
R A KERN and H P SCHENCK, Philadelphia
- An Attempt to Correlate the Various Theories of Vasomotor Disturbances of the Nasal and Bronchial Tracts
HAROLD G TOBEY Boston

Thursday, June 14—2 p m

- Agranulocytic Angina ROBERT F RIDPATH, Philadelphia
- X-Ray Changes in the Petrous Portion of the Temporal Bone Without Clinical Manifestations (Lantern Demonstration)
GEORGE M COATES MATTHEW S ERSNER and DAVID MYERS, Philadelphia
- Practical Points in the Radical Mastoid Operation (Lantern Demonstration) CLARENCE H SMITH New York
- Changes in the Lysozyme Content of the Nasal Secretion During Colds ANDERSON C HILDING, Duluth, Minn
- Experimental Studies in Vascular Repair A Report of Two Hundred Experimental Studies (Lantern and Motion Picture Demonstration)
O JASON DIXON, Kansas City, Mo
- Diagnostic Factors Concerning Herpes Zoster Oticus
RALPH A FENTON Portland, Ore

Friday, June 15—2 p m

- Election of Officers**
- Hearing Reclamation and Preservation in the Moderately Deafened Child Management and Treatment Based on Ten Years of Clinical and Laboratory Research (Lantern Demonstration) EDMUND P FOWLER, New York
- Prenatal Medication as a Possible Etiologic Factor of Deafness in the New-Born
H MARSHALL TAYLOR, Jacksonville, Fla
- Conservative Surgical Treatment of Hypertrophic Rhinitis (Lantern Demonstration)
HOWARD V DUTROW, Dayton, Ohio
- The Association of Middle Ear Infection with Sinus Disease (Lantern Demonstration)
M M CULLOM, Nashville, Tenn
- An X-Ray Study of the Maxillary Antrum Before and After Operation (Lantern Demonstration)
EDWARD KING Cincinnati
- New Adaptation of X-Ray Prints and Slides Giving Stereoscopic Effect
WALTER H THEOBALD, Chicago

SECTION ON PEDIATRICS

MEETS IN BALLROOM, FOURTH FLOOR CLEVELAND
PUBLIC AUDITORIUM

OFFICERS OF SECTION

- Chairman—ALFRED A WALKER, Birmingham, Ala
- Vice Chairman—C W BURHANS, Lakewood, Ohio
- Secretary—RALPH M TYSON Philadelphia
- Executive Committee—JAY I DURAND Seattle FREDERIC W SCHLUTZ, Chicago, ALFRED A WALKER Birmingham, Ala

Wednesday, June 13—9 a m

- Further Studies on Tungsten Filament Radiation (Dual Purpose Lighting) (Lantern and Motion Picture Demonstration)
HENRY J GERSTENBERGER A J HORESH J D NOURSE and A L VAN HORN Cleveland
- Discussion to be opened by A GRAEME MITCHELL Cincinnati and HUGH J LESLIE Cleveland

- The Value of the Calmette Vaccination in Prevention of Tuberculosis in Childhood (Lantern Demonstration)
ARVID WALLGREN, Goteborg, Sweden
- The Effect of Initial Tuberculous Infection on Subsequent Tuberculous Lesions (Lantern Demonstration)
J A MYERS, Minneapolis
- Discussion to be opened by HORTON R CASPARIS, Nashville, Tenn, and W AMBROSE MCGEE, Richmond, Va
- The Application of Determinations of Fetal Size in Utero to the Problem of Reducing the Premature Infant Mortality (Lantern Demonstration)
STEWART H CLIFFORD Boston
- Discussion to be opened by FRED L ADAIR and JULIUS H HESS, Chicago
- A Study of the Influence of Breast and Artificial Feeding on the Morbidity and Mortality of Twenty Thousand Infants (Lantern Demonstration)
CLIFFORD G GRULEE and HEYWORTH N SANFORD, Chicago, and PAUL H HERRON, Spokane, Wash
- Discussion to be opened by LAURENCE R DEBUYS, New Orleans
- The Pathology of Pneumonia in Infancy (Lantern Demonstration)
CHARLES HENDEE SMITH, IRVING GRAEF and ELIZABETH H T ANDREWS, New York
- Discussion to be opened by FRANK W KONZELMANN, Philadelphia, and KARL E KASSOWITZ, Milwaukee

Thursday, June 14—9 a m

- Chronic Atopic Eczema (Neurodermatitis) in Childhood
LEWIS W HILL, Boston
- Discussion to be opened by MARION B SULZBERGER, New York and J VICTOR GREENEBAUM, Cincinnati
- Chairman's Address One Dose Alum Toxoid in Diphtheria Immunization
ALFRED A WALKER, Birmingham, Ala
- Factors That Influence Rheumatic Disease in Childhood (Lantern Demonstration)
ALBERT D KAISER Rochester, N Y
- Discussion to be opened by HUGH McCULLOCH, St Louis, and ALBERT J BEIL, Cincinnati
- Therapeutic Results with the Pituitary Growth Hormone (Lantern Demonstration)
ROBERT L SCHAEFER, Detroit
- Discussion to be opened by ROY G HOSKINS, Boston
- The Problem of Accidental Poisoning in Childhood (Lantern Demonstration) JOHN AIKMAN, Rochester, N Y
- Discussion to be opened by S W CLAUSEN, Rochester, N Y, and C W WICKOFF, Cleveland
- Diagnosis and Treatment of Lung Abscess in Children (Lantern Demonstration) DAVID T SMITH, Durham N C
- Discussion to be opened by LOUIS H CLERF, Philadelphia, and J W EPSTEIN, Cleveland

Friday, June 15—9 a m

- Election of Officers**
- Theory and Practice of Parenteral Fluid Administration (Lantern Demonstration) ALEXIS F HARTMAN, St Louis
- Discussion to be opened by F W SCHLUTZ, Chicago, and ARTHUR G HELMICK, Columbus Ohio
- A Study of Vaccination in Five Hundred New-Born Infants (Lantern Demonstration)
H H DONNALLY, Washington D C
- Discussion to be opened by J A DOULL, Cleveland
- The Immunization of School Children Against Whooping Cough (Lantern Demonstration)
J M FRAWLEY, Fresno, Calif
- Discussion to be opened by LOUIS W SAUTER Evanston, Ill, and H F HELMHOLZ, Rochester, Minn
- Antitoxin is No Antitoxin in Scarlet Fever (Lantern Demonstration)
JAMES E BOWMAN and P F LUCCHESI, Philadelphia
- Discussion to be opened by JOHN A TOOMEY, Cleveland
- The Secondary Case of Scarlet Fever (Lantern Demonstration)
ARCHIBALD L HOYNE and JOHN HAYS BAILEY, Chicago
- Discussion to be opened by JOHN A TOOMEY Cleveland and D L RICHARDSON Providence, R I

**SECTION ON PHARMACOLOGY
AND THERAPEUTICS**MEETS IN SOUTH HALL C, FOURTH FLOOR,
CLEVELAND PUBLIC AUDITORIUM**OFFICERS OF SECTION**

Chairman—JOHN H. MUSSER, New Orleans

Vice Chairman—C. H. GREENE, New York

Secretary—RUSSELL L. HADEN, Cleveland

Executive Committee—R. L. LEVY, New York, E. M. K. GEILING, Baltimore, JOHN H. MUSSER, New Orleans

Wednesday, June 13—9 a m

Clinical Experiences with Thetevin, a Cardiac Glucoside (Lantern Demonstration)

HARRY L. ARNOLD, Honolulu, T. H., WILLIAM S. MIDDLETON, Madison, Wis., and K. K. CHEN, Indianapolis

Discussion to be opened by R. WESLEY SCOTT, Cleveland

Effects of Tissue Extracts on Muscle Pain of Ischemic Origin (Lantern Demonstration)

NELSON W. BARKER and GRACE M. ROTH, Rochester, Minn.

Discussion to be opened by E. V. ALLEN, Rochester, Minn., and WALLACE S. DUNCAN, Cleveland

Oxygen in the Treatment of Acute Coronary Occlusion

ALVAN L. BARACH and ROBERT L. LEVY, New York
Discussion to be opened by WALTER M. BOOTHBY, Rochester, Minn., and A. CARLTON ERNSTENE, Cleveland

Studies on the Thyrotropic Hormone of the Anterior Pituitary (Lantern Demonstration)

JAMES B. COLLIP and E. M. ANDERSON, Montreal, Canada

Action of Iodine in Thyrotoxicosis with Special Reference to Refractoriness (Lantern Demonstration)

JAMES H. MEANS and JACOB LERMAN, Boston

Pharmacology of the Thyroid in Man (Lantern Demonstration)

W. O. THOMPSON, Chicago

Discussion on papers of DRS. COLLIP and ANDERSON, MEANS and LERMAN and DR. THOMPSON to be opened by GEORGE W. CRILE, Cleveland, ANTON J. CARLSON, Chicago, HERRMANN L. BLUMGART, Boston, A. C. IVY, Chicago, GEORGE M. CURTIS, Columbus, Ohio, and E. C. KENDALL, Rochester, Minn.

Thursday, June 14—9 a m

The Differential Diagnosis and Therapeutic Rationale of Leukopenic States (Lantern Demonstration)

CHARLES A. DOAN, Columbus, Ohio

Discussion to be opened by ROY R. KRACKE, Emory University, Ga., and E. B. KRUMBHAR, Philadelphia

Hemoglobin and Plasma Protein Regeneration as Influenced by Amino Acids and Proteins in Diet (Lantern Demonstration)

GEORGE H. WHIPPLE, Rochester, N. Y.

The Diagnosis and Treatment of the Iron Deficiency Anemias (Lantern Demonstration)

FRANK H. BETHELL, Ann Arbor, Mich.

An Assay of Various Extracts of Liver for Intramuscular Use (Lantern Demonstration)

WILLIAM DAMESHEK and WILLIAM B. CASTLE, Boston

Discussion on papers of DRS. WHIPPLE, BETHELL, and DAMESHEK and CASTLE to be opened by RAPHAEL ISAACS, Ann Arbor, Mich., L. G. ZERFAS, Indianapolis, GEORGE R. MINOT, Boston, and CYRUS C. STURGIS, Ann Arbor, Mich.

Chairman's Address JOHN H. MUSSER, New Orleans

Treatment of the Common Cold (Lantern Demonstration)

H. S. DIEHL, Minneapolis
Discussion to be opened by GERALD S. SHIBLEY, Cleveland, K. K. CHEN, Indianapolis, and H. H. FELLOWS, New York**Friday, June 15—9 a m****Election of Officers**

A Study of the Effect of Caffeine on Rabbits (Lantern Demonstration)

C. GLENVILLE GIDDINGS JR. and E. L. BISHOP, Atlanta, Ga.

Discussion to be opened by E. W. EDMUNDS, Ann Arbor, Mich.

The Relief of Menopause Symptoms by Follicular Hormone Therapy (Lantern Demonstration)

E. L. SEVRINGHAUS, Madison, Wis.

Discussion to be opened by EMIL NOVAK, Baltimore, J. P. PRATT, Detroit, and E. P. McCULLAGH, Cleveland

Studies of Morphine Substitutes (Lantern Demonstration)

E. W. EDMUNDS and NATHAN B. EDDY, Ann Arbor, Mich.

The Use of Dihydromorphinon Hydrochloride in the Pain of Cancer (Lantern Demonstration)

C. MALONE STROUD, St. Louis

Discussion on papers of DRS. EDMUNDS and EDDY and DR. STROUD to be opened by TORALD SOLLMANN, Cleveland, WALTER C. ALVAREZ, Rochester, Minn., C. K. HIMMELSBACH, Fort Leavenworth, Kan., and NORMAN A. DAVID, Morgantown, W. Va.

The Role of Hypercalcemia in the Presence of the Tuberculin Reaction in Experimental Tuberculosis (Lantern Demonstration)

EUGENE DE SAVITSCH, Chicago

Discussion to be opened by HENRY WILLIS, Northville, Mich.

The Therapeutics of the Intravenous Drip (Lantern Demonstration)

HAROLD T. HAMAN and A. S. W. TOUROFF, New York
Discussion to be opened by T. G. ORR, Kansas City, Mo., PAUL TITUS, Pittsburgh, and ROBERT KAPSINOW, Lafayette, La.**SECTION ON PATHOLOGY AND
PHYSIOLOGY**MEETS IN SOUTH HALL C FOURTH FLOOR,
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Wednesday, June 13—2 p m

Giant Cell Tumors Their Pathology and Possible Etiology (Lantern Demonstration)

CLAUDE MOORE, Washington, D. C.

Hyperproteinemia, Autohemo-Agglutination and Abnormal Bleeding in Multiple Myeloma (Lantern Demonstration)

ALVIN G. FOORD, Pasadena, Calif.

Is Hodgkin's Disease a Neoplasm or Due to Infection (Lantern Demonstration)?

E. B. KRUMBHAR, Philadelphia

Chairman's Address The Cancer Problem Today (Lantern Demonstration)

WILLIAM CARPENTER MACCARTY, Rochester, Minn.

The Problems of Radiosensitivity of Tumors (Lantern Demonstration)

MAX CUTLER, Chicago

Hypernephroid Tumors of the Kidney (Lantern Demonstration)

EUGENE R. WHITMORE, Washington, D. C.

The Pathology of Heart Disease in Veterans

PHILIP MATZ, Washington, D. C.

Thursday, June 14—2 p m

Specific Viable Vaccines in Tuberculosis (Lantern Demonstration)

H. J. CORPER, Denver

The Significance of Mixed Infections in Pneumonia (Lantern Demonstration)

MAXWELL FINLAND, Boston

Tissue Reactions in Immunity Some Clinical Implications (Lantern Demonstration)

REUBEN L. KAHN, Ann Arbor, Mich.

Normal Hematologic Standards (Lantern Demonstration)

EDWIN E. OSGOOD, Portland, Ore.

The Origin of the White Blood Cells (Lantern Demonstration)

B. K. WISEMAN, Columbus, Ohio

Discussion to be opened by CHARLES A. DOAN, Columbus, Ohio

The Spleen in Sickle Cell Anemia (Lantern Demonstration)

L. W. DIGGS, Memphis, Tenn.

A Study of One Hundred Cases of Jaundice (Lantern Demonstration)

LEON SCHIFF, Cincinnati

Friday, June 15—9 a m

Election of Officers

- The Metabolism of Levulose VI The Influence of Gonadal
Function on Tolerance (Lantern Demonstration)
ALLAN WINTER ROWE Boston
Sodium Ferrocyanide as a Clinical Test of Glomerular Efficiency
(Lantern Demonstration)
EDWARD J STIEGLITZ and ALVA A KNIGHT, Chicago
Discussion to be opened by NATHAN S DAVIS III
Some Physiologic Changes Occurring During Hyperpyrexia
Induced by Physical Means (Lantern Demonstration)
WILLIAM BIERMAN, New York
The Functions of a Full Time Pathologist (Lantern Demon-
stration) NICHOLAS M ALTER Jersey City, N J
Obtaining Permission for Autopsies (Lantern Demonstration)
MARGARET WARWICK, Buffalo

**SECTION ON NERVOUS AND
MENTAL DISEASES**

MEETS IN SOUTH HALL A, SECOND FLOOR
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Minn

Wednesday, June 13—9 a m

- Trauma and the Nervous System, with Special Reference to
Head Injuries and a Classification of Posttraumatic
Syndromes I S WECHSLER New York
Discussion to be opened by N W WINKELMAN, Phila-
delphia, and GEORGE B HASSIN, Chicago
Spastic Paraplegia Cases Illustrating the Common Etiologic
Factors (Lantern Demonstration)
N W WINKELMAN, Philadelphia, and JOHN L ECKEL,
Buffalo
Discussion to be opened by I S WECHSLER New York
The Neurologic Manifestations of Hyperinsulinism and Other
Hypoglycemic States (Lantern Demonstration)
EDWARD H RYANERSON and FREDERICK P MOERSCH,
Rochester, Minn
Discussion to be opened by I S WECHSLER, New York
and GEORGE W HALL, Chicago
The Diagnosis of Cerebral Neoplasms in the Absence of
Generalized Intracranial Pressure Phenomena (Lantern
Demonstration)
A E BENNETT and J J KEEGAN, Omaha
Discussion to be opened by ALFRED W ADSON, Roch-
ester, Minn, and LLOYD H ZIEGLER Albany, N Y
The Diagnosis and Surgical Treatment of Chordomas of the
Basilar Plate (Lantern Demonstration)
WILLIAM P VAN WAGENEN, Rochester N Y
Discussion to be opened by JOHN L ECKEL, Buffalo,
and W JAMES GARDNER, Cleveland
Frontal Lobe Tumors Clinical Observations in a Verified
Series (Lantern Demonstration)
H C VORIS Rochester Minn
Discussion to be opened by ALFRED W ADSON, Roch-
ester, Minn and F J GERTY Chicago

Thursday, June 14—9 a m

- Chairman's Address (Lantern Demonstration)
HENRY W WOLTMAN Rochester Minn
**SYMPOSIUM ON THE FUNCTIONS OF THE
CEREBRAL CORTEX**
FRONTAL LOBES
The Relation of Cyto Architecture of the Frontal Lobes of
Primates to Functional Activity (Lantern Demonstra-
tion) PAUL C BUCY, Chicago
An Analysis of the Syndromes of the Motor and Premotor
Areas
J F FULTON, New Haven, Conn and HENRY R VIETS,
Boston
Functions of the Frontal Association Areas in Primates (Lan-
tern Demonstration)
C F JACOBSEN New Haven, Conn
Discussion on papers of DR BUCY, DRS FULTON and
VIETS and DR JACOBSEN to be opened by I S
WECHSLER, New York and JOHN L ECKEL Buffalo

AUTONOMIC REPRESENTATION IN THE CORTEX

- Vasomotor Disturbances Resulting from Cortical Lesions (Lan-
tern Demonstration)
MARGARET A KENNARD, New Haven, Conn
The Influence of the Cortex on Gastro-Intestinal Movements
(Lantern Demonstration)
JAMES W WATTS, Philadelphia
Discussion on papers of DRS KENNARD and WATTS to
be opened by JOHN PAUL QUIGLEY, Cleveland, and
PAUL C BUCY, Chicago

OCCIPITAL LOBES

- Structure of the Retina and Its Cerebral Representation in
Primates and in Man (Lantern Demonstration)
STEPHEN POLJAK, Chicago
A Phylogenic Interpretation of the Functions of the Visual
Cortex (Lantern Demonstration)
DONALD MARQUIS New Haven, Conn
Discussion on papers of DRS POLJAK and MARQUIS to
be opened by FRANKLIN JELSMAN, Louisville, Ky, and
THOMAS J HELDT, Detroit

Friday, June 15—9 a m

Election of Officers

- Multiple Sclerosis Cervicodorsal Sympathectomy as a Relief
Measure (Lantern Demonstration)
FREDERICK S WETHERELL, Syracuse, N Y
Discussion to be opened by NOBLE R CHAMBERS,
Syracuse, N Y
Spinal Drainage of Repeated Lumbar Punctures in Traumatic
Lesions of the Central Nervous System
WILLIAM SHARPE, New York
Discussion to be opened by FOSTER KENNEDY, New
York, and TEMPLE S FAX, Philadelphia
Muscular Dystrophy, Muscular Atrophy and Myasthenia
Gravis Review of Clinical and Biochemical Studies of
the Effects of Amino Acid (Lantern Demonstration)
CARLO J TRIPOLI WILLIAM M MCCORD, JEROME E
ANDES and HOWARD H BEARD, New Orleans
Discussion to be opened by WALTER M BOOTHBY,
Rochester Minn, and HANS H REESE, Madison, Wis
Physiologic and Psychologic Phenomena Produced by a Pro-
longed Vigil (Lantern Demonstration)
SIEGFRIED E KATZ and CARNEY LANDIS, New York
Discussion to be opened by CLARENCE O CHENEY, New
York, and LLOYD H ZIEGLER, Albany, N Y
The Treatment of Psychoneuroses in General Practice
LAUREN H SMITH, Philadelphia
Discussion to be opened by JOSEPH YASKIN, Philadelphia,
and ALAN D FINLAYSON, Cleveland
Modern State Hospital Treatment of Mental Diseases
CHARLES F READ and JOHN T NERANCY, Elgin, Ill
Discussion to be opened by CLARENCE O CHENEY, New
York, GEORGE B HASSIN, Chicago, and FRANKLIN
G EBAUGH, Denver

**SECTION ON DERMATOLOGY AND
SYPHILOLOGY**

MEETS IN CLUB ROOM B, THIRD FLOOR, CLEVELAND
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Wednesday, June 13—9 a m

- Chairman's Address (Lantern Demonstration)
C GUY LANE, Boston
Necrobiosis Lipoidica Diabeticorum (Lantern Demonstration)
ERWIN P ZEISLER and MARCUS R CARO, Chicago
Clinical Mutations in Lymphoblastomas (Lantern Demonstra-
tion) FRANK STILES JR, Ann Arbor, Mich
Is Spiegler-Fendt Sarcoid a Clinical or Histologic Entity?
GEORGE M LEWIS New York
Studies on the Specificity of a Streptococcus Isolated from
Cases of Pemphigus Preliminary Report (Lantern
Demonstration) ASHTON L WELSH, Rochester, Minn

- Streptococcic Infections Simulating Ringworm of the Hands and Feet (Lantern Demonstration)
JAMES HERBERT MITCHELL, Chicago
- The Roentgen Unit in Dermatology (Lantern Demonstration)
GEORGE M. MACKEE and ANTHONY C. CIPOLLARO, New York
- The Role of High Frequency Currents in the Performance and Histologic Interpretation of Biopsy Samples (Lantern Demonstration)
FRED D. WEIDMAN and JACQUES P. GUEQUIERRE, Philadelphia

Thursday, June 14—9 a m

- Urinary Proteose in Eczema (Lantern Demonstration)
THEODORE CORNBIET and M. A. KAPLAN, Chicago
- The Present Status of the Specific Diagnosis and Treatment of the Allergic Diseases of the Skin
ARTHUR F. COCA, New York
- Ragweed Dermatitis (Lantern Demonstration)
LOUIS A. BRUNSTING and C. R. ANDERSON, Rochester, Minn.
- Some Observations on Light Sensitive Dermatoses (Lantern Demonstration)
NELSON PAUL ANDERSON and SAMUEL AYRES JR., Los Angeles
- Acneiform Eruptions of the Face Etiologic Importance of Specific Foods (Lantern Demonstration)
CLEVELAND J. WHITE, Chicago
- Early Cutaneous Carcinoma (Lantern Demonstration)
RICHARD L. SUTTON JR., Kansas City, Mo.
- Dioxanthranol 1-8 as a Substitute for Chrysarobin
HERMAN BEERMAN, GEORGE V. KUCHAR, DONALD M. PILLSBURY and JOHN H. STOKES, Philadelphia
- Verruca Peruana as Observed in Peru (Lantern Demonstration)
HOWARD FOX, New York

Friday, June 15—9 a m

- Election of Officers
- The Treatment of Hemorrhagic Symptoms with Snake Venom (Lantern Demonstration)
SAMUEL M. PECK, New York
- The Frei Test for Lymphogranuloma Inguinale Recovery of the Antigen from a Pustular Reaction (Lantern Demonstration)
MAURICE J. STRAUSS and MARION E. HOWARD, New Haven, Conn.
- Organic Luetin Its Value in Diagnosis and Treatment of Syphilis A Study of Five Hundred Cases
LESLIE P. BARKER, New York
- The Treatment of Syphilis with Hyperpyrexia (Lantern Demonstration)
NORMAN N. EPSTEIN and MAURICE COHEN, San Francisco
- Sulpharsphenamine Bismuth (Bismarsen) in the Treatment of Congenital Syphilis A Five Years Appraisal (Lantern Demonstration)
STANLEY O. CHAMBERS and GEORGE F. KOETTER, Los Angeles
- Arsphenamine Sensitization Dermatitis An Attempt at Sensitizing Patients by Intradermal Neoarsphenamine (Lantern Demonstration)
ARTHUR G. SCHOCH, Dallas, Texas
- The Application of the Intravenous Drip Method of Chemotherapy as Illustrated by Massive Doses of Neoarsphenamine in the Treatment of Early Syphilis (Lantern Demonstration)
LOUIS CHARGIN, New York

SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

MEETS IN SOUTH HALL B THIRD FLOOR,
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Wednesday, June 13—2 p m

SYMPOSIUM ON LEAD POISONING

- Chairman's Address (Lantern Demonstration)
WILSON G. SMILLIE, Boston.
- Epidemiology of Lead Poisoning
A. J. LANZA, New York.
- Chemistry of Lead in the Body (Lantern Demonstration)
JOSEPH C. AUB, Boston
- Normal Absorption and Excretion of Lead (Lantern Demonstration)
ROBERT A. KEHOE, Cincinnati
- Symptoms in Early Stages of Lead Poisoning
R. R. JONES, Washington, D. C.
- Control of Lead Poisoning in the Worker (Lantern Demonstration)
EUSTON L. BELKNAP, Milwaukee
- Recent Progress in the Treatment of Plumbism (Lantern Demonstration)
IRVING GRAY, Brooklyn

Thursday, June 14—2 p m

PUBLIC HEALTH

- The Relation of Postgraduate Medical Instruction to Public Health
LEROY E. PARKINS, Boston
- The Response of Peritoneal Tissue to Dusts Introduced as Foreign Bodies (Lantern Demonstration)
JOHN W. MILLER and R. R. SAYERS, Washington, D. C., and WILLIAM P. YANT, Pittsburgh
- The Estimation of Functional Disability in the Pulmonary Fibroses (Lantern Demonstration)
A. HURTADO, W. W. PRAY, N. KALTREIDER and WILLIAM S. MCCANN, Rochester, N. Y.
- The Control of Occupational Diseases by Laboratory Methods
C. O. SAPPINGTON, Chicago
- Carbon Tetrachloride as an Industrial Hazard
P. A. DAVIS, Akron, Ohio
- The Effects of Consolidation of State Health Welfare and Licensure Functions to Preventive Medicine (Lantern Demonstration)
F. D. STRICKER, Portland, Ore.
- Some Phase of Current Medical Relief Problems (Lantern Demonstration)
H. JACKSON DAVIS, Albany, N. Y.

Friday, June 15—2 p m

Election of Officers

EPIDEMIC ENCEPHALITIS

- The Encephalitis Problem (Lantern Demonstration)
JOSEPHINE B. NEAL, New York
- 1933 OUTBREAK
- Epidemiology
J. P. LEAKE, Washington, D. C.
- Pathology (Lantern Demonstration)
HOWARD ANDERSON MCCORDOCK, St. Louis
- Etiology (Lantern Demonstration)
RALPH S. MUCKENFUSS, St. Louis
- Diagnosis (Lantern Demonstration)
THEODORE C. HENPELMANN, St. Louis
- Treatment
J. W. ESCHENBRENNER, St. Louis
- Prognosis
ANDREW B. JONES, St. Louis
- Handling the Epidemic
JOSEPH F. BREDECK and PAUL J. ZENTAY, St. Louis

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Wednesday, June 13—2 p m

SYMPOSIUM ON GONORRHEA

- Immunologic Problems in Gonorrhea
PERCY S. PELOUZE, Philadelphia
- The Treatment of Gonorrhea Based on Laboratory Observations During the Course of the Disease
RUSSELL B. HERROLD, Chicago
- Methods of Treatment of Gonorrhea in Women (Lantern Demonstration)
EMILY D. BARRINGER, New York
- Discussion on papers of Drs. PELOUZE, HERROLD and BARRINGER to be opened by AUGUSTUS L. HARRIS, Brooklyn, HENRY W. E. WALTHER, New Orleans, HERBERT T. HAYES, Houston, Texas and ROY W. MOHLER, Philadelphia

Results with Corbus Ferry Bouillon Filtrate and Other Forms of Intradermal Therapy in the Treatment of Gonorrhea (Lantern Demonstration)

R E CUMMING and ROBERT A BURHANS, Detroit
Discussion to be opened by BUDD C CORBUS, Chicago

The Criteria of Cure of Gonorrhea

AMBRSE J KING, London, England
Discussion to be opened by C T STEPITA, New York

Instrumental Methods of Procedure in the Treatment of the Prostatic and Vesicular Infections (Lantern Demonstration)

JOSEPH F MCCARTHY, New York

The Treatment of Chronic Prostatitis by Incision with Electrocautery (Lantern Demonstration)

GERSHOM J THOMPSON, Rochester Minn
Discussion on papers of DRS MCCARTHY and THOMPSON to be opened by W N TAYLOR, Columbus, Ohio, and E O SMITH Cincinnati

Indications and Methods in Handling the Surgical Complications Occurring in the Treatment of Gonorrhea

ALBERT E GOLDSTEIN, Baltimore

Discussion to be opened by MILEY B WESSON, San Francisco and ELMER HESS, Erie, Pa

Presentation of a New Dilating Urethroscope for Women (Lantern Demonstration)

RALPH L DOURMASHKIN New York

Thursday, June 14—2 p m

Chairman's Address The Importance of the Streptococcus in Genito-Urinary Disease

HARRY CULVER, Chicago

A Simplified Treatment of Bacilluria

ANSON L CLARK and B F KELTZ, Oklahoma City

The Necessity for the Standardization of the Treatment of Bacilluria (Lantern Demonstration)

ALBERT M CRANCE, Geneva, N Y

Discussion on papers of DRS CULVER, CLARK and KELTZ, and CRANCE to be opened by WILLIAM P HERBST Jr Washington, D C, and IRA R SISK, Madison, Wis

SYMPOSIUM ON GENITO URINARY TUBERCULOSIS

The Incidence of Renal Tuberculosis in Five Hundred Autopsies for General and Pulmonary Tuberculosis (Lantern Demonstration)

MONROE E GREENBERGER and LEONARD P WERSHUB New York and OSCAR AUERBACH West New Brighton, S I, N Y

Discussion to be opened by ROY B HENLINE New York and THOMAS D MOORE, Memphis, Tenn

Tuberculous Nephritis (Lantern Demonstration)

FREDERICK LIEBERTHAL, Chicago

Discussion to be opened by WILLIAM ROSENBERG, Cleveland, and BORIS E GREENBERG, Boston

Does the Diagnosis of Unilateral Renal Tuberculosis Always Indicate Nephrectomy?

STANLEY R WOODRUFF, Jersey City N J and H C BUMPUS JR Pasadena, Calif

Discussion to be opened by N G ALCOCK, Iowa City, J C PENNINGTON, Nashville, Tenn, and R M LECOMTE, Washington, D C

Genital Tuberculosis (Lantern Demonstration)

HUGH H YOUNG Baltimore

Discussion to be opened by WILLIAM E LOWER Cleveland and W F BRAASCH, Rochester Minn

Treatment of Urinary Tuberculosis—Old and New

EDWARD L KEYES, New York

Discussion to be opened by W G SHULTZ Tucson, Ariz, CHARLES M MCKENNA, Chicago, and C J McDEVITT Cincinnati

Quartz Light Therapy in the Treatment of Bladder Tuberculosis (Lantern Demonstration)

STANLEY L WANG New York

Friday, June 15—2 p m

Election of Officers

SYMPOSIUM ON UROLITHIASIS

The Present Conception of Renal Lithiasis (Lantern Demonstration)

VIRGIL S COUNSELLER Rochester, Minn and J B PRIESTLY, Des Moines Iowa

Discussion to be opened by L LICHTWITZ and JEROME M LATCH New York

Experimental Production and Dissolution of Urinary Calculi with Clinical Application (Lantern Demonstration)

CHARLES C HIGGINS, Cleveland

Discussion to be opened by WILLIAM J ENGEL, Cleveland, and GEORGE H EWELL, Madison, Wis

Bilateral Urinary Calculi The Medical and Surgical Handling of the Various Problems Involved (Lantern Demonstration)

ALEXANDER R STEVENS, New York

Discussion to be opened by J S LEWIS JR, Youngstown, Ohio, and MOSES SWICK, New York

Recurrent Urinary Calculi Consideration of Etiologic Factors and Clinical Management (Lantern Demonstration)

LINWOOD D KEISER Roanoke, Va

Discussion to be opened by THOMAS P SHUPE, Cleveland, RICHARD CHUTE, Boston, and FRANCIS P TWINEM, New York

The Medical and Surgical Treatment of Calculous Anuria (Lantern Demonstration)

GEORGE F CAHILL, New York

Discussion to be opened by HARRY R TRATTNER, Cleveland, and GORDON F MCKIM, Cincinnati

The Indications for Operation and Treatment of Impacted Ureteral Calculus (Lantern Demonstration)

FREDERIC E B FOLEY, St Paul

Discussion to be opened by OSWALD S LOWSLEY, New York, and ARTHUR R KNAUF, Tampa, Fla

Present-Day Management of Bladder Stones with a Description of Visualized Litholapaxy (Lantern Demonstration)

ABRAHAM RAVICH, Brooklyn

SECTION ON ORTHOPEDIC SURGERY

MEETS IN SOUTH HALL A, SECOND FLOOR,
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Wednesday, June 13—2 p m

The Treatment of Committted Fracture of the Patella in Which There Are One Large Fragment and Several Small Fragments (Lantern Demonstration)

J E M THOMSON, Lincoln, Neb

Discussion to be opened by JAMES S SPEED, Memphis, Tenn, H R CONN, Akron, Ohio, and MARCUS H HOBART, Evanston, Ill

Report of One Hundred Cases of Fracture of the Hip (Lantern Demonstration)

LOUIS G HOWARD, Boston

Discussion to be opened by DALLAS B PHEMISTER Chicago ARCHIBALD F O DONOGHUE, Sioux City, Iowa, E T EVANS, Minneapolis and J LAURENCE JONES, Kansas City, Mo

End Result Study of Tuberculosis of the Hip Joint Treated by Fusion A Study of One Hundred and Seventy Cases (Lantern Demonstration)

HALFORD HALLOCK and JAMES W TOUMER JR, New York

Discussion to be opened by HEARY W MEYERDING, Rochester, Minn, FRANK R OBER Boston C H HEYMAN, Cleveland, and JOSEPH S BARR, Boston

The Treatment of Simple Foot Imbalance (Lantern and Motion Picture Demonstration)

REX L DIVELEY Kansas City, Mo

Discussion to be opened by CARL E BADGLEY Ann Arbor, Mich, THEODORE A WILLIS, Cleveland LEWIS CLARK WAGNER and JOHN JOSEPH NUTT, New York, and J J KURLANDER, Cleveland

Nonoperative Treatment of Fractures of the Bones of the Forearm, with Special Reference to the Treatment of These Fractures in Children and Adolescents A Report of One Hundred and Fifty Consecutive Recent Cases (Lantern Demonstration)

VOIGT MOONEY, Pittsburgh
Discussion to be opened by RUDOLPH S REICH and WALLACE S DUNCAN Cleveland and D H LEVINTHAL Chicago

The Growth Disk

ARTHUR G DAVIS, Erie, Pa

Thursday, June 14—2 p m

Congenital Pseudarthrosis of the Tibia (Lantern Demonstration) PAUL CRENSHAW COLONNA, New York
Discussion to be opened by ARMITAGE WHITMAN, New York, PHILIP LEWIN, Chicago, BURT G. CHOLLET, Toledo, Ohio, and HENRY W. MEYERDING, Rochester, Minn

Nonunion in Fractures of the Shaft of Humerus A Report on Four Cases (Lantern and Motion Picture Demonstration) JAMES WARREN SEVER, Boston
Discussion to be opened by DALLAS B. PHEMISTER, Chicago, WILLIAM B. OWEN, Louisville, Ky., and WILLIAM L. SNEED, New York

Chairman's Address An Analysis of End Results in the Treatment of Central Fractures of the Neck of the Femur (Lantern Demonstration)

JAMES S. SPEED, Memphis, Tenn

Disabilities of the Hand Resulting from Loss of Joint Function (Lantern Demonstration) SUMNER L. S. KOCH, Chicago
Discussion to be opened by WALTER G. STERN, Cleveland, ARTHUR STEINDLER, Iowa City, and L. E. PAPURT, Cleveland

Statistical Analysis and Report on the Treatment of Five Hundred Cases of Congenital Dislocation of the Hip Bloodless and Open Reduction and Late Palliative Operations (Lantern Demonstration)

ARTHUR STEINDLER, ERNEST FREUND and JACOB KULOWSKI, Iowa City

Discussion to be opened by EDWIN W. RYERSON, Chicago, JOSEPH A. FRIBERG, Cincinnati, and SAMUEL L. ROBBINS, Cleveland

Dislocations of the Cervical Spine Some Predisposing Causes (Lantern Demonstration)

THEODORF P. BROOKES, St. Louis

Discussion to be opened by ROBERT D. SCHROCK, Omaha, and CARL B. DAVIS, Chicago

Injuries to the Vertebrae and Intervertebral Disks Following Lumbar Puncture (Lantern Demonstration)

CHARLES N. PLASE, Chicago

Discussion to be opened by R. WALLACE BILLINGTON, Nashville, Tenn. EDWARD L. COMPERE, Chicago, and C. G. BARBER, Cleveland

Friday, June 15—2 p m

Election of Officers

Treatment of Permanent Paralysis of Deltoid Muscle with Luxation at the Shoulder Joint (Lantern and Motion Picture Demonstration)

Discussion to be opened by SYLVAN L. HAAS, San Francisco, FRANK R. OBER, Boston, ROBERT D. SCHROCK, Omaha, and WALTER A. HOYT, Akron, Ohio

The Mechanics of the Function of the Viscera in the Upper Part of the Abdomen (Lantern Demonstration)

JOEL E. GOLDTHWAIT, Boston

Discussion to be opened by EDWIN W. RYERSON and EMIL D. HAUSER, Chicago

Coxa Magna A Condition of the Hip Related to Coxa Plana (Lantern Demonstration)

ALBERT B. FERGUSON and M. BECKETT HOWORTH, New York

Discussion to be opened by ARTHUR T. LEGG, Boston, and OSCAR L. MILLER, Charlotte, N. C.

The Changes in Autogenous Bone Transplants (Lantern Demonstration) C. HOWARD HATCHER, Chicago

Discussion to be opened by PAUL B. MAGNUSON, Chicago, and ESLE ASBURY, Cincinnati

Fracture of Both Bones of the Leg Treatment by a Modified Boehler Method with a New Apparatus (Lantern Demonstration)

R. A. GRISWOLD, Louisville, Ky.

Discussion to be opened by WILLIAM B. OWEN, Louisville, Ky., J. A. CALDWELL, Cincinnati, and MAXWELL HARBIN, Cleveland

The Influence of the Shoe on Gait as Recorded by Electrobasograms and Slow Motion Pictures (Lantern and Motion Picture Demonstration)

R. PLATO SCHWARTZ, Rochester, N. Y.

Discussion to be opened by FRANK R. OBER, Boston, ARTHUR STEINDLER, Iowa City, and G. I. BAUMAN, Cleveland

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

MEETS IN SOUTH HALL B, THIRD FLOOR,
CLEVELAND PUBLIC AUDITORIUM

OFFICERS OF SECTION

Chairman—ALBERT F. R. ANDRESEN, Brooklyn

Vice Chairman—WALTER A. FANSLER, Minneapolis

Secretary—H. L. BOCKAUS, Philadelphia

Executive Committee—GEORGE B. EUSTERMAN, Rochester, Minn., CURTICE ROSSER, Dallas, Texas, ALBERT F. R. ANDRESEN, Brooklyn

Wednesday, June 13—9 a m.

The Morphology and Function of a Continuous Reticular Coat of the Small Intestine (Lantern Demonstration)

LEWIS GREGORY COLE, New York

Discussion to be opened by EUGENE P. PENDERGRASS, Philadelphia

Regional (Terminal) Ileitis Its Roentgen Diagnosis (Lantern Demonstration)

JOHN L. KANTOR, New York

Discussion to be opened by HARRY M. WEBER, Rochester, Minn., and JAMES T. CASE, Chicago

Intestinal Tuberculosis An Analysis of One Thousand Autopsies, with Remarks on the Early Diagnosis by Double Contrast Barium Enema (Lantern Demonstration)

RUSSELL S. BOLES and JACOB GERSHON-COHEN, Philadelphia

Discussion to be opened by EDGAR MAYER, New York, and BENJAMIN H. ORNDORFF, Chicago

Peptic Esophagitis A New Clinical Entity (Lantern Demonstration)

ASHER WINKELSTEIN, New York

Discussion to be opened by CHEVALIER JACKSON, Philadelphia, and RUDOLPH KRAMER, New York

Gastroscopy (Lantern and Motion Picture Demonstration)

CHEVALIER JACKSON and CHEVALIER L. JACKSON, Philadelphia

Discussion to be opened by GABRIEL TUCKER and WILLIAM A. SWALM, Philadelphia

Histopathology of the Anal Crypts (Lantern Demonstration)

CLAUDE C. TUCKER and C. ALEXANDER HELLWIG, Wichita, Kan.

Discussion to be opened by CHARLES E. POPE, Evanston, Ill., and LOUIS J. HIRSCHMAN, Detroit

Thursday, June 14—9 a m.

Chairman's Address The Undergraduate Teaching of Gastroenterology in American Medical Schools (Lantern Demonstration)

ALBERT F. R. ANDRESEN, Brooklyn

Digestive Manifestations of Gout and Their Treatment (Lantern Demonstration)

ANTHONY BASSLER, New York

Discussion to be opened by HORACE W. SOPER, St. Louis, and E. W. SHANK, Dayton, Ohio

Gastro-Intestinal Manifestations of Urologic Disease (Lantern Demonstration)

SIDNEY A. PORTIS and J. S. GROVE, Chicago

Discussion to be opened by HARLOW BROOKS, New York, and CHARLES M. MCKENNA, Chicago

Jaundice A Review of Experimental Investigations (Lantern Demonstration)

F. C. MAYN and J. L. BOLLMAN, Rochester, Minn.

Discussion to be opened by I. S. RAVDIN, Philadelphia, and A. C. IVY, Chicago

The Galactose and Urobilinogen Tests in the Differential Diagnosis of Obstructive and Intrahepatic Jaundice (Lantern Demonstration)

DAVID H. ROSENBERG, Chicago

Discussion to be opened by M. A. BLANKENHORN, Cleveland, and LEON SCHIFF, Cincinnati

Latent and Slight Jaundice The Significance of Slightly Elevated Concentrations of Serum Bilirubin

H. M. ROZENDAAL, M. W. COMFORT and A. M. SNELL, Rochester, Minn.

Discussion to be opened by A. H. AARON, Buffalo, and V. C. ROWLAND, Cleveland

Gonococcal Infection of the Rectum

CLEMENT L. MARTIN, Chicago

Discussion to be opened by HERBERT T. HAYES, Houston, Texas, and CURTICE ROSSER, Dallas, Texas

Friday, June 15—9 a m

Election of Officers

- Cancer of the Rectum JOSEPH W RICKETTS Indianapolis
Discussion to be opened by FRED W RANKIN Lexington, Kj, and DUDLEY A SMITH San Francisco
- Krukenberg Tumor (Lantern Demonstration)
F G RUNYON Reading Pa
Discussion to be opened by JOSEPH C BLOODGOOD Baltimore and HARRY E BACON Philadelphia
- Proteins Versus Carbohydrates A Study of Their Gastric Digestion MARTIN E REHFUSS Philadelphia
Discussion to be opened by J EARL THOMAS Philadelphia, and ERNEST H GAITHER Baltimore
- The Unstable or Irritable Duodenum Clinical Observations in One Hundred Cases
JULIUS FRIEDENWALD and MAURICE FELDMAN, Baltimore
Discussion to be opened by ELMER L EGGLESTON Battle Creek Mich, and JOHN G MATEER Detroit
- Pain in Benign Ulcers of the Esophagus Stomach and Small Bowel The Diagnostic Significance of Type and Radiation with Some Observations of Pain Conduction Pathways (Lantern Demonstration)
ANDREW B RIVERS Rochester Minn
Discussion to be opened by RALPH C BROWN and FRANK SMITHIES Chicago
- Complications of Peptic Ulcer Their Prognostic Significance (Lantern Demonstration)
SARA M JORDAN and EVERETT D KIEFER Boston
Discussion to be opened by BURRILL B CROHN New York, and J TATE MASON, Seattle

SECTION ON RADIOLOGY

MEETS IN NORTH HALL, LOWER LEVEL
CLEVELAND PUBLIC AUDITORIUM

OFFICERS OF SECTION

- Chairman—A U DESJARDINS Rochester Minn
Vice Chairman—AMEDEE GRANGER New Orleans
Secretary—JOHN T MURPHY Toledo Ohio
Executive Committee—HENRY K PANCOAST Philadelphia
GEORGE W GRIER Pittsburgh A U DESJARDINS Rochester, Minn

Wednesday, June 13—9 a m

- Chairman's Address A U DESJARDINS Rochester Minn
- The Role of X-Ray Wavelength in Skin Tolerance (Lantern Demonstration)
PAUL C HODGES and ALEXANDER BRUNSCHWIG Chicago
- The Modified Coutard Technic in Roentgen Therapy (Lantern Demonstration)
J M MARTIN Dallas Texas
- Further Observations on the Diagnosis and Treatment of Carcinoma of the Bladder by the Roentgen Rays (Lantern Demonstration)
G E PFÄHLER Philadelphia
- Radiologic Aspect of Cancer of the Breast from Memorial Hospital (Lantern Demonstration)
FRANK E ADAIR New York
- Roentgen Therapy in Chronic Paranasal Sinusitis A Further Report (Lantern Demonstration)
FRANK E BUTLER and IVAN M WOOLEY Portland Ore

Thursday, June 14—9 a m

- Calcification (Ossification) of Normal Laryngeal Cartilages Mistaken for Foreign Body (Lantern Demonstration)
W EDWARD CHAMBERLAIN and BARTON R YOUNG, Philadelphia
- Arteriography in Peripheral Vascular Disease (Lantern Demonstration)
JOHN D CAMP and E V ALLEN, Rochester Minn
- Differential Diagnosis of the Leukemic States with Particular Reference to the Immature Cell Types (Lantern Demonstration)
ROY R KRACKE Emory University Ga
- Classification and Differential Diagnosis of the Anemias (Lantern Demonstration)
RUSSELL L HADEN Cleveland
- The Relation of Cell Types in Leukemia to Sensitivity to Radiation (Lantern Demonstration)
RAPHAEL ISAACS Ann Arbor Mich
- Diagnosis and Treatment of Various Types of Leukemias (Lantern Demonstration)
NATHAN ROSENTHAL New York

Friday, June 15—9 a m

Election of Officers

- Intrahepatic Gallbladder (Lantern Demonstration)
E P MCNAMEE Cleveland
- Comparison of the Urinary Tract in Pregnancy and Pelvic Tumors (Lantern Demonstration)
EDGAR C BAKER and JOHN S LEWIS JR, Youngstown Ohio
- The Effect of Intracranial Tumors on the Sella Turcica (Lantern Demonstration)
KARL KORNBLUM and LESLIE H OSMOND Philadelphia
- Pulmonary Manifestations in Human Tularemia (Lantern Demonstration)
V W ARCHER and STAIGE D BLACKFORD University, Va
- Interlobar Pleural Effusions (Lantern Demonstration)
B P STIVELMAN New York
- Interpretation of Roentgenographic Pathology in Pulmonary Tuberculosis (Lantern Demonstration)
HENRY K TAYLOR New York
- Early Diagnosis of Fulminating Pulmonary Tuberculosis in Adults Necessity for Repeated Roentgen Examinations (Lantern Demonstration)
FRANKLIN B BOGART Chattanooga Tenn

SECTION ON MISCELLANEOUS TOPICS

MEETS IN NORTH HALL, LOWER LEVEL,
CLEVELAND PUBLIC AUDITORIUM

Session on Forensic Medicine

OFFICERS OF SESSION

- Chairman—LUDVIG HEKTOEN Chicago
Secretary—HARRISON S MARTLAND, Newark, N J
- Wednesday, June 13—2 p m
- Reform of County Government and the Office of Coroner
OSCAR T SCHULTZ, Evanston, Ill
- Discussion to be opened by H R FISHBACK Chicago
- The Office of the Chief Medical Examiner of New York City as a Medicolegal Center CHARLES NORRIS New York
- An Introductory Course in Legal Medicine for Medical Students (Lantern Demonstration)
S A LEVINSON and C W MUEHLBERGER Chicago
- Forensic Application of Serologic Individuality Tests (Lantern Demonstration)
KARL LANDSTEINER, New York
- Discussion to be opened by ALEXANDER S WIENER Brooklyn
- Subdural Hemorrhage (Lantern Demonstration)
TIMOTHY LEARY Boston
- Alcohol and Automobile Accidents (Lantern Demonstration)
HERMAN A HEISE Milwaukee
- Discussion to be opened by ALEXANDER O GETTLER, New York
- The Isolation of Volatile Poisons from Tissues and Their Identification (Lantern Demonstration)
ALEXANDER O GETTLER, New York
- Discussion to be opened by HARRISON S MARTLAND Newark N J
- The Medicolegal Aspect of Silicosis
WILLIAM D McNALLY, Chicago
- Discussion to be opened by HENRY C SWEANY, Chicago
- An Epidemic of Fatal Estivo-Autumnal Malaria Among Drug Addicts in New York City Transmitted by Common Use of Hypodermic Syringe (Lantern Demonstration)
MILTON HELPERN New York
- Discussion to be opened by CHARLES NORRIS New York
- Carbon Monoxide Poisoning (Lantern Demonstration)
HARRISON S MARTLAND, Newark N J

Session on Nutrition

OFFICERS OF SESSION

- Chairman—JAMES S MCLESTER Birmingham Ala
Secretary—WILLIAM S MCCANN Rochester, N Y
- Thursday, June 14—2 p m
- Nutrition and Resistance to Infection (Lantern Demonstration)
S W CLAUSEN New York
- Address (Lantern Demonstration)
H R GEYELIN New York
- Discussion to be opened by JAMES E PAULLIN Atlanta Ga
- Ulcerative Colitis III The Factor of Deficiency States A Clinical Study (Lantern Demonstration)
THOMAS T MACKIE New York
- What Should a Patient with Arthritis Eat (Lantern Demonstration)
WALTER BAUER Boston

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit will be located on the Arena Floor of the Auditorium—the floor directly above the Technical Exhibit and general registration desks. The same general arrangement of booths and decorations will be carried out as in former years. Features this year will be the group exhibits sponsored by the fifteen sections of the Scientific Assembly, motion picture programs to be run simultaneously by several sections, symposiums on amebiasis and treatment of burns as joint undertakings by different sections, special exhibits on treatment of eye injuries by the Section on Ophthalmology and on home delivery technique by the Section on Obstetrics, Gynecology and Abdominal Surgery, and special exhibits subsidized by the Committee on Scientific Exhibit.

Admission will be limited to individuals wearing Fellowship or other badges of the convention and to guests to whom special cards of admission have been issued. The exhibit will *not* be open to the public.

SPECIAL EXHIBITS

Exhibit on Encephalitis

The exhibit on encephalitis, with special reference to the 1933 outbreak, is presented by a special committee under the joint auspices of the Committee on Scientific Exhibit of the Board of Trustees of the American Medical Association, and the United States Public Health Service. The committee is composed of James P. Leake, Washington, D. C., Ralph S. Muckenfuss, St. Louis, and Ralph C. Williams, chairman, Washington, D. C.

The exhibit will consist of charts, specimens, talks and demonstrations. It will be presented under four headings as follows:

Epidemiology	J. P. Leake, Washington, D. C. E. A. Musson, Jefferson City, Mo. H. D. Choate, St. Louis
Pathology	H. A. McCordock, St. Louis W. D. Collier, St. Louis Elizabeth Moore, St. Louis
Etiology	R. S. Muckenfuss, St. Louis Charles Armstrong, Washington, D. C. J. E. Smadel, St. Louis
Clinical Features	R. A. Kinsella, St. Louis T. C. Hempelmann, St. Louis G. C. Brown, St. Louis

Exhibit on Nutrition

In conjunction with Symposium on Nutrition conducted by the Section on Miscellaneous Topics, an exhibit on nutrition will be shown in the Scientific Exhibit under the auspices of the Committee on Scientific Exhibit, the Committee on Foods and Hygiene, the Health Magazine. The committee in charge is composed of Walter C. Alvarez, Rochester, Minn., Reginald Fitz, Boston, and P. C. Jeans, Iowa City. A competent corps of demonstrators will be on hand throughout the week. The following subjects will be included: foundation diets, overfeeding diets for the undernourished, reduction diets for the obese, anti-diarrhea diets, anticonstipation diets, and nutrition in different diseases and abnormal conditions. A pamphlet covering these subjects will be distributed at the meeting.

Demonstrations in Pathology

The special demonstrations in pathology will be presented under the direction of Benjamin S. Kline, pathologist, Mount Sinai Hospital, Cleveland, with an advisory committee consisting of A. B. Luckhardt, Chicago, Frank W. Hartman, Detroit, Howard T. Karsner, Cleveland, William Carpenter MacCarty, Rochester, Minn., and J. P. Simonds, Chicago.

Arrangements have been made to secure both surgical and necropsy material from numerous sources and demonstrations in the exhibit booth will be conducted continuously throughout the week. As an additional feature, special demonstrations at stated periods each morning and afternoon will be given on various subjects in a room directly adjoining the exhibit booth with the following pathologists in charge: Howard T. Karsner, Harry Goldblatt, Allen Graham, R. Dominguez, Alan R. Moritz, H. S. Reichle, Anna M. Young, and B. S. Kline.

SECTION EXHIBITS

Section on Practice of Medicine

Section exhibit committee: IRVING S. WRIGHT, chairman, New York, JAMES HAROLD AUSTIN, Philadelphia, WILLIAM J. KERR, San Francisco, EUGENE S. KILGORE, San Francisco, and L. G. ROWNTREE, Philadelphia.

Besides the exhibits sponsored by the Section on Practice of Medicine, the section is cooperating in the Symposium on Treatment of Burns and in the Symposium on Amebiasis and is contributing to the group of exhibits on thyroid diseases. It is also maintaining a motion picture program in an area adjoining the section exhibits, where motion pictures will be run on a definite schedule throughout the week.

ALBERT S. HYMAN, Witham Foundation for the Study and Prevention of Heart Disease, Beth David Hospital, New York. Transthoracic electrocardiography, demonstration of the nine lead hook-up. Exhibit of photographs, charts, records, graphs and models illustrating the historical development of various leads used in electrocardiography, inadequacy of conventional three lead methods in certain types of coronary and myocardial disease, employment of transthoracic leads for diagnosis and localization of infarcted areas of heart muscle, reconstruction of electrodynamic triangle of the heart to conform with three dimensional theory, clinical application of the nine lead hook up with demonstration of normal records from all age groups and exhibition of various myocardial lesions in coronary disease and allied conditions.

N. M. KEITH, H. P. WAGENFR and N. W. BARKER, Mayo Clinic, Rochester, Minn. Diffuse arterial disease with hypertension. Exhibit of (a) clinical data in essential hypertension with differentiation of groups I, II, III and IV, chronic glomerulonephritis with hypertension, hypertension associated with vasospastic phenomena, (b) enlarged photographs of ocular fundi showing characteristic retinal and vascular changes in foregoing groups, (c) photomicrographs of arterioles seen in biopsy of pectoralis major muscle in cases of hypertension, illustrating pathologic change and changes in lumen to wall ratio, (d) photomicrographs of retinal arterioles in above groups.

CLAYTON J. LUNDY and J. TETREV, Rush Medical College of the University of Chicago, Chicago. Clinical classification of ventricular extrasystoles. Exhibit of charts and photographs showing clinical occurrence and experiments on human hearts. Study of selected electrocardiograms, relationships of age, type of heart disease, clinical left and right ventricular strain, acute and chronic, coronary disease, extracardiac extrasystoles, cardiac hypertrophy especially with anemia, electrocardiographic relationships, congenital heart disease, and pulmonary artery stenosis.

WILLIAM P. MURPHY, Peter Bent Brigham Hospital, Boston. Therapeutic effects of intramuscular injections of liver extract. Exhibit of charts illustrating the effects of intramuscular injections of a solution of liver extract on the white blood cells, particularly granulocytes, the blood platelets and hemoglobin in secondary anemia. Two reel film on pernicious anemia, illustrating the diagnosis, treatment and results with special consideration of the use of liver extract by intramuscular injection.

EDWIN E. OSGOOD, CLARICE ASHWORTH and RICHARD YOUNG, University of Oregon Medical School, Portland, Ore. Morphologic hematology, cells of blood and bone marrow in health and disease. Exhibit of colored drawings of cells of blood and bone marrow, arranged in the order of maturity, also a collection of stained smears of blood and bone marrow for microscopic study, the technique of obtaining bone marrow is illustrated.

H. L. SMITH and F. A. WILLIUS, Mayo Clinic, Rochester, Minn. The heart in obesity. Exhibit of gross specimens completely encased in fat varying from one to several centimeters thick, gross sections showing line of demarcation between the fat and the muscle completely obliterated and fat penetrating completely through the walls of the ventricle and into the papillary muscles, gross specimens demonstrating that fat hearts will float on water and normal hearts will sink, colored photo

micrographs demonstrating how fat has completely penetrated the wall of the ventricles, photographs of injected specimens showing the great vascularity of adipose tissue photomicrographs of perfused, injected and isolated heart of rabbit showing size, distribution and the enormous capillary bed of a normal heart

CARL R. STEINKE, CLARENCE L. HYDE and Associates, Springfield Lake Sanatorium East Akron Ohio Treatment of pulmonary tuberculosis, showing examples of various types of treatment Exhibit of roentgenograms showing results of types of treatment separately and in various combinations of results, as follows 1 Rest cure 2 Pneumothorax 3 Phrenicectomy 4 Paraffin fill 5 Pressure bag 6 Pneumolysis 7 Thoracoplasty

IRVING S. WRIGHT, A. WILBUR DUNEE, JOSEPH KOVACS, DEAN MOFFAT and JOSEPH WIENER, Vascular Clinic, New York Post-Graduate Medical School and Hospital of Columbia University, New York Peripheral vascular circulation, effects of tobacco and certain vasodilators Exhibit of charts and other material demonstrating the effects of tobacco smoking on the peripheral vascular system effects of choline derivatives, especially acetyl-B methyl choline chloride, by various routes of administration, method of treatment

WALLACE M. YATER and V. H. CORNELL, Army Medical Museum, Washington, D. C. Lesions of the conduction system of the heart Exhibit of colored plaques of microscopic sections through the conduction system at various levels Photographs of salient electrocardiograms, roentgenograms gross cardiac lesions and microscopic sections are shown of several cases of auriculoventricular and bundle branch block

Motion Pictures—The following motion pictures will be shown on a definite schedule, to be announced later

CLAYTON J. LUNDY, Chicago "The Normal Heart Beat Cycle"

WILLIAM P. MURPHY, Boston "Pernicious Anemia Diagnosis, Treatment and Results"

S. A. WEISMAN, Minneapolis, Minn. "Is the Tuberculous Chest Flat?"

Section on Surgery, General and Abdominal

Section exhibit committee ALTON OCHSNER chairman New Orleans, and W. L. ESTES JR., Bethlehem, Pa.

In addition to the exhibits sponsored by the Section on Surgery, General and Abdominal, the section is cooperating in the Symposium on Treatment of Burns and is taking charge of the motion picture program for that symposium

CLAUDE S. BECK, Western Reserve University School of Medicine and Lakeside Hospital Cleveland Circulatory failure produced by compression of the heart, curable by operation Exhibit of photographs, drawings, charts and motion picture illustrating physiology, pathology, clinical manifestations, operative procedures, and results in cases of cardiac compression A new conception of pericardial disorders is presented and a new clinical nomenclature is advocated

HARRY E. MOCK, A. R. MORROW and C. E. SHANNON, Northwestern University School of Medicine, Surgical Department, and St. Luke's Hospital Chicago Skull fractures and cerebral injuries Exhibit of plaster models, charts and photographs illustrating skull fractures and cerebral injuries

PENN. RIDDLE, Baylor University College of Medicine, Dallas Texas Are peptic ulcers varicose ulcers? Exhibit of models and drawings showing varicose ulcers of the leg and peptic ulcers, illustrating their relation to the portal system of veins, augmented by a motion picture

CLAIRE L. STRAITH, Detroit Reconstructive facial surgery Exhibit of enlarged photographs and models illustrating various points in technique and results accomplished in the treatment of facial deformities particular attention being paid to treatment of facial wounds and facial bone injuries due to motor accidents

J. ROSS VEAL and URBAN MAES, Department of Surgery, Louisiana State University Medical Center New Orleans Arteriography with thorium dioxide solution (stabilized) in peripheral vascular diseases Exhibit of a number of selected arteriographs demonstrating various peripheral circulatory diseases such as angiospasm gangrene of various types Buerger's

disease, extravascular tumors and varicose veins, there will be included also one arteriovenous aneurysm of the femoral vessels and one popliteal aneurysm

CHARLES S. WHITE, GEORGE B. JENKINS and J. LLOYD COLLINS, George Washington University School of Medicine, Department of Surgery and Anatomy, Washington, D. C. Innervation of muscles of anterior abdominal wall Exhibit of illustrations from dissections and operations

Section on Obstetrics, Gynecology and Abdominal Surgery

Section exhibit committee E. D. PLASS, chairman, Iowa City, ARTHUR H. BILL, Cleveland, and WILLIAM H. WEIR, Cleveland

A special feature of the Section on Obstetrics, Gynecology and Abdominal Surgery will be an exhibit on home delivery technic, presented by the section exhibit committee A motion picture program will be run in a space adjoining the exhibit

SPECIAL EXHIBIT SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY Home delivery technic A slum bedroom will be set up with the usual minimum amount of furniture Demonstrations will be carried on each day on a definite schedule under the direction of the Obstetrical Department of Johns Hopkins Hospital, Baltimore, St. Louis Maternity Hospital Maternity Hospital of Cleveland, Chicago Lying-In Hospital and Chicago Maternity Center

LLOYD ARNOLD and C. J. GUSTAFSON, University of Illinois College of Medicine Chicago Normal menstruation Exhibit of graphs, charts and colored drawings illustrating (1) periodicity, (2) duration, (3) grams of exudate, (4) percentage of blood in exudate in normal females from 12 to 50 years of age over a period of years

E. C. HAMBLEN and ROBERT A. ROSS, Department of Obstetrics and Gynecology, Duke Hospital, Durham, N. C. Studies of endometrial and ovarian responses in women to extracts of pregnancy urine Exhibit of case summaries, photomicrographs of endometrium before and after administration of extracts photomicrographs of portions of ovaries removed and studied after serial sectioning, and charts illustrating results obtained in several years of study of endometrial and ovarian responses to extracts of pregnancy urine administered preoperatively These studies were made primarily in patients with hyperplasia of the endometrium

WILLIAM C. LANGSTON and BYRON L. ROBINSON, University of Arkansas School of Medicine, Little Rock, Ark. Castration atrophy and theelin Exhibit of microscopic sections charts and tables showing (1) effect of double ovariectomy on the rat uterus as to chronology, degree, location and histologic changes associated therewith (2) effect of theelin as a restorative of atrophic rat uteri, (3) duration of effect of theelin as a restorative of atrophic uteri following double ovariectomy In all experiments, opposite horns were used as controls

T. O. MENEES and J. D. MILLER, Blodgett Memorial Hospital, Grand Rapids, Mich. Demonstration of the endometrium by thorium hydroxide solutions Exhibit of roentgenograms obtained by intra-uterine injection of thorium hydroxide solutions, including normal variations in the endometrium of the menstrual cycle, hyperplasia, endometrioma, polyps, retained products, submucous fibroids and carcinomas, accompanied by some gross specimens

GILBERT P. POND, West Suburban Hospital, Oak Park, Ill. A new and positive method of identification of new-born infants Exhibit of palm printing outfit for infants and adults series of typical prints, demonstration of classification methods, files, and charts illustrating types of palm patterns

HENRY SCHMITZ and HERBERT E. SCHMITZ, Loyola University School of Medicine Chicago Early diagnosis, clinical grouping and indications of various methods of treatment of carcinoma of uterine cervix Exhibit of charts illustrating and describing clinical observations, diagnosis of extent of tumor indications for various methods of treatment, and technic of radiation therapy

Motion Pictures The following motion pictures will be shown on a definite schedule to be announced later

JOSEPH B. DELEE, Chicago "Safeguarding Motherhood"

Section on Ophthalmology

Section exhibit committee THOMAS D ALLEN, chairman, Chicago, PARKER HEATH, Detroit, and A D RUEDEMANN, Cleveland

A special exhibit of the Section on Ophthalmology on First Aid in Eye Injuries will be presented under the auspices of the section exhibit committee

SPECIAL EXHIBIT, SECTION ON OPHTHALMOLOGY First aid in eye injuries Exhibit will cover eye injuries in birth, in preschool age, in school age, in adults, in industry, in rural communities, the value of the roentgen ray in eye injuries, and a summary of preventive measures The following ophthalmologists will demonstrate Thomas D Allen, Hallard Beard, Vernon L Leech, Leo L Mayer, Samuel J Meyer, Sydney Walker and George H Woodruff A pamphlet giving essential factors concerning first aid will be distributed

JOHN E L KEYES, Laboratory of Anatomy, Western Reserve University, Cleveland Optic foramen in the dried human skull Exhibit of photographs illustrating (1) normal optic foramen, (2) variations in the contiguous sinuses, (3) foramen for the internal carotid artery adjoining the optic canal, (4) separate foramen for the ophthalmic artery, (5) interclinoid bridges, (6) unusual apertures and walls of the optic foramen, (7) relationship of the long axis of the optic foramen to various planes of the skull Prints of roentgenograms illustrating (a) the foregoing aberrations, (b) foramina roentgenographed (1) directly along the axis of their canals, (2) a known number of degrees off that axis, (3) from the outside of the skull, as in the living subject

WILLIAM F MONCREIFF and BERTHA KLIEN, Rush Medical College, University of Chicago, Chicago Lesions of the fundus oculi Exhibit of paintings and photographs showing histopathologic changes and ophthalmoscopic details in lesions of the following structures (1) retina, including retinal vessels and macular area, (2) choroid, (3) optic papilla Classified from the clinical and pathologic points of view, the following groups of lesions of the fundus oculi are presented (1) congenital anomalies, (2) inflammatory processes, (3) degenerative processes, (4) injuries, (5) neoplasms

GEORGE H STINE, Colorado Springs, and CLIFFORD B WALKER, Los Angeles Intra-ocular localization and treatment of separated retina Exhibit of diagrammatic charts showing the course of light rays from the retinal tear outward through the pupil by way of the nodal points and pupils of entrance and exit, method of determining the limbus distances to the retinal lesion from the angular position in the field of vision as found on the perimeter

PHILLIPS THAGESON, University of Iowa, Iowa City Laboratory diagnosis of certain conjunctival diseases, including etiology of inclusion blennorrhea Exhibit of cultures, slides and colored drawings illustrating the essential points in the laboratory diagnosis of the following pneumococcal conjunctivitis, staphylococcal conjunctivitis, chronic pseudomembranous conjunctivitis, Morax-Axenfeld conjunctivitis, Koch-Weeks and influenza bacillus conjunctivitis, trachoma gonorrheal ophthalmia, spring catarrh and inclusion conjunctivitis of the new-born and the adult

Section on Laryngology, Otology and Rhinology

Section exhibit committee WILLIAM V MULLIN, chairman, Cleveland AUSTIN A HAYDEN, Chicago, and JOHN J SHEA, Memphis, Tenn

CHEVALIER LAWRENCE JACKSON and ALBERT K MERCHANT Temple University Hospital Philadelphia Hiatal hernia of the stomach differential diagnosis from "cardiospasm," peptic ulcer, cicatricial stenosis and carcinoma of the esophagus Exhibit of transparencies showing roentgenographic and endoscopic appearances and histopathology illustrating differential diagnosis of diseases of the lower esophagus, particular attention being paid to hiatal hernia of the stomach

MYRON METZENBAUM, Cleveland Asymmetry of the nares and dislocation of the lower end of the septal cartilage in the new-born and in young children Exhibit of mounted photographs and casts, and a mechanically operated model demonstrating the foregoing subjects

CLAUDE MOORE, George Washington University Hospital, Washington, D C Tumors, polyps and cysts in the nasal accessory sinuses Exhibit of roentgenograms showing tumors, polyps and cysts in the nasal sinuses A large number of cases proved by iodized oil injection with roentgenologic examination, with clinical data, operative procedures and other information

WILLIAM V MULLIN and W L DEETON, Department of Otolaryngology, Cleveland Clinic, Cleveland Comparative study of the larynx Exhibit of a study of the larynx by wax models of the interior and exterior of the larynx of animals, reptiles and birds

Section on Pediatrics

Section exhibit committee F THOMAS MITCHELL, chairman, Memphis, Tenn, W C FARGO, Cleveland, and ABRAHAM LEVINSON, Chicago

H H DONNALLY and MARGARET M NICHOLSON, George Washington University School of Medicine, Washington, D C Smallpox vaccination of new-born infants Exhibit of colored life size drawings of three types of takes, charts and tables relating to methods of securing takes and covering a study of vaccination of a large number of new-born infants

J M FRAWLEY, Fresno, Calif The prophylaxis of whooping cough Exhibit demonstrating the preparation of pertussis antigen, showing the various stages from the time the cough plates are taken until the antigen solution is ready for use, charts showing the value of prophylactic vaccination

HENRY J GERSTENBERGER, A J HORESH, J D NOURSE, G R RUSSELL, A L VANHORN, DONALD N SMITH, CATHARINE ROSE, EDNA CHAPMAN and DAVID SHIELDS, Babies and Childrens Hospital, Cleveland Tungsten filament radiation (dual purpose lighting) Exhibit of (a) photographs illustrating the manner of exposure of wetnurses, orphanage children and rachitic infants to ceiling lights, (b) graphic charts showing diet, blood calcium and phosphorus levels of rachitic infants before and during the observation period, (c) roentgenograms of wrists of infants, showing rate and extent of healing, (d) roentgenograms showing effect of feeding rats a rachitic diet to which the blood from the exposed wetnurses and orphanage children has been added

ARCHIBALD L HOYNE and JOHN HAYS BAILEY, Municipal Contagious Disease Hospital, Chicago The secondary case of scarlet fever Exhibit of china figures, charts, diagrams and graphs showing the origin of secondary cases of scarlet fever from hospitalized cases the complication present in both primary and secondary cases and the effect of various quarantine regulations on the secondary scarlet fever rate

J ARTHUR MYERS Lymanhurst School and University of Minnesota, Minneapolis Tuberculosis in chests of children and young adults Exhibit of roentgenograms of chests of children which show the development of the first infection type of tuberculosis from the acute inflammatory stage to the formation of calcium deposits Reinfection type of disease is also demonstrated from its earliest detectable stage to cavity formation Various types of lesions and results of treatment are shown by roentgenograms

FRANK VANDER BOGERT, Department of Pediatrics, Ellis Hospital, Schenectady, N Y Study in infant stools Exhibit of a collection of mounted plasticine models of infant stools from actual normal and abnormal specimens, showing the effects of various types of feeding and of changes in the constituents of the formulas

Section on Pharmacology and Therapeutics

Section exhibit committee RUSSELL L HADEN chairman, Cleveland A CARLTON ERNSTENE, Cleveland, and CARL H GREENE, New York

The Section on Pharmacology and Therapeutics is contributing to the Symposium on Amebiasis in addition to the exhibits listed below

FRANKLIN J BACON, Western Reserve University School of Pharmacy, Cleveland Cultivation of medicinal plants Exhibit of pictures mounted specimens and potted plants cultivated by the School of Pharmacy at Squire Valleevue Medicinal Plant Garden, demonstration of manufactured products from plants grown

O W BARLOW and J L JONES, Departments of Pharmacology and Obstetrics, Western Reserve University School of Medicine, Cleveland Charts and apparatus showing records of the actions of ergot

C K HINNELSBAUGH, United States Public Health Service, Fort Leavenworth, Kansas, and G H GERLACH and E J STANTON, Department of Pharmacology Western Reserve University School of Medicine, Cleveland Method of testing morphine, codeine and diacetylmorphine habituation in rats Exhibit of apparatus tracings and charts showing the trend of struggle response exhibited during habituation to and withdrawal from morphine, codeine and diacetylmorphine

W E LOWER, E L WALSH and D ROY McCULLAGH Cleveland Clinic Foundation, Cleveland Experimental investigation of testicular extracts (a) Exhibit of mounted specimens, wax models and diagrams demonstrating parabiosis in rats, demonstration of prostatic hypertrophy and atrophy in rats (b) Wax models and diagrams showing effects of castration on other endocrine organs and the influence of various injections on these changes (c) Diagrams showing the effect of injections of male sex hormone in normal rats

(a) TORALD SOLLMANN Department of Pharmacology Western Reserve University School of Medicine Cleveland Studies on optical projection of excised organ activity in the frog heart (b) TORALD SOLLMANN, H N COLE, N E SCHREIDER and K I HENDERSON, Department of Dermatology, Western Reserve University School of Medicine, Cleveland Charts illustrating excretion studies of mercury and bismuth

Section on Pathology and Physiology

Section exhibit committee WILLIAM CARPENTER MACCARTY, chairman, Rochester, Minn., FRANK W HARTMAN, Detroit, A B LUCKHARDT, Chicago, and J P SIMONDS, Chicago

In addition to the exhibits listed below the Section on Pathology and Physiology is cooperating in the Symposium on Treatment of Burns and in the Symposium on Amebiasis and is contributing to the group of exhibits on thyroid diseases The section exhibit committee is also acting in an advisory capacity concerning the special demonstrations in pathology

L W DREES, Department of Clinical Pathology, University of Tennessee, Pathological Institute Memphis, Tenn Sick cell anemia Exhibit of (1) series of photographs, photomicrographs and drawings showing the appearance of patients with sick cell anemia the leg ulcers, the blood picture the pathologic changes and the roentgen observations, (2) printed matter giving a word picture of the disease under etiology incidence, history, physical examination laboratory observations, pathology prognosis and treatment, (3) microscopes to demonstrate blood smears, moist preparations and pathologic sections

CHESTER W EMMONS College of Physicians and Surgeons Columbia University, New York Morphologic basis for a simplified classification of the dermatophytes Exhibit of cultures of different types of dermatophytes of photographs of cultures photomicrographs and drawings of significant morphologic features, keys and explanatory material

RUSSELL L HADEN Cleveland Clinic Cleveland 1 Exhibit of charts and apparatus to illustrate the complete laboratory examination of the blood and methods of calculation 2 Natural color photomicrographs of all types of blood cells and various blood dyscrasias

REUBEN L KAHN University of Michigan Hospital Ann Arbor, Mich Studies on tissue reactions in immunity Exhibit of charts showing quantitative measurements of skin reactions in specifically immunized animals, relation between skin reactions and serum reactions specific reacting capacities of various tissues, desensitization (disimmunization) and associated phenomena

ROY R KRACKE and FRANCIS P PARKER Emory University School of Medicine, Atlanta, Ga The etiology of granulopenia (agranulocytosis) Exhibit of charts tables graphs and diagrams illustrating the incidence of granulopenia in nurses physicians and physicians families studies bearing on geographic distribution and on the incidence as related to the administration of certain types of drugs with evidence that the disease is caused by the administration of certain benzene con-

taining drugs and barbiturates, records of animal experiments showing effect of these drugs in rabbits and guinea-pigs

ALAN R MORITZ, Department of Pathology, Western Reserve University, Cleveland Ovarian tumors Exhibit of a series of translucent photographs showing gross and microscopic structures of tumors of the ovary

VICTOR C MYERS E MUNTWYLER, F C BING, R F HANZAL and C T WAY, Western Reserve University School of Medicine, Cleveland Biochemical diagnostic methods Exhibit of practical demonstrations of simple clinical procedures in biochemical diagnostic methods A regular schedule of demonstrations will be run each day

HERBERT S REICHEL, HOWARD T KARSNER and THOMAS T FROST, Institute of Pathology, Western Reserve University School of Medicine, Cleveland Typical forms of tuberculous pulmonary disease Exhibit of transilluminated photographs of coronal sections of the lungs fixed in situ illustrating pathogenesis of tuberculous infection and demonstrating morphologic bases of the more common types of tuberculous pulmonary disease

JANE SANDS ROBB and J F FRED HISS, Syracuse University College of Medicine, Syracuse, N Y Cardiac muscles Exhibit of human hearts dissected to show the component muscles, similar dissections of dog hearts, colored plaster casts of dissections, preparations of injected coronary vessels, charts and tracings showing typical changes in electrocardiogram when an individual muscle is eliminated

GEORGE C SHIVERS, University of Colorado Medical School, Colorado Springs Avoidance of pulmonary embolism from intravenous arsenicals Exhibit of tissue, slides, photographs, charts and test tube experiments, demonstrating (a) a fatal case of pulmonary embolism from an intravenous arsenical (b) the frequency of such accidents, (c) the cause of such embolism to be a change in the pH value of the drug with a resultant precipitation of the drug in the blood stream, (d) method devised for the prevention of pulmonary embolism from intravenous arsenicals

GREGORY SHWARTZMAN Mount Sinai Hospital, New York Phenomenon of local skin reactivity to bacterial filtrates Exhibit of charts diagrams, lantern slides, microscopic slides moulages, living animals and preserved specimens illustrating the appearance and nature of the phenomenon, its role in immunology in relation to other immunologic processes, new types of toxins and antitoxins and practical applications to treatment of typhoid fever, meningococcal meningitis and nonspecific ulcerative colitis

MARGARET WARWICK, Millard Fillmore Hospital, Buffalo The necropsy in the general hospital, as interpreted at the Millard Fillmore Hospital Exhibit of posters and photographs showing the importance and the availability of the necropsy to the general hospital, and methods of overcoming the usual objections

Section on Nervous and Mental Diseases

Section exhibit committee GROVES B SMITH, chairman, Godfrey Ill., THOMAS J HELDT, Detroit, and LLOYD ZIEGLER, Albany, N Y

A W ADSON W McK CRAIG, J G LOVE, H W WOLTMAN, F P MOERSCH, H L PARKER, W D SHELLEN and J W KERNOHAN, Mayo Clinic and Mayo Foundation Rochester Minn Neurologic diseases and neurosurgical procedures Exhibit of moulages showing technic of some of the more important operations on the brain and cord, transparencies, photomicrographs, abstracts of histories, and motion pictures illustrating various parts of a neurologic examination and some operations

MAX A BARR and WALTER L BRUETSCH, Central State Hospital and Department of Mental and Nervous Diseases, Indiana University School of Medicine Indianapolis Malarial treatment of dementia paralytica Exhibit of transparencies showing the activation of the histiocytes (plasmatocytes, macrophages) in the brain, liver, spleen and bone marrow during the malaria treatment, comparative study of stimulating phagocytosis with malaria plasmodia streptococci and other organisms, the blood picture of therapeutic malaria, the dangers of

the malaria treatment, the histopathology of untreated and malaria-treated dementia paralytica, the influence of therapeutic malaria on the ocular manifestations in dementia paralytica, serologic histories of malaria-treated patients with dementia paralytica

WALLACE B HAMBY and W JAMES GARDNER, Cleveland Clinic, Cleveland Intracranial neoplasms Exhibit of charts illustrating various types of intracranial tumors, each with patient's history, physical observations, data of special examinations, notes and photographs of operations, together with a summary of the type pathology

HARRY D PIERCE and LOUIS J KARVOSCH, Cleveland Cerebrospinal fluid hydrodynamics, with a demonstration of encephalography and graphic methods of recording pressure phenomena Exhibit of 1 Practical demonstration of encephalography done by the closed methods, a manikin constructed to show how displacement occurs 2 Manikin with the Trattner hydrophorograph attached to needles in the cistern and lumbar locus demonstrating how permanent graphic records are obtained in subarachnoid block tests 3 Illuminated box showing different conditions recorded by such methods which have important diagnostic significance 4 Encephalographic studies

Section on Dermatology and Syphilology

Section exhibit committee FRID D WEIDMAN, chairman, Philadelphia, CLARK W FANNERUP, Chicago, ROBERT L GILMAN, Philadelphia and JOHN E RAUSCHKOLB, Cleveland

Symposium on Cutaneous Allergy MARION B SULZBERGER and FRED WISE, New York Post-Graduate Medical School of Columbia University, New York Allergic Dermatoses (illustrating paper by Alfred F Coca to be read before the Section on Dermatology and Syphilology) Exhibits by NELSON PAUL ANDERSON and SAMUEL AYRES JR Los Angeles Observations on light sensitive dermatoses and by LOUIS A BRUNSTING and C R ANDERSON Mayo Clinic, Rochester, Minn Ragweed dermatitis, illustrate papers which they will read before the Section on Dermatology and Syphilology

Authors' Exhibits The following exhibits illustrate papers to be read before the Section on Dermatology and Syphilology

THEODORE CORNBLEET and M A KAPLAN University of Illinois College of Medicine, Chicago Urinary proteose in eczema Exhibit of materials isolated and placards giving the essential results of their use in skin tests therapeutic trials and immunologic studies in rabbits

NORMAN EPSTEIN and MAURICE COHEN Mount Zion Hospital, San Francisco The use of hyperpyrexia in the treatment of syphilis Exhibit of photographs illustrating method of carrying out treatment temperature charts and graphic illustrations of results

GEORGE M LEWIS and DAVID L SATFENSTEIN New York Post-Graduate Hospital, New York Spiegler Fendt sarcoid Exhibit of clinical photographs, photomicrographs and diagrams illustrating the Spiegler-Fendt sarcoid

JAMES HERBERT MITCHELL, Rush Medical College, Chicago Exhibit of photographs illustrating streptococcal infections simulating ringworm of the hands and feet

SAMUEL M PECK, NATHAN ROSENTHAL and HAROLD A ABEL, Mount Sinai Hospital, New York Snake venom therapy in hemorrhagic diathesis Exhibit of colored drawings and pictures of skin manifestations following injections of venom Schwartzman phenomenon, pictures of the different types of snakes, exhibit of charts and graphs demonstrating clinical effects of venoms

MAURICE J STRAUSS and MARION E HOWARD Yale University Medical School and New Haven Hospital, New Haven, Conn The Frei test for lymphogranuloma inguinale Recovery of the antigen from a strongly positive test Exhibit of charts showing results of experiments photographs and lantern slides of the test

FRED D WEIDMAN and JACQUES P GUEQUIERRE, University of Pennsylvania Philadelphia High frequency currents in performing biopsies Exhibit demonstrating that electric currents may produce such a wide zone of coagulation necrosis

around biopsy specimens as to interfere with histologic study Data indicate how wide such a zone of coagulation necrosis may be with different coagulating and cutting currents, it is also indicated how small a specimen may be removed by such technique and still preserve sufficient noncoagulated tissue for histologic study

ASHTON LEROY WEISS, Mayo Foundation, Rochester, Minn Pemphigus Exhibit of photographs of experimental lesions in animals and man, charts illustrating agglutination, absorption agglutination, precipitin fermentation, cataphoretic velocity, serum potential absorption serum potential, and serum potential studies of pemphigus and control serum, photographs of organisms, and charts illustrating some of the characteristic properties of the organism

ERWIN P ZEISLER and MARCUS R CARO, Chicago Necrobiosis lipoidica diabetorum Exhibit of colored photographs and photomicrographs illustrating clinical appearance and histologic observations

Independent Exhibits The following exhibits are independent of the symposium and the authors' papers

PAUL BICHET, New York Exhibit of photographs and charts illustrating hereditary dermatoses diagrams showing lines of transmission through different generations

H N COLE and J R DRIVER, Department of Dermatology, Western Reserve University School of Medicine, Cleveland Treatment of malignant conditions of the skin and mucous membranes Exhibit of transparent photographs and photomicrographs illustrating the modern trend in the treatment of malignant conditions of the skin and mucous membrane The technique and results of treatment by the interstitial use of heavily filtered radium needles of small intensities is featured

R L MCINTOSH and M E DIEMER, University of Wisconsin, Madison, Wis Delochrome prints Exhibit of Delochrome prints from a large collection of photographs of living patients with dermatologic diseases, to illustrate the adaptability of these prints to photographing dermatologic conditions, to bring out the minute variations and details so essential in dermatologic diagnosis

MARTIN SNIDERMAN, Department of Dermatology, University of Pittsburgh, Pittsburgh Exhibit of moulages illustrating actual dermatologic conditions

ERWIN P ZEISLER and MISS ESTHER BOHLMAN, Michael Reese Hospital, Department of Dermatology, Chicago Exhibit of colored photographs of skin and mucous membrane lesions selected for their value for teaching purposes

Section on Preventive and Industrial Medicine and Public Health

Section exhibit committee PAUL A DAVIS, chairman, Akron, Ohio ALICE HAMILTON, Boston, THURMAN B RICE, Indianapolis, and THEODORE L SQUIRE, Milwaukee

The Section on Preventive and Industrial Medicine and Public Health is cooperating in the Symposium on Amebiasis in addition to the following exhibits

EMILY DUNNING BARRINGER, HANAN STRAUSS, D F CROWLEY, in collaboration with ANNA W WILLIAMS, ANNIS THOMSON and ARCHIBALD McNEIL, Kingston Avenue Hospital, New York Differential diagnosis of gonorrhea in the female Exhibit demonstrating differential diagnosis of gonorrhea in the female, symptoms and laboratory tests differentiating gonorrhea from other inflammatory diseases of the female genital tract, especially due to Actinomyces

LOUIS I DUBLIN Metropolitan Life Insurance Company, New York Progress in public health since 1900 Exhibit of charts showing past and present public health problems, the fight against diseases, the gains in chances of survival

R R JONES United States Public Health Service, Washington, D C The lead hazard in industry and its control Exhibit of charts and graphs showing the extent of lead compounds most commonly used and the solubility in the body fluids, recognized procedure for the control of industrial plumbism, demonstration of sampling apparatus by measuring the lead content in the atmosphere demonstration and test for lead in human excreta and demonstration of blood films showing changes typical of plumbism

THURMAN B RICE and VIRNE K HALVEY, Indiana University and Indiana Division of Public Health, Indianapolis The "Indiana Plan" of health work coordination Exhibit of plans, charts and maps showing the work of the new division of public health in Indiana

Section on Urology

Section exhibit committee RUSSELL S ILLGUSON, chairman, New York, THOMAS D MOORE, Memphis, Tenn., and MOSES SWICK, New York

The exhibits of the Section on Urology will fall into three groups, to correspond with the three symposiums to be considered by the section in the Scientific Assembly

LAWRENCE N ATLAS and CHARLES A BOWERS Department of Urology, St Luke's Hospital, Cleveland Methods for teaching basic urology Exhibit of lead molds of different types of normal and abnormal kidney pelvises together with their respective pyelograms, plaster reproductions of variations in the anatomy of the dissected hilus of normal and pathologic kidneys, and of pathologic bladder necks

A ELMER BELT and DONALD A CHARNOCK, Los Angeles Urinary calculi Exhibit of urinary calculi with graphic illustrations concerning formation, classification, diagnosis and treatment

HUGH CABOT, WALTER WALTERS V S COUNSELLER and J T PRIESTLEY, Division of Surgery, and W F BRAASCH Division of Urology Mayo Foundation, Rochester Minn Operative treatment of stones in the kidney Exhibit of (1) motion picture of operative technique in removal of renal stones, (2) continuous lantern projector showing slides on surgical management factors of safety and illustrative cases (3) stationary displays on general management of a large number of cases of nephrolithiasis factors predisposing to calculus formation postoperative treatment chemical composition of stones, exhibit of stones and special features regarding bilateral and recurrent renal stones and display of specimens

CHARLES C HIGGINS, Cleveland Clinic, Cleveland Experimental production and solution of urinary calculi Exhibit of roentgenograms demonstrating experimentally formed renal and bladder stones in rats under vitamin A deficiency, charts showing incidence of renal and bladder infection in rats under vitamin A deficiency diet and frequency of stones at intervals during the experiment Roentgenograms of clinical cases demonstrating the decrease in size of the renal calculi when patient is placed on a special diet high in vitamin A

FREDERICK LIEBERTHAL Department of Urology, Michael Reese Hospital, Chicago Special pathology of renal tuberculosis Exhibit of drawings and charts of a study of a large number of cases of renal tuberculosis depicting the development of the disease from the earliest states to complete destruction of the kidney

LELAND M MCKINLAY Grand Rapids, Mich Nerve control of the urinary bladder, mechanical demonstration Exhibit of a life size model of a male torso connected electrically and mechanically so that the complete act of urination is enacted to illustrate the response of the urinary bladder and sphincters to impulses coming over the sympathetic and parasympathetic nerves and the coordinated contraction or relaxation of the internal and external sphincters A series of cystometrograms is presented to demonstrate the variations in intracystic pressure subsequent to the use of sympathetic and parasympathetic nerve stimulants

W CALHOUN STIRLING Washington D C Carcinoma of the prostate gland Exhibit of photographs and specimens showing incidence latest methods of diagnosis symptoms differential diagnosis, gross and microscopic anatomy associated gross lesions and all forms of latest recognized therapy

G J THOMPSON and J T PRIESTLEY Mayo Clinic, Rochester, Minn Transurethral prostatic resection Exhibit showing the type of case encountered method of preliminary preparation technique of operation and postoperative care including complications, and necropsy material Special emphasis will be placed on technique and methods employed to prevent complications

Section on Orthopedic Surgery

Section exhibit committee E B MUMFORD chairman Indianapolis, PAUL N JEPSON, Philadelphia, and J T O'FERRALL, New Orleans

WALTER BAUER and GRANVILLE A BENNETT, Departments of Medicine and Pathology, Harvard Medical School and Medical Clinic of Massachusetts General Hospital, Boston Degenerative changes in joints resulting from continued trauma and increasing age and their relationship to hypertrophic arthritis Exhibit of charts photographs, roentgenograms, gross specimens and microscopic sections, illustrating the repair of articular cartilage and the effects of patellar displacement together with changes resulting from unusual and continued trauma

MICHAEL S BURMAN, LEO MYER and HARRY FINKELSTEIN, Hospital for Joint Diseases, New York Arthroscopy the direct visualization of joints Exhibit of paintings, photographs and charts showing the summation of numerous cases in which arthroscopy was used

ALBERT B FERGUSON and M BECKETT HOWARTH New York Orthopedic Dispensary and Hospital, New York Coxa plana and related conditions at the hip Exhibit of prints, diagrams and microscopic slides demonstrating the etiology, pathology and relations of coxa plana, slipping of the upper femoral epiphysis osteochondritis dissecans, arthritis and a condition, designated coxa magna, characterized by enlargement of the femoral head and neck

EDSON B FOWLER, Department of Anatomy, Northwestern University Medical School, Chicago Absorbable horn fixation of fractures Exhibit of (1) many long human bones fractured to illustrate various kinds and location of breaks and held with horn by simplified method of internal fixation (2) horn in stages of preparation and sizes of stock needed in different bones, (3) new fracture instrument for reduction and bone reamers that simplify the technique, (4) roentgenograms of several cases of fractures before and after, with end results (5) specimen of horn fixation of fractured dog's ulna showing union and partial absorption of the horn

BAYARD T HORTON Mayo Foundation Rochester, Minn Congenital arteriovenous fistula of the extremities Exhibit of photographs, wax casts roentgenograms arteriograms and photomicrographs illustrating clinical, physiologic and pathologic studies of a series of cases of congenital arteriovenous fistula of the extremities

CHARLES N PEASE Children's Memorial Hospital, Chicago Injuries to the vertebrae and intervertebral disks following lumbar puncture Exhibit of sketches showing the intervertebral disk and vertebrae normal and when spine is flexed showing increasing intradisk pressure and herniation into neural canal roentgenograms of actual cases, mounted gross specimens showing needle pushed into disk and into vertebral body, photographs of vertebrae and disks, enlargement of lumbar spine with accompanying photomicrographs A large model of the lumbar spine and intervertebral disks made out of wood showing what happens when needle is introduced too far

R PLATO SCHWARTZ University of Rochester School of Medicine and Dentistry Rochester, N Y Muscle function and gait as recorded by the electrobasograph Exhibit presenting (1) the demonstration of a method of obtaining records of the function of certain muscles during walking (2) records that will give graphic evidence of the improvement in function of locomotion following treatment for various causes of disability in function of the lower extremities (3) records that will show the influence of various types of shoes on feet with different physical characteristics

FRED J WANPLER Medical College of Virginia, Richmond, Va and J PRESTON MAXWELL Peiping Union Medical College, Peiping China Osteomalacia Exhibit of slides and charts illustrating (a) the principal causes of the disease (b) early symptoms (c) facts obtained in a study of a number of Chinese women, charts showing fetal rickets and pictures relative to the disease

Section on Gastro-Enterology and Proctology

Section exhibit committee A H AARON, chairman, Buffalo, WALTER FANSLER, Minneapolis, and VERNON C ROWLAND, Cleveland

The Section on Gastro-Enterology and Proctology is giving special attention to the Symposium on Amebiasis, in addition to the following exhibits

BURRILL B CROHN and LEON GINZBURG, Mount Sinai Hospital, New York Regional ileitis Exhibit of slides showing histologic structure of inflammatory lesion, charts showing distribution of inflammatory granulomas in ileum and contrasting benign involvements of colon, or colon and ileum in colitis and the dysenteries

THOMAS E JONES, Cleveland Clinic Foundation, Cleveland Carcinoma of colon and rectum Exhibit of wax models showing malignant growths of the colon, chiefly of the rectum, removed by abdominal perineal method

JOHN L KANTOR, New York Regional (terminal) ileitis Exhibit of prints of roentgenograms illustrating diagnostic and differential diagnostic criteria on regional ileitis

LAY MARTIN, Johns Hopkins University, Baltimore Studies on the physiologic chemistry of gastric secretion Exhibit of charts demonstrating normal and pathologic states of gastric secretion tubes containing organic and inorganic materials microscopic demonstrations of crystallized gastric proteins and osazones

HENRY A RAFSKY, From the Max Einhorn Gastro-Enterological Clinic, Lenox Hill Hospital New York Stomach lavage microscopy as a diagnostic aid in biliary tract disease Exhibit of a study of a group of patients with and without biliary tract disease Photomicrographs of crystals observed in lavage water before operation compared with photomicrographs of crystals seen in the bile and stones removed from the gall-bladder or bile ducts at operation will be shown

CURTICE ROSSER and LEWIS WATERS, Baylor University, Department of Medicine Sections on Proctology and Medical Art, Dallas, Texas Anal tumors and rectal foreign bodies Exhibit of illuminated photographs, photomicrographs and drawings illustrating (1) gross and microscopic pathology of various benign and malignant tumors of the anal canal and (2) a number of ingested and inserted foreign bodies of the lower bowel The possible etiologic connection of benign anal lesions with cancer is shown and proper methods of removal of small and large rectal foreign bodies is illustrated

CLAUDE C TUCKER and C ALEXANDER HELLWIG St Francis Hospital, Wichita, Kan Normal and pathologic histology, clinical significance and operative treatment of anal ducts Exhibit of photographs and photomicrographs showing anal ducts in the human fetus and the new-born, in the adult and in different animals, photomicrographs of infected anal ducts, anal fistula and periproctitic abscess, photographs of operative treatment of anal ducts

Section on Radiology

Section exhibit committee S W DONALDSON chairman, Ann Arbor, Mich, C E HUFFORD, Toledo, and E P McNAMEE, Cleveland

In addition to the radiologic exhibits listed, a large amount of radiologic material will be found in exhibits in other parts of the hall

E V ALLEN and JOHN D CAMP, Mayo Foundation for Medical Education and Research, Rochester, Minn Arteriography Exhibit of roentgenograms made following injection of a radiopaque substances into the peripheral arteries of the living subject Arteriograms revealing normal vessels, congenital variations and appearances in thrombo-angitis obliterans, Raynaud's disease, scleroderma and arterial venous aneurysm will be shown together with a description of the technic of the method

VINCENT W ARCHER S D BLACKFORD and J E WISLER, University of Virginia Hospital, University, Va Radiologic pulmonary observations in tularemia Exhibit of reductions of chest films on a number of tularemia patients illustrating acute cases showing pneumonia, pleural effusion, marked bronchitis and nodular changes Follow-up examinations over a period

of months show residual pulmonary changes in many cases, a large percentage of the cases studied show definite pulmonary changes

FRANKLIN B BOGART, Pine Breese Tuberculosis Sanatorium, Chattanooga, Tenn Roentgenographic demonstration of early pulmonary tuberculosis showing necessity for repeated examinations in fulminating cases Exhibit of roentgenograms of a small group of cases illustrating (1) the importance of roentgen examination of the chest in early minimal involvement, (2) that a small group of tuberculous cases with a fulminating type of the disease are coming to the radiologist and clinician so early in the disease that it is not possible to demonstrate the lesions radiographically or clinically, and yet in a short period of time an extensive lesion is shown

SAMUEL BROWN, Jewish Hospital, Cincinnati Abdominal tumors Exhibit of roentgenograms illustrating (1) normal topographic relationship of the abdominal organs in the upright and prone anteroposterior and lateral positions, (2) anomalous positions of the abdominal organs of congenital and acquired origins (3) differential diagnosis of abdominal tumors by the roentgenologic method

JOHN D CAMP, Mayo Foundation for Medical Education and Research Rochester, Minn 1 Roentgenographic study of the osseous changes accompanying tumors of the spinal cord and associated soft tissues Exhibit of roentgenograms and transparencies of gross specimen photographs illustrating the various bone changes associated with soft tissue tumors within the spinal cord 2 Roentgenographic changes accompanying intracranial meningioma Exhibit of roentgenograms and transparencies of photographs of gross specimens depicting the various osseous changes in the skull occurring as a result of a contiguous meningioma

W EDWARD CHAMBERLAIN and BARTON R YOUNG Temple University Medical School, Philadelphia 1 Primary bone tumors Exhibit of transparencies demonstrating cases of primary bone tumors 2 Calcification (ossification) of normal laryngeal cartilages mistaken for foreign body Exhibit of transparencies and diagrams illustrating varied types of laryngeal calcifications which may be confused with foreign body

H KENNON DUNHAM Hamilton County Tuberculosis Sanatorium Cincinnati (a) Pulmonary emphysema with injection of iodized oil Exhibit showing that pulmonary emphysema as a complication of arrested far advanced pulmonary tuberculosis is of both medical and economic importance As a handicap it must be a factor in rehabilitation programs generally (b) Conditions simulating pulmonary tuberculosis Exhibit showing that nontuberculous cases are often sent in to a tuberculosis sanatorium and a knowledge of such conditions on the part of the general practitioner and the specialist is desirable

PAUL C HODGES, ALEXANDER BRUNSCHWIG and S PAUL PERRY, University of Chicago Chicago X-ray wavelength and skin tolerance Exhibit of charts, diagrams, pelts of experimental animals, and microscopic preparations Demonstration of the fact that the degree of reaction to irradiation depends solely on the intensity of the dose and is independent of wavelength

HOWARD B HUNT and J J KEEGAN, University of Nebraska School of Medicine, Omaha Radiographic and clinical correlation of meningeal tumors Exhibit of plain roentgenograms, encephalograms and photographs of a few specimens, together with histories and operative observations on several proved cases of meningeal tumors

JOHN S LEWIS JR and EDGAR C BAKER, Youngstown Hospital Association, Youngstown, Ohio Comparison of urinary tract in pregnancy and in the presence of pelvic tumors Exhibit of prints from films of intravenous or retrograde pyelograms in cases of pregnancy or pelvic tumors, demonstrating that both conditions show comparable dilatation of upper urinary tract, and that various causes given for dilatation in pregnancy are not all assignable to tumors

J M MARTIN and C L MARTIN, Baylor University Hospital, Dallas, Texas Radiation therapy in oral malignant growths Exhibit of photographs and drawings of actual cases of oral malignant growths illustrating in detail the macroscopic and microscopic appearance of these lesions at the time of treat-

ment, with later photographs showing the results of radiation treatment in each case

GEORGE E PFAHLER and JACOB H VASTINE, Philadelphia
Roentgen diagnosis of tumors of the bladder and their serial study under treatment by irradiation Exhibit of mounted roentgenograms ("pneumocystograms") showing the tumors the infiltrating or noninfiltrating character and the disappearance of some of them under roentgen treatment

Section on Miscellaneous Topics

Two subjects discussed by the Section on Miscellaneous Topics will be further illustrated in the Scientific Exhibit "Nutrition," by an exhibit put on by a special committee (see Special Exhibits) and "Forensic Medicine," by a symposium composed of a group of exhibits on this subject In addition there are a number of exhibits on varied topics dealing with different phases of medicine

Symposium on Legal Medicine The following three exhibits deal with different phases of medicolegal problems

R N HARGER, Department of Biochemistry and Toxicology Indiana University School of Medicine, Indianapolis Chemical methods for detection of drunkenness (a) Exhibit of automatic demonstration of the use of the "drunkometer, a device for detecting drunkenness by testing the subject's breath accompanied by charts showing that this method is a practical substitute for blood or spinal fluid analyses (b) Demonstration of a simple method of determining alcohol in body fluids and tissues (c) Simple test for diagnosing methyl alcohol poisoning (d) A method for analyzing an embalmed body to determine the existence of intoxication at the time of death

TIMOTHY LEARY, Medical Examiner Service Suffolk County, Boston The relation of cholesterol to atherosclerosis Exhibit of enlarged photomicrographs illustrating (a) human coronary sclerosis and (b) comparison of the lesions of human coronary and experimental rabbit atherosclerosis

MASSACHUSETTS MEDICO-LEGAL SOCIETY, Gilman Osgood, President, Boston Exhibit of photographs and documentary evidence dealing with various phases of medical jurisprudence

WILLIAM BIEMAN and E H FISHBERG, Beth Israel Hospital New York Some physiologic changes occurring during hyperpyrexia induced by physical means Exhibit of charts indicating changes in (a) chemistry of the blood, sweat and gastric contents (b) agglutinating and complement fixing factors of the blood serum (c) white cell count in the blood (d) the blood velocity (e) respiratory excursions (f) skin surface temperatures, (g) sedimentation rates (h) relationship between rectal and mouth temperatures respiratory rates and pulse rates

MAX CUTLER Michael Reese Hospital Chicago Exhibit of stereophotographs, wax models and molds charts, photographs and lantern slides illustrating the early diagnosis of cancer

W E KENDALL, P F BROWN, L H PRINCE and J W TURNER, in collaboration with MAX CUTLER, Chicago Veterans Administration Facility, Hines, Ill Early diagnosis and treatment of cancer of the skin and mouth Exhibit of photographs charts, colored lantern slides models and gross specimens showing results of necropsy in neglected cases of melanoma and carcinoma of the skin and mouth

GEORGE LEVENE Evans Memorial for Clinical Research and Preventive Medicine Massachusetts Memorial Hospitals, Boston Mechanical hearts Exhibit of a number of mechanical models, which reproduce the appearance of the heart as seen under the fluoroscope showing the normal heart sinus arrhythmia, extrasystoles, heart block auricular fibrillation thromboticosis, coronary disease aortic stenosis, aortic insufficiency and tricuspid insufficiency

CHARLES J SUTRO, Hospital for Joint Diseases New York Effect of chronic fluoride intoxication on teeth and bones Exhibit of enlarged photographs and roentgenograms showing the various changes in the teeth and bones of fluoride-fed rats, histologic sections showing changes in long bones and teeth Data and photographs will be presented of rats teeth to disprove the statement that fluoride action depends on parathyroid dysfunction, similar evidence to disprove the fact that low

calcium diet alone produces mottled enamel, roentgenograms of long bones of workers consuming cryolite (fluoride compound), showing advanced osteosclerosis

GRANT E WARD and J MASON HUNDLEY JR, Baltimore Combination treatment of cancer Exhibit of (1) illustrations of patients before and after operation, photomicrographs for diagnosis and to show histologic changes in tissue, (2) motion pictures showing technic of electrosurgery (3) demonstration of various types of electrosurgical apparatus, (4) wax models of cancer cases used especially for teaching purposes, (5) methods of radium therapy especially as applied to gynecology

GROUP EXHIBIT, Department of Anatomy and Associated Foundations Western Reserve University School of Medicine, Cleveland Growth and repair J C PIACAK The prenatal environment N W INGALLS Stages in embryonic development, normal and abnormal CARL C FRANCIS Growth in infancy and the preschool period T WINGATE TODD Maturity levels in grade and high school periods HARRY C ROSENBERGER B HOLLY BROADBENT and OSCAR TURNER Growth of the nasopharynx in the child Y A VENAR The role of vitamin D and amino-acids in skeletal growth W M KROGMAN Growth of the anthropoid B HOLLY BROADBENT Roentgenographic measurement of dentofacial development growth JOHN E L KEIES Features of orbital growth W B SEYMOUR JR The registration in the bones of constitutional handicaps ELMER F GOOEL Muscular tone as expressed in the foot print THEODORE A WILLIS The weight-bearing role of the leg muscles L DEWEY ANDERSON The measure of psychomotor, social and intellectual development in young children MARION N GIBBONS Osteochondritis and the growing child W KUENZEL The reactions of the alimentary tract to different food substances RUDOLPH S REICH The foot circulation Repair in shoulder dislocation C GLENN BARBER Repair as studied in amputation stumps THEODORE T ZUCK The therapeutics of growth encouragement in retarded children H C MOLOY and W E CALDWELL Anatomic variations in female pelvis JOHN P GARDINER The ischialramic diameter

Symposium on Amebiasis

Contributions to the Symposium on Amebiasis have been made by the Section on Gastro Enterology and Proctology, the Section on Pathology and Physiology, the Section on Pharmacology and Therapeutics, and the Section on Preventive and Industrial Medicine and Public Health

ARMY MEDICAL MUSEUM, United States Army Washington, D C Amebiasis Exhibit of photographs and photomicrographs showing Endamoeba histolytica compared with other ameba pictures showing histologic and pathologic phases of amebic dysentery compared with bacillary dysentery

LEWIS B BATES, LAWRENCE GETZ and WILLIAM M JAMES Medical Association of the Isthmian Canal Zone, Panama City Diagnosis and pathology of human amebiasis with special reference to infestation with Endamoeba histolytica Exhibit of (1) stool and culture preparations of the amebas of man, showing differentiation of species, (2) sections of tissue showing pathology of E histolytica, (3) gross pathology of infestation with E histolytica The appearance of the intestinal amebas in preparations from the stool and the microscopic and gross pathology of the lesions will be especially illustrated

FRANCIS BAYLESS, Institute of Pathology, Western Reserve University, Cleveland Methods of cultivating Endamoeba histolytica Exhibit and description of various types of mediums used in cultivation of Endamoeba histolytica with demonstration of living cultures from laboratory and clinical sources

MANFRED KRAEMER and MAURICE ASHER, Newark, N J The diagnosis of amebiasis by the proctosigmoidoscopic method Exhibit of charts and drawings showing method of making proctosigmoidoscopic examination, appearance of mucous membrane showing area from which smear is made, sigmoidoscopic appearance of bowel in diarrheas that might be confused with amebiasis Demonstration of warm stage examination of smear on a simple cheap rapidly constructed warm stage

C D LEAKE A C REED, H H ANDERSON and H G JOHNSTONE Pacific Institute for Tropical Medicine in the Hooper Foundation for Medical Research and Department of

Pharmacology, University of California Medical School, San Francisco The chemotherapy of amebiasis Exhibit showing the requirements of an ideal drug for treatment of amebiasis Laboratory criteria for evaluating relative merits of drugs proposed for use in amebiasis, toxic range of drug on single and repeated oral administration in various animals, rate of excretion, amebicidal concentration in vitro, effective range in natural balantidial infestation in guinea-pigs and in natural monkey amebiasis, controlled clinical trial Results of a survey of (a) ipecac and kurchi alkaloids, (b) halogenated oxyquinolines, (c) organic arsenicals and (d) miscellaneous antiseptics

THOMAS B. MAGATH, Mayo Clinic, Rochester, Minn. Amebiasis in kittens Exhibit of photographs and transparencies showing lesions in kittens suffering from amebiasis

ISAAC D. RAWLINGS, Chicago Board of Health Chicago Amebiasis The Chicago outbreak Exhibit of charts showing carriers in the general population and among food handlers, and the cases and carriers found in the Chicago outbreak, working model showing cross connection between a safe and a polluted water supply, motion picture showing living amebas

Symposium on Treatment of Burns

The Symposium on the Treatment of Burns is sponsored by the Section on Surgery, General and Abdominal, the Section on Practice of Medicine, and the Section on Pathology and Physiology In addition to the exhibits there will be a motion picture program run on a definite schedule in an area adjoining the exhibits

ROBERT HENRY AIDRICH, Boston Gentian violet in the treatment of burns Exhibit of photographs and charts of patients treated with gentian violet, charts showing bacteriology of burns, mortality before and after introduction of gentian violet, studies of fatal burns, showing increase in life expectancy with the use of gentian violet

SAMUEL GORDON BERKOW, Perth Amboy General Hospital Perth Amboy, N. J. Classification, healing time and significant blood chemistry of burns Exhibits of figures showing burns in adults and children with charts showing method of estimating (1) percentage of body surface involved (2) actual area involved, table computing healing time, based on area, depth of wound and age of patient (DuNouy and Carrel's equation), charts showing significant factors in blood chemistry in extensive burns, with special emphasis on those pointing to hypopnephrinemia

VILRAY P. BLAIR and J. B. BROWN, Department of Surgery, Washington University School of Medicine, St. Louis Exhibit of photographs and mounted drawings on the treatment of full thickness skin losses resulting from burns

D. M. GLOVER and A. F. SYDOW, St. Luke's and City Hospitals, Cleveland The repair of acquired skin defects Exhibit of diagrams and photographs illustrating the problems in restoring large areas of skin destroyed by burns the ideal method of skin transplantation, illustrations of the types of full thickness grafts in selected cases

ROBERT KAPSINOW and S. E. KAPSINOW, Lafayette La. Extensive superficial burns Exhibit of tables indicating use of hemoglobin readings and the value in prognosis table showing effect of forcing fluids on blood concentration changes, graphs showing relation between hemoglobin, water intake and urine output in immediately and delayed treated cases, and rate of absorption from site of burn

R. D. McCLURE and C. I. ALLEN, Henry Ford Hospital, Detroit The treatment of burns Past and present methods Exhibit of charts, photographs and motion pictures of past and present methods of treating burns, with a demonstration with material Special attention is given to the discovery and development of the tannic acid treatment by the late Dr. E. C. Davidson

GROVER C. PENBERTH, Children's Hospital of Michigan Detroit Davidson method of treating burns by tannic acid Exhibit of photographs and charts illustrating cases treated by means of tannic acid, a motion picture depicting method of treatment

STANLEY J. SEEGER, Milwaukee Children's Hospital Milwaukee Prevention and treatment of burns I Exhibit of

dioramas, charts and posters showing the importance of prevention, common causes of burns in children, possibilities of educational work by hospital organizations, motion pictures on prevention of burns suitable for use before lay groups 2 Exhibit of charts giving general outline of treatment, demonstration of method of applying tannic acid and the importance of pH value of tannic acid solutions, illustrated by photographs and photomicrographs

NORMAN TREVFS and GEORGE T. PACK, Memorial Hospital for Cancer and Allied Diseases, New York The development of cancer in burn scars Exhibit of transparent illustrations and charts showing experience at the Memorial Hospital for Cancer, clinical photographs, photomicrographs charts and illustrations showing methods of treatment and end results

Motion Pictures The following motion pictures will be shown on a definite schedule to be announced later

D. M. GLOVER, Cleveland "Tannic Acid Treatment of Burns" "Technique of the Thiersch or 'Split' Graft with Examples of the Results" "The Use of Full-Thickness Grafts—Free and Pedicled"

R. D. McCLURE, Detroit Tannic Acid Treatment of Burns

G. C. PENBERTH, Detroit "The Method of Treating Burns Used at the Children's Hospital of Michigan"

STANLEY J. SEEGER, Milwaukee The Prevention of Burns

Diseases of the Thyroid

A number of exhibits dealing with various phases of the thyroid problem have been grouped together

HERRMAN L. BIUNGART, J. E. F. RISFMAN, DAVID DAVIS and A. A. WEINSTEIN, with the surgical collaboration of DAVID D. BERLIN, Beth Israel Hospital and Harvard Medical School, Boston Treatment of angina pectoris and congestive failure by total ablation of the normal thyroid gland Exhibit of a study of a large number of patients with chronic heart disease treated by total thyroidectomy, charts indicating the rationale of procedure, selection of cases, clinical course, technique of operation postoperative management and complications, and mortality statistics motion picture of operation and of patients before and after operation data regarding changes in cardiac size and electrocardiogram blood cholesterol, calcium phosphorus, studies on early relief of pain, exercise test used for diagnosis of angina, and preoperative and postoperative photographs will be shown

JOSEPH FEISEN, Bronx Hospital New York Clinical types of thyroid dysfunction Exhibit of mounted stained specimens with individual folders containing photomicrographs and summarized clinical data individual graphs indicating iodine therapy, basal metabolic rate and postoperative course

HAROLD L. GOSS and HENRY F. HUNT, Geisinger Memorial Hospital Danville, Pa. Diseases of the thyroid gland Exhibit of photographs goitrous thyroids mounted with photomicrographs showing pathology of the condition and demonstrating various diseases affecting the thyroid gland i. e., carcinoma, active suppurative and nonsuppurative thyroiditis, adenomatous goiter with and without systemic symptoms and hyperthyroidism or exophthalmic goiter

G. ALLEN ROBINSON, New York Differential diagnosis of tumors of the neck Exhibit of photographs of benign, malignant primary and metastatic conditions including a classification of common and unusual tumors method of diagnosis and treatment of various neoplasms will be indicated

WILLARD O. THOMPSON, PHEBE K. THOMPSON, S. G. TAYLOR III and S. B. NADLER, Rush Medical College of the University of Chicago Presbyterian and Cook County Hospitals Chicago The pharmacology of the thyroid in man Exhibit of charts to correlate (1) the more important facts concerning iodine in relation to the treatment of goiter, (2) the comparative calorigenic effects, in myxedematous man, of most substances known to affect the basal metabolism

GROUP EXHIBIT Cleveland Clinic Foundation Cleveland Diseases of the thyroid R. H. NICHOLS, E. L. SHIFLETT and R. S. DINSMORE Roentgen studies of the thyroid D. ROY

McCULLAGH Iodine studies in hyperthyroidism E PERRY
McCULLAGH Hypothyroidism A C ERNSTENE The heart
in hyperthyroidism R S DINSMORE Technic of thyroid
surgery U V PORTMAN Malignant goiter ALLEN GRAHAM
(1) Gross pathology of the thyroid (2) Microscopic pathology
of the thyroid A D RUEDELMANN Exophthalmos G W
CRILE End results of thyroid surgery

EDUCATIONAL CLASSIFICATION

Government and National Organizations

The educational exhibits include those exhibits from national and state organizations and government institutions which are put on in the name of the institution rather than of individuals and which are intended to show progress in the particular activities with which those institutions deal

AMERICAN ASSOCIATION OF HOSPITAL SOCIAL WORKERS, Chicago Some contributions of social work to the care of ill health Exhibit of material on social factors in disease as found by social workers in various hospitals and outpatient departments of the country

AMERICAN COMMITTEE FOR THE CONTROL OF RHEUMATISM Philadelphia Chronic arthritis Exhibit of moulages, old books and charts together with a motion picture on chronic arthritis

AMERICAN HEART ASSOCIATION New York Arteriosclerotic heart disease Exhibit will cover diagnosis, taking into consideration history, physical, roentgen and electrocardiographic observations, the relationship and differentiation between angina pectoris and coronary occlusion, prognosis and treatment

AMERICAN HOSPITAL ASSOCIATION Chicago Hospital construction, equipment and administration Exhibit of statistical graphs package libraries, transparencies and other material that is informative to the hospital field and members of medical staffs of hospitals

AMERICAN PHARMACEUTICAL ASSOCIATION, Baltimore The National Formulary Exhibit showing the use of the National Formulary in hospitals, with emphasis on the use of N F drugs, chemicals, preparations and prescriptions

AMERICAN SOCIAL HYGIENE ASSOCIATION, New York Treatment of syphilis Exhibit of cooperative clinic studies as follows Johns Hopkins University, JOSEPH EARLE MOORE, University of Pennsylvania, JOHN H STOKES Mayo Clinic PAUL A O'LEARY, Western Reserve University HAROLD N COLE, University of Michigan UDO J WILE in cooperation with TALIAFERRO CLARK, United States Public Health Service

AMERICAN SOCIETY OF CLINICAL PATHOLOGISTS, Denver Registration of laboratory technicians Exhibit of charts showing distribution of laboratory technicians photographs and placards illustrating the work of the board of registry and the American Society of Clinical Pathologists

CHICAGO MUNICIPAL TUBERCULOSIS SANITARIUM Pneumothorax Clinic, Chicago Collapse therapy in pulmonary tuberculosis Exhibit of roentgenograms showing indications for collapse, technic, complications and results Correlated pathologic exhibit showing the relationship between roentgenograms and the actual pathologic conditions, as demonstrated by lung specimens

CLEVELAND RADIOLOGICAL SOCIETY Cleveland History and progress of radiology Exhibit of prints and actual material showing early work in roentgenology a demonstration of the various roentgen examinations that can be made in the investigation of a particular patient for a particular pathologic condition

HEART COUNCIL OF GREATER CINCINNATI Cincinnati Studies of cardiovascular disease Exhibit of charts, graphs, electrocardiographic tracings, radiograms and specimens resulting from research studies conducted by the staff of the Heart Council of Greater Cincinnati

MUSEUM OF HISTORICAL AND CULTURAL MEDICINE CLEVELAND MEDICAL LIBRARY ASSOCIATION Cleveland Exhibit of a collection of monaural stethoscopes

NATIONAL BOARD OF MEDICAL EXAMINERS Philadelphia Exhibit of charts describing the work and progress of the National Board of Medical Examiners

NATIONAL TUBERCULOSIS ASSOCIATION, New York Pathologic sequence of pulmonary tuberculosis Exhibit of roentgenograms illustrating successive steps in the development of pulmonary tuberculosis from primary complex to chronic widespread pulmonary involvement Motion picture of thoracoplasty operation and results

UNITED STATES PHARMACOPEIAL CONVENTION, Washington D C The United States Pharmacopeia Exhibit showing the use of the Pharmacopeia in hospitals with emphasis on the use of U S P drugs, chemicals, preparations and prescriptions

VETERANS ADMINISTRATION, Medical and Hospital Service Washington, D C Clinical and postmortem observations in a group of veterans with cardiovascular disease Exhibit of graphs and statistical tables showing postmortem observations in veterans with heart disease heart disabilities will be classified according to etiologic factors, anatomic types and abnormal physiology, the postmortem data will include information on anatomic types of cardiovascular disease, the coexisting general diseases, and data on age and race

AMERICAN MEDICAL ASSOCIATION

The exhibits from the headquarters group of the American Medical Association will be found in various parts of the hall

BUREAU OF HEALTH AND PUBLIC INSTRUCTION Professional participation in public health effort Exhibit of maps indicating state and county societies showing noteworthy activities in health education and medical participation in public health work by state and county medical societies

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS Exhibit of charts showing the leading facts of importance regarding medical education, licensure, internships and residencies, status of listing of specialists, latest available data on hospital occupancy and other hospital statistics

COUNCIL ON PHARMACY AND CHEMISTRY, CHEMICAL LABORATORY BUREAU OF INVESTIGATION AND COMMITTEE ON FOODS These will present collective exhibits to illustrate the weaknesses of the present National Food and Drugs Act, and to emphasize the urgent need for more comprehensive national food and drug legislation in the public interest

COUNCIL ON PHYSICAL THERAPY Exhibit of motion pictures, charts, instruments and simple equipment designed to substantiate the physiologic effects of physical therapy procedures employed in the practice of physical therapy, including such therapeutic procedures as heat massage, therapeutic exercise and hydrotherapy

AWARDS

There will be two classes of awards, consisting each of (a) a gold medal, (b) a silver medal, (c) a bronze medal and (d) three certificates of merit

NOTE—The special (subsidized) exhibits (Encephalitis Exhibit Nutrition Exhibit and demonstrations in Pathology) and the exhibits of the headquarters of the American Medical Association are not open to awards

CLASS I

Awards in class I are made for exhibits of individual investigations which are judged on basis of originality and excellence of presentation

CLASS II

Awards in class II are made for exhibits which do not exemplify purely experimental studies which are judged on the basis of excellence of correlating facts and excellence of presentation

Medals are awarded only to individuals A special certificate of merit will be awarded to the best educational exhibit in the Educational Classification (this includes exhibits by national organizations, and the like) The decisions of the Committee on Awards will be final and will not be subject to review

The Committee on Awards will be composed of five persons It will make its decisions on Wednesday The names of the Committee on Awards will not be available until after the decisions have been published

THE BILLINGS MEDAL

The late Dr Frank Billings, during his lifetime, as one of the leaders of the American Medical Association was responsible more than any other individual for stimulating the scientific exhibit idea and encouraging the progress of this work both in and out of the meetings and assemblies of the Association

The exhibit was started in 1899 at the Columbus session through the activities of the Indiana State Medical Association. A pathologic exhibit was the feature of the exhibit and was continued as such for the next several years under the supervision of the then newly formed Section on Pathology and Bacteriology with the active cooperation of Dr Frank B Wynne, as chairman of the committee. In 1903, under the presidency of Frank Billings the exhibit was broadened in scope to include all phases of scientific medicine, and hence was named Scientific Exhibit

Awards of medals and certificates were first made to the best exhibits shown in 1908. When this proposition was presented to the House of Delegates when it met the previous year, it was the influence of Frank Billings that prevented the matter from dying without action



A crucial period of the Scientific Exhibit came in 1920. For several years the direction of the exhibit had been passed around from one person to another, with a lagging interest and enthusiasm. The Board of Trustees took an active interest in the problem and authorized a committee to prepare "plans for increasing the attractiveness of the Scientific Exhibit". Dr Frank Billings and Dr D Chester Brown were made members of this committee. At this time there was almost no appropriation for the Scientific Exhibit and requests for additional funds were at first denied. Dr Billings continued his interest in the Scientific Exhibit almost up to the time of his death.

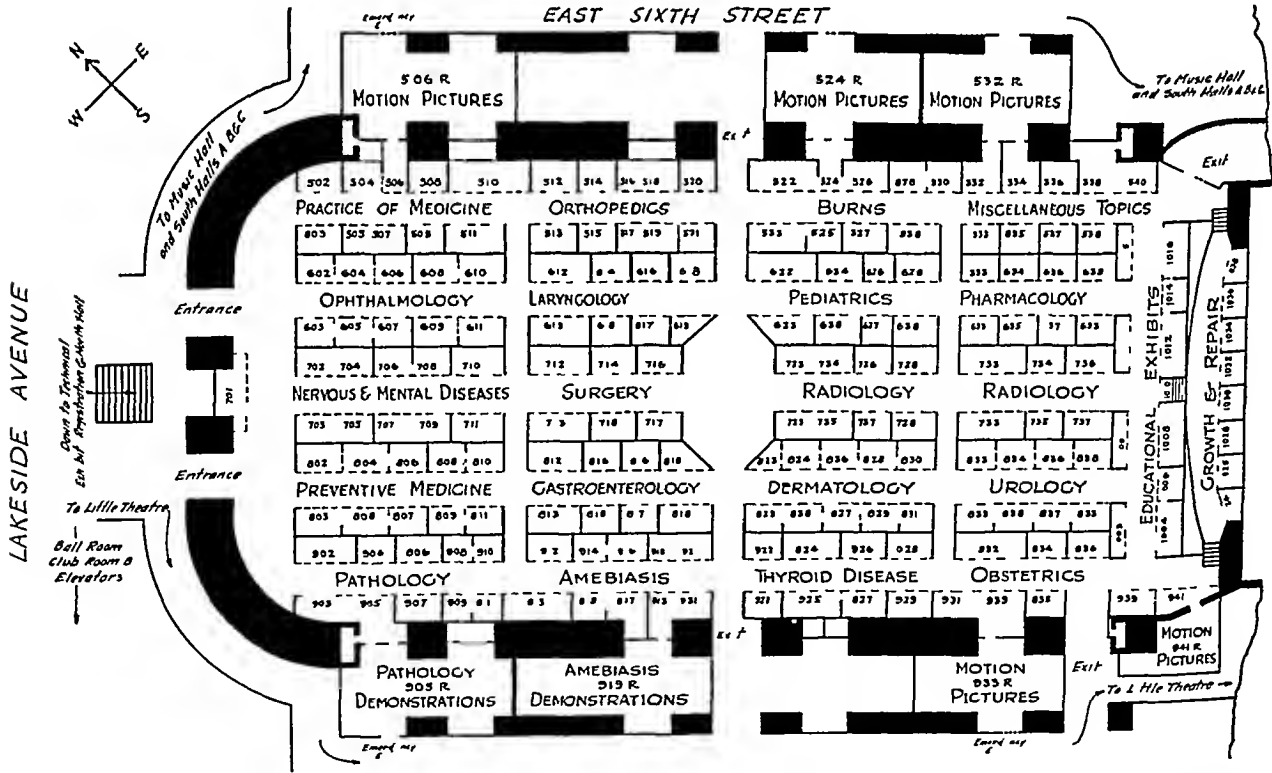
There have been numerous men who have made valuable contributions to the Scientific Exhibit in the past thirty-five years. But Frank Billings, not only by his standing in the medical world but also by his ceaseless labor for the betterment of scientific medicine, contributed so much to the development of the Scientific Exhibit that the use of his picture on the medal which is awarded annually in the Scientific Exhibit, is a compliment to the standing of the Scientific Exhibit and an expression of lasting appreciation for his inspirational leadership.

FLOOR PLAN OF SCIENTIFIC EXHIBIT

The Scientific Exhibit located on the Arena Floor of the Cleveland Public Auditorium will be the largest in the history of the Association. The quarters are adequate, however to accommodate both the exhibition and the visitors and provision has been made for seating arrangements at frequent intervals throughout the hall.

Further illustrated in the Scientific Exhibit thus making it possible for the physician who has heard the paper read to study the subject further at his leisure and to ask questions of the author.

Motion picture programs will be shown on definite schedules in areas provided for the purpose, directly adjacent to the



Sixteen sections of the Scientific Assembly are taking an active part, details of which have been given in the preceding pages. Special section exhibit committees have been engaged in selecting the best material possible in the various specialties. A large number of the papers read before the sections will be

section exhibits, by the Section on Practice of Medicine and the Section on Obstetrics Gynecology and Abdominal Surgery. Additional motion pictures will be shown on burns in an area adjacent to the symposium on burns, while a large number of motion pictures will be shown in individual booths.

THE TECHNICAL EXPOSITION

Difficult business conditions during the past few years have served as a challenge to inventive genius and research in practically every line of industry.

How this challenge has been courageously met and accepted by those firms which cater to physicians' needs will be concretely demonstrated in the exhibits of the Technical Exposition of the Cleveland Session. The occurrence and recurrence of the word "new" throughout the exhibit descriptions on the following pages is indeed significant. It is not an idle repetition, but an indication that scientific research has gone on despite adverse economic conditions, and that medical firms have increased their usefulness to the profession in manifold ways by developing new products or services.

It is this ability to impart new ideas, furnish new suggestions or demonstrate new methods that makes the Technical Exposition of pronounced educational value to the visiting physician. In a short amount of time, he can acquire a first-hand acquaintance with the latest developments of firms located in widely separated parts of the country.

But, while new instruments and apparatus, new books, new dietetic products, new medicinal prepara-



tions will be found on all sides, it should be remembered that exhibitors are also present to impart useful information regarding the standard and longer used articles. The Exposition as a whole represents practically all of the important products used in the practice of medicine. With almost 175 firms participating, and with all exhibits conveniently arranged on the lower level of the Auditorium, every minute of time spent in the Technical Exposition can be made stimulating and profitable. The Registration Bureau, the Postoffice, Lounge, Ticket Validation counter and several Section Meeting Halls will be found on this same level. Attendants with specialized knowledge in their respective fields will be in charge of the booths. Courteous treatment without undue urging to buy may be expected.

The exhibits will be open from 8:30 a. m. to 6:00 p. m. each day, except on Friday, when the closing hour will be at noon. The descriptions of the individual exhibits that follow are arranged alphabetically by firm names to facilitate easy reference.

WILL C BRAUN,
Superintendent of Exhibits

ABBOTT LABORATORIES

Halliver Oil Products

Since nutritional factors as never before, are engaging the attention of the forward-looking physician, Halliver Oil Products will occupy a prominent place in the Abbott exhibit. Booth 66. Chemical, sales and clinical research men will be in attendance and will be glad to discuss the numerous Council Accepted Abbott products with you. Pollen Extracts and charts of the pollen incidence in your own locality will also be featured. Call and place an order for your chart, which will be furnished free of charge.

ADLANCO X RAY CORPORATION

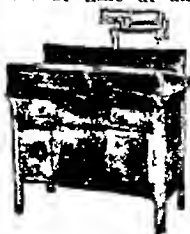
Ultra Short Wave Therapy

Several types of Ultra-Short Wave and Short Wave apparatus will be exhibited in Booth 186 by the Adlanco X-Ray Corporation, pioneers in this new therapy. Trained men will be on hand to explain the apparatus which is new to many members of the profession. The mystery of short electrical waves from 30 to 10 meters, and especially of ultra-short waves from 10 to 3 meters, has introduced a new and important factor in physio-therapy, and the results obtained will be discussed at this exhibit.

W D ALLISON COMPANY

New Pediatric Table

The new Allison-Ramsay Pediatric Table will be shown for the first time at an A. M. A. meeting by the W. D. Allison Company, manufacturers of physicians' wood furniture for the past fifty years. Many other late models of doctors' treatment room furniture, outstanding in quality and reasonable in price, will also be exhibited in Booth 94. The salesmen in charge will be glad to explain in detail the features of this fine furniture.



A S ALOE COMPANY

Cold Ray Quartz Ultraviolet Lamp

A striking feature of the Aloe exhibit, Booth 33, will be the new Cold Ray Quartz

Ultraviolet Lamp which has recently been accepted by the Council on Physical Therapy. This unit has been carefully tested in various clinics and has satisfactorily met all requirements. Another feature of this exhibit will be Stille Rustless Instruments at a special discount. A full line of surgical instruments, hospital and office furniture and physical therapy apparatus will be shown also.

AMERICAN OPTICAL COMPANY

New Improved May Ophthalmoscope

Important among the ophthalmic diagnostic instruments the American Optical Company will show in Booths 128 and 129 will be the new improved May Ophthalmoscope. This instrument presents a totally reflecting prism which bends the light instead of reflecting it, eliminating shadows and reducing corneal reflexes to a minimum. The convenient 'bryonet method' of attachment and a uniform round light controlled by a rheostat. Other new and important developments in eye, ear, nose and throat diagnostic instruments will be shown.



D APPLETON CENTURY COMPANY

Entire Line to Be Shown

Included in their entire standard line of medical works to be displayed by D. Appleton Century Co. in Booth 45, will be the 6 published volumes of their 'Practitioners Library of Medicine and Surgery.' These will give a clear idea of the scope of the Library, which is being supervised editorially by Dr. George Blumer. New editions will be shown of Holt and Howland's 'Diseases of Infancy and Childhood' (revised by Holt and McIntosh), Barton and Yates' 'Symptom Diagnosis,' and Zinsser and Bayne-Jones' 'Textbook of Bacteriology.' A new work to be shown is Wolf's 'Textbook of Physical Therapy.'

ARMOUR AND COMPANY

Sources of Gland Preparations

Armour and Company's exhibit, Booth 26 will be more than just a display of products. It will depict the sources of various pharmaceuticals, surgical ligatures, etc.—all in meat animals. Along with a vial of pituitary liquid will be the glands from

which the substance is extracted. Thyroid glands from the throats of cattle, sheep and hogs will illustrate the source of many thyroid preparations. Dozens of other exhibits of this nature will be shown, and competent men will be in attendance.

AZNOE'S

Medical Personnel Bureau

Aznoe's, the first medical personnel bureau (established in 1896) will be represented in Booth 153 by the director, Mrs. Bates. She will be pleased to explain to anyone seeking assistance how Aznoe's can be of service, and to those persons who are looking for a change, a location or a salaried appointment she will be glad to tell how Aznoe's nation-wide service can assist them.



BATTLE CREEK FOOD COMPANY

To Show Savita

Be sure to stop at Booth 27 for a treat! The Battle Creek Food Company will serve sandwiches spread with Savita, a yeast extract resembling meat but having the properties of pasteurized brewers' yeast.

W A BAUM COMPANY, INC.

Train Model of Duralumin

W. A. Baum Company will exhibit a large model of the Union Pacific's new high-speed train at Booth 28, emphasizing the utility of Duralumin. Both the train and the new Koppak Model Lifetime Baumanometer are built of Duralumin, the copper-aluminum alloy possessing the strength of steel with only one-third the weight.



BAUER & BLACK

Research Results to Be Shown

The results of a basic research program instituted by Bauer & Black more than five

years ago will be shown in Booths 122 and 123 where adhesive plaster, sutures absorbent cotton, gauze bandages, elastic stockings, Handi-Cast plaster of paris bandages, suspensories, Handi-Tape dressings and athletic supporters will demonstrate improvements will be exhibited. Bauer & Black's research has not been confined to the laboratory, but has gone into the field as well. This has resulted in a suspensory guide which will be available to physicians at the exhibit.

BAUSCH & LOMB OPTICAL COMPANY

Microscope for Laboratory Work



One of the instruments which will be shown by the Bausch & Lomb Optical Co. in Booth 6 is the model HA Physicians' and Medical Students Microscope. You are invited to inspect this instrument which is superior for laboratory use because of its weight, balance and stability. Note that its newly designed mechanical stage permits the systematic examination of the entire surface of a 75mm x 50mm slide.

BECTON, DICKINSON & CO

New Automatic Hypodermic

Becton Dickinson & Co. will display the new B-D Busher Automatic Injector, a self-injecting hypodermic unit which relieves nervous uncertainty, also the new B-D Blood Transfusion Outfit which simplifies transfusion to a one-man operation, and the new style Utility Manometer for hospital and office use. Other B-D products, many of them improved will be displayed and information given concerning them by attendants in Booths 37, 38, 39 and 40.

BILHUBER KNOLL CORPORATION

Disauid the New Morphine Derivative

In Booth 24 the Bilhuber-Knoll Corporation will display Disauid the morphine derivative, and offer evidence of its advantages as an analgesic in painful conditions and as a cough sedative. Among other products shown will be Theocaine, the diuretic and myocardial stimulant indicated in congestive heart failure and angina pectoris. Metrazol, the circulatory and respiratory restorative and also Bromural and Euresol. Well informed representatives will be glad to give interested physicians detailed information on these products.



BOVRIL OF AMERICA

A Famous Rich Beef Drink

Bovril a highly concentrated beef extract scientifically combined with highly concentrated extract of fresh brewers' yeast has been prescribed by eminent British and continental physicians for nearly half a century. Bovril has been accepted by the Committee on Foods of the A. M. A., and its vitamin B potency is recognized by the Privy Council for Medical Research in England. It will be demonstrated in Booth 112 where physicians may obtain descriptive literature.



P. BLAKISTON'S SON & COMPANY, INC.

To Show Series

"The Recent Advances in Medicine" Series present in concise, well written volumes the newer things in the various fields of medicine. This series, which has been augmented by several new volumes and new editions, will be shown with other desirable books in Booth 78, occupied by P. Blakiston's Son & Co., Inc.

BUCK X RAY COMPANY

Developments in X Ray Supplies

If you are interested in x-ray work, either from the standpoint of improving your present equipment or of purchasing new, you will find something of value in Booth 195. The Buck Company will show some innovations in the manufacture of developing tanks and illuminators, and will also have an attractive display of other items necessary to complete the modern x-ray dark-room.



BURDICK CORPORATION

Physical Therapy and Electrosurgery Equipment

In Booth 68 The Burdick Corporation will exhibit a complete line of modern physical therapy and electrosurgery equipment. In the physical therapy field it will feature the Council Accepted D-2 Diathermy, Anniversary model Ultra-violet Lamp and Dual Aonlie. For electrosurgery the products of greatest interest will be the SU-2 blended current Electro-surgical unit and the new D-3 machine for electrocoagulation.

CAMERON SURGICAL SPECIALTY COMPANY

New Electrically Lighted Instruments

Cameron Surgical Specialty Company will display a complete line of their electrically lighted Surgimold Instruments, for diagnostic and operative use. Their new colposcope instrument, the Tele-Vaginalite will be shown in three sizes with 10x Telescope. They will also show the Cameron Cauleodine line original portable Radio Knife with the new handle current control which is one of the noteworthy innovations of electro-surgery offering complete assurance of safety when cutting in a wet field and is particularly adapted to the prostate resection operation. Booth 105.

CARNATION COMPANY

To Demonstrate Solid Curd Milk

How the curds of various forms of milk are acted upon by an artificial gastric juice will be shown in Booths 154 and 155 by the Carnation Company, producers of Carnation Evaporated Milk. The effect of homogenization on the size of the fat globules in this milk will also be demonstrated. Carnation officials state that an important product improvement of special interest to pediatricians will be given publicly at this time.



S. H. CAMP & COMPANY

New Designs for Supports

Complete information on the latest developments of Camp Anatomical Supports will

be given at Booth 65 by representatives of S. H. Camp & Company. Latest designs for prenatal and postoperative visceroploids, and hernia, together with sacro-iliac, dorso-lumbar, and lumbosacral supports will be of interest to attending physicians.

WILMOT CASTLE COMPANY

Three New Sterilizers

The modern trend in sterilizer design will be shown by three new sterilizing outfits which the Wilmot Castle Company will display in Booth 126. One is a new popular priced instrument sterilizer and cabinet in which the instrument sterilizer is recessed and operated by a foot lift. This new model will be priced even lower than the older type cabinet with sterilizer at the side. Another model is a new specialists' outfit, and the third is a complete small pressure equipment for clinics and small hospitals. You are invited to examine them.



CHAMBERLIN METAL WEATHER STRIP CO.

Weather Strips and Screens

Visit Booth 183 and examine the interesting display of fuel saving equipment made by the Chamberlin Metal Weather Strip Co. If you will leave your name and address for a heat loss survey of your home or building, it will be given to you and carefully explained when computed—with the firm's compliments and no obligation on your part.



CHAPPEL BROS. INC.

Will Exhibit Liver Extracts

Complete maintenance charts of pernicious anemia patients carried through for over two years with Chappel's Liver Extracts will be shown in Booth 193 by the Chappel Bros. Laboratories. Chappel's Oral Liver Extract is a palatable highly purified liquid of reliable potency which is under constant hospital control. The injectable form is sufficiently refined to permit subcutaneous use without hazard. Each batch is tested for potency before being released for sale. Competent detail men will be in attendance.

CIBA COMPANY INC.

An Effective Amebiasis Vioform

The recent publicity on amebiasis has caused many physicians to seek new agents to combat this disease. Vioform, Ciba, through the efforts of Lenke et al., has proved to be one of the most effective amebicides. A special display of Vioform is included among the scientific exhibitions in Booth 85 the Ciba Company, Inc., will feature not only Vioform but also Digifoline Dial, Nupercaine, Lipodoline and Aloquinol.



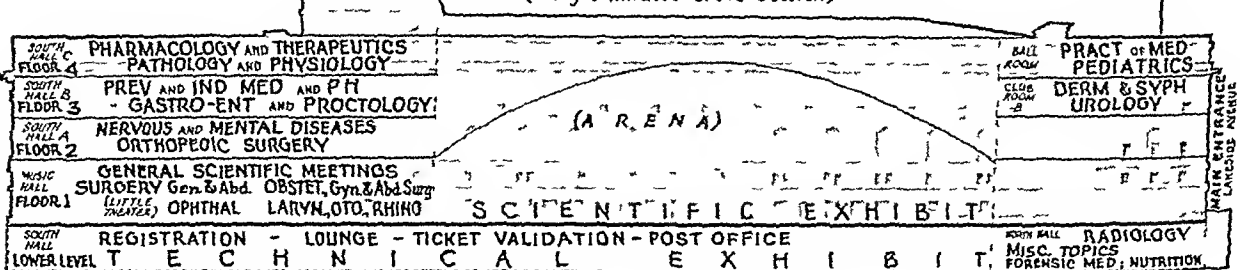
CHURCH & DWIGHT COMPANY INC.

Sodium Bicarbonate

The exhibit of Church & Dwight Company, Inc., in Booth 150 will emphasize the pu

CLEVELAND PUBLIC AUDITORIUM

(Diagrammatic Cross Section)



Showing Location of Section Meetings, Scientific Exhibit, Technical Exhibit

richly, availability, and low cost of Arm and Hammer and Cow Brand Baking Sodas. These products which are identical, are Sodium Bicarbonate U S P. Physicians will be interested in them as their cost is extremely low and they are available in nearly every household. The booth will be of early American design simple and dignified and symbolizing the age when this firm began the manufacture of these brands of Sodium Bicarbonate in 1846.

HAROLD H CLAPP INC

Strained Baby Foods



The new Enamel Purity Pack of Clapp's Strained Baby Foods was first announced to the medical profession at the Milwaukee meeting last year. That the profession approved has been made evident during the ensuing months. This package, together with the original glass line, will be exhibited by Clapp in Booth 110.

WARREN E COLLINS INC

Combination Respirator Incubator

The latest models of the Drinker Infant Respirator, Burgess Collins Oxygen Tent and Benedict-Roth Metabolism apparatus will be displayed by Warren E Collins, Inc., in Booth 5. The combination respirator-incubator has new improvements of interest. The oxygen tent which operates on an entirely new principle, cuts oxygen therapy costs in half. The new Benedict-Roth has many new features which add to the patient's comfort and the ease of operation. See these demonstrated.

DAVIS & GECK INC

Sutures for Special Purposes



Their complete line of sterile surgical sutures will be shown by Davis & Geck in Booth 131. On display, also, will be several new items, including special purpose sutures with atraumatic needles adapted for tonsil, thyroid, obstetrical, circumcision plastic and eye work. They will show films from their Library of Surgical Motion Pictures to which many new subjects have been added since last year.

DAVIES, ROSE & COMPANY LTD

Pharmaceutical Preparations

Physicians prescribing preparations made by Davies Rose & Co Ltd, are assured of uniformity and dependability maintained by laboratory determination and supported by clinical experience. A visit to this firm's exhibit in Booth 46 should prove of interest to visiting physicians.

R B DAVIS COMPANY

Will Serve Cocomalt

Visit Booth 70 and be served with Cocomalt, a popular food drink supplying rich calcium, phosphorus and vitamin D content in a particularly delicious form. Miss Elsie Stark, director of the home economics department of the R B Davis Company, will be in charge of the Cocomalt booth. New Food Value Charts (calcium, phosphorus, vitamin D and calorie value) will be available for those who desire them.



F A DAVIS COMPANY

"The Cyclopedra of Medicine"

Seven hundred carefully selected physicians and surgeons from all civilized countries have produced under George Morris Pier-

son "The Cyclopedra of Medicine" in 12 volumes. Ten of these are now ready and may be examined at the F A Davis Company's exhibit. This notable work covers every phase of internal medicine, major and minor surgery and all the specialties, and a supplementary volume issued yearly keeps the Cyclopedra always up-to-date. Other standard works on various branches of modern medicine and surgery will also be displayed. Booth 73.

DE PUY MANUFACTURING COMPANY

Improvements in Fracture Appliances

Some of the most advanced improvements in fracture appliances will be shown by the De Puy Manufacturing Company in Booth 58. One feature is the new Granberry Hyperextension Frame which will fit on any hospital bed and which permits the surgeon to get direct hyperextension immediately beneath the point of fracture of any vertebra between the shoulder and the pelvis. Also on display will be the Forrester Head Sling, the Campbell Acroplastic Splint, the Granberry Arm Reduction Frame, the Lester Rocking Leg Splint, the De Puy Portable Fracture Table, the Neuhirner Adjustable Forearm Splint, Key's Kirschner Bow and the Well Leg Splint.

DETROIT COVER COMPANY

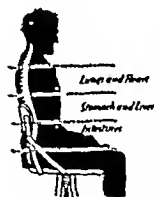
New Inhalant Device

There is considerable discussion of Arizona, the new inhalant device for use as an adjunct to the treatment of disorders of the nasal and respiratory tracts. This instrument, which recently was accepted by the Council on Physical Therapy, will be the attraction in the exhibit of the Detroit Cover Company, Booth 146. Arizona provides a direct means of reaching the nasal passages and lungs with medicated vapor or dry heat. A mask fits tightly over the nose and mouth and is connected with a heat and vapor chamber. All inhaled air is drawn through a heating element.



DO/MORE CHAIR COMPANY

Correct Posture Chairs



seated employees and executives in offices and factories.

DE VILBISS COMPANY

Nasal Guard for Atomizer

A complete line of atomizers and vaporizers for home and professional use will be displayed in Booth 43 by The DeVilbiss Company. A prominent feature of the exhibit will be the recently developed DeVilbiss Nasal Guard which prevents any excess pressure in the nasal passages during prescribed self-treatment. All visitors are cordially invited to visit the DeVilbiss display.

DUKE LABORATORIES INC

Will Distribute Nivea Creme

Physicians' wives golfers bothers motorists, self-shavers and oil those in need of an emollient cream for skin comfort protection and cleansing will find tubes of the familiar Nivea Creme awaiting them in Booth 7. The Duke Laboratories Inc will also have on display the new liquid cream Nivea Skin Oil.

DU PONT FILM MANUFACTURING CORPORATION

To Feature Radiographs

The DuPont Film Manufacturing Corporation invites you to visit Booth 206 and inspect the display of radiographs representative of its X-ray film which is particularly suitable for summer use.



EARNSHAW KNITTING COMPANY

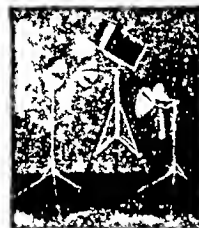
New Vanta Developments

Nurse Hubbard will be at Booth 18 to show you the Vanta Baby Garments, manufactured by the Earnshaw Knitting Company, to conform to the ideas of doctors, nurses, and hospitals. Every effort is made to have the garments absolutely safe for baby and convenient for the mother. Allayette sizes are sterilized in regular hospital apparatus. This company originated dressing babies without pins or buttons. 'Self-Help' garments, sun suits and many of the things that have aided the physician to bring health and comfort to the baby.

EASTMAN KODAK COMPANY

Infra-Red Clinical Photography

On account of the diagnostic possibilities of infra-red clinical photography, you will be interested in the display of the Eastman Clinical Camera. This is ideally suited to this purpose. Besides an exhibit of radiographs made on Eastman Ultra-Speed Safety X-ray film, there will be distributed to members of the profession authoritative texts on the subjects of photography and radiography. Medical Division representatives of the Eastman Kodak Company will gladly answer questions regarding your radiographic or photographic problems and demonstrate any of the equipment on display in Booths 198 and 199.



ELECTRO SURGICAL INSTRUMENT COMPANY

New Electrically Lighted Instruments

You are invited to see the demonstration of new electrically lighted surgical instruments by the Electro Surgical Instrument Company in Booth 194. A complete line of cautery transformers, electrodes and accessories will also be on display. Of great interest to the bronchoscopist will be the bronchoscope instruments constructed of an entirely new non-corrosive metal which requires no plating and always retains its luster and cannot be bent or crushed by the patient's teeth while in use.



J H EMERSON

Will Exhibit New Products

A syringe blood transfusion apparatus, an automatic temperature control for intravenous injection apparatus for recording photographically the sedimentation rate of blood (up to ten determinations simultaneously) and an inexpensive design of negative pressure chamber for treating peripheral vascular diseases will be shown by J H Emerson in Booth 149. Latest designs of his familiar products will also be exhibited: the Barcroft-Warburg and other research apparatus, simple portable oxygen tents and adult and infant respirators.

List of Exhibitors

FIRM NAME	SPACE No
Abbott Labs, North Chicago, Ill	66
Adlanco X Ray Corp, New York	186
Allison Co, W D, Indianapolis	94
Aloe Co, A S, St. Louis	33
A M A, Periodicals and Books	171
Amer Cystoscope Makers, New York	205
Amer Hosp Supply Corp, Chicago	183
Amer Optical Co, Southbridge, Mass.	128-129
Appleton Century Co, New York	45
Armand Company, The, Des Moines, Iowa	168
Armour and Company, Chicago	26
Arnces, Chicago	153

FIRM NAME	SPACE No
Battle Creek Food Co, Battle Creek, Mich.	27
Bauer & Black, Chicago	122-123
Baum Co, Inc, W A, New York	28
Bausch & Lomb Opt. Co, Rochester, N Y	6
Becton Dickinson, Rutherford, N J	37-38-39-40
Betz Co, F S, Hammond, Ind.	69
Bilbuber Knoll Corp, Jersey City	24
Blakistoe's Son & Co, Philadelphia	78
Bovril of America, Camden, N J	142
Buck X Graph Co, St. Louis	195
Burdick Corp, Milton, Wis	68

FIRM NAME	SPACE No
Cambridge Instr Co, New York	8
Cameron Surg Spec, Co, Chicago	105
Camp & Co, S H, Jackson, Mich	65
Carnation Co, Oconomowoc, Wis	154-155
Castle Co, Wilmot, Rochester, N Y	126
Chamberlain Metal Weather Strip, Detroit	183
Chappel Bros, Inc, Rockford, Ill	193
Chicago Medical Book Co, Chicago	136
Church & Dwight Co, New York	150
Ciba Co, Inc, New York	80
Clapp Inc, Harold H, Rochester, N Y	110

ENOCHS MANUFACTURING COMPANY
To Exhibit New Modern Suite

You are invited to inspect the new Modern suite of physicians' office furniture displayed by the Enoch Manufacturing Co in Booth 111. It is designed for this "stream-lined" age, yet there is nothing freakish or bizarre about it.

**H G FISCHER & COMPANY**

Electrotherapeutic Demonstrations

Three interesting pieces of apparatus in the exhibit of H G Fischer & Co will appeal to physicians interested in electrotherapeutic equipment. These are the new Fischer Short Wave High Frequency Apparatus, the new Fischer 60-88 Universal Shock-proof Diagnostic X-ray, and their model H Diathermy and Electrocoagulation Unit recently accepted by the Council on Physical Therapy. See these demonstrated in Booth 5.

FORM PUBLISHING COMPANY

Collins Diet Calculator

The Form Publishing Company will have available in Booth 158 the Collins Diet Calculator, which has been accepted by a large majority of practicing physicians in the U S as the most important and practical aid in writing any calorie diet in medicine. It contains 1800 menus on one chart and can be used in diabetes, cardiovascular disease, nephrosis and epilepsy. They will also show the new Collins Oesophagus Diet Chart which contains 100 reducing diets on one chart.

E FOUGERA & COMPANY

Will Display Lipiodol

A cordial invitation is extended to all physicians to visit the display of this firm which, for 85 years has been supplying American physicians with outstanding French Swiss and English pharmaceuticals. The display will feature Lipiodol, an iodized oil designed for lipodiagnostics and as a substitute for inorganic iodides. Pictures will demonstrate its application to the central nervous system, respiratory tract, utero-tubal exploration and the accessory nasal sinuses and detailed information will be given concerning Lipiodol as an opaque contrast medium for radiographic diagnosis. Booth 109.

GEBAUER CHEMICAL COMPANY

Ethyl Chloride C P

Gebauer's Ethyl Chloride C P will be exhibited in Booth 147. Physicians are invited to inspect the metal tube in which it is supplied, and which is equipped for either spray or drop administration.

**GENERAL ELECTRIC COMPANY**

Intelligent Use of Lighting

See the latest developments in lamps and lighting, and G E's now famous Science of Seeing in the General Electric Company's exhibit Booth 118. See how readily an intelligent use of lighting can relieve us human seeing machines of eye strain and of the drain we impose on our energy when we struggle to perform severe visual tasks under improper seeing conditions. Get on more intimate terms with the Indoor Sun ultra-violet from G E Mazda sunlight lamps and help yourself to vitamin D, the sunshine vitamin.

GENERAL ELECTRIC X RAY CORPORATION

Shock Proof X Ray Units

The Model "T" Portable Shock Proof X-Ray Unit will be one of several new designs to be shown by the General Electric X-Ray Corporation, and radiographs showing the quality of work that it is possible to do with this small, compact unit will prove a real surprise. The G E Inductotherm, the most simplified and efficient method ever developed for creating heat within the tissue and for producing therapeutic fever will also be featured. Apparatus for electrocardiography, electrosurgery, and electrocoagulation ultra-violet quartz lamps, infra-red lamps, etc., will offer many practical suggestions to physicians for valuable additions to their office equipment. Booths 13, 14, 15 and 16.

GENERAL MILLS INC

All About Bread

Bread is nutritional properties and its many and varied uses in the diet will be the feature of the General Mills display in Booth 21. A "moving wheel" chart graphically illustrating bread and baked wheat foods as the hub of the balance wheel of the diet will show bread in combination with various other foods. It will explain how these combinations of food provide the nutritive elements such as proteins, minerals, vitamins and carbohydrates that are necessary in a well balanced diet. A book containing the latest correct information on baked wheat foods will be given to physicians visiting the booth.

HANOVIA CHEMICAL & MANUFACTURING CO

For Milk Irradiation

A feature of the Hanovia exhibit Booth 127 will be the Hanovia National Irradiator for vitamin D activation of milk, embodying an automatic ultra-violet intensity control and recorder.

Of particular interest also will be the new quartz-mercury Super Alpine Sun Lamp for general body irradiation; the quartz-mercury Super Self-contained Kromayer Lamp for local application and the Physicians' and Specialists' Models Solux Radiant Heat Lamps for the application of infra-red rays. Special hospital model lamps will also be on display. Trained representatives will be in attendance at this interesting exhibit.

**CHR HANSEN'S LABORATORY INC**

Junket Powder and Tablets

The Junket Folks will be on hand to welcome you to Booth 47 where a dietitian will show how easily milk may be made into delicious and attractive desserts, milk drinks and ice cream. Recent research shows that milk with Junket digests faster than milk alone and this explains why many people who cannot drink milk can eat Junket. Junket Tablets, not sweetened or flavored, are useful for non-sugar and special diets. Visit the Junket booth for samples and further information.

**HEALTH PRODUCTS CORPORATION**

Cod Liver Oil Concentrate Tablets

In Booth 116 the makers of White's Cod Liver Oil Concentrate Tablets will show the manufacturing processes from the fish to the palatable little tablets. They will explain the year-round benefits of these tablets which are as effective and easy to take in mid-summer as in winter and are always constant in vitamin content and accurate in dosage.

HAWAIIAN PINEAPPLE COMPANY

Pineapple Juice to Be Served

A product that will appeal to all who are interested in pure fruit juices as an important part of the daily diet is Dole Pineapple Juice which the Hawaiian Pineapple Company will exhibit in Booth 131.



It has many known nutritional properties, and contains no muck or fuss in serving. Its value in the diet of children and as a source of vitamins A, B and C, of mineral salts, food acids, and natural sugars, will be shown. Call at this exhibit for a drink of natural golden juice of fresh, ripe pineapples. You will find it refreshing and unusual.

H J HEINZ COMPANY

New Facts About Baby Feeding

In addition to displaying an interesting line of products, H J Heinz Company will have a member of its research department at the 57 Varieties exhibit. He will be prepared to present new facts about baby feeding from a scientific viewpoint. On display will be the Heinz line of baby foods, including tomato juice and strained beets, prunes, tomatoes, spinach, carrots, peas, green beans, and mixed vegetables. Heinz Rice Flakes and Breakfast Wheat will be shown and also Heinz Oil. Oil from the company's plant in Seville, Spain. Booth 72.

**HOFFMAN La ROCHE, INC**

Digalen Manikins to Appear

In an attractive setting in Booth 83 the manikins that have been recently appearing in THE JOURNAL A M A ads of Hoffman-La Roche will dramatize the widely accepted Roche's digitalis remedy, Digalen. In addition there will be other Roche medical aids on display for the interested physician and members of the Roche staff will be in attendance.

**IDEAL BABY SHOE COMPANY**

Results of Baby Shoe Research

To determine proper types of foot coverings for each stage in the development of the normal baby foot, months of research directed by orthopedic surgeons were conducted by the department of medical cooperation of Mrs. Day's Ideal Baby Shoe Company. The results of this and other baby shoe research will be explained by representatives and may be seen in a reference portfolio in Booth 157.

JOHN F JELKE COMPANY

Good Luck Margarine

In Booth 93 the Jelke attendant will appreciate the opportunity of discussing the food value of Good Luck Margarine. Every Jelke Good Luck product has the seal of approval of the Committee on Foods Literature in connection with the vitamin content and nutritional values of Good Luck Margarine will be freely distributed.

MEAD JOHNSON & COMPANY

Products for Infant Feeding

One of the features of the Mead Johnson & Company exhibits, Booths 119 and 120 (near the registration desks) will be a display of eight of the original Postnatal paintings that have been reproduced from time to time in THE JOURNAL. These paintings are the work of Bernhard Pollast, a famous Dutch painter of child life who is considered by authorities to rank in the same class with De Hoog, Meijer, and Israels.

List of Exhibitors—Continued

FIRM NAME	SPACE NO	FIRM NAME	SPACE NO	FIRM NAME	SPACE NO
Collins Inc. Warren E. Boston	5	Do/More Chair Co. Elkhart Ind	165	Emerson J. H. Cambridge Mass	149
Coop Med Adv. Bur.	opp 172	Dry Milk Co. New York	133	Enochs Mfg Co, Indianapolis	111
Corn Products Refining Co., New York	166 167	Duke Labs Inc. Long Island City	7	Fischer & Co. H. G. Chicago	55
Davies Rose & Co., Ltd. Boston	46	DuPont Film Mfg Corp. New York	206	Foregger & Co. New York	177
Davis & Geck, Inc. Brooklyn	131	Earshaw Knitting Co. Newton Mass	18	Form Pub Co. New York	158
Davis Co. F. A. Philadelphia	73	Eastman Kodak Co. Rochester N Y	198 199	Fougere & Co., E. New York	109
Davis Co. R. B. Hoboken N J	70	Eiseler & Co. Nashville	160	Gebauer Chem Co. Cleveland	147
DeFur, Mfg Co. Warsaw Ind	58	Electro Surg Instr Co. Rochester N Y	194	General Elec Co. Cleveland	118
Detroit Cover Co. Detroit	146	Electro Ther Prods Corp. Los Angeles	140 141	General Elec. X Ray Corp, Chicago	13 14 15 16
DeVilbiss Co. Toledo	45				

etc. There will be a display of all Mead products for infant feeding including Dextrin-Maltose, Pabulum, Halfbut Liver Oil, Mead's Brewery's Yeast and Mead's Powdered Milk Products

JONES SURGICAL SUPPLY COMPANY

McIntosh Physical Therapy Apparatus
As a feature of its exhibit, the Jones Surgical Company will have a complete showing of McIntosh Physical Therapy Equipment and Accessories. All physicians are invited to stop at Booth 148 to see this apparatus and to inspect a full display of surgical instruments and supplies for physicians and hospitals.

KNOX GELATINE COMPANY

To Show Special Dietetic Uses

Visit Booths 90 and 91 and learn the growing importance of Knox Sparkling Gelatine for various dietetic purposes. Attractive dishes suitable for different diets will be on display and booklets on feeding the sick, diabetic diets reducing diets, etc. will be available. Testing samples of Knox Gelatine salads and candies will also be given free. Competent representatives will be in attendance to supply detailed information.



Attractive dishes suitable for different diets will be on display and booklets on feeding the sick, diabetic diets reducing diets, etc. will be available. Testing samples of Knox Gelatine salads and candies will also be given free. Competent representatives will be in attendance to supply detailed information.

LAKESIDE LABORATORIES, INC

Ampoule Preparations

Their Council Accepted Ampoule preparations, particularly their ampoules of Dextrose (d Glucose) 50%, will be exhibited by the Lakeside Laboratories, Inc. in Booth 180. Members of the research staff will be present to demonstrate the chemical, bacteriological, and physiological methods used to insure the purity, sterility and safety of Lakeside products.



LARSEN COMPANY

Strained Vegetables

In Booth 95 the Larsen Company of Green Bay Wis. will exhibit its complete assortment of strained vegetables consisting of nine varieties, strained unseasoned ready for use—peas, spinach, carrots, beets, green beans, prunes, tomatoes, vegetables with cereal and beef broth, and celery (an exclusive item with Larsen). Particularly interesting is the fact that these vegetables are packed in protective enamel-lined containers with special vacuum seal, yet retail at ten cents.



LEA & FEBIGER

To Show Important New Works

Among the important new works to be exhibited by Lea & Febiger in Booth 60 are Atkinson's 'External Diseases of the Eye', Feinberg on 'Allergy in General Practice', Grafe on 'Metabolic Diseases and Their Treatment', Well's 'Neuropathology', and Bridges' 'Dietetics for the Clinician'. New editions of important works will include the sixth edition of Kanavel's 'Infections of the Hand', the fourth edition of Ormsby's 'Diseases of the Skin', the second edition of Nicholson's 'Laboratory Medicine', the third edition of Fishberg's 'Hypertension and Nephritis', the fifth edition of Joslin's 'Diabetic Manual', the second edition of Massie's 'Surgical Anatomy', and the tenth edition of Park and Williams' 'Pathogenic Micro-organisms'.



LEDERLE LABORATORIES INC

Biological and Pharmaceutical Products

Among their more important biological and pharmaceutical products shown by the Lederle Laboratories in Booth 53, will be Pollen Antigens, which for 20 years have proved successful in controlling hay fever attacks. Polson Ivy Extract in almond oil for Rhus Dermatitis. Antipneumococcal Serum for pneumonia, the single dose Toxoid for diphtheria prevention. Tetanus-Gas Gangrene Antitoxin for prophylaxis. Staphylococcal Toxoid, Solution Liver Extract Parenteral, Solution Liver Extract Oral, Ferric Ammonium Citrate in capsules, Cod Liver Oil Concentrate Tablets, and standardized Whole Leaf Digitalis Tablets. Attendants will gladly answer in detail the questions of visitors.

LEPEL HIGH FREQUENCY LABORATORIES INC

New Short Wave Machine

In Booths 137 and 138 the Lepel High Frequency Laboratories will exhibit their new short wave machine for local heat treatments without application of metal electrodes and a complete line of high frequency machines for electro medical and electro surgical use. A model will be shown which enables giving diathermy treatments with almost complete elimination of radio interference. They will also show a new ultra-violet quartz lamp.



ELI LILLY AND COMPANY

To Show Graphs and Transparencies

Graphs and transparencies displayed in art glass panels will be the dominant feature of the Lilly exhibit in Booths 74, 75 and 76. Among the products illustrated will be Insulin (Insulin, Lilly), Amytal Sodium Amytal, Merthiolate, Extralin, Ephedrine preparations and Biologals. The Insulin (Insulin, Lilly) panel will show the relation between the metabolic load and metabolic capacity in normal and diabetic individuals. The Ephedrine panel will illustrate certain physiological effects of this alkaloid. Physicians from the medical department of Eli Lilly and Company laboratories will be at the exhibit.

LINDE AIR PRODUCTS COMPANY

Economy in Oxygen Therapy

The Linde Air Products will feature a model oxygen tent and will give practical instruction and demonstration in the technique of testing oxygen and carbon dioxide concentrations. On display will be cylinders of Linde Oxygen USP for use with any oxygen administering equipment, the new Linde Oxygen Flow Indicator and other oxygen apparatus. Reprints of current literature on oxygen therapy will be available to those interested in the subject. Booths 143 and 144.

J B LIPPINCOTT COMPANY

"Post Graduate Instruction at Home"

Among the books to be shown by The J B Lippincott Company in Booth 135 will be Peham and Amreich's 'Operative Gynecology', 2 volumes extensively illustrated to show each operation step by step. Kirschner's 'Operative Surgery' in 2 volumes a new edition of Lippincott's 'Quick Reference Book', Lewellyn F. Barker's new 'Treatment of the Commoner Diseases', and the new idea in personal post-graduate instruction at home supplied from the Pittsburgh Diagnostic Clinic as a supplement to the 'International Clinics' and in the nursing field an entirely new work by

Solomon on "Pharmacology Materia Medica and Therapeutics for Nurses" and new editions of the standard nursing texts.

MACMILLAN COMPANY

To Show Advance Proofs

On display at the Macmillan Booth, 81, will be Crile's 'Diseases Peculiar to Civilized Man' and Pemberton-Osgood's 'Medical and Orthopaedic Management of Chronic Arthritis' which have just been published. There will be advance lithograph plates from Wilmer's 'Atlas of the Eye' which will be published some time this summer. Advance material on Meigs' 'Tumors of the Female Pelvic Organs', Miller's 'Tuberculosis of the Lymphatic System', Wilensky's 'Osteomyelitis' and other important books in preparation will also be available. Ask the representative at the booth to show you some of the latest Macmillan publications in varied fields.

MALLINCKRODT CHEMICAL WORKS

To Show the "Famous 84"

A survey has shown that nearly all prescriptions are filled from approximately 84 chemicals. Mallinckrodt, in Booth 84, will display these chemicals known to retail druggists throughout the country as "the famous 84". In addition they will show Barium Sulphate for x-ray of the gastro-intestinal tract, Jodelkon and Iso-Jodelkon radiopaque dyes permitting x-ray of the gall bladder the arsenicals, and ether for anesthesia. Films will show the first public demonstration of surgical ether anesthesia and its manufacture. Interesting literature on these items will be available to visitors.



MALTINE COMPANY

Results of Vitamin A Study

Charts and slides are to be exhibited by The Maltine Company in Booth 132, showing the results of a study just completed at one of the large Eastern universities. This demonstrates how the value of vitamin A of cod liver oil may be enhanced when it is emulsified with Maltine. The various steps in the manufacture of Maltine with Cod Liver Oil, together with photomicrographs of the final products, are also to be illustrated and described.



MARCELLE LABORATORIES

Non Allergic Cosmetics

If you will register at Booth 207, the Marcelle Laboratories will mail you any Marcelle Cosmetic item you select. Experienced attendants will be on hand to give you such information as you may desire concerning these non-allergic cosmetics.



MEDICAL BUREAU

For Medical Personnel

In Booth 121 Miss Burnice Larson will offer the facilities of The Medical Bureau, an organization acting as counselor in problems of medical personnel to hospitals, administrators, clinic managers and executives in the medical field. The records of physicians who have specialized in various branches of medicine men and women interested in assistantships, accredited graduate nurses, laboratory technicians and dietitians are available to those interested in the completion or reorganization of their staffs.

List of Exhibitors—Continued

FIRM NAME	SPACE NO
General Foods New York	44
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Gerber Prods Co. Fremont Mich	106
Gradyohl Labs, St. Louis	158
Hamilton Mfg. Two Rivers Wis	101 102 & 107
Hankins Rubber Co. Massillon Ohio	48
Hanovia Chem. & Mfg. Co. Newark	127
Hansen's Lab. Chr. Little Falls N Y	47
Hawaiian Pineapple Co. San Francisco	134
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FIRM NAME	SPACE NO
Heidbrink Co. Minneapolis	54
Heinz Co. H J Pittsburgh	72
Hoffmann LaRoche Inc. Nutley N J	83
Hygea	176
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Ideal Baby Shoe Co., Danvers, Mass	157
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Johnson & Co. Mead Evansville	19 119 120
Johnson & Johnson New Brunswick N J	104
Jones Surg. Supply Co., Cleveland	148

FIRM NAME	SPACE NO
Kelley Koett Mfg. Covington Ky	212
Kellogg Co. Battle Creek Mich	77
Knox Gelatine Co., Johnston, N Y	90-91
Lakeside Labs. Inc. Milwaukee	180
Larsen Co. The Green Bay Wis	95
Lea & Febiger Philadelphia	60
Lederle Labs. Inc. New York	53
Lepel High Freq. Labs. New York	137 138
Lichel Flarsheim Co. Cincinnati	20 20B
Lilly and Co., Eli Indianapolis	74 75 76

MEDICAL CASE HISTORY BUREAU**To Show Inexpensive Method**

If you find record keeping an onerous task, if you are interested in a system that shows at a glance the case you want, how many calls you made and when, the patient's history, the developments diagnosis and treatments, and the financial status of each case, it will pay you to spend some time in Booth 34 for the purpose of investigating the Medical Case History Bureau. All the charts will be shown there for all branches of medicine just as they are actually kept in their cabinets.

MEDICAL PROTECTIVE COMPANY**"The Doctor and the Law"**

In Booth 36 you may obtain a copy of the current number of the Medical Protective Company's publication "The Doctor and the Law." Under that title the law department of the Company is now presenting periodical discussions of the fundamental principles of law in their practical every day application to the practice of medicine.

MELLIN'S FOOD COMPANY**Basic Principles of Mellin's Food**

Since the adjustment of the diet for babies deprived of human milk must always be of interest to physicians, the Mellin's Food Company will set before physicians the basic principles of Mellin's Food, with the sincere belief that the evidence accumulated from long experience fully justifies the recognition of the value of Mellin's Food as a modifier of milk in infant feeding. Physicians are cordially invited to visit Booth 62.

WM S MERRELL COMPANY**Dioramas to Present Contrasts**

In Booth 42 the Wm S Merrell Company will feature two dioramas or miniature reproductions. One will depict the original apothecary shop of Wm S Merrell as it appeared in 1828, and the other an interior view of the present day Merrell Biological Research Laboratory at Reading, Ohio, making a striking comparison of the older methods of production with the up-to-date equipment of a modern biological plant. The Merrell Company will show Thibogen and Natural Sodium Salicylate as well as the standard USP and NI pharmaceuticals.

MIDDLEWEST INSTRUMENT COMPANY**Waterless Metabolism Apparatus**

The Midwest Instrument Company will feature a waterless type of metabolism apparatus with calculations eliminated by use of a very simple slide rule. Demonstrations of the technique and accuracy of the machine will be made on actual cases, and tests made without charge on anyone wishing to know his own basal metabolic rate. You are cordially invited to visit Booth 52.

**C V MOSBY COMPANY****To Show Complete Line**

A cordial invitation is extended to all physicians to visit Booth 92 where the C V Mosby Company will display its complete line of medical publications. Among the newer books to be shown will be Hertzler's "Surgery of a General Practice," Hey and Conwell's "Management of Fractures, Dislocations and Sprains," Pottenger's "Tuberculosis in the Child and Adult" and Vebers "Spinal Anesthesia."

V MUELLER & COMPANY**Hospital Equipment**

A bone surgery engine of a new design to be shown by V Mueller & Company in Booths 124 and 125 has several features that you will be interested in seeing demonstrated.

This firm will also display its new Herb-Mueller Ether Vapor and Vacuum Apparatus, which has all the latest improvements and is up to the Mueller high standard of quality. Many new patterns of surgical instruments, as well as hospital equipment, will be exhibited.

NATIONAL CARBON COMPANY, INC**To Show Milk Irradiation**

The exhibit of National Carbon Company, Inc., Booths 143 and 144, will feature the application of the Eveready Carbon Arc Irradiation Unit to the irradiation of milk. This method of increasing the vitamin D content of milk has been adopted by several of the large dairy companies in various cities and is a subject of considerable interest to all physicians. Actual irradiating equipment in full operation will be demonstrated. Competent men will be in attendance at the exhibit to explain the details of the process and the value of the resulting product.

NESTLE'S MILK PRODUCTS, INC**New Modifier of Cow's Milk**

Hyline the new modifier of cow's milk for infants, will be featured in the exhibit of Nestle's Milk Products, Inc., in Booth 61. Physicians interested in the adaptation of fresh cow's milk for infant feeding will have an opportunity to familiarize themselves with this new modifier, which makes it possible to naturalize the artificial feeding in proportions of fat, carbohydrate and protein. Representatives in charge of this exhibit will gladly supply detailed information on Hyline to all physicians who visit the Nestle booth.

OHIO CHEMICAL AND MANUFACTURING COMPANY**Complete Line of Anesthetic Gases**

In Booth 179 The Ohio Chemical and Manufacturing Company will exhibit a complete line of Ohio anesthetic gases showing a new and better cylinder seal and a new rubber grip for large cylinders. They will also show oxygen therapy apparatus which is now available for rent or for sale through 17 branches located in principal cities. Another interesting item will be Deuterium Oxide (Heavy Water), the new element which has created so much interest in the field of scientific research. Ask to see Ohio Ethyl Chloride and the new Carrying Alt.

PAGE MILK COMPANY**Vitamin D Evaporated Milk**

You are invited to stop at Booth 179 to get full information concerning Page Vitamin D Evaporated Milk. This milk is not irradiated, the vitamin D being obtained by the addition of a tasteless cod liver oil concentrate. Each tall 142-ounce can contains 150 Steenbock units of vitamin D. Because of its unusually high vitamin D potency and because the use of this same concentrate doubles the normal vitamin A content, Page Vitamin D Evaporated Milk is of particular interest for infant feeding. It may also be used in puddings, custards, etc., as cooking does not affect the vitamin potency.

**LYDIA O'LEARY****A Way to Conceal Birthmarks**

Practically every physician encounters persons who are handicapped by the presence of unsightly birthmarks on the face, neck or arms. How these blemishes can be so expertly concealed as to practically defy detection will be shown by Lydia O'Leary in her demonstration of "Cover Mark," a harmless preparation which needs to be applied but once a day. The preparation resists water when swimming and will not crack or rub off until removed. A

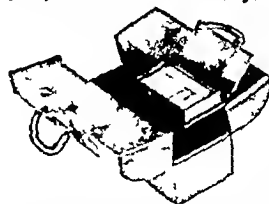
visit to this demonstration may help you remove an overwhelming handicap from some of your patients or acquaintances. Booth 209.

OXFORD UNIVERSITY PRESS**Invites You to Browse**

The Oxford University Press feels that a few minutes of your time browsing in its exhibit in Booth 49 will be well spent. It will contain many books of interest to the general practitioner and the specialist, such as the new edition of "Applied Physiology" by Wright, "A Text-Book of Psychiatry" by Henderson and Gillespie, Mayou's "Diseases of the Eye" revised by Ridley, and others of equal importance.

PANDORA BAG COMPANY**To Show Bag in Construction**

The new Pandora Bag in all stages of construction just as it is made at the factory, will be shown by the Pandora Bag Company in Booth 169. Physicians can learn



how the bag is made, examine samples of the leather, see all the sizes, and determine whether Pandora fits their needs. The new ampoule case bottle arrangement meets of every variety the new hypodermic case which makes blunt needles an impossibility, and the new sterilizer which makes your Pandora into an OB bag at will—all fitted to Pandora—will be shown.

PARKE, DAVIS & COMPANY**Demonstrations by Research Workers**

An exhibit of unusual scientific interest is being prepared by Parke, Davis & Company. Apparatus used in the standardization of pituitary hormones will be included. In the exhibit and actual demonstrations will be made to visiting physicians by research workers from the Parke-Davis Laboratories. Among other things to be shown is the new barbiturate hypnotic Oral Sodium, which has aroused widespread medical interest because of its high efficiency and low toxicity. Expert technical men will be in charge to welcome you to Booths 30, 31 and 32.

**E L PATCH COMPANY****Flavored Cod Liver Oil**

Throughout the past few years when the vitamin picture has been constantly changing, Patch's Flavored Cod Liver Oil has maintained its high position as a natural source of vitamins A and D. This year, in Booth 57, there will be some new and interesting features in connection with this well known product. The Patch Laboratory representatives will be on hand ready to answer questions and give information regarding the latest developments in the production and use of cod liver oil.

**PATTERSON SCREEN COMPANY****New Screen Will Interest Roentgenologists**

The Patterson Screen Company will exhibit their products in Booth 184 where Mr. Patterson and Mr. Reuter will be in attendance. See the new type B fluoroscopic screen which was introduced late last year, and learn of its advantages.

List of Exhibitors—Continued

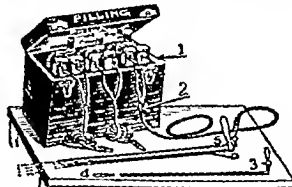
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Macmillan Co The New York	81	Merrill Co Wm S Cincinnati	42		
		Metz Labs H A New York	99 100		

PETROLAGAR LABORATORIES INC
New Product with Cascara

Petrolagar with Cascara, a new product for the treatment of constipation which combines the mechanical softening action of Petrolagar-Pain with the stimulating effect of Fluidextract Cascara Sagrada will be exhibited by Petrolagar Laboratories Inc, in Booths 2, 3 and 4. There will be a continuous showing of Petrolagar Scientific Medical Motion Pictures and an exhibition of photographs of notable physicians who have offered major contributions to medicine.

GEORGE P. PILLING & SON COMPANY
Instruments for Thoracoplasty

Bronchoscopic and esophagoscopic instruments as developed by the staff of the Chevalier Jackson Clinics will as usual be featured in the exhibit of George P. Pilling & Son Co., Booth 108. Special attention will also be directed to instruments used



in the rapidly developing field of thoracoplasty, and instruments of Sauerbruch, Frey, Schneider, Lebsche, Alexander, Bethune, Hudson, Honan and O'Brien will be shown. Brain surgery instruments and recent developments in rectal and oral surgery will also be displayed. Pilling and Company make many of these instruments in their own factory, and invite you to inspect them.

W. F. PRIOR COMPANY
Loose Leaf Sets

Its latest 3-volume loose-leaf sets, 'Gynecology and Obstetrics' and 'Principles and Practice of Physiotherapy' by Mock, Pemberton and Coulter, will be featured by the Prior Company. In the latter book this most misunderstood subject is assessed by men high in medical ranks. Its essential dovetailing with proper medical and surgical treatment with restoration of function as the goal, is covered in an unbiased manner. See also Dean Lewis' 'Practice of Surgery' and Tice's 'Practice of Medicine' in loose-leaf form. Booth 56.

RADIUM CHEMICAL COMPANY, INC
and
RADON COMPANY INC
To Have Joint Exhibit

New types of containers and accessories for the application of radium and radon in malignant and non-malignant conditions will be displayed by the Radium Chemical Company, Inc and the Radon Company Inc in Booth 187. Attention is called particularly to the display of the new removable platinum radium cells, with complementary gold sheath needles (for interstitial irradiation) and platinum capsules (for intra-cavity application). With a small quantity of radium in these removable cells, the same type of effective work can be done as with a larger amount of radium made up into containers of more permanent form.

RALSTON PURINA COMPANY
Cereals and Ry Krisp

Ralston Wheat Cereal, Baby Ralston and Ry-Krisp, the Whole Rye Wafer, will be

exhibited by the Ralston Purina Company in Booth 35. Ralston Wheat Cereal provides the elements of whole wheat plus the appetite-essential properties of the extra vitamin B, added in the form of wheat germ. Baby Ralston now furnishes a rich source of vitamin B, iron and calcium for the small infant who is just starting to eat cereal. Ry-Krisp, which remains the country's most popular rye cracker is used in general as well as special diets. The exhibit will afford an excellent chance to learn about these three important food products.

SMA CORPORATION

Antirachitic Breast Milk Adaptation

SMA, the well known antirachitic breast milk adaptation for infants deprived of breast milk, will be featured in the display of the SMA Corporation. SMA, when diluted according to directions, is essentially similar to human milk in percentages of protein fat, carbohydrate and ash, in chemical constants of the fat and in physical properties. Powdered Hypo-Allergic Milk for the milk-sensitive will be another feature—ask for the 'Milk Allergy' booklet. Alerdex, the protein-free maltose and dextrins, product which is gaining favor for routine use as a prophylactic against cereal eczemas, will also be displayed in Booth 82.

**SANBORN COMPANY**

Metabolism and Electrocardiograph Testing

The 1934 Sanborn Motor-Graphic Metabolism Tester, introducing the electrically driven kymograph clock, will be on display in Booth 64. You are invited to inspect this tester, and also the 1934 Sanborn Electric-Portocardiograph which operates directly from lamp socket or wall plug. This makes it a conveniently portable outfit for testing at patients' homes, as well as for office use.

SCANLON MORRIS COMPANY

To Demonstrate New Operating Table

For the first time Scanlon-Morris Company will demonstrate its latest general operating table, which incorporates remarkable conveniences for general and special surgery. New features in dressing water, instrument and utensil sterilizers that greatly simplify control of the sterilizing process will be available for investigation. Specialties in suture materials will be demonstrated and a novel glove-drying and powdering machine will be exhibited. An experienced representative will be in attendance at Booth 12 to discuss equipment problems of the surgeon and the hospital executive.

W. B. SAUNDERS COMPANY

Books That Describe New Treatments

An examination of the books to be shown by W. B. Saunders Company in Booth 63 will reveal the vast number of new treatments, both medical and surgical, that have come into practice even during the past year. Particularly important are Curtis 3-volume 'Obstetrics and Gynecology', Callender's 'Surgical Anatomy', Beckham's 'Operative Surgery', the new Mayo Clinic Volume, Beckham's 'Treatment', De Lee's 'Obstetrics', Cecil's 'Medicine', 'Medical Clinics of North America' and 'Surgical Clinics of North America', Stokes' 'Syphilology', Pepper and Farley's 'Hematologic Diagnosis', Buck's 'Physical Diagnosis', Gleason on the 'Nose, Throat and Ear', Jackson's 'Bronchoscopy', Esophagoscopy and 'Gastroscopy', Norris and Landis 'Chest Diseases' and Griffith and Mitchell's 'Pediatrics'.

**SANOOZ CHEMICAL WORKS INC**

Outstanding Pharmaceutical Specialties

Sandoz Chemical Works, Inc., will feature Calglucon (Calcium Gluconate-Sandoz) in stable ampule solution for safe, non-irritant intravenous and intramuscular calcium therapy, also in tablets and granules for palatable oral use. In addition they will present Gynergen, the original product containing the specific ergot alkaloid, ergotamine, in pure and stable form, and Scilifaren, the glucosidal principles of squill, a new and reliable cardiodiuretic. Competent representatives will be in attendance at Booth 71.

SCIENTIFIC SUGARS COMPANY

New Carbohydrate Syrup

Cartose, the new carbohydrate syrup for supplementing milk for infant feeding, will be displayed by the Scientific Sugars Co. in Booth 159. The constant uniformity, the remarkable bacteriological purity and the economy of this maltose-dextrin-dextrose-sucrose product appeal to the exacting pediatrician as well as the general practitioner.

SHARPE & DOHME, INC

Will Make Exhibit Different

Sharpe & Dohme will occupy Booth 112 this year, and their exhibit is expected to be entirely different from any which they have ever had. No particular pharmaceutical or biological product will be displayed, but their exhibit will be attractive and interesting and will be well worth visiting.

SHARP & SMITH

Large Display of Instruments

In addition to a complete line of surgical instruments and supplies as regularly exhibited by Sharp & Smith, there will be on display in Booth 25 the Willamac Electrode with various tips suitable for every kind of work in diathermy.

SNUGGLE RUG COMPANY

Infants' Crib Covers

In addition to the Snuggle Bunny and Snuggle Duck, Crib Covers for infants which the Snuggle Rug Company has been



manufacturing for several years some new Crib Covers will be demonstrated in Booth 103. Each of these keeps the baby completely and comfortably covered at all times, and at the same time allows him complete freedom of movement under the cover. You are invited to inspect this line of Crib Covers which answers most of the infant sleeping problems, including all pocketbooks, climates and seasons.

SPINACH PRODUCTS COMPANY

Spintrate in New Form

The demand for an easier method of administration with adults and older children has resulted in the development by the manufacturers of Spintrate during the past year of candy coated Spintrate tablets. Doctors interested in organically bound mineral supplements to special diets are invited to become acquainted with this new item at Booth 87. The powdered Spintrate as used in infants' formulae will also be demonstrated.

SONOTONE CORPORATION

To Demonstrate Hearing Aids

Latest developments in bone conduction hearing aids for individual and group use will be demonstrated by the Sonotone Cor-

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FIRM NAME	SPACE No
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poration, Booth 211 This is an opportunity to inspect and test personally devices which have attracted wide attention in recent months Vacuum tube equipment for individual or group use, including the set for teaching purposes with audiometer attachment will also be on exhibition Interesting literature containing complete information on Sonotone products will be supplied for your files

SPENCER CORSET COMPANY

To Demonstrate Support

The Spencer exhibit in Booth 115 will interest both physicians and their wives.



Trained representatives will demonstrate the Spencer theory of individual designing service, which transfers the pull of the abdominal support to the pelvic girdle and not to the spine at or above the lumbar region. They will explain the advantages of having supports individually designed to meet the particular needs of each patient, and will display and demonstrate supports for post-operative wear, maternity, post-partum, sacro-iliac sprain, movable kidney, enteropneosis, hernia, and breast uplift.

E. R. SQUIBB & SONS

New Liver Preparation

An extensive exhibit occupying Booths 79 and 80 will be utilized by E. R. Squibb & Sons to acquaint visiting physicians with the new developments in their glandular, anesthetic, vitamin, chemo-therapeutic and biological products. One of the new products to be featured is Autolyzed Liver Concentrate. The display of Pollicen Extracts will attract physicians who are interested in any fever therapy. Competent attendants will be present to answer inquiries and discuss any Squibb products.



STOKELY BROTHERS & COMPANY

Introduce Strained Foods

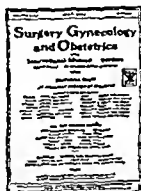
Growers and canners of vegetables for 36 years, Stokely Brothers & Company are introducing their new Strained Foods for Baby. They will show why every step in the preparation of these foods is laboratory controlled from the moment the fresh vegetables and fruits go into the shays, glass lined kettles until they are sealed in special golden enamel lined cans, and how the natural flavor, valuable vitamins and mineral salts of the fresh product are retained to a high degree. Visit Booth 156 and see why these foods are so tempting to baby.



SURGICAL PUBLISHING COMPANY

'Surgery, Gynecology and Obstetrics'

Edited and published by surgeons in the interest of practitioners of surgery, this journal, "Surgery, Gynecology and Obstetrics" will be exhibited by its publishers The Surgical Publishing Co. in Booth 173. It presents monthly a score or more of original contributions by eminent authorities and provides a complete and authoritative résumé and index of the current surgical literature of all languages. See also Dr. Franklin H. Martin's autobiography "The Joy of Living" which will be on display.



SUN RAYED COMPANY

Kemp's Sun Rayed "on Draught" Again
Kemp's Sun-Rayed Pure Tomato Juice will again be "on draught" in Booth 51 with the compliments of the manufacturer the Sun-Rayed Company, Division of Kemp Bros. Packing Company. Attention will be called to the patented manufacturing process by which whole vine-ripened tomatoes are converted into fruit-bodied, non-separating juice and to the exacting methods of vitamin retention. New photographs will illustrate the production process and a new trophy awarded the Kemp Brothers will be displayed.

TAYLOR INSTRUMENT COMPANIES

Sphygmomanometers and Thermometers
Along with Tyco's Sphygmomanometers, the Taylor Instrument Companies' exhibit will feature the new Taylor Estee Thermometer. This high grade clinical thermometer will be offered at an extremely low price singly or in professional sets of six. The set consists of any combination of bulb styles desired, oral, rectal or stubby. Booth 98.

Taylor

CHARLES C. THOMAS

Will Show New Books

Of special interest in the Charles C. Thomas exhibit Booth 1 will be Moore's "Modern Treatment of Syphilis," Grinker's "Neurology," Carlisle's "Practical Talks on Heart Disease," Thomas's "Clinical Pathology of the Jaws," Dandy's "Benign Tumors in the Third Ventricle of the Brain," Glasser's "Science of Radiology," Glasser's "Wilhelm Conrad Röntgen," Fischer's "Lymphatic Collapses," Roman's "Surgery" (2nd edition), Hitchcock's "Physical Chemistry," Blech and Lynch's "Medical Tactics and Logistics," Kanner's "Child Psychiatry," Craig's "Amoebic Dysentery," and Wiener's "Blood Groups."



TRAINING SCHOOL AT VINELAND

To Show Work in Research Laboratory

The Training School at Vineland N. J., a private school for mentally deficient children and adults will display hand work of some of its pupils in Booth 50. Miss Clarrette Sehon, field secretary for the institution, will be in charge of the exhibit. She will show moving pictures of the work being done particularly in the research laboratory of the Training School where the causes of mental deficiency and the means of ameliorating the condition of the mentally deficient are being sought. Literature giving full information concerning the school will be available.

UNITED FRUIT COMPANY

Drink a Ripe Banana

At the exhibit of the United Fruit Company, Booth 41 you may enjoy a variety of delicious drinks made from fresh ripe bananas before your very eyes. Printed recipe cards showing the methods and ingredients for making these banana drinks, will be distributed. In addition the latest scientific data on the nutritive and therapeutic value of the banana based on extensive research, will be supplied.

UNITED PRUNE GROWERS

To Refute Misleading Ideas
The results of two years of extensive research proving the falsity of many ideas concerning prunes are being published by the United Prune Growers for distribution.

In Booth 67 The exhibit will be presided over by Ray Randall and L. B. Williams of the California Dried Fruit Research Institute, and E. M. Mtrak of the University of California.

VITAMIN FOOD COMPANY

Animals to Feed on Vegex

The chemist who made the first salt enzyme autolyzed extract from yeast Vegex found that it tasted like cooked meat, although meat-free. Vegex was widely used for soups before the vitamin discoveries. During the World War the British government selected it for treating beri-beri and then for the regular rations of the troops. Since then in medical centers with both child and adult diets Vegex has been a standard for Vitamin B₁ and is equally high in Vitamin G or B₂. See the 90 or more animals on vitamin feeding tests in the Vegex exhibit in Booth 203.

WINTHROP CHEMICAL COMPANY INC

AND H. A. METZ LABORATORIES

Pharmaceuticals of Note

All visitors are cordially invited to inspect Booths 99 and 100 where, among the many outstanding products to be displayed attention will be called to Salyrgan, the diuretic whose value is universally recognized, Phantodorm, the hypnotic which assures natural sleep without a "hang-over", Sklodan, for intravenous and retrograde pyelography, Silver-Salvarsan, of proved efficiency in resistant types of syphilis and to other well known products. Literature on these preparations as well as on newer introductions will be freely available to all physicians.

WILLIAM WOOD & COMPANY

and

WILLIAMS & WILKINS COMPANY

Find New Strength in Union

Booth 17 will represent the union of one of the oldest and one of the youngest American publishing houses—William Wood & Co. and the Williams & Wilkins Company—and will provide a convenient opportunity for you to examine their latest medical and scientific books and journals. Included will be many new editions of well known standard works, such as Cabot's "Physical Diagnosis," Delafield & Prudden's "Pathology," May's "Eye, Ear, Nose, Throat," Keith's "Embryology," and others also such striking new books as Dickinson's "Human Sex, Anatomy and his The Single Woman."

CARL ZEISS INC

Call Attention to Photometers

Their well known microscopes and accessories, as well as other scientific and surgical apparatus, will be shown in Booth 113 by Carl Zeiss, Inc. You are especially invited to see the Pulfrich Photometer for colorimetric and nephelometric examinations, the Wolf-Schneider flexible Gastroscope, the Laparo-Thoroscope for severing adhesions and the Birch-Hirschfeld Retinal Photometer for determining vitamin A deficiency.



ZIMMER MANUFACTURING COMPANY

New Fracture Bed to Be Shown

An interesting assortment of the newest items in fracture equipment will be displayed by the Zimmer Manufacturing Company in Booth 97. A model of the fracture bed with overhead frame that has been officially approved by the Fracture Committee of the American College of Surgeons, the new Roger Anderson Reduction Apparatus, the Electric Plaster Cutter and other items will be shown for the first time.

Additional Descriptions of Exhibits Received Too Late to Include in This Section Will Be Found on Advertising Pages 78 79 80 82 84

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THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 12, 1934

THE CLEVELAND SESSION

As will be apparent to every Fellow of the American Medical Association who considers carefully the material available in this issue concerning the Cleveland session, the scientific pabulum there offered will be nourishing. The scientific exhibits surpass in number and equal in quality those of previous sessions. In the clinical programs, the Council on Scientific Assembly and the officers of the sections have provided a series of general scientific meetings in which leaders of note will discuss topics of immediate interest to the entire assemblage. The scientific sections of the Association, which cover all the leading fields of medical practice, will be supplemented by special sessions of the Section on Miscellaneous Topics devoted to medicolegal problems and to questions on nutrition. Coordinating the scientific presentations, the sections will be fully represented in the Scientific Exhibit, as will also the general scientific meetings.

The policies of medical science and of the practice of medicine in relationship to the public and the state will have thorough consideration at the Cleveland session. Not only will these come before the House of Delegates in the routine manner—as was made apparent by the report of the Board of Trustees and of the special councils, published in *THE JOURNAL* last week—but also a special session of the House of Delegates in executive session is planned for special consideration of problems of medical economics. A thorough consideration in this democratic assemblage of the elected representatives of the medical profession in all the states and territories should yield policies by which the medical profession may be guided in these changing times.

The medical profession of Cleveland is doing its utmost to plan a program of entertainment, an opening meeting, and a number of receptions and banquets which are in accord with the repute of that city for hospitality. The number of reservations made at the leading hotels in Cleveland indicate a record breaking attendance. *THE JOURNAL* would therefore advise those who contemplate attending the session to make their

reservations at the earliest possible moment in order to be assured of comfortable quarters.

The city of Cleveland situated on one of our great inland lakes, is in the month of June one of the most comfortable cities of America. It is easily accessible to every type of transportation. The session comes at a time that seems to mark the beginning of the end of the economic depression. The physician who has at heart not only his scientific advancement but also the needs of his profession will do his utmost to participate in the Cleveland session.

THE PROBLEM OF HUMAN STERILIZATION

Alarm over the apparent increase in crime and the financial burden of institutionalization of social enemies and incompetents has renewed interest in ways and means of solving this problem. Human sterilization, at present receiving its test in a mass effort in Germany,¹ is perhaps the principal method being studied at the present time. In this question the medical profession is directly interested as the instrument for carrying out any such program, and indirectly as an important division of society in deciding if, how and why any large scale attempts at human sterilization should be attempted.

As to the importance of the burden of crime, insanity and feeble-mindedness to society there can be but one answer. In the United States² the number of patients with mental disease resident in state hospitals alone has shown a marked increase. In 1880 there were 31,973, in 1910 there were 159,096, and in 1929 there were 272,527 patients with mental disease confined in state hospitals. Further analysis of these statistics is necessary. The ratio of total patients with mental disease per hundred thousand of the general population increased from 63.7 in 1880 to 225.9 in 1929. Again analysis is insufficient, is the increase real or due to a higher percentage of institutional confinement in recent years? What proportion of these patients are suffering with "inherited" mental disease? Viewing the problem from a slightly different angle brings out further matter for consideration.³ "Careful studies indicate there are six millions in the United States who have been, are now, or at some future time will be legally committed as insane to state institutions.

There are six million additional cases who are not mentally diseased, but who are so deficient in intellect with an endowment in this respect that is more than 50 per cent below average that they are often described as feeble-minded." The financial cost is difficult to analyze in all its direct and indirect ways. Suffice it to state by way of illustration that the per capita cost in 1928 for prisons was \$320.89, for hospitals \$308.85, and for institutions for

¹ Human Sterilization in Germany and the United States editorial J A M A 102 1501 (May 5) 1934

² Landman J H Human Sterilization New York Macmillan Company 1932 pp 16 17

³ Randall H E The Operation of Sterilization J Michigan M Soc 33 74 (Feb) 1934

the feebleminded and the epileptic \$300 67⁴. The facts and figures of the growing burden of social misfits and incompetents could be multiplied. Certainly there is no doubt of the social and economic problem.

Sterilization of the unfit as a means of gradually reducing the toll exacted from society is not of recent origin. It is based on the essential concept that certain traits which are recognized as unsocial are perpetuated in the race by direct propagation. It is on this concept that the whole problem hinges. When viewed superficially with only cursory examination of the eugenic evidence, few socially minded individuals can resist the rosy outlook of banishing incompetence in a few years by the simple expedient of preventing the conception of such individuals by sterilization of the potential parents. The laws governing human heredity, especially of "mental traits," are unfortunately not known. Too often a mental trait is confounded with a mendelian unit character. Too often are uncritical histories of families such as the Jukes, the Kallikaks and the Edwardses the basis for unsubstantiated far-reaching eugenic conclusions. In feeble-mindedness, schizophrenia, circular insanity, epilepsy, Huntington's chorea and hereditary blindness and deafness the proponents of eugenic sterilization find evidence of inheritance which they believe amenable to reduction by this means. Other authorities however (e.g., Tredgold⁵), believe that mental deficiency is not due to absence in the ancestral germ cells of certain components but to incomplete development resulting from diminished capacity of growth of the seed. Tredgold finds moreover, that the proportion of defectives who are the offspring of defective parents is exceedingly small. It follows that, if every defective in existence a generation ago had been sterilized the number of defectives today would not be appreciably diminished. Hence if this principle should be properly applied it would be necessary to sterilize heterozygous individuals who are latent carriers of mental ailments.

From the evidence thus briefly considered it would appear that society is faced with an increasing (so far) load of mental and physical incompetents. Whether sterilization of large numbers of these incompetents would improve the position of society is dependent on one of two factors as yet undetermined. If it becomes possible to gage the laws of human inheritance with mathematical certainty, either human sterilization or "positive eugenics" (increased breeding of desirable stocks) would seem desirable. If, on the other hand without waiting for more definite information of inherited transmission, mass sterilization of defectives is carried out, with subsequent definite decrease in the number of defectives, its value also would be proved. Such a program could not, however, be subject to critical analytic conclusions short of several generations.

AN INVESTIGATION INTO THE CAUSE OF HYPERTENSION

Since 1733, when the English rector Stephen Hales published the results of his ingenious experiments "to find out the real force of the blood in the arteries," this subject has occupied the attention of medical men. Lifetimes of study have been devoted to elucidation of the intricate problems of cardiovascular physiology and pathology, clinical applications have kept pace. But efforts directed to the determination of the causes of the so-called degenerative circulatory diseases, and to the discovery of effective treatments, have met failure at almost every turn. Of late years, indeed, these conditions, whether by reason of better diagnosis, greater population of susceptible age groups or other changes, appear to be increasing in frequency.

It is with more than usual interest, then, that one reads of the experiments of Goldblatt and his collaborators¹ at Western Reserve University. These investigators report, for the first time, the successful production of persistent arterial hypertension in animals, this was accomplished by establishing chronic reduction of the flow of blood to the kidneys. Eleven healthy dogs were prepared with one carotid artery looped through a short tube of skin after the method of Van Leeuwen to permit accurate observations of blood pressure at frequent intervals, blood and urine examinations were made to rule out the presence of renal disease. Systolic blood pressure readings were taken daily for at least two months to establish control levels, the animals were then operated on under aseptic conditions, and adjustable silver clamps were applied to the renal arteries. In some of the animals constriction was made great at the beginning, while in others it was made moderate at first and subsequently increased one or more times. Constriction of one renal artery was followed by a moderate or slight rise of pressure, which tended to return to the level of the control period. Following the production of bilateral renal ischemia, however, the systolic blood pressure rose to a variable degree in all the animals. Pressures persisting between 200 and 240 mm. of mercury were common, some approached 300. In two of the animals the clamping of both renal arteries was made almost complete from the beginning, the rise of blood pressure that followed was accompanied by the development of uremia, which rapidly proved fatal. In these animals the amounts of urea nitrogen, total nonprotein nitrogen and creatinine in the blood increased progressively, while the urea clearance and the output of phenolsulphonphthalein decreased progressively until death. The remaining animals survived for long periods with large persistent elevations in blood pressure, five of them being alive at the end of fifteen months, in only a few of these nine did tests reveal any decrease in kidney function. In one animal showing a persistent elevation of blood

⁴ Landman. Human Sterilization p. 39.
⁵ The Sterilization of Mental Defectives. London Letter J. A. M. A. 87:1404 (Oct. 23) 1926. Sterilization of Defectives (Departmental Committee's Report). Brit. M. J. 1:161 (Jan. 27) 1934.

¹ Goldblatt, Harry, Lynch, J., Hanzal, R. T. and Summerville, W. W. J. Exper. Med. 59:347 (March) 1934.

pressure for more than fifteen months, the urea clearance was reduced to about 50 per cent of the mean control level. In others, however, either no change occurred in urea clearance or only slight preliminary reduction, with rapid return to normal. The concentrations of urea, total nonprotein nitrogen, creatinine and guanidine in the blood all remained within normal limits.

Goldblatt and his associates also investigated the effects of constriction of the splenic and both femoral arteries in one animal and of extirpation of one suprarenal gland with denervation and destruction of the medulla of the other in a second dog; neither of these procedures had any significant effect on blood pressure, which then rose in both instances after constriction of the renal arteries.

Ischemia limited to the kidneys appears to be a sufficient condition for the production of persistently elevated systolic blood pressure. The hypertension produced by this means resembles closely that associated either with so-called benign nephrosclerosis or with so-called malignant nephrosclerosis in man, depending on whether the constriction of the arteries is moderate or severe.

The Cleveland investigators deserve commendation for this fundamental contribution, ingeniously conceived and meticulously executed. Their work throws new light on the pathogenesis of hypertension, at least of the type associated with renal vascular disease.

Current Comment

SOCIALIZATION OF MEDICAL PRACTICE

In the department of Medical Economics in this issue of *THE JOURNAL* appears a summary of a report on the socialization of medical practice, including health insurance, made by the Bureau of Economics of the American Medical Association. The report appears in full in the *American Medical Association Bulletin*, which is sent to all Fellows. Others desiring copies of the *Bulletin* may send their requests to the headquarters office. The physician who is familiar with the history of the attitude of the American medical profession toward changes in the nature of medical practice realizes that this question has not been neglected by the House of Delegates of the American Medical Association. Immediately following the introduction of socialized medicine in Great Britain, as represented by the panel system, the House of Delegates of the American Medical Association authorized a special study of social health insurance. At subsequent meetings, the House of Delegates expressed itself in no uncertain terms relative to invasion by the state in the affairs of medicine. A few years ago it instructed the Board of Trustees and the Officers of the American Medical Association to use *THE JOURNAL* and all the facilities of the Association in opposing the introduction of state medicine in any form. That has been the assigned task of the officials at the headquarters of the

Association. Moreover, the endorsement in principle of the Minority Report of the Committee on the Costs of Medical Care at the annual session of the American Medical Association reaffirmed this policy for officials of the American Medical Association. There seem to be evidences that official bodies representing the medical profession in some of the states are interested in a change of this policy of the House of Delegates. It remains to be seen, therefore, whether the American medical profession as represented by organized medicine through the House of Delegates, wishes to continue its policy of careful experimentation with new methods of medical practice, observing the ethics and traditions of medicine or whether it is ready to endorse on a nation-wide scale some step toward the socialization of medical care. Obviously, the medical profession has never been confronted at an annual session with questions of greater moment for its determination.

SECRETION OF PANCREATIC JUICE

Thirty-two years ago the English physiologists Bayliss and Starling formulated the theory that the secretion of pancreatic juice is brought about by a humoral mechanism. According to them the entrance of gastric acid into the duodenum somehow promoted the formation or liberation of a chemical substance, designated as secretin, that is absorbed and carried to the pancreas, where it acts as a stimulus to secretion. Participation of the nervous system was excluded by the observation that the secretory phenomenon is observed even when all nervous connections between the intestine and the pancreas are severed. This classic experiment initiated the modern conception of hormone stimulation of functional organs. The fundamental features of the hypothesis have retained acceptance though the views and experiments of Bayliss and Starling have been challenged from time to time. One item for debate has been the question as to whether a prosecretin really exists, that is, whether secretin is not always present preformed in the intestinal wall. Another uncertainty has centered in the reputed necessity for acid in the initiation of the hormone reactions. Thus the English physiologist John Mellanby has suggested that, as soon as bile reaches the duodenum, bile salts are in part absorbed through its mucosa and carry preformed secretin along with them into the portal circulation. By an ingenious experiment whereby the volumes of secreted bile and pancreatic juice can be measured every day and each of them withdrawn from the alimentary tract or replaced at will, Dragstedt and Woodbury¹ of the University of Chicago have demonstrated at least for the species on which all the classic tests have been undertaken, that the presence of bile in the duodenum cannot be considered essential for the secretion of pancreatic juice. The ingestion of food even in the absence of bile promotes the usual pancreatic secretory response. In other words bile salts cannot therefore be considered essential either for the activation of the specific pancreatic stimulant or for its passage into the blood in effective form.

¹ Dragstedt, L. R. and Woodbury, R. A. The Relation of Bile to the Secretion of Pancreatic Juice. *Am J Physiol* 107: 584 (March) 1934.

Medical Economics

"THE INSURANCE PRINCIPLE IN THE PRACTICE OF MEDICINE"

A Summary of a Report Prepared by the Bureau of Medical Economics

The various forms of social insurance aim to give protection against social uncertainties. Their scope is usually restricted to those whose incomes are insufficient to permit the accumulation of a reserve to meet social contingencies.

A recent German writer¹ thus describes the origin of insurance:

Social insurance is the child of its period. It is the result of a compulsory urge to organization and had its origin in the mechanical conception of life.

The increasing industrialization of Germany had need of a healthy, efficient working force for its development and the Kaiser needed soldiers.

Bismarck's original plan arose out of a combination of the capitalistic with the feudal and fraternal mental attitude. Governmental care was to make it clear to the eyes of the workers how much the state cared for them and thereby make them contented and loyal.

Austria, with much the same stage of development, followed in 1887. Other nations showed few signs of following this example during the nineteenth century. But the first decade of the present century saw a remarkably rapid expansion of sickness insurance among European states. Tables 1, 2 and 3 give the date of the introduction of such systems among the principal nations and also something of the extent of their expansion within those nations.

Sickness insurance was at first directed against the unemployment caused by sickness. All the emphasis was placed on the financial assistance given to the wage earner while sick. There was little consideration of the necessity and value of medical care.

Sickness insurance is always urged in the interests of underpaid workers, but these have never been responsible for or even highly favorable to its enactment. Laborers have rather demanded wages sufficiently high to enable the recipients to pay their own medical expenses. In no country have the unions led a demand for sickness insurance. In nearly every country the first attempt to collect sickness insurance contributions from employees has met with resistance. It was so in Germany a half century ago and in France in 1931. The political parties of labor have never made sickness insurance one of their urgent planks. No system owes its introduction primarily to any socialist or labor party.

The story of Germany is typical and has been told many times. Bismarck introduced the law as a weapon against the Social Democrats who voted unanimously against it. For years this party fought all forms of social insurance, denouncing them as a "beggars' soup kettle," from which relief was ladled out to prevent discontent. Then the Social Democrats captured the insurance societies and made them a part of their political machine, whereupon these institutions became "sacred cows" to be defended against all criticism. The benefits of social insurance, which Bismarck expected to use to buy support for the imperial government, were then used to buy Social Democratic votes.² The latest development has been the seizure of these institutions by the Nazis, who are now using them to crush out Social Democracy.

The situation was much the same in other countries. In an address to the International Conference of Insurance Societies, Dr. Winter, delegate from Czechoslovakia, said:³

Sickness insurance was introduced into the countries of Central Europe, into Germany and later into Austria at a time when the working class was largely powerless in the political field. The motives always political which led to its introduction are well known. The working class was not represented in the political institutions but it was left in control of the insurance societies.

He then describes how this control of the societies was turned into a political weapon. Of Austria we are told:⁴

The societies are the pillars of the political parties. They have been so anxious to give benefits to the insured that they are today in a miserable financial condition. In spite of the magnificent palaces they have constructed to shelter their services all this is only a deceptive show.

Great Britain repeats the story. The law was enacted as a political measure by Lloyd George, and the societies at once became political forces, antagonistic to many of the best features of insurance.

Sickness insurance has been introduced everywhere with very little consultation with, and often largely against the wishes of, the workers who were to become the patients, and the physicians who were to give the medical service.

One of the most striking conclusions that arise from any comparative historical study of sickness insurance systems is their highly experimental character. This is true of the oldest as well as the youngest systems. After a half century of existence, those of Germany and Austria are still changing with great rapidity. These changes are by no means due exclusively to general political, industrial or financial transformations, which often fundamentally alter the workings of the system. They are much more due to constant dissatisfaction with details.

This continuous tinkering creates an extremely complex set of institutions. There are 3000 sections in the German laws on sickness insurance, and this is only the beginning. The various institutions for the regulation of insurance and the settlement of disputes between contending parties within the system are making new modifications and interpretations almost daily.⁵

An examination of the column headed "Date of Enactment of Law" in table 1 will give some impression of the number of more important fundamental legislative changes in the various systems. A failure to recognize this wide diversity of time and place in the workings of sickness insurance is largely responsible for the contradictory reports and opinions expressed by those who discuss such insurance.

An examination of tables 1, 2 and 3 would supply the advocate of almost anything in regard to insurance with facts to support nearly any argument. This might appear to suggest a simple solution. It might be argued that if one were to pick out all the desirable features from each system and combine them, one might develop a perfect system. Unfortunately the problem is not so simple. Some of the desirable and undesirable features in nearly every system are so closely linked by administrative or political considerations as to make separation difficult if not impossible.

The changes that took place in the evolution of the various systems often profoundly altered their character. The early groups of fellow workers had little to fear from malingering. Members constantly visited the sick and often assisted in their care. Before sickness insurance the societies were truly self governing and sufficiently democratic to insure that their officials, who were almost always unpaid, truly represented the membership. They had no need for elaborate financial organizations or expensive headquarters.⁶

The supposition that these conditions could be carried over into the gigantic societies required for the insurance of millions is responsible for many of the evils of present systems. The claim that the great financial and semipolice organizations of paid visitors and supervising physicians with their intricate statistical reports of expenses and rate of so called sicknesses are but a larger growth of the old fraternal societies is but one of the many examples of failure to recognize that a great change in the quantity of any social phenomena almost inevitably changes the quality and character of the institutions involved.

⁴ Narbeshuber, Carl (President of the Austrian Medical Association). *Revue internationale de médecine professionnelle et sociale*. November 1925, p. 54.

⁵ The modifications of the legal institutions have been incessant in Germany, an indication of the difficulty of the social and technical problem to be solved. It is only by personal solutions, the English method of trial and error by the acceptance of an empirical progression that the best results are obtained. (Italics in original.)

Eyland, J. M. *Les assurances sociales en France*. 1929, pp. 91-92.

⁶ McCleary, G. F. *National Health Insurance*. 1932, pp. 7-19. *International Labor Office, Voluntary Health Insurance*. 1927. Lehman, Helmut. *Aerzte und Krankenkassen*. 1929, pp. 7 et seq.

¹ Prek, Gottlieb. *Sozialversicherung und Aerzte*. 1931, pp. 5-6. See also von Weizsacker, Victor. *Soziale Krankheit und der soziale Gedung*. 1930, p. 7.

² Baumeier, Waldemar. *Die Krankenversicherung*. 1930, pp. 9-14.

³ *Compte rendu rapports et résolutions. Quatrième assemblée générale. Conférence internationale des Unions nationales de sociétés mutuelles et de caisses d'assurance maladie*. Geneva, 1930, p. 35.

TABLE 1—Provisions of National Sickness Insurance Systems*

Date of Enactment of Law	Qualifications for Insured		Population	Number Insured and Beneficiaries						Physicians		
				Number Insured				Total Beneficiaries Including Families		Engaged in Insurance		Total in Country
				Compulsory		Voluntary						
	Compulsory	Voluntary		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	
Germany Industry 6/15/88 Commerce 1888 Industry 1886	All salaried and wage workers domestic apprentices professors teachers etc under 2 700 M annually	a Former compulsorily insured b Small employers 2 700 M maximum c Families of insured	63 000 000	19 600 000	31.4	1 600 000	2.5	40 000 000	63.5	50 000	35 000	70
Austria 1881, modified 28 times since and extended	All wage workers (no wage limit) except artisans and independent workers	a Former compulsorily insured b Small employers	6 300 000			63 000	1.0	4 500 000	70.0	8 000	7 500	94
Bulgaria 1918 modified 3/6/24 and 2/2/29	All employed workers and small employers limit 2 000 Swiss Fr	a Former compulsorily insured b Public employees c Merchants d Liberal professions (limit 2 000 levas)	5 500 000	230 000	3.9	2 000 to 3 000	0.39	Does not include family		2 300	1 100	48
Belgium Proposed	Proposed all wage workers		8 000 000	2 200 000 (proposed)	26.0	?		6 000 000 (proposed)	75.0	5 500		
Denmark 1899 modified 1915 1921 1924 1933	No compulsory	All persons with low incomes regardless of occupation	3 500 000	No compulsory		1,500 000	65.1	Does not include family	65.1	2 600	Great majority	
Danzig Same as Germany	All wage workers under 4 500	All persons insured for 26 weeks of preceding year	407,500	?		?		200 000	49.0	282	200	67
Ethiopia 4/23/19 modified 1917	All industrial workers	Very few in private organizations	1 200 000	40 000	3.3			90 000	7.5			
France 4/30/30	All earning less than 18 000 Fr (15,000 Fr in provinces)	a Former compulsory b All earning less than 15,000 Fr	41 000 000	8 000 000	19.0	?	?	12 000 000	29.0	27 000	18 000 (?)	66
Greece 1911 many changes new law 1924	a All manual workers b All nonmanual receiving less than £2.50 annually	a Former compulsory b Those authorized by the minister of health c Earning less than £160 annually	44 500 000	17 500 000		300 000		Does not include family		36 000	17 700	49
Holland 6/5/13 in force but not as whole since 1913	(Accident insurance only) all workers under 8 000 Fl ann	Open to all	7 800 000	1 227 500 (accident only)		1 160 000		Does not include family		4 450	3 700	84
Hungary 1891	All workers under 24 000 000 Cr	a Former compulsory b Independent artisans c Small employers limit 8 400 000 Cr	8 000 000	1 400 000	9.3	Not stated		Not stated				
Latvia 1922			1 900 000	145 000	7.0			240 000	12.5	1 062	600	56
Luxemburg 7/31/01 new law 12/17/29	All workers in commerce and industry	Not compulsorily insured (domestic small employers etc) limit 12 500 Fr	265 000	64 500	22.7	416	0.15	110 000	38.6	150	165	80
Norway 1911 amended 1915 and 1930	All workers under 5 400 Kr	All receiving less than 5 400 Kr annually	2 500 000	550 000	19.6	80 000	2.85	1 500 000	43.5	1 800	"Nearly all"	
Palestine Proposed voluntary at present	No compulsory insurance	All members of labor organizations	919 400	(None)		18 000		35 000		600	70	11.6
Poland 6/19/20	All employees (no wage limit) save agricultural ecclesiastic and governmental	Former compulsory under 45 years of age	31 000 000	3 500 000	11.3	(Insignificant)		8 000 000	25.8	7 500	2 700	36
Sweden 7/4/10	No compulsory	All sickness insurance is voluntary	6 000 000	(None)		933 000	15.5	3 628 000	60.4	2 300	"Nearly all"	
Switzerland 6/13/11	Not compulsory except in certain cantons	All Swiss citizens	4 100 000	(None)		1 400 000	34.0	Does not include family		3 350	2 700	80
Czechoslovakia 1919	All wage workers	No voluntary	14 000 000	2 600 000	19.0	56 000		10 000 000	73.5	8 000	6 400	80
Yugoslavia 1922	All workers except domestic agricultural and governmental	Former compulsory all wage workers exempt from compulsory	13 500 000	560 000	4.2	2 500	0.02	1 250 000	9.5	3 700	1 200	33.2
Greece	All workers employees or domestic	a Former compulsory b Home workers										

* Compiled from replies to questionnaires by International Medical Association as published in *Revue Internationale de Médecine Professionnelle* et sociale August 1931 corrected from all available later information
† Made compulsory in October 1933

on his part "The effort toward adjustment to reality," he says "is replaced by the desire for indulgence, nursing and maintenance of the infantile situation. So we arrive at the remarkable fact that the sick seek to gain pleasure and profit from the condition of sickness and, in spite of their sufferings and burdens, basically do not wish to get well. So we speak of a flight to sickness and of a sickness advantage (Krankheitsgewinn).

Dr Blum concludes his analysis with the statement
So we arrive at the tragic fact that an institution created in response to the highest social impulses and to serve such social purposes encourages the antisocial attitude (asozialitat) of the sick undermines the desire for recovery and endangers health.

Against these evils the insurance system aims to protect itself by compelling the physician to act as a sort of detective and by a system of restrictions and supervisions. The patient knows all about these restrictions, and if he does not receive the latest highly advertised and expensive drugs or the most

The insurance administrators in all countries try to control admission to insurance practice. When this practice dominates the field, as it does in most European countries today, this practically places the insurance societies in the position of licensing bodies. The societies next seek to influence education so as to prepare the physician for the sort of medical practice that the insurance society thinks necessary.

Because of the character of insurance practice, observers hold that there is a tendency to neglect graduate work. Concerning this point Kurt Finkenrath says ¹⁷

I made a statistical study in 1919 to determine from what sections of Berlin the majority of the physicians came to attend the graduate courses of the Central Committee of the Kaiserin Friedrich Haus. This made clear the fact that three fourths of all participants came from the West and Southwest and that all other sections of Greater Berlin furnished only one fourth. From this division the conclusion was drawn that the physicians who had an interest in further education were overwhelmingly those who still had some share of private practice while the great mass of the insurance physicians were far from desiring any further education.

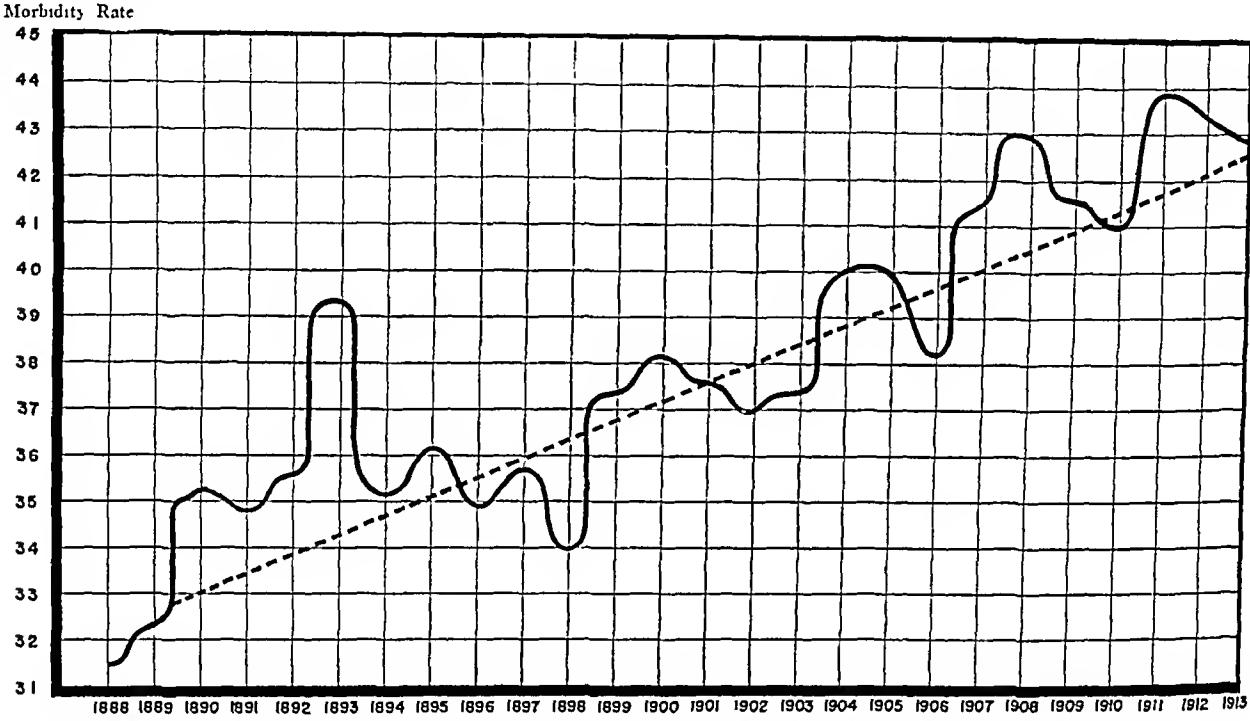


Chart 1—Morbidity in German local insurance societies (ortskrankenkassen). Solid line is smoothed curve of actual morbidity rates as measured by certified cases of incapacity for work; the trend line is dotted.

sensational and fashionable treatment with costly x-ray or other machines, he is convinced that this is not because these treatments are unnecessary but because the society's orders for economy prevent their use in his case.

The most severe criticism of medical service under insurance is not based on the occasional examples of overworked practitioners, with resulting hasty careless diagnosis and treatment but rather on the atmosphere of suspicion and antagonism, which destroys the very foundations of good service. Payment into a general fund over which the insured has no control, and from which he can get back his money, to which, rightly or wrongly, he believes he is entitled, only by being sick, creates the conditions described.

THE PHYSICIAN IN SICKNESS INSURANCE

The same story is repeated in the evolution of nearly every insurance system. In the beginning the physicians cooperated and often contributed their services. When the physicians resisted the efforts to debase medical service and the medical profession, the result was a continuous battle between the physician and the insurance administrators.

The first effect of insurance is to pay the physician for much of the work that he did before for charity and thereby to increase many medical incomes. Later when the medical profession has become dependent on the insurance society, work is increased and income reduced.

This conflict between the physician and the society has led to the formation on both sides of international organizations. The International Association of Physicians after a most exhaustive research drew up resolutions on the attitude of the medical profession to sickness insurance. It must be remembered that this organization did not have before it the question of whether insurance should be introduced but was faced with an accepted fact in the shape of an existing system. The association declared its general approval of the principles of social insurance and then set forth at great length the principles which it felt must be maintained in the interest of good medical service.

The medical service must remain autonomous as to all questions concerning the practice of medicine.

Insurance should be 'applied only to those persons who are incapable of meeting the necessary costs of medical care in case of sickness from their own resources.'

The insured should always share in the cost of medical care and drugs.

There should be complete free choice of physician permitting all licensed physicians who accept insurance regulations to share in the care of the sick.

Professional secrecy should be maintained.

¹⁷ Finkenrath, Kurt. *Krankenhilfe und Gesundheitsfürsorge durch die Aerzteschaft*, pp. 119-121. The attitude of the insurance societies is presented by Franz Korrus, secretary, German Insurance Societies of Czechoslovakia. *Compte rendu*, p. 75.

There should be no restriction of the right to prescribe, although the medical organizations should always 'seek to suppress all expensive and superfluous medication'

Payments should not be by a fixed sum per person or by salary (The British Medical Association objected to this rule and stated that it preferred the system now existing in England)

Sickness insurance is one phase of the effort of industrial civilization to force a recalcitrant profession into industrial patterns. Such insurance means that a professional service is to be supplied under compulsion. The medical profession maintains that the very character of the service is such that it will be destroyed by such compulsion.

Advocates of sickness insurance usually deny any such attack on professional status, yet the official statement of the International Conference of National Unions of Mutual Societies and Sickness Insurance Societies, which includes the carriers of sickness insurance in all the principal European nations, has declared that only through mechanization and contract

German and English observers question very much whether the \$300,000,000 in the former country and the \$160,000,000 in the latter spent annually for insurance would not produce far better effects on the public health if expended in other directions.²⁰

It is difficult to say clearly to what extent any system of sickness insurance is satisfactory to the people involved. The political power of the insurance societies makes any movement for the abolition of an existing system practically impossible. The conditions at the time of the origin of the English system were infinitely worse in regard to medical care than now prevails in the United States.

The Majority Report of the Committee on the Costs of Medical Care, which recommends sickness insurance, says:²¹ "It is probably true that in the United States, except for some rural areas, a much larger amount of medical service is available, and is actually obtained, even by low-wage-earners, than was the case in any European country during the period when

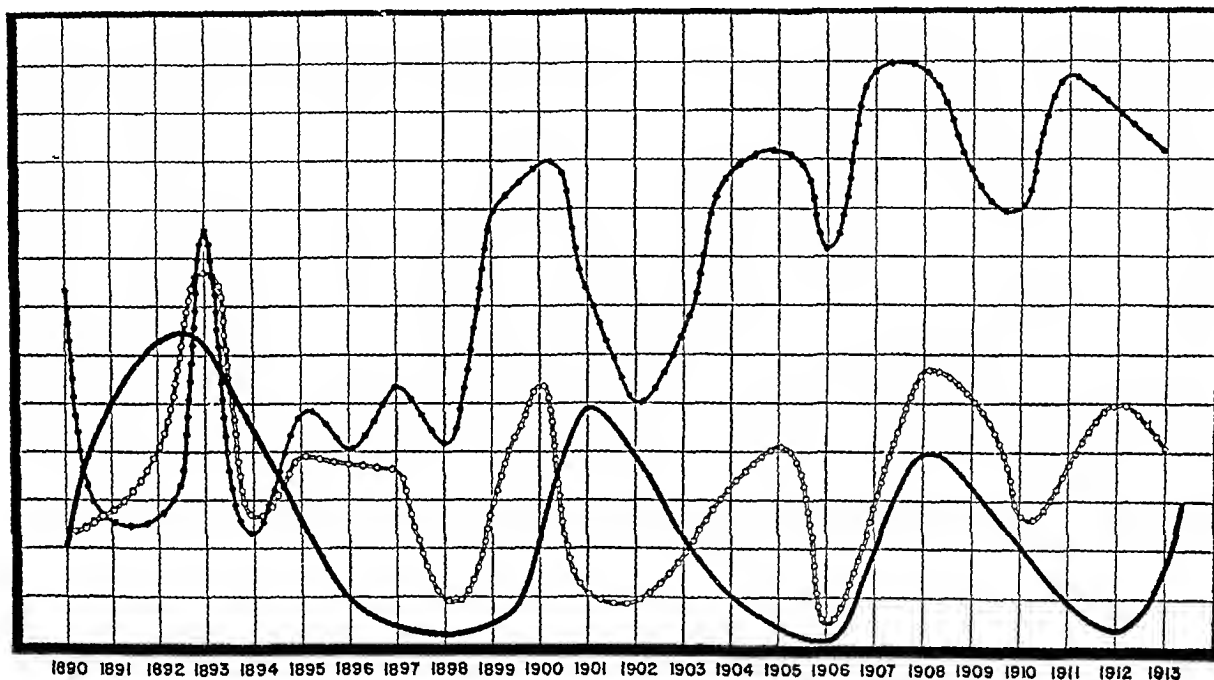


Chart 2—Morbidity and business conditions 1890-1913. Solid line shows depressions and prosperity in reverse with crises at high and prosperity at low points. Lower open line with circles shows sickness record of Pomeranian local societies (ortskrankenkassen). Upper line with solid dots of industrial societies (betriebskrankenkassen).

employment of the physician can insurance be successfully conducted.¹⁸

This position has been officially endorsed by the International Labor Office.¹⁹

The majority report of the Committee on the Costs of Medical Care and the writings in support of sickness insurance schemes show the same desire to develop the 'large exploitation' of medical practice through groups, medical centers, clinics and insurance, and the same tendency to place the control of such institutions under lay management. The whole history of industrial and contract practice, both within and without the system of workmen's compensation, repeats the story. Everywhere there is the same effort to destroy professional status and personal contacts between producers and consumers of professional service, and to substitute the contract relations of a lay employer hiring physicians supplying an impersonal market.

Sickness insurance demands the expenditure of immense sums, which experience has shown produce no reduction in morbidity or mortality rates. On the other hand there is ample proof that the expenditure of similar sums in public health service, sanitation, pure food control, immunization and various other directions will improve the public health.

its health insurance system was developing." Under such conditions as prevailed in these European countries, almost any change was an improvement.

The questionnaire of the International Association of Physicians included a query on the extent of satisfaction to the insured and the physician. The replies are given in the last two columns of table 3. Of the four nations that reported general satisfaction, two Bulgaria and Denmark have so completely transformed their system since these replies were given as to raise serious question as to present satisfaction, and in Holland little more than a workmen's compensation law exists. Great Britain remains the only nation expressing fairly general satisfaction, yet parliamentary investigations and reports of royal commissions and other bodies show that a large percentage of those affected in Great Britain question strongly whether the same amount of money might not have been spent with greater benefit to the health in other ways.

A movement that has recently gained great strength in Germany and is of considerable importance in other countries would seem to indicate that where systems of sickness insurance

¹⁸ *Compte rendu*, pp. 168 et seq. Jaumaux, A. Cent années de mutualité en Belgique, pp. 100 et seq.

¹⁹ Official Report of Proceedings 1927, p. 279.

²⁰ Kreschner, M. Zur Praxis der Begutachtung 1931, p. 11. See comments of Sir Henry Brackenbury in Supplement to British Medical Journal July 15, 1933, pp. 25-26, where he raises questions as to the success of the British Health Insurance in meeting its objectives. See also A. M. A. Bulletin November 1933, pp. 120-122, where Sir Henry Brackenbury's statements are reproduced and discussed.

²¹ Publication 28, p. 128.

are old enough to have worked out their full results there is a widespread doubt as to whether the attempt to distribute the whole burden of medical care and relief during sickness should not be abandoned in favor of a return to individual responsibility for a portion at least of that burden

The Swedish, Norwegian, French and Chilean systems have always required the insured to bear a portion of the burden when the service is given. In Denmark, Switzerland and Luxemburg only a part of the cost of drugs is paid by the insurance system. It is noteworthy that complaints of excessive practice and overmedication are seldom heard in these countries and that they have not shown any such alarming increase in "morbidity" as has characterized other systems.

In Germany, and also in some other countries with long experience with compulsory insurance, there is a strong movement, especially among physicians (although by no means confined to them) in favor of some sort of compulsory system of saving as a substitute for insurance as at present operated.²²

There is considerable variation in the details of the proposals of these various writers, but all involve the principle of segregation of all or part of the contributions of the insured and of returning a certain portion at death or at the age when an old age pension is granted or else to offer a cash reward or suspension of contributions to those who have not asked the aid of the fund for a certain period. A similar plan has been vigorously urged by P. Specklin, a physician with a long pre-war experience under the Germany system at Mulhouse.²³

TABLE 4—Infant Mortality in Prussia

	1913	1920	1926	1927	1928	1929
Among the wealthy	65	41	41	36	34	34
In the middle class	89	65	64	64	59	66
In the working class, excluding those occupations in which there are a large number of illegitimate children	141	104	101	97	94	103
Working class including occupations with many illegitimate children	214	166	149	143	125	135

The fact that the actuarial basis of the English system has proved to be wholly unreliable and that no method has been found of calculating the tremendous increase in morbidity due to economic and psychologic reasons throws doubt on the question as to whether any of the existing or immediately proposed forms of sickness insurance offer any satisfactory solution of the distribution of medical care. One thing is clearly evident: the degree of satisfaction of insured and physician in practically every country depends on the extent to which medical professions have been able to defeat the schemes of lay administrators. England, France and the Scandinavian countries are the nations where professional control is most complete and where the sort of proposals that are urged by lay forces in this country as the basis of sickness insurance have had least development. They are also the ones where morbidity has shown the slowest rate of increase where physicians and insured express the greatest satisfaction and where even the societies are in the best financial condition.

22 Hartz G. Neue Wege in der Sozialpolitik 1929. Muller Arthur. Zwangssparsystem statt Sozialversicherung 1929. Lick Erwin. Soziale Versicherungen und Volksgesundheit 1929. Zeisler August. Im Kampf gegen Vergewaltigung durch den Staat 1931. Hartz Gustav. Eigentum oder Rente 1930. Baumeier Waldemar. Die Krankenversicherung, Jetzt ein Fluch umgestaltet ein Segen für das Volk 1930. The intentions of the Nazi government were outlined by Hadenkamp in the Aerztliche Mitteilungen March 11 1933, pp 223 225 where he says concerning this phase of the subject. The exact form that this fundamental reform will take cannot be stated today. A certain role will be played by the idea of directing insurance into a compulsory savings system. As is well known this idea has for a long time been active in the public mind and has been discussed by the medical profession. In medical circles it has been differently estimated some have welcomed it strongly. The national socialist movement has declared itself for the development of the idea of saving but has coupled this with the proposal for fundamental changes. State Secretary Dr Krohn in an interview with the representative of a great daily paper has declared that he saw possibilities in a sound combination of insurance and savings. He thought—and that is important for us—to be sure only of the cash insurance not of sickness insurance.

23 Presse medicale Feb 26 and March 6 1929 also in British Medical Journal January 25 1930 supplement pp 25 28. See also McCleary G F. National Health Insurance 1932 pp 157 159. For similar movement in Austria see Augustin Gisela. Klinische Wochenschrift Feb 13 1932.

Association News

MEDICAL BROADCASTS

National Broadcasting Company

The American Medical Association broadcasts on a coast to coast network each Monday afternoon from 4 to 4 15 Central daylight saving time (4 o'clock Eastern standard time 3 o'clock Central standard time, 2 o'clock Mountain standard time, 1 o'clock Pacific standard time)

The next three broadcasts will be as follows

- May 14 Pursuit of Longevity Morris Fishbein M D
- May 21 Disease by Air W W Bauer M D
- May 28 The Family Medicine Chest Morris Fishbein M D

Columbia Broadcasting System

The Association broadcasts on a Western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4 30 to 4 45, Central daylight saving time. The next three broadcasts will be as follows

- May 17 Mischievous Misconceptions, W W Bauer, M D
- May 24 Character of a Quack Morris Fishbein M D
- May 31 Health Slogans W W Bauer, M D

THE CLEVELAND SESSION

Radio Addresses to Be Broadcast During the Week

A simple program of a practical nature has been arranged for broadcasting during the week of the convention, over Stations WTAM, WHK and WGAR

RADIO STATION WTAM (NATIONAL BROADCASTING COMPANY)

Talks on the following subjects will be made late in the afternoon

- Monday June 11 Common Cold Wilson G Smilie M D (network)
- Tuesday June 12 New Diabetics for Old Priscilla White M D
- Wednesday June 13 Your Doctor W L Biering M D
- Thursday June 14 Convention Highlights, Morris Fishbein M D

RADIO STATION WHK (COLUMBIA BROADCASTING SYSTEM)

Talks on the following subjects likewise will be made late in the afternoon

- Monday June 11 Health Examinations Wingate Johnson M D
- Tuesday June 12 Family Doctor N B Van Etten M D (network)
- Wednesday June 13 Cancer Is Curable Max Cutler M D
- Thursday June 14 Medicine Marches Forward Morris Fishbein M D (network)

RADIO STATION WGAR

On Station WGAR the following subjects will be broadcast

- Monday June 11 Appendicitis John O Bower M D
- Tuesday June 12 Simple Cheap Happy Thurman B Rice M D
- Wednesday June 13 Blood Building Foods James S McLester M D
- Thursday June 14 Relieving Hay Fever and Asthma G W Waldbott, M D

Golf Tournament for Women Physicians

Women physicians who desire to enter the annual golf tournament at the Cleveland session are requested to send their names to Dr Harriet Doane, Pulaski, N Y, or to Dr Helena Ratterman, 126 East Auburn Avenue, Cincinnati, Ohio. For news of the golf tournament for men see page 1579

Additional Annual Dinners During the Cleveland Session

The Alumni dinner of Rush Medical College of the University of Chicago will be held at the Hotel Statler Wednesday June 13, at 7 p m, \$1 50 per plate. For reservations and other information please inquire of Dr Austin A Hayden at the Hotel Statler

The Alpha Omega Alpha annual dinner will be held Thursday, June 14, at the Hotel Cleveland at 6 30 p m, \$2 per plate. For reservations and other information please inquire of Dr Josiah Moore at the Hotel Cleveland

For other reunions and dinners during the Cleveland session see pages 1578 and 1579 in this issue of THE JOURNAL

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Stop Shipment of Parrots—Newspapers reported, April 3, that the certification of psittacine birds for shipment had been halted by Dr. Jay D. Dunshee, Sacramento, director of public health of the state board of health, pending further investigation of reported cases of psittacosis. The order affects birds shipped both within and to points outside the state. Fourteen of the sixty-seven cases of psittacosis reported in the state since Dec. 1, 1931 have been fatal. It was stated that other states have reported 106 cases, with twenty-two fatalities.

Southern California Meeting—The nineteenth semiannual meeting of the Southern California Medical Association was held in Santa Barbara April 6-7, under the presidency of Dr. Henry Douglas Eaton, Los Angeles. The following physicians participated in the program:

Will L. Miles, Los Angeles: Split Skin Grafts.
Francis B. Settle, Long Beach: Phytobezoar Associated with Gastric Ulcer.
William M. Moffat, Santa Barbara: Follutein in the Treatment of Selected Cases of Headache.
Percival A. Gray, Jr., Santa Barbara: Insulin in the Treatment of Food Allergy.
Samuel Hirschfeld, Los Angeles: Dyscolulation.
Noel F. Shambaugh, Long Beach: Thorium Dioxide as a Diagnostic Aid.
Rexwald Brown, Santa Barbara: Collectivism in Medicine—A Movement Which Should Be Promoted.
Rea Smith, Los Angeles: A Study of Abdominal Adhesions.
Charles C. Coghlan, Los Angeles: Red Hair and Its Relation to Allergy.
Chalmers Hiram Weaver, Los Angeles: Cancer of the Cervix.

Dr. Cyrus Sturgis, professor of internal medicine, University of Michigan School of Medicine, Ann Arbor, spoke on 'Treatment of Anemias' and 'Observations Concerning the Etiology of Agranulocytosis.'

Society News—Dr. John D. Camp, Rochester, Minn., addressed the San Francisco County Medical Society, May 8, on 'Roentgenologic Findings in Hyperparathyroidism.'—A program sponsored by the San Mateo County Medical Society was presented at the Veterans' Administration Facility, Palo Alto, April 19, with Dr. Arthur L. Bloomfield, San Francisco, as speaker, on 'Present Status of Focal Infection in Relation to the Practice of Medicine.'—Dr. Ralph Kaysen, San Diego, discussed Boehler methods before the San Diego County Medical Society, April 10.—Dr. Russell L. Cecil, New York, addressed the San Diego Academy of Medicine, April 27, on 'Modern Treatment of Rheumatoid Arthritis.'—Harold F. Hawkins, D.D.S., addressed the Hollywood Academy of Medicine, April 19, on 'Mineral Metabolism as Related to Medicine' and Dr. Rea Proctor McGee, 'Inter-Relationship of Medicine and Dentistry.'—Speakers before the Los Angeles Surgical Society, April 13, included Drs. Lucius W. Johnson and Joseph L. Schwartz, captain and lieutenant commander, respectively, U. S. Navy, on 'Head Injuries' and 'Practice of Medicine in American Samoa.'—At a meeting of the San Francisco Pathological Society, March 29, Drs. Frederick A. Proescher and Adelbert M. Moody, among others, discussed 'Forensic Methods for Examination of Blood.'—Dr. Albert H. Rowc, Oakland, addressed the San Joaquin County Medical Society, April 5, on 'Problems of Allergy in Medical Practice.'—Dr. Charles A. Duker, Oakland, discussed the Alameda County health insurance plan before the Solano County Medical Society, April 10.

COLORADO

Society News—A symposium on cancer of the breast was presented before a joint meeting of the Boulder and Larimer county medical societies, April 4, by Drs. William W. Haggart, Wilfred S. Dennis and Frederick E. Diemer.—At a meeting of the Medical Society of the City and County of Denver, April 17, Reuben G. Gustavson, Ph.D., and Fred E. D'Amour, Ph.D., discussed 'Recent Studies in the Human Sex Cycle and Recent Hormone Studies During Pregnancy,' respectively. The society was addressed April 3 by Drs. Theodore E. Boyer on 'Orogenic General Sepsis,' Walter W. King on 'Neoplasm of the Breast,' and Alexander W. Freshman on 'Breast Surgery' (motion picture).

Spring Clinics at Pueblo—Three days were given over to the spring clinics of the Pueblo County Medical Society, April 18-20, under the auspices of the Colorado State Medical Society. The subjects treated included:

Electrosurgical Resection in Carcinoma of the Breast, Dr. William Senger.
Tonsillectomy in Modified Suspension Position, Dr. Clarence E. Earnest.
Obstetrical Practice in a Rural Community, Dr. George E. Van Der Schouw.
Puerperal Eclampsia: Cause, Prevention and Treatment, Dr. William F. Singer.
Problems in Infant Feeding, Dr. John D. Geissinger.
Treatment of Squint, Dr. Guy H. Hopkins.
Chronic Suppurative Otitis Media—Its Treatment by Radical Mastoid Operation, Dr. James J. Pattee.
Blood Dyscrasias, Dr. Frederick M. Heller.
Trichomonas Vaginalis: Its Etiologic Relationship to Leukorrhea, Dr. John B. Farley.
Problems in Medicolegal Practice, Mr. Benjamin F. Koperlik.

DISTRICT OF COLUMBIA

Personal—Dr. Benjamin P. Watson, New York, gave one of the lectures in the Smith-Reed-Russell series at George Washington University School of Medicine, March 27, on 'Present-Day Conceptions of Puerperal Sepsis.'—*Science* reports the death, February 7, of Felix Neumann, aged 76, until recently assistant librarian at the Army Medical Library.

Health at Washington—Telegraphic reports to the U. S. Department of Commerce from eighty-six cities with a total population of 37 million, for the week ended April 28, indicate that the highest mortality rate (18.4) appears for Washington, and for the group of cities as a whole, 12. The mortality rate for Washington for the corresponding period last year was 15.5, and for the group of cities 11.3. The annual rate for eighty-six cities for the seventeen weeks of 1934 was 12.6 as against a rate of 12 for the corresponding period of the previous year. Caution should be used in the interpretation of these weekly figures as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

Medical Bills in Congress—H. R. 9395, introduced by Representative Weideman, Michigan, proposes to provide compensation for disability or death resulting from injury to employees in certain employments in the District of Columbia. The bill would authorize an injured employee to select a physician to treat his injury, the reasonable cost of such treatment to be paid by the insurer, subject to the approval of the Deputy Commissioner. The bill would further authorize the Deputy Commissioner to order a change in the physician, surgeon, hospital or other requirement if, in his opinion, reasonable ground exists for believing that such a change is necessary to safeguard the life, health or recovery of the employee. All fees and other charges for treatment or service are to be limited 'to such charges as prevail in the same community for similar treatment of injured persons of like standards of living' and are to be subject to regulation by the Deputy Commissioner.

Course in Female Endocrinology—The George Washington University School of Medicine opened a course in female endocrinology, May 4, to continue until May 28. The following lectures comprise the course:

May 4, A Historical Review of the Female Sex Endocrinology: Physiology of the Sex Glands, Dr. Jacob Kotz, clinical professor of obstetrics and gynecology.
May 7, Chemistry of the Female Sex Hormones, Vincent De Vigneaud, Ph.D., professor of biochemistry.
May 11, Clinical Hormone Tests: Technic, Indications and Interpretations of Results, Dr. Elizabeth Parker, research associate in endocrinology.
May 14, Functional Bleeding: Role of the Endocrines in the Menopause, Dr. Howard I. Kane, professor of obstetrics and gynecology.
May 18, Dysmenorrhea: Etiology and Treatment, Scanty and Irregular Menses, Amenorrhea, Dr. Kotz.
May 21, Premature Termination of Pregnancy Due to Endocrine Disturbances, Dr. Kane.
May 25, The Endocrines in Obesity and the Neurotic Women with Disturbed Endocrine Function, Dr. Kotz.
May 28, Frigidity: Oversexed Women and Functional Sterility, Dr. Kotz.

ILLINOIS

Society News—A symposium on peptic ulcer was presented before the Sangamon County Medical Society, April 5, by Drs. Charles L. Patton, Frank N. Evans, Richard F. Herndon, Thomas D. Masters, Lawrence M. Hilt and David J. Lewis, Springfield.—Speakers before the Bureau County Medical Society in Princeton, April 10, were Drs. Philip H. Kreuscher and Ernest E. Irons, both of Chicago, on backache and causes and treatment of chronic arthritis, respectively.—Dr. Meyer Solomon, Chicago, discussed nervous breakdowns before the Will-Grundy County Medical Society, April 11.—At a meeting of the Iroquois County Medical Society, April

12, Dr Philip Rosenblum, Chicago, spoke on "Convulsions in Children"—The Fulton County Medical Society was addressed in Canton, April 18, by Dr James P Simonds, Chicago, on nephritis—At a meeting of the Kane County Medical Society in Aurora, April 11, Dr Irving F Stein, Chicago discussed "The Use of Obstetric Forceps"—Dr Herbert N Rafferty, Robinson, among others, addressed the Crawford County Medical Society, April 18, on "Multiple Fractures and Traumatic Epilepsy"—The Peoria City Medical Society was addressed May 1, by Dr Chauncey C Maher, Chicago, on "Treatment of Cardiac Edema" The society was addressed, April 17, by members of the state health department Dr Frank J Jirka amebiasis, Howard J Shagline, Ph D, the doctor and the diagnostic laboratory, and Dr Robert H Woodruff, the doctor and vital statistics

Chicago

Capps Prize to Dr Kistler—The Institute of Medicine of Chicago has awarded the Joseph A Capps Prize for medical research for 1933 to Dr Gene H Kistler, University Ala, for his paper on "Sequences of Experimental Infarction of the Femur in Rabbits" Dr Kistler graduated from Rush Medical College in 1931 The prize of \$500 is awarded annually for meritorious medical research by a graduate of a Chicago medical school, completed within two years after graduation

Society News—Dr John T Murphy, Toledo, addressed the Chicago Roentgen Society, May 10, on "Bone Tumors"—The Chicago Tuberculosis Society was addressed, May 10 among others, by Dr John B O'Donoghue on "Surgery of Pulmonary Tuberculosis"—Speakers before the Chicago Pathological Society, May 14, will include Dr Emil T Hoverson, Kankakee, Ill, on "Sedimentation Rate of Erythrocytes An Explanation for Normal Daily Variations"—The Chicago Academy of Criminology was addressed, May 10, by Benjamin C Bachrach, public defender of Cook County on "Criminal Code and Indeterminate Sentence," and Prof Harrison Dobbs of the University of Chicago, "The State's Responsibility in the Correctional Education of Children"

INDIANA

District Meeting—The Ninth District Medical Society will hold its annual meeting at the Country Club Frankfort, May 17, when Mayor C E Crawford will give the address of welcome Speakers will include Drs Ralph G Carothers, Cincinnati, on "Treatment of Compound Fractures", Edwin N Kime, Indianapolis, "Prognosis in Cancer," and William F McBride, Dayton, "The Country Doctor—Forty Years of It" Dr Charles P Emerson, Indianapolis, will give the banquet address on "Oriental Medicine" A golf tournament will be a feature of the session

Society News—Dr Maurice Joseph Barry, among others, will address the Indianapolis Medical Society, May 15 on "Heredity in Anemia" Dr Dean Lewis, Baltimore, President American Medical Association, will discuss "Tumors of the Breast" before the society, May 22, meeting jointly with the graduate group of the Indiana University Medical Center—Dr Richard B Stout, Elkhart, spoke before the North-eastern Indiana Academy of Medicine at Kendallville, April 26, on "Spinal Anesthesia—Volume Control Technic"—Dr Julius R Yung, Terre Haute, discussed exophthalmic goiter before the Gibson County Medical Society in Princeton, April 9—At a meeting of the LaPorte County Medical Society in Michigan City, April 12, Dr Victor D Lespinasse, Chicago, spoke on "The Childless Couple—Cause and Cure"—Dr Percy E McCown, Indianapolis, addressed the Clinton County Medical Society in Frankfort, April 5, on "Transurethral Removal of Bladder Neck Obstructions"—Dr Harold Dale Pyle, South Bend, addressed the St Joseph County Medical Society, April 3, on "Nutritional Diseases of Infants and Children"

IOWA

Society News—The Linn County Medical Society was addressed, May 3, by Dr Fred L Adair, Chicago, on "Maternal Mortality and Morbidity"—Speakers before the Des Moines Academy of Medicine and Polk County Medical Society, April 24, included Drs Helen Johnston and Edward J Harnagel on trichomonas vaginalis vaginitis and jaundice, respectively

Annual Renewal Fees Due Before June 1—All licenses to practice medicine and surgery in Iowa expire annually on June 30 To renew such a license a licensee must make a written application to the state department of health before June 1, enclosing the renewal fee of \$1 If a license expires

by reason of the licensee's failure to renew it, it can be reinstated without reexamination only on the recommendation of the board of health and the payment of the overdue fees

Annual Birthday Banquet—In celebration of his sixty seventh birthday, Dr William A Rohlf, Waverly, recently held his annual birthday dinner and clinic More than 100 professional friends of Dr Rohlf attended With Dr Jay F Auner, Des Moines, as toastmaster, speakers included Drs Charles B Taylor, president of the state medical society, Robert L Parker, Des Moines, secretary of the state society, Leonard A West, Des Moines, and Charles H Graemling, Waverly A huge birthday cake bearing sixty-seven candles was presented to Dr Rohlf by Dr and Mrs John McDannell, Nasliua A surgical clinic was held in the morning and a medical clinic in the afternoon Speakers included Drs Harold C Haben and Virgil S Counsellor, Rochester, Minn, on internal medicine, Howard L Beye, Iowa City, surgical conditions of the chest, and Fred M Smith, Iowa City, thyroid disorders About 142 physicians attended the clinics Dr Rohlf a past president of the Iowa State Medical Society, has been holding this birthday clinic celebration for several years

KENTUCKY

Health Report for 1933—Preliminary statistics issued by the state department of health show that the death rate in Kentucky for 1933 was 107 per thousand of population, the same as the preliminary rate in 1932, later raised to 112 Mortality among infants less than 1 year old fell from 685 in 1932 to 595 in 1933 Pneumonia, whooping cough, scarlet fever, measles, influenza and the diarrheas showed decreases, but diphtheria and typhoid increased slightly The tuberculosis rate was the same as the preceding year, 858

Society News—Dr Chauncey W Dowden, Louisville, addressed the Franklin County Medical Society, Frankfort, March 8, on secondary anemia—Drs Rettig A Griswold and Robertson O Joplin presented a paper on "Fracture of the Lower Extremity" before the Jefferson County Medical Society, Louisville, April 2—Drs Seale Harris, Birmingham, and Seale Harris Jr, Nashville, Tenn, addressed the Christian County Medical Society, Hopkinsville, March 20, on "Hypertension and Its Relation to Epilepsy and Epileptiform Convulsions" and "Treatment of Syphilis," respectively

LOUISIANA

Dr Jackson Lectures—Dr Chevalier Jackson, professor of bronchoscopy and esophagoscopy, Temple University School of Medicine, Philadelphia, gave a series of lectures at Louisiana State University Medical Center, New Orleans, April 16-19 His subjects included "Diagnosis of Foreign Bodies in the Air and Food Passages," with motion picture demonstration of the mechanism of valvular obstruction, "Diseases of the Esophagus," with demonstration of esophagoscopy for diagnosis, and "Bronchoscopy as an Aid in the Diagnosis and Treatment of Pulmonary Diseases" Dr Jackson is visiting professor at the medical center

MAINE

State Medical Meeting at Bangor, May 27-29—The eighty-second annual meeting of the Maine Medical Association will be held at Bangor, May 27-29, with headquarters at the Bangor House, and under the presidency of Dr Warren E Kershner, Bath Dr Dean Lewis, Baltimore, President of the American Medical Association, will speak Tuesday, on "Differential Diagnosis of Breast Tumors" Reviewing the year's progress in medicine, speakers will be Drs Eugene H Drake, Portland, and John O Piper, Waterville, in ophthalmology, Erastus E Holt Jr, Sylvester J Beach, Portland, and Howard F Hill, Waterville, in surgery, Edward H Risley, Waterville, and Frank H Jackson, Houlton, otolaryngology, Henry P Johnson and George O Cummings, Portland and pediatrics, Thomas A Foster, Portland Physicians on the scientific program will include

Magnus F Ridlon Bangor Ectopic Pregnancy
Alfred Mitchell Jr Portland Structures of the Urethra
Harold D Ross Sanford Abdominal Complications in Obstetrics
Oscar R Johnson Portland Skin Manifestations in General Disease
Frederick T Hill Waterville, Acute Throat Conditions
Sullivan L Andrews Lewiston Significance of Eye Symptoms in Head Injuries
George E Young, Skowhegan Thoracic Surgery Results of Collapse Therapy in State Sanatoriums
William A Ellingwood Rockland Focal Infections in Ear, Nose and Throat and Their Relation to Systemic Disease
Raymond V A Bliss Bluehill Diseases of the Arteries

At the annual banquet, Tuesday evening, addresses will be made by Dr Kershner and Dr Lewis

MARYLAND

Tuberculosis Clinics for Negroes—As a special feature for the observance of National Negro Health Week, the Maryland Tuberculosis Association conducted four special tuberculosis clinics for Negroes in the counties of the state

April 3, Fairmont Heights Prince George's County
April 5, Prince Frederick Calvert County
April 6, Bowie Prince George's County
April 6, St. Michaels, Talbot County

Dr Warthen Named Assistant Health Commissioner—Dr William H. F. Warthen, for ten years director of the bureau of child welfare, has been appointed assistant commissioner of health of the Baltimore City Health Department, succeeding the late Dr John Frederick Hempel. Dr Humphrey Warren Buckler has been acting temporarily in this position pending a permanent appointment. Dr Warthen, 37 years old, is a graduate of Johns Hopkins University School of Medicine.

Medical Advisory Board—Appointment of a medical advisory board for the Baltimore City Hospitals, with Dr George Walker as chairman, was announced, April 6. Other members of the board include Drs Alan M. Chesney, dean, Johns Hopkins University School of Medicine, James M. H. Rowland, dean, University of Maryland School of Medicine, Huntington Williams, health commissioner, Thomas R. Boggs, Arthur M. Shipley and Charles C. Hablston, and Mr Parker J. McMillin, superintendent of the city hospitals.

MASSACHUSETTS

Precipitation Test to Be Used by State Department—The Massachusetts Department of Public Health, as the result of several years of comparative study of various types of serologic tests for syphilis and in view of the majority opinion of both local syphilologists and serologists in many of the states and laboratories, is now using a precipitation test for official routine purposes. Use of the new test was begun, April 2. According to Dr Henry D. Chadwick, commissioner of public health, the precipitation test was developed by Dr William A. Hinton, chief of the state serologic laboratory.

Society News—Speakers before the New England Pediatric Society in Boston, March 23, included Drs James L. Gamble and Stewart H. Clifford on "Present Knowledge of the Food Substances" and "Factors Influencing the Viability of Premature Infants," respectively. Drs J. Herbert Waite and William P. Beetham presented a paper on "Ocular Complications in Diabetes" before the New England Ophthalmological Society, April 17. At a meeting of the New England Roentgen Ray Society in Boston, April 20, speakers included Drs Harry F. Friedman and Abram Louis Hermanson on "Protected Irradiation in Carcinoma of the Larynx" and "Roentgenologic Exploration of the Biliary Ducts with Iodized Oil," respectively. Dr Edwin A. Locke discussed "Hypertension, Its Cause and Treatment" before the Malden Medical Society in Malden, April 17. Dr Albert A. Epstein, New York, spoke before the William Harvey Society in Boston, April 13, on "Diseases of the Kidney in General Practice."

MICHIGAN

Dr Campbell Named Mayor—Dr James B. Campbell took office as mayor of Big Rapids, April 9, he is the fourth physician to hold the office in the history of the city. He is president of the Mecosta County Medical Society and, for the past four years, has been city commissioner. Dr Campbell has been practicing in Mecosta County since 1900.

Dinner to Dr Chene—The staff of Providence Hospital, Detroit, gave a dinner at the Detroit Athletic Club, May 3, in honor of Dr George Charles Chene, who has been connected with the institution for twenty years and secretary of the staff for the last fifteen years. He has held various teaching positions in the departments of gynecology and roentgenology at Detroit College of Medicine and Surgery since 1908.

MISSOURI

Society News—The St. Louis County Medical Society is now publishing a bimonthly bulletin. The initial copy was dated February 28. Speakers before the society, April 11, included Drs Franz J. Arzt on "Syphilis in Pregnancy" and John Gray Jones "Management of Posterior Presentation." Dr Ernest Kip Robinson, Kansas City, addressed the Lafayette County Medical Society, March 24, on "Newer Methods in Cancer Treatment." Dr Harvey J. Howard presented the "Adventures of an American Physician in China" before the St. Louis Medical Society, April 10. Members of the St. Louis Trudeau Club presented a symposium on the

prognosis of pulmonary tuberculosis before the society, April 3. Dr Sidney I. Schwab spoke before the St. Louis Neuro-psychiatric Society, April 23, on "The Utilization of Freudian Concepts in Neurology and Psychiatry." Dr Otto Jason Dixon, Kansas City, addressed the Golden Belt Medical Society at Junction, April 5, on "Advantage of Conservative Treatment in Acute Mastoid Disease" and the Panhandle District Medical Society at Amarillo, Texas, April 10, on "A New Method for Surgical Treatment of Sigmoid Sinus Thrombosis with the Use of Viable Muscle Implant."

NEW YORK

Society News—Dr Edward C. Reifstein, Syracuse, addressed the Utica Academy of Medicine, recently, on cardiac pain. Drs John P. Peters, New Haven, Conn., and Neil C. Stevens, Glen Cove, addressed the Medical Society of the County of Nassau, Mineola, March 27, on "Nature and Treatment of Diabetes" and "Auscultation of the Abdomen as a Method of Diagnosis," respectively. Dr Frederick S. Wetherell, Syracuse, addressed the Broome County Medical Society, Binghamton, March 6, on "Sympathetic Nerve Surgery—A Discussion of Its Progress and Rationale." Dr Emanuel D. Friedman, New York, addressed the Chemung County Medical Society, Hornell, and the Steuben County Medical Society, Elmira, April 19, on epidemic encephalitis.

New York City

Personal—Michael Heidelberger, Ph.D., associate professor of biologic chemistry at Columbia University and research chemist to Presbyterian Hospital, has recently been awarded a grant by the Guggenheim Foundation for research on the molecular weight of thyroglobulin at Uppsala University, Sweden. Donald D. Van Slyke, Sc.D., research chemist to the hospital of the Rockefeller Institute for Medical Research, was guest of honor at a dinner, March 29, in honor of his twentieth anniversary in that position.

Society News—At a meeting of the Medical Society of the County of Queens, April 24, Dr Thomas T. Mackie discussed amebiasis and Dr Charles H. Goodrich discussed medical economics. Dr Thomas Drysdale Buchanan delivered a Friday afternoon lecture before the society, April 6, on recent advances in anesthesia. Dr Fred Wise will address the American Stomatological Association, May 15, on "Buccal and Labial Lesions of Interest to Dentist and General Practitioner." Dr Carroll Fox, medical director, U. S. Quarantine Station, Rosebank, L. I., addressed the Public Health Officers Association, April 18, at the headquarters of the city health department, on "Quarantinable Maritime Diseases and Their Method of Spread." At the meeting of the International and Spanish-Speaking Association of Physicians, Dentists and Pharmacists, March 16, a symposium on "Birth and Sex Abnormalities" was presented by Drs Irving W. Potter, Buffalo, Samuel R. Meaker, Boston, James A. Harrar and Ira S. Wile. A testimonial dinner was given to Dr Jacob M. Gershberg, president and founder of the society, April 25, at the Hotel Astor, by the board of directors.

District Health Administration—Plans are going forward for the establishment of health districts to carry out localized health service, in accordance with the results of experimentation that has been carried on for several years in the Bellevue-Yorkville district. Three years ago the Central Harlem Health Center was established with its activities officially related to the central health department and with the cooperation of various official and voluntary agencies. Under the new administration, funds have now become available for the continuation of the plan under the direction of the department of health. A new bureau of district health administration has been created with Dr Margaret Shepard Witter Barnard as temporary director, pending civil service examination. Central Harlem has been made the first official district and Dr Arthur I. Blau, district health officer. Other districts will be chosen shortly. The Coordinating Council of the Five County Medical Societies in a report issued in 1931 approved the establishment of these centers and has taken an active part in the preliminary planning. A technical advisory committee to the commissioner of health and the bureau has been appointed as follows: Drs James Alexander Miller, chairman, George Bachr, Hugh Chaplin, Charles Gordon Heyd and Edward L. Keves, Mr Bailey B. Burritt, Mr Homer Folks, William F. Walker, Dr P. H. and Katherine Tucker, R. N.

Elves in Jail—May Be Deported—Carl R. Elfs who has practiced medicine without a license in various states and under various names, was sentenced to a year in New York County Penitentiary and was also fined \$500 or in default of

payment of the fine to serve 100 days in addition, April 24, after he was found to be practicing without legal authorization as physician to Hart's Island Prison, this time under the name Max R. Schneller. Schneller received a temporary appointment as psychiatrist to the prison in March, when the department of correction was making drastic changes in its medical staff. After being pressed for his license for some time, Schneller applied to the state board of medical examiners in the name of Dr. Max Schneider, a reputable physician, and as a result of the subsequent investigation was relieved from duty, April 12. Immediately after this he attempted suicide by taking an overdose of a sedative drug. When arraigned in court two days later he pleaded guilty, fainting twice during the hearing. He again collapsed in court when he was sentenced ten days later. The checkered career of Schneller-Elles has been reviewed in *THE JOURNAL* (Sept. 17, 1927, May 3, 1930, p. 1419, and July 11, 1931, p. 111), and the *Federation Bulletin*, published by the Federation of State Medical Boards of the United States, printed in January 1928 a long account of his activities up to that time. Information from the probation department of the New York Court of Special Sessions indicates that an effort will be made to deport him. He claims to be a native of Germany and to have been adopted by a Baron Arthur von Schneller. It was reported that he was employed at Hart's Island at a salary of \$1,450 a year and maintenance.

OHIO

University News—Beginning next September, the school of nursing of Western Reserve University will become a graduate professional school. Applicants for admission must have completed a course leading to the degree of bachelor of arts, science or philosophy. The course may be completed in thirty-three months.—Rev. John F. Berr, formerly registrar of Western Reserve University School of Dentistry, Cleveland, has been appointed registrar of the school of medicine at the university.

Society News—Dr. Marion A. Blankenhorn, Cleveland, addressed the Toledo Academy of Medicine, April 27, on "Deficiency Diseases of Adults." During the morning of that day medical and surgical clinics were held at Toledo Hospital by the staff and in the afternoon Dr. Blankenhorn conducted a clinic.—Dr. Karl D. Figley, Toledo, addressed the Allen County Medical Society, Lima, March 20, on allergy.—Drs. Elmer I. McKesson, Toledo, and Irwin A. Bottenhorn, Columbus, addressed the Marion County Academy of Medicine, Marion, April 3, on "Anesthesia in Medicine and Dentistry" and "Pulp and Pulp Canal Infection," respectively.—The Doctors' Symphony Orchestra of Akron gave a concert before the Stark County Medical Society, Canton, April 12. Dr. Alexander S. McCormick is director of the orchestra.—Speakers before the Columbus Academy of Medicine, March 12, were Drs. Raymond A. Ramsey on goiter, Francis W. Gosnell, metabolism and hypothyroidism and John E. Briggs, inflammation and malignancy.—Dr. John W. Carmack, Indianapolis, addressed the Montgomery County Medical Society, Dayton, April 6, on "Cooperation of the General Physician and the Otolaryngologist in the Treatment of Nasal Sinus Infection."

OKLAHOMA

Society News—Drs. Harry Wilkins and Don H. O'Donoghue, Oklahoma City, addressed the Comanche County Medical Society, Lawton, March 8, on "Neurosurgical Conditions in Children" and "Injuries About the Knee Joint," respectively.—At a meeting of the Southwestern Oklahoma Medical Association, Clinton, March 20, speakers were Drs. Charles W. Stevenson and Charles R. Hartsook, Wichita Falls, Texas, on "Tumors of the Chest" and "Relation of Ophthalmology and Otolaryngology to General Medicine," respectively, and Drs. Walter W. Wells and Willis K. West, Oklahoma City, on "Care of the Breast in Obstetrics" and "Deformities in Children Due to Fractures," respectively.

OREGON

New State Board Officers—At a meeting of the Oregon State Board of Medical Examiners, April 5, the following officers were elected: Drs. Elza D. Johnson, Klamath Falls, president; Joseph F. Wood, Portland, secretary; and Charles C. Newcastle, Portland, treasurer.

Jones Lectures—Dr. John F. Fulton, Sterling professor of physiology, Yale University School of Medicine, New Haven, Conn., gave the tenth annual N. W. Jones Lectures at the University of Oregon Medical School, Portland, recently. His subjects were "Autonomic Representation in the Cerebral Cortex" and "The Functions of the Frontal Lobes."

PENNSYLVANIA

Public Meeting on Cancer—The Cambria County Medical Society presented a program on cancer for the public, May 10, in Johnstown, as part of its campaign for early diagnosis and treatment. Speakers were Drs. Samuel J. Waterworth, Clearfield, Bernard P. Widmann, Philadelphia, and Joseph C. Bloodgood, Baltimore. Members of the Somerset County Medical Society were guests.

Philadelphia

Coroner May Serve Writ on Sheriff—When the sheriff of Philadelphia was made defendant in a lawsuit recently, the question arose as to who could legally serve a writ on him. After a search of old laws it was discovered that the city coroner was empowered to serve such a writ, as under old English law he was the highest officer in the county. It was the first time such a case had occurred in the memory of city officials, it was said.

Society News—The Philadelphia Heart Association held its annual meeting, April 11, with Drs. Charles H. Miner, Wilkes-Barre, and William D. Stroud as speakers. Dr. Edward B. Krumbhaar was reelected president.—Drs. Hermann L. Blumgart, Boston, and Homer M. Swift, New York, addressed the College of Physicians of Philadelphia, May 2, on "Total Ablation of the Normal Thyroid in the Treatment of Patients with Chronic Heart Disease" and "Current Concepts of the Nature of Rheumatic Fever," respectively.—The Society of the Medical Alumni of the University of Pennsylvania will hold its annual reunion, May 19. Dr. Barton C. Hirst is president and Dr. Alex. Heron Davison, secretary.

The Da Costa Oration and Strittmatter Award—Dr. George W. Crile, Cleveland, delivered the fourth annual Da Costa Oration of the Philadelphia County Medical Society, April 18, on the endocrine glands. At the meeting the eleventh annual Strittmatter Award under the auspices of the society was presented to Dr. Philip F. Williams for his services in the field of maternal mortality. Dr. Williams, a graduate of the University of Pennsylvania School of Medicine (1909), is assistant professor of obstetrics at his alma mater and in the Graduate School of Medicine of the university. In 1930 he was chairman of a committee which made an exhaustive study of maternal mortality. The award, established by Dr. Isidor P. Strittmatter in 1923, is a gold medal given to a physician who has rendered meritorious service or made a valuable contribution to the healing art or to one of the fundamental sciences of medicine.

TENNESSEE

State Medical Election—Dr. John O. Mamer, Nashville, was elected president of the Tennessee State Medical Association at the annual meeting in Chattanooga, in April, succeeding Dr. Hiram B. Everett, Memphis. Sectional vice presidents were elected as follows: Drs. William B. Campbell, Cleveland; East Tennessee, James K. P. Blackburn, Pulaski; Middle Tennessee, and Grailey H. Berryhill, Jackson; West Tennessee, Dr. Harrison H. Shoulders, Nashville, was reelected secretary and editor of the state medical journal. Next year's meeting will be held in Nashville.

Society News—Drs. John E. Gordon, Detroit, and Walker L. Rucks, Memphis, addressed the Gibson County Medical Society, Trenton, March 26, on "Management of Infectious Diseases" and "Vomiting in Infancy and Childhood," respectively.—Dr. Henry A. Callaway, Maryville, addressed the Blount County Medical Society, May 3, on "Calcium Deficiency in Pregnancy."—Dr. Thurman D. Kitchin, Wake Forest, N. C., addressed the Sullivan-Johnson Counties Medical Society, Bristol, April 4, on "Relation of Physiology to Medicine."—Dr. William C. Chaney, Memphis, presented a paper on heart disease before the Obion County Medical Society, Union City, March 29.—Drs. George R. Livermo and James W. Bodley, Memphis, addressed the Fayette at Hardeman county medical societies at the Bolivar State Hospital, April 27, on "Urologic Problems of Interest to the General Practitioner" and "Infections of the Hand," respectively.—Dr. Katharine Dodd addressed the Nashville Academy of Medicine, May 1, on "Guanidine as a Complicating Factor in Certain Diseases of Childhood."

TEXAS

Society News—The Harris County Medical Society entertained its members who are more than 70 years old at a dinner at the Houston Club, March 14. Dr. Martin Lee Graves made the address of the evening on contributions of men of mature years.—Drs. Jerrell Bennett and Roy L. Grogan, Fort Worth,

among others, addressed the Tarrant County Medical Society, Fort Worth, March 7, on placenta praevia.—The semiannual meeting of the Northwest Texas District Medical Society was held in Wichita Falls, March 13, among other speakers were Drs Thomas P Frizzell, Knox City, on amebiasis, Robert E Forrester, Moran, industrial examination, George R Enloe, Fort Worth, acute infection of the hand, and Jackson Stewart Cooper, Abilene.—Drs Elliott M Mendenhall and Alfred I Folsom, Dallas, will address the Dallas County Medical Society, May 24, on "Phrenicectomy in the Treatment of Tuberculosis" and "Analysis of 300 Prostatic Resections," respectively.—Dr Edward H Cary, Dallas, among others, addressed a public meeting sponsored by the Texas Hospital Association at its annual session in Temple, in March, on "The Hospital as the People's Friend"—A symposium on cancer of the cervix and uterus was presented before the El Paso County Medical Society, El Paso, March 12, by Drs James Vance, John W Cathcart and Willis W Waite

WASHINGTON

Society News—Dr Charles C Tiffin, Seattle, addressed the Chelan County Medical Society, Wenatchee March 14, on 'Technic of Thyroidectomy'—Dr Herbert E Coe, Seattle gave an address on "Pyloric Stenosis and Intussusception" before the Kitsap County Medical Society, Bremerton, March 13—Drs Roger S Anderson and Albert J Bowles, Seattle, addressed the Walla Walla Valley Medical Society, Walla Walla, March 8, on "Treatment of Fractures of the Head of the Femur and Tibia" and "Hyperparathyroidism," respectively—Drs Richard W Perry and Souren H Tashjian, Seattle, addressed the King County Medical Society, April 2, on "Matters of Interest to the General Practitioner Concerning Farsightedness, Nearsightedness and Squint" and "Treatment of Infections by the Mobilizations of Histocytes," respectively—The North Pacific Society of Internal Medicine held its biennial meeting in Seattle, March 17 Among speakers were Drs John M Blackford and James M Bowers, Seattle, on "Follow-Up Study of Arterial Hypertension and "Treatment of Delayed Pneumonic Resolution with Irradiation," respectively

WEST VIRGINIA

Society News—Dr Robert K Buford Charleston, addressed the Fayette County Medical Society, Oak Hill, March 13 on borderline hyperthyroidism—Dr Roy Benson Miller, Parkersburg, president of the West Virginia State Medical Association, addressed the Tyler-Wetzel Counties Medical Society, March 13, on medical economics—Drs Harlow R Connell Bluefield, and John I Markell, Princeton, presented papers on appendicitis before the Mercer County Medical Society, Princeton, March 15—Drs Edward T W Hall and Aubrey F Lawson, Weston, addressed the Lewis County Medical Society at the Weston State Hospital in February, on "Injection Treatment of Varicose Veins" and "Traumatic Rupture of the Small Intestine Without External Signs," respectively

State Medical Meeting in Huntington—The sixty-seventh annual meeting of the West Virginia State Medical Association will be held in Huntington, May 14-16, with headquarters at the Pritchard Hotel and under the presidency of Dr Roy Benson Miller, Parkersburg Section meetings will be held Monday afternoon May 14, and general scientific assemblies the next two days The West Virginia Heart Association will meet Monday morning Guest speakers will include

Dr Alfred Friedlander Cincinnati Studies in Oscillometry
Dr Paul D White Boston Evolution of Our Knowledge of Heart Disease
Dr Albert E Russell U S Public Health Service Sclerosis and Other Pulmonary Conditions Resulting from Inhalation of Dust
Dr Eli J Browder Brooklyn Traumatic Lesions of the Spinal Cord and Their Treatment
Dr Merrick F McCarthy Cincinnati Surgery of the Lateral Sinus and Internal Jugular Vein
Drs William L Aycock and Charles F McKhann Jr Boston Symposium on Polymyositis
Dr William B Morrison Columbus Ohio Treatment of Benign and Malignant Lesions of the Stomach and Duodenum
Dr Luther C Peter Philadelphia The Problem of the Cross Eyed Child
Dr Russell L Haden Cleveland Chronic Arthritis
Dr Olin West Chicago Secretary American Medical Association Medical Service A Professional Service

The annual oration on surgery will be given by Dr James R Bloss Huntington on 'Obstetric Application of Surgical Progress', the oration on medicine by Dr George R Maxwell Morgantown, on 'Coronary Disease' Entertainment includes a golf tournament at the Gwyn Country Club to be played each day, a smoker Monday evening and a dinner dance Wednesday evening

GENERAL

Medical Bills in Congress—*Bills Introduced* S 3510, introduced by Senator Couzens, Michigan, would authorize the withdrawal of alcohol tax-free "for the use of any clinic operated for charity and not for profit, including use in the compounding of bona fide medicines for treatment outside of such clinics of patients thereof, but not for sale" H R 9405, introduced (by request) by Representative Knutson, Minnesota proposes to revise the laws and regulations relating to pensions and other allowances for veterans and their dependents

Academy of Pediatrics—The fourth annual meeting of the American Academy of Pediatrics will be held in Cleveland, June 11-12 Monday morning and Tuesday afternoon will be devoted to round table discussions led by Drs Thomas B Cooley, Detroit, Herbert E Coe, Seattle, Isaac A Abt, Chicago Borden S Veeder and Hugh McCulloch, St Louis Arthur H Parmelee, Oak Park, Ill, John A Toomey, Cleveland, and Bela Schick, New York At an afternoon session Monday Dr Arvid Wallgren, Gothenburg, Sweden, will give an address and Drs Frederick F Tisdall, Toronto Ont, and Roy G Hoskins, Boston, will speak on "Dental Caries" and "Ductless Glands," respectively

Control of Noise—Technical advances in methods of controlling noise will eventually result in voluntary control of a large part of urban noise, but suitable noise abatement ordinances are essential to achieve results in the near future, in the opinion of a committee of the American Public Health Association recently made public The committee believed that municipal health officials should assume responsibility of the enforcement of such ordinances, since the health aspect is the chief factor in noise abatement It should be handled by a noise abatement commission to coordinate the activities of the various municipal departments concerned and to arouse public interest in noise abatement campaigns, the committee recommended, closing with the suggestion that the study be continued until noise abatement becomes sufficiently standardized to permit a comprehensive final report

Orthopedic Surgeons' Meeting—The American Orthopedic Association will hold its annual meeting in Rochester, Minn, June 6-9, under the presidency of Dr Melvin S Henderson Rochester The first day will be devoted to consideration of "Open Treatment of Congenital Dislocation of the Hip" Mr W Rowley Bristow, London, as the guest of the association, will deliver an address the second day on "Internal Derangements of the Knee" Other speakers include

Dr William E Gallie Toronto Ont Tendon Fixation in Infantile Paralysis—Late Results
Dr Willis C Campbell, Memphis Tenn Analysis of Living Cases of Bone Sarcoma After Five Year Period
Dr Philip D Wilson Boston Treatment and End Results of Adolescent Epiphyseolysis of the Upper End of the Femur
Dr Hugh T Jones Los Angeles Treatment of Acute Purulent Arthritis by Joint Washing

Saturday morning, the third day will be devoted to presentation of numerous short communications

Society for Study of Rheumatic Diseases—The American Association for the Study and Control of Rheumatic Diseases will hold its annual meeting in Cleveland at the Hotel Cleveland, June 11, 9 a m, when the following program will be presented

Dr Arthur Steindler Iowa City Focal Infection in Arthritis
Dr Charles W Wainwright Baltimore Arthritis and Streptococcus Vaccine Based on Skin Sensitivity
Dr Frank J Sladen Detroit Three Years Concentrated Work
Dr Frank R Ober and Dr William T Green Boston Arthritis in Children
Dr William Paul Holbrook Tucson Ariz Variations in Management During the Different Phases of Atrophic Arthritis
C W Scull Ph D and Dr Ralph Pemberton Philadelphia The Influence of Dietetic and Other Factors on the Reduction of Swelling of Tissues in Arthritis
Dr Joseph Kovacs New York The Peripheral Blood Circulation in Chronic Arthritis and the Influence of Vasodilators
Dr John G Kuhns and Harold L Weatherford Ph D Boston The Role of Reticulo-Endothelial System in the Deposition of Colloidal Dyes and Particulate Matter in Articular Cavities

To be read if time permits

Dr I Maxwell Lockie and Roger S Hubbard Ph D Buffalo Studies on Metabolism of a Case of Gout
Dr Edward F Hartung New York Calcium and Cholesterol Metabolism in Arthritis
Dr G Douglas L Taylor Dr Albert B Ferguson and Dr Haig H Kasabach New York A Study of Roentgenologic Findings in Various Forms of Chronic Arthritis

Psittacosis Control—The development of measures to control psittacosis in the United States was outlined in *Public Health Reports*, April 6, in a report prepared for presentation to the permanent committee of the International Office of Public Hygiene in Paris this month In 1932 there were

seventy-six cases with seven deaths and in 1933 fifteen cases with four deaths. Up to March 4 of this year, only two cases with one death had been reported, but since the report was written an outbreak has been reported from Pittsburgh in which ten deaths occurred. All reported cases were traceable to birds bred in California, according to the report. Importation of parrots into the United States had been stopped by an embargo in January 1930, which was amended in 1932 to include all psittacine birds. Early in 1932 California health authorities placed an embargo on importation of birds into the state and began an epidemiologic study, which showed that the disease had become endemic in California aviaries. Eleven hundred and forty aviaries with about 100,000 parakeets were inspected and registered. Efforts of state authorities to regulate breeding and marketing aroused such opposition that the federal government added a provision to interstate quarantine regulations prohibiting transportation of birds of the parrot family unless shipments were accompanied by a certificate of state health authorities. Strenuous efforts were also made by the California authorities to control spread of psittacosis within the state, but it was found that certificates were being altered and sickly birds were being shipped out of the state. In December 1933 the U S Interstate Quarantine Regulations were again amended to require that no birds of the psittacine family could be shipped in interstate commerce unless such birds were at least 8 months old (it had been determined that young birds are more susceptible to the infection) and unless they were accompanied by a certificate signed by the state health officer and granted after inspection and such laboratory tests as are deemed necessary. A new type of certificate was recently adopted describing in detail the shipment for which it is issued. It is issued in quadruplicate, one copy being sent to the health officer at the point of destination. Thus he is advised of the arrival of birds and may refuse admission to them if it is deemed advisable. Copies of this certificate are filed also with the state health office, the common carrier and the issuing health office.

FOREIGN

Chinese Journal Honors Professor Fülleborn—The *Chinese Medical Journal* dedicated a special parasitology number to the late Prof. Friedrich Fülleborn, director of the Institute for Tropical Diseases, Hamburg, Germany, an authority on medical parasitology. The special number combined the issues for November and December 1933 and contained 400 pages of original articles. Professor Fülleborn, who died Sept. 9, 1933, became interested in tropical medicine as a medical officer in the German Colonial Army in German East Africa in 1896. In 1901 he became a member of the staff of the Hamburg institute for tropical medicine and in this capacity visited many parts of the world for scientific investigation concentrating in later years on helminthology. He became director of the institute in 1930.

Society News—The Society for the Study of Inebriety celebrated its fiftieth anniversary, April 10 with a special meeting at which Sir Humphry Rolleston delivered an address on the history of the society.—The fourth International Convention for Life-Saving Service and for First Aid in Accidents will be held in Copenhagen, June 11-16.—The sixth congress of the International Society for Logopedics and Phoniatrics (therapeutics of speech and voice) will be held in Budapest, September 5-7.—An International Congress for Endocrinology will be held in Marienbad, Czechoslovakia, May 24-26, under the chairmanship of Prof. Julius Bauer, Vienna. Information may be obtained from Professor Bauer, Mariaungasse 15 Vienna, concerning scientific matters and from the Balneological Institute, Marienbad, on administrative and technical matters.

Ophthalmologic Congress in India—The annual conference of the All India Ophthalmological Society was held at the new All India Institute of Hygiene, Calcutta, Dec. 19-21, 1933. Clinical demonstrations were presented in the institute and in the Carmichael Medical College. Among speakers were Lieut.-Col. Ernest William O. G. Kirwan, on epidemic superficial punctate keratitis, Dr. Susil K. Mukerjee, Calcutta, on glaucoma as a result of epidemic dropsy, Lieut.-Col. R. E. Wright, Madras, on Von Hippel-Lindau's disease, Lieut.-Col. J. N. Duggan, Bombay, treatment of external eye diseases with ultraviolet rays and Dr. Victor C. Rambo, Mungeli, the place of tarsectomy and grafting of mucous membrane in surgery of the lid and conjunctiva. The Association for the Prevention of Blindness in Bengal furnished an exhibit of slides and motion pictures illustrating care of the eyes and need for preventive work. Colonel Duggan was elected president. The 1935 meeting will be held in Madras.

The World Typhus Situation—A review of the occurrence of typhus throughout the world during 1932 and 1933 assembled by the Health Section of the League of Nations in *Epidemiological Reports*, showed serious outbreaks in Egypt, both the Asiatic and European territories of the Soviet Union, Syria and Chile. After a decline to less than 300 cases a year the number of cases reported in Egypt rose to 3,236 in 1932 and 7,476 in 1933. The disease appeared for the first time in Uganda in June 1932 and persisted through 1933. Endemic typhus showed a marked increase in the United States, though the increase is partly due to improvement in diagnosis. In South America the disease spread rapidly in Bolivia, Peru and especially Chile during the two years. A severe epidemic occurred in March and April 1932 in Syria among the semi-nomadic tribe of about 2,000 members camped along the Euphrates River, there were more than 400 cases, with 300 deaths. The most important foci in Asia were in the Soviet Union, where after a period of low incidence (less than 2,000 cases in 1928 and the two following years) 27,188 cases occurred in 1932. The number was considerably less in 1933, the report stated. The course in the European part of the union was parallel to that of the eastern region. A few cases were reported in the Irish Free State, Spain and Portugal.

Government Services

Physicians Wanted for Civilian Conservation Corps

The War Department announces that there is a shortage of qualified physicians of the Medical Reserve Corps to meet the needs of the medical service for the Civilian Conservation Corps. This shortage will be aggravated when a new group of approximately 300,000 men will be enrolled for the summer camps, about 200 men to each camp. An officer of the Medical Reserve Corps with the necessary medical supplies to care for the sick and injured will be assigned to each camp or group of camps if located close together. Assignments will be made by the corps area commander under whose jurisdiction the camp is located, for a period of six months, which may be extended at the discretion of the corps area commander. One captain and two lieutenants will be appointed for each thousand men enrolled in the conservation corps. Medical Reserve officers who desire such assignment should apply direct to their corps area commanders. Physicians who are not members of the reserve may secure appointments by applying to the nearest corps area commander or to the Surgeon General's Office, Washington, D. C. Addresses of the corps area headquarters and the states comprised in each are as follows:

First Maine New Hampshire Vermont, Massachusetts Rhode Island Connecticut Headquarters Army Base Boston 9 Mass.
Second New Jersey, Delaware and New York Headquarters, Governors Island N. Y.
Third Pennsylvania Maryland Virginia, District of Columbia. Headquarters U. S. Post Office and Court House, Baltimore
Fourth North Carolina South Carolina Georgia Florida Alabama Tennessee Mississippi and Louisiana. Headquarters Oakland City Station Atlanta
Fifth Ohio West Virginia, Indiana, Kentucky Headquarters Fort Hayes Columbus Ohio
Sixth Illinois Michigan, Wisconsin Headquarters, U. S. Post Office Building Chicago
Seventh Missouri Kansas Iowa Arkansas Nebraska Minnesota North Dakota South Dakota Headquarters Baird Building Omaha
Eighth Texas Oklahoma, Colorado New Mexico Arizona. Headquarters Fort Sam Houston, San Antonio Texas
Ninth Washington Oregon Idaho Montana Wyoming, Utah Nevada and California Headquarters Presidio San Francisco

The pay and allowances of a first lieutenant are approximately \$250 a month. Living accommodations are furnished at the camps for the officer only and at no cost to him. Each camp provides arrangements for mess at a minimum charge. Transportation is furnished by the government from the officer's home and return. Further information concerning appointment to the Medical Reserve Corps or to duty with the Civilian Conservation Corps may be obtained by applying direct to the surgeon of the corps area of which the applicant is a resident.

CORRECTION

Increase in Population—In the State Board Number 6 THE JOURNAL, April 28, page 1402 appears a statement to the effect that the increase in population between 1920 and 1930 was 6 per cent. The sentence should have read, "According to the U. S. Census Bureau the population in 1933 was increasing at the rate of seven-tenths of 1 per cent."

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 14, 1934

The Payment of Hospitals and Physicians for Traffic Accidents

The minister of transport, Mr Oliver Stanley, received a deputation appointed by the parliamentary medical committee (drawn from physicians and surgeons who are members of either of the legislative chambers) in regard to the payment of hospitals and physicians for traffic accidents. The speakers emphasized the urgent need for compensation for services rendered and material loss arising from the treatment of these accidents and suggested the incorporation in the forthcoming bill to deal with traffic accidents of provisions on the lines of the road traffic emergency treatment bill, which has passed through the house of lords (*THE JOURNAL*, January 6, p 55). The minister expressed sympathy with the position of the hospitals and physicians in connection with such accidents. He intimated that the new bill will be so widely drawn that it will be possible for members to move amendments to achieve the object desired. As it is not suggested that the cost should be met from state funds but from the compulsory insurance policies of drivers, there would be no difficulty over a financial resolution. Members of the deputation pointed out that an intolerable position had been reached, that physicians had moved away from houses at busy crossings because they were called out at all hours of the day and night and often received no payment or even thanks. In many instances more than half the beds at cottage hospitals were occupied with bad accident cases, with the result that the local subscriptions were falling away. One of the difficulties, apparently, was that motorists hesitated to make any payment to a physician on the ground that it might be construed as an admission of liability. After the conference, Lord Moynihan stated to the press that he knew of a physician who had attended more than a hundred traffic accidents and had not received a cent. There were over two million licenses and at a cost of 50 cents a year, or less than a cent a week, physicians could be guaranteed a \$3 fee and hospitals could be paid for emergency treatment.

The Falling Birth Rate

Dr E W MacBride, professor of zoology in the Imperial College of Science, in an article contributed to the *Daily Dispatch* expresses satisfaction at the falling birth rate, which he regards as having saved the nation from starvation. Fifty years ago the birth rate in Great Britain was 34 per thousand, today it is 15. As a biologist he finds that, while species of animals and plants vary much in the number of offspring, that number is directly related to the dangers of childhood. The herring lays 20,000 eggs a year, the fulmar petrel only one, yet the average population of the two species remains about the same over a period of years. The egg of the herring is fastened to a stone and then abandoned whereas the egg of the petrel is hidden in a hole till the chick hatches, and this is then carefully tended until it can fly. Obviously the young fulmar has a better chance of living to grow up than the young herring and therefore, to maintain the existing population much fewer of the former are required. In London 150 years ago out of every five children born three died before the age of 5 years. Now the infantile death rate is only 35 per thousand births. If the birth rate had remained at the level of fifty years ago and no emigration had occurred people would have been so closely packed in this island that life would have been impossible. The latitudes in which the white race can live and bring up families are limited and only two of

the British dominions fall within them. Canada is vast but an arctic climate renders four fifths of it unsuitable. Moreover, in the east there is a large granite plateau of 2,000,000 square miles, covered with barren soil and capable of only the poorest kind of farming. Australia is within tropical and sub-tropical zones, and three fourths is rainless desert. The population is only 6 million, of which half is concentrated in the four principal cities. Successful farming is possible only on a strip along the eastern and southern coasts. Nature's law for the benefit of every species is natural selection, which means restriction of reproduction to the most vigorous. But by social services the human race strives to counteract natural selection and then wonders at the size of the unemployment rolls.

The Treatment of Men Burned in Colliery Explosions

The mines department has been exercised by the high mortality of men burned in colliery explosions. During the last two years, out of sixty-two men brought to the surface after explosions forty-five died in hospitals from the effects of the burns. It has been noticed that men even slightly burned have died after being brought to the surface. It is therefore recommended that men who are burned should be carried up on stretchers, well covered with blankets, even though the burns do not appear to be serious. The report shows that nearly all the men found dead in the mine after explosions have died not from the burns they received but from carbon monoxide poisoning. It is therefore thought that those found alive have been affected more or less by this gas. Owing to the serious effect of carbon monoxide on the heart and respiration, it is recommended that a mixture of oxygen containing 7 per cent of carbon dioxide should be administered as soon as possible—if possible, at the place where the men are found. It is also pointed out that in extensive superficial burns, such as are produced in explosions, toxic symptoms come on early—in five or six hours—and are pronounced. To obtain the most rapid result from local treatment by a coagulating agent, a 20 per cent solution of tannic acid in 1,000 acriflavine hydrochloride should be applied.

BERLIN

(From Our Regular Correspondent)

March 19, 1934

The Notifiable Diseases in 1933

According to statistics of the federal bureau of health, diphtheria and scarlet fever caused the highest percentage of cases in the German reich in 1933. In comparison with the two previous years, the morbidity and the mortality increased. The adjoining table shows the figures for three years.

	Case Incidence			Deaths			Case Mortality (per Cent)		
	1931	1932	1933	1931	1932	1933	1931	1932	1933
Diphtheria	26,627	64,138	74,559	3,005	2,974	3,698	5.47	4.64	4.97
Scarlet fever	40,980	50,268	76,749	471	307	348	1.00	0.72	0.71

After the apex of the seasonal incidence was reached in the forty-eighth calendar week, the mortality from diphtheria in 1933 was considerably lower than in 1932. The morbidity from scarlet fever was 40 per cent higher than in 1932, without approaching however, the morbidity for 1927, 1928 and 1929 (19,883, 122,225 and 95,909 cases). The increase in the number of deaths from diphtheria and scarlet fever showed about the same ratio as the increase in the number of cases.

The cases of infantile paralysis dropped from 3,733 in 1932 to 1,249 in 1933, and the deaths declined from 315 to 131.

Epidemic cerebrospinal meningitis showed a slight increase. The incidence for the years 1929-1933 was 959, 663, 574, 518 and 598, which resulted in 503, 351, 307, 256 and 279 deaths,

respectively. In the years mentioned, the deaths amounted to 52, 53, 52, 49 and 47, respectively, per hundred cases.

Cases of illness due to meat, fish and sausage poisoning show a further decline for 1933 (1,527 as against 2,477).

The decline in cases of typhoid was 25 per cent, in paratyphoid (although no details were given), 28 per cent, and in dysentery, 48 per cent. The number of deaths from dysentery declined only 3 per cent (from 126 to 122), from paratyphoid, 10 per cent, from typhoid, 28 per cent (from 513 to 369).

The number of persons injured by the bite of animals with rabies, or by animals suspected of being rabid, rose from sixty-four to 132 (one fatal case). There were three cases of glanders and two of trichinosis, with no deaths.

During the previous year, 1932, no cases of rabies or of glanders or trichinosis were notified. The number of cases of anthrax declined from eighty-one in 1932 to seventy-nine in 1933, the number of deaths remained the same (ten).

The cases of childbed fever showed a decline (4,826 cases, 1,379 of which proved fatal), thus, there were 286 deaths to each hundred cases. The peculiarly favorable status of tuberculosis in Prussia (in 1932, only 39,716 cases of contagious pulmonary and laryngeal tuberculosis were notified) was preserved in 1933 there having been only 39,832 notified cases. The number of deaths showed a slight decrease (decline from 20,945 to 20,868).

Increase in the Incidence of Diphtheria

In 1933, as Professor Catel, director of the Kinderklinik announced, not only did the number of persons contracting diphtheria show an increase, but there was also a distinct change in the course of the disease. The highly toxic type of diphtheria with a high case mortality was more frequent than in former years. Since the methods heretofore used for active immunization (Behring's vaccine, toxin-antitoxin mixture, Ramon's anatoxin) are neither absolutely harmless nor certain to produce an absolute immunity the time has not yet come for compulsory vaccination on a large scale. It may be stated that the Lowenstein protective ointment does not appear to be effective.

The Bacterial Flora of the Vagina

Researches that Siebke carried out at the Universitäts-Frauenklinik in Kiel on the bacteriology of the vaginal secretion revealed either pure cultures of streptococci or cultures composed chiefly of streptococci, in 54 per cent of the 1934 gravidas. The presence of streptococci was demonstrated in about 70 per cent of all cases examined. Febrile puerperal disorders, in spite of a normal childbirth, showed the highest percentage in the cases that, during pregnancy, presented in the vagina a pure streptococcus flora, predominantly streptococci, or the latter mixed with *Bacillus coli*. In these puerperants the morbidity was almost three times as high as in women with a pure, or prevailingly pure, *Bacterium vaginalis* flora at the end of term. Foul smelling lochia are less frequently present in association with a pure, or prevailingly pure, *Bacterium vaginalis* flora than with other micro-organisms. According to the cases examined, febrile puerperal disorders following a spontaneous birth are the more rare, the more distinctly the intact acid protection in the region of the vagina is characterized by a corresponding bacterial flora.

The Diagnosis of Lead Poisoning

The pharmacologist Prof. Dr. Behrens, who has for years studied questions pertaining to lead, spoke recently before the Berlin Medical Society. By the use of radioactive lead isotopes, with which he poisoned mice he was able to establish that, contrary to other older views, lead poisoning constitutes a genuine cumulative disease resulting from a difference between the intake and the excretion of the poison. Lead accumulates

chiefly in the liver and kidney, and secondarily in the bones. In the blood there is an adsorption by the red corpuscles. In the bones it is significant that the storage occurs chiefly in the subepiphyseal areas and under the periosteum. By the use of the radioactive lead the demonstration is simple, as the lead produces light spots on a photographic plate. It was possible in this manner to demonstrate that the lead undergoes a rapid resorption and a slow excretion in the animal, and that it is a highly cumulative poison. But, when large quantities are ingested, a considerable portion is not resorbed by the intestine but is eliminated with the feces. The elimination of the stored portions takes place slowly, namely, along with the bile into the intestine and by way of the kidney. The elimination occurs in the form of lead sulphate, which is soluble with difficulty.

Behrens discussed the methods for the demonstration of small quantities of lead. He has adopted the method of H. Fischer, which, by means of a dye (diphenylthiocarbazone), demonstrates colorimetrically lead in quantities as low as thousandths of a milligram. Behrens emphasized that researches must be instituted to discover where the borderline between the normal and the pathologic secretion of lead lies. Until that has been done, it will be impossible to render an expert opinion in questions concerning the degree of disability or amount of compensation.

Promotion of the Early Marriage of Physicians

Among the policies of the new government, the promotion of early marriages plays no small part. The Bavarian minister of the interior has recently taken up the cause of the physicians. A careful examination of medical journals reveals that in advertisements of positions open for physicians there is an occasional cautious statement to the effect that unmarried applicants will receive first consideration. The federal ministry of the interior has issued a new decree concerning the promotion of the early marriage of physicians. Attention is directed to an article by a hospital physician and to the opinions expressed by the federal bureau of health, in which it is emphasized that there exists an absolute necessity and duty to reserve, as a rule, all openings for first assistants, and particularly for head physicians, for physicians who are either married or who plan to marry as soon as a suitable position is secured, furthermore, that, in filling posts for head physicians, preference must be given to applicants who have a large number of children. An inquiry has now been launched to ascertain whether it will be possible to provide homes for such physicians to a greater extent than has been done in the past.

PARIS

(From Our Regular Correspondent)

March 21 1934

Ten Years of Experience with the Ramon Anatoxin

Mr. G. Ramon, who now occupies, at the Academy of Medicine, the chair made vacant by the death of his teacher Roux, gave a lecture recently in which, as is the custom, he gave a survey of his discoveries. Ten years has elapsed since he proposed diphtheritic anatoxin for immunization against diphtheria. The method today enjoys world-wide acceptance. The immunity that the vaccination produces is demonstrated by the Schuck test and by the amount of specific antitoxin in the blood serum of the persons vaccinated. It is durable, and at the end of five years, the percentage of subjects immunized remains about the same as it was just after the vaccination. In recent years, Ramon has endeavored to increase the efficacy of the vaccination. The method of combined vaccination (anti-typhoid vaccine plus anatoxin), which he developed with the collaboration of Zoeller, answers this double purpose. It thus becomes possible to effect simultaneously two immunizations and to reinforce the immunity secured. Its use is recommended.

by the law of December 1931, which made vaccination with anatoxin compulsory in the army. The adoption of anatoxin of high antigenic value has brought new progress. It requires only two injections and produces an immunity of a high degree. In closing, Ramon declared that with the systematic and general use of vaccination by anatoxin there is hope that diphtheria may be entirely eliminated.

The Harmful Effects of Oil Burning Steamers on Marine Animals

Since mazout has been widely employed for firing the boilers of ships, harmful effects on marine animals have been observed. The petroleum left on the surface of the sea forms a layer that is scarcely perceptible but which, as it is never removed, increases with the years. Prof. Charles Richet has pointed out its effects on sea life in a communication to the Academy of Sciences. A thin coat of mazout covers the most frequented sea routes, particularly in the smaller areas, such as the English Channel and the North Sea, and for years considerable destruction has been observed among the inhabitants of these seas. The plankton, which constitutes the food of many fish, is being destroyed. Oysters are dying by the millions. Many fish are killed when the coating of oil obstructs their gills. The oil impregnates the wings of diving birds and gums up their feathers. As a result, these birds die from the cold. One sees, on the northern coast of France, veritable hecatombs of seagulls. In England, the Society for the Protection of Birds has called the attention of navigation companies to this lamentable destruction. The filters employed recover a part of the oil but allow a considerable part to escape. As these conditions brought about by oil burning vessels are likely to become worse, it may be that, in the course of centuries, important changes will be brought about in the animals of the sea, by this new factor.

An Electric Thermometer for Measuring Surface Temperatures

Mr. Jean Saidman presented recently to the Société des médecins des hôpitaux de Paris an electric thermometer that is accurate, although simple. It consists of two plates that are applied to the point the temperature of which one desires to measure. The electric current produced at the level of these plates enters metal coils connected with a millivoltmeter having a graduated centigrade scale. The figure read on this apparatus must be added to that of a mercury thermometer placed in the metal coils. Only from ten to fifteen seconds is required to ascertain the temperature of any point on the skin or the accessible mucous membranes. The apparatus enables one to study the pathology of the joints, the evolution of arthritis—accompanied by an elevation of temperature that diminishes as the attack recedes. One can study also surface elevations of temperature such as accompany inflammatory attacks or deep congestions.

Radium in the Treatment of Epulis

Degrais published, a few years ago, a report of a case of epulis as large as a walnut which was cured by radium. Since then he has observed a number of cases that were sent to him by dentists, and he has published an article in which he states that radium therapy is the surest treatment for epulis. The technique that he has finally adopted is the following. Under local anesthesia, he implants in the tumor needles from 1 to 2 cc. long and containing from 15 to 2 mg. of radium, depending on the size of the epulis, the needles being more or less numerous, depending on the case. The results were always good, and Degrais has never observed a recurrence. This is an excellent mode of treatment for all forms of epulis.

ITALY

(From Our Regular Correspondent)

Feb. 15, 1934

Congress of Obstetrics and Gynecology

The twenty-first national congress of obstetrics and gynecology was held at Bari, under the chairmanship of Professor Gaifami, director of the Clinica ostetrica of the Università Adriatica.

The official speaker on the first topic, "Vaginal Celiotomy," was Professor Bertino of Padua. The indications for such an intervention may be divided into obligatory and preferential. To the obligatory indications belong the cases in which the abdominal route is contraindicated and the vaginal route constitutes the only way to cure the disease. In cancer of the cervix, Bertino prefers the abdominal route, in cancer of the corpus and in chorio epitheliomas, the vaginal route. In prolapse of the uterus he limits operative treatment by way of the vagina to the rare cases of neoplastic or hypertrophic uterus or irreducible prolapse. The vaginal route and the Resnelli method are indicated in cases in which retroversion is associated with prolapse of the uterus. In uterine perforations one has recourse to the vaginal route only in clean cases, and in tuberculosis of the genitalia only in cases with frank localization in the uterus. In obstetrics, vaginal celiotomy is reserved for cases presenting hemorrhage due to a remnant of placenta remaining in the uterus, postpartum hemorrhages resistant to other methods, and hemorrhages due to placenta praevia or vesicular mole.

The second topic, "Female Sex Hormones," was introduced by Professor Acconci of Pavia. He emphasized that thus far only the more important aspects of the humoral correlations had been analyzed, whereas no less importance attaches to the features still unknown.

Professor Gaifami spoke on gynecologic radiotherapy, and suggested certain criteria for the regulation of the subject, the need of distinguishing the use of radium from that of roentgen rays, and of soliciting in the field of gynecologic radiotherapy the collaboration of the gynecologist. The congress approved a resolution to that effect.

Professor Gaifami spoke on the development of mother's aid in southern Italy. There is a discrepancy in the number of institutions in northern and southern Italy, to the disadvantage of the latter. The speaker suggested the creation of special obstetric-gynecologic departments in every chief town in the provinces. The birth rate is higher in the South.

For the next congress the island of Rhodes was selected. The two topics on the program are (1) "Woman in Relation to Sport Activities," chief speaker, Professor Scaglione, and (2) "The Lower Segment of the Uterus in Its Anatomic Peculiarities, Its Physiologic Behavior and Its Clinical Importance."

The Treatment of Leukemia

At a meeting of the Società medico chirurgica of Bologna, Professor Viola brought out that the clinical manifestations of the leukemic states differ widely. With regard to roentgen treatment, his experience shows that better results are obtained with small doses administered at varying intervals, depending on the case.

Volta called attention to the determination of the basal metabolism in judging the gravity of the chronic leukemic disorders and for establishing a prognosis. Such a test is useful also in radiologic treatment.

Schassi spoke on the periods of remission in chronic leukemic myelosis. He gave an account of a patient who was subjected to systematic study from 1924 until today, roentgen treatment being applied from time to time. At present he is in good

health The speaker considers the case an example of true clinical recovery

Azzi described cases of lymphopenic lympholeukemia, with an acute course, in which some benefit resulted from blood transfusion

He thinks that some benefit could be derived by directing roentgen rays to the tonsils

Possati, in radiologic treatment of chronic leukemia, follows commonly the technic of applying small fractional doses to the liver and the spleen He noted that some patients who do not react to ordinary treatment received benefit from brief applications of rays in accordance with the Ghilarducci method of variable filtration

Meeting of the Medico-surgical Society of Pavia

The Societa medico-chirurgica of Pavia met recently under the chairmanship of Prof. A. Pensa Filippi and Locatelli reported the results of their trials of vaccino-therapy by the intravenous route in undulant fever, in which they follow the norms indicated by Bianchi They found that this method of treatment is applicable in certain stages of the disease and does not cause untoward incidents It is well to commence with small doses and to increase the dose rapidly so as to provoke a sharp febrile reaction The beneficent effects of the treatment appear early To prevent recurrences it is well to continue the injections after complete defervescence, seven or eight injections being given in all

BUCHAREST

(From Our Regular Correspondent)

April 5, 1934

The Draft of a New Law on Quackery

The Bulgarian Board of Health has transmitted a memorandum to the government, asking for legislative help against quackery, which is flourishing in this country The draft defines quackery as follows (1) When any one without a license to practice medicine undertakes to treat patients professionally, advertises or calls himself a doctor, prescribes or supplies to his patients drugs that a chemist may not sell without a prescription, (2) when a dentist extends his therapeutic activities beyond the realm of dentistry and gives a general anesthetic, for example, or when a specialist in massage treats patients without their being referred to him by a doctor, or a midwife administers a general anesthetic or supplies drugs other than those which she is specifically qualified to dispense, (3) when a doctor, not licensed as a specialist poses in any way as a specialist, (4) when a doctor prescribes an unnecessarily large quantity of drugs solely to profit thereby, or if he advises, exclusively for his own profit, an operation or medical treatment for a disease for which such treatment is obviously unsuitable, or for a disease from which the person concerned is plainly not suffering, (5) when a doctor prescribes drugs ostensibly for medical purposes, although cognizant of their being wanted for other purposes (drugs of addiction), (6) when a doctor lends his name to the advertisement of drugs, medical equipment, foods or drinks in such a way that the public is liable to form an inaccurate opinion as to the real value of said articles, and (7) when a doctor lends his name to the activities of unqualified persons, to make the public believe their medical activities are authorized by him, such persons are guilty of quackery

The Incidence of Echinococcosis in Europe

In a treatise in *Praxis* on the occurrence of echinococcosis in Europe the statement is made that the prevailing opinion that Mecklenburg and Pomerania are the areas most affected needs correction H. Toole, who studied conditions in Greece,

found that in the Piraeus one person in 1,000 had an echinococcal infection, whereas in Mecklenburg the rate is only 1/3,585, while the population of Rostock (the city with the most extensive incidence in Mecklenburg) shows a rate of 1/1,370 In the province of Cephalonia the corresponding figure is 1/529 Echinococcal cysts have been found in 23 per cent of necropsies in Athens, whereas in Rostock during the period 1861-1905 the percentage was 1.98 and in 1905-1922 only 0.57 Dikoff, who studied the conditions in Sofia in Bulgaria, states that in 9,770 necropsies between 1900 and 1908 the echinococcus was the cause of death in four, or 0.49 per cent In 1922, out of 780 necropsies, death in seven cases was found to be due to the echinococcus R. Peicic, who has collected the cases in Yugoslavia in the last ten years, found 921 cases, including 241 from Bosnia and South Serbia Peicic regards Greece as one of the most badly infected of European countries According to Dew, the disease is uncommon in England

In Hungary, Czirer analyzed all the cases observed in the surgical clinics in 1917-1927 and found that echinococcal infection accounted for 0.2 per cent of the total He observed that echinococcal cysts are much more prevalent among the rural than among the urban population While human infection is not more prevalent in Hungary than in the western countries, Drs. Bodrogi and Lorincz, who studied the spread of echinococcosis in Hungary, consider it advisable to take strong measures against the echinococcus here as elsewhere

Massage Establishments

According to a responsible Bucharest newspaper the public health authorities have issued an order that will put an end to grave abuses in massage establishments and at the same time regulate their sphere of action It was explained that this restriction was necessary because massage establishments had become the haunts of secret vice According to the new regulations, massage can be practiced on persons only of the same sex and only on healthy subjects, the so-called curative massage being allowed only under medical supervision Cosmetic massage without the use of electrical appliances may be practiced freely The order subjects professional masseurs to special examination, and no licenses to practice will be given to applicants who have been punished for any offenses

BELGIUM

(From Our Regular Correspondent)

Feb. 27, 1934

Certification of Specialists

The title of "medical specialist" gave rise recently to a discussion before the Academy and various medical societies The discussion is not yet closed, but the Societe belge d'ehirurgie has unanimously supported the resolution of Professor de Beule affirming the need of creating a special surgeon diploma, which, without depriving the doctors of medicine surgery and obstetrics of the rights that the law confers on them, will emphasize the need of postgraduate training for those who aspire to an official post of surgery in a hospital or a clinic The technical and scientific advances in surgery demand imperatively the creation of a certificate guaranteeing that the holder has acquired a thorough knowledge of surgery by special studies

Exanthematous Typhus

Bruynoghe and Jadin have presented a communication to the Royal Academy of Medicine on exanthematous typhus They isolated the virus from rats caught in the port of Antwerp It is therefore not impossible that sporadic cases of exanthematous typhus may appear in that port or elsewhere The

virus of exanthematous typhus may adapt itself to other rodents (mice, dwarf mice, voles), and these rodents may play a part in the dissemination of the disease. The Weigl vaccine confers evident protection against typhus and should be applied whenever general health measures are insufficient to protect against contaminations.

Hospital Organization

At the third International Congress of Hospitals, the committees appointed to study the organization and equipment of hospitals under the chairmanship of Dr. Alter reached the following conclusions:

In order to secure the best results from hospital organization, small hospitals must be avoided, and all possible influences must be made to combine to promote the physical and psychic personality of the patients. Hospital care and treatment will not attain the maximal effectiveness unless they center on the individual patient.

The hospital of the future must be conceived on a large scale from the point of view of plan and organization, but in spite of its size it must guarantee the most complete individualization in the treatment. These two conditions, if realized, will result in the maximum economic efficiency.

From the administrative point of view, the best type of hospital is that containing about 600 beds. Smaller hospitals should be planned so that they can be enlarged and made to approach the ideal type without any excessive outlay.

The best type of 600-bed hospital should consist of absolutely distinct departments the collaboration of which is possible without friction. The arrangement should be such as to prevent loss of time in going back and forth between the departments. As far as possible, the patient should not be moved but rather the personnel and the equipment.

Large wards are excluded. Rooms with several beds are not practical. Rooms with one or two beds are the ideal. To attain this, a service unit comprising twenty-five beds, the majority of the rooms with only one bed should be adopted. The rooms should open on a central corridor. The equipment of the sickrooms and of the service units should conform in all respects to the fundamental principles stated.

Aid for Natives of the Congo

The Queen Elizabeth Fund for the medical relief of the natives of the Belgian Congo was established as a result of the endowment of a medical fund to combat tropical diseases in the Belgian Congo. The income from this endowment is to be used by the Queen Elizabeth Fund to provide medical aid for the natives. The report of the Queen Elizabeth Fund in 1931, which has just appeared, can be expected to give only a general idea of the society's mode of functioning. The directive agencies in Belgium are the administrative council and the committee on management, with a permanent office in Brussels. There is an executive committee, presided over by the governor general of the Belgian Congo, and an executive bureau, at present in the province of Congo Kasai. Besides the detection and the treatment of diseases, and prophylaxis and hygiene in general, the program includes the application of measures designed to promote the well being and growth of the native population. The program comprises also the protection of the mother and child, the crusade against social diseases, industrial hygiene, and the like. In 1932 the crusade against social diseases was exceedingly energetic as regards rashes and syphilis. The number of new tripanosomic infections is diminishing steadily and has dropped to below that of 1931, namely, to 0.26 per cent. The medical personnel attached in 1932 to the sector of the Lower Congo comprised twenty-two physicians (fifteen in 1931) and fifty-two sanitary officers and nurses (thirty-nine in 1931).

Marriages

STANLEY MORTIMER DILLENBERG, Newark, N. J., to Miss Margery Jean Siegel of New York, April 19.

ROBERT LAURENCE KNIPFER to Miss Marian Kathleen Knapp, both of Brandon, Iowa, March 13.

ALLEN CLAY GWIAN JR. to Miss Mary Virginia Homan, both of El Paso, Texas, April 25.

MAI THOMAS BOLOTIN, Chicago, to Miss Mary R. Mann of Shanghai, China, February 25.

JOSEPH B. PRIESTLEY to Miss Elizabeth Jane Lutz, both of Des Moines, Iowa, April 14.

CLARENCE G. POOL, Compton, Ill., to Miss Helen Schnuckel at New Orleans, March 27.

Deaths

Harry Lee Barnes of Wallum Lake, R. I., University of Vermont College of Medicine, Burlington, 1898, past president of the Rhode Island Medical Society, member of the American Climatological and Clinical Association, formerly director of the National Tuberculosis Association, at one time superintendent of the Stony Wold Sanatorium, Lake Kashaqua, N. Y., superintendent of the Rhode Island State Sanatorium, aged 56, died, April 8, of heart disease.

Thomas E. Hodges, Rogers, Ark., Arkansas Industrial University Medical Department, Little Rock 1888, formerly professor of osteology, College of Physicians and Surgeons, Little Rock, professor of anatomy, histology and embryology, and lecturer on anatomy, University of Arkansas School of Medicine, Little Rock, formerly mayor of Rogers, aged 74, died, March 25, of influenza and myocarditis.

William Gardiner Anglin, Kingston, Ont., Canada, Queen's University Faculty of Medicine, Kingston, 1883, M.R.C.S., England, 1884, emeritus professor of clinical surgery, Queen's University Faculty of Medicine, fellow of the American College of Surgeons, formerly physician to the Kingston Penitentiary, aged 77, died, February 4.

Charles Edward Caldwell, Cincinnati, Medical College of Ohio, Cincinnati, 1884, professor emeritus of surgical anatomy, University of Cincinnati College of Medicine, member of the Southern Surgical Association, formerly on the staff of the Cincinnati General Hospital, aged 73, died, March 23, of coronary thrombosis.

Julius A. Chevigny, Hammond, Ind., School of Medicine and Surgery of Montreal, Que., Canada, 1895, member of the Indiana State Medical Association, secretary of the board of health of Hammond, on the staff of St. Margaret's Hospital, aged 61, died suddenly, March 17, in Austin, Texas, of coronary occlusion.

David Nowlin, Montgomery City, Mo., St. Louis Medical College, 1890, member of the Missouri State Medical Association, fellow of the American College of Surgeons, bank president, aged 67, died, March 5, in a hospital at St. Louis, of chronic nephritis, diabetes mellitus and gangrene of the right foot.

Wilkin Blackburn Stevens of Kimball, W. Va., Maryland Medical College, Baltimore, 1904, past president of McDowell County Medical Society, formerly member of the Public Health Council, medical director of the Stevens Clinic Hospital, aged 56, died, March 8, at Coral Gables, Fla. of coronary occlusion.

James O. Ringold, Winona, Miss., University of the South Medical Department, Sewanee, Tenn., 1897, member of the Mississippi State Medical Association, past president of the Winona District Medical Society, on the staff of the Winona Infirmary, aged 60, died, March 31, of arteriosclerosis.

Arthur Henry McCreight of Fort Dodge, Iowa. Rush Medical College, Chicago, 1897, past president of the Webster County Medical Society, served during the World War, formerly county coroner, aged 67, on the staff of St. Joseph's Mercy Hospital, where he died, March 28, of pneumonia.

Richard Benson Stewart, Warren, Pa., College of Physicians and Surgeons, Baltimore, 1881, member of the Medical Society of the State of Pennsylvania, on the staff of the Warren General Hospital, aged 72, died, March 25, of pneumonia as the result of an accidental fall.

John Richard Benton, Stevensville, Md. University of Maryland School of Medicine, Baltimore, 1883, for twenty years member of the county board of education and for twelve years judge of the orphans' court, aged 75, died, March 19, of chronic nephritis and heart disease

Henry Dixon Stewart, Monroe, N. C., University of Maryland School of Medicine, Baltimore, 1898, member of the Medical Society of the State of North Carolina, served during the World War, aged 62, was found dead in bed, March 20, of heart disease

Perry Gabriel Dunlap, Lawton, Okla., Vanderbilt University School of Medicine, Nashville, Tenn., 1881, University of Nashville Medical Department, 1882, member of the Oklahoma State Medical Association, aged 75, died, January 21, of angina pectoris

Byron Stanley Loney ♂ Detroit, University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1917, fellow of the American College of Surgeons, on the staff of the Harper Hospital, aged 50, died, March 17, of coronary thrombosis and arteriosclerosis

Benjamin Beamer Morrow, Spiceland, Ind. Eclectic Medical Institute, Cincinnati, 1897, member of the Indiana State Medical Association, aged 61, died, February 27, in the Methodist Episcopal Hospital, Indianapolis, of prostatic hypertrophy

Ernest Charles Daniel MacCallum, Kingston Ont., Canada, McGill University Faculty of Medicine Montreal, Que., 1897, associate professor of medicine, Queen's University Faculty of Medicine, aged 61, died, February 6, of pneumonia

George Frederick Bainter, Strasburg, Ohio, Ohio Medical University, Columbus, 1896, formerly mayor of the village and county coroner, served during the World War, aged 63, died, March 31, in the Union Hospital, Dover, of myocarditis

John Charles Humphreys ♂ Philadelphia Hahnemann Medical College and Hospital of Philadelphia, 1908, Jefferson Medical College of Philadelphia, 1910, formerly a medical missionary, aged 54, died, March 31, of hypostatic pneumonia

Robert Thomas Dott, Sioux Falls S. D. Rush Medical College Chicago, 1883, Bellevue Hospital Medical College New York, 1885, member of South Dakota State Medical Association, aged 75, died, January 3, of cerebral hemorrhage

Joseph Francis Brewer, Minneapolis, Kan. University Medical College of Kansas City, 1889, member of the Kansas Medical Society, for many years president of the board of education, aged 79, died, March 11, of lobar pneumonia

Helmer Walter Huseby, Floodwood Minn. University of Minnesota Medical School, Minneapolis, 1926, member of the Minnesota State Medical Association, aged 34, died March 22, in a hospital at Duluth, of pneumonia

Robert McCune Smith, Kansas City, Mo., Kansas City Medical College, 1902, member of the Missouri State Medical Association, aged 72, died, March 18, in the Research Hospital, of carcinoma of the left jaw, liver and brain

William Sheppard Norman ♂ Hamburg, Ark. University of Louisiana Medical Department, New Orleans, 1875, past president of the Ashley County Medical Society, aged 82, died, March 13, of hypostatic pneumonia

Peter Paul Klopp, Philadelphia, Jefferson Medical College of Philadelphia, 1890, member of the Medical Society of the State of Pennsylvania, also a lawyer and pharmacist, aged 66, died, March 24, of arteriosclerosis

Howard Banks Ames ♂ Alva, Okla. Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1901, past president of the Woods County Medical Society, aged 60, died, March 14, of carcinoma of the stomach

Harry A. P. Neel, Philadelphia, University of Pennsylvania School of Medicine, Philadelphia, 1877, member of the Medical Society of the State of Pennsylvania, aged 79, died, February 5, of uremia and arteriosclerosis

Linn Bayard Marshall, Portland, Maine University of Colorado School of Medicine, Denver, 1913, member of the Maine Medical Association, served during the World War, aged 51, died, March 30, of heart disease

Kenneth Bowles Huffman, Joplin Mo., St. Louis University School of Medicine, 1910, member of the Missouri State Medical Association, served during the World War, aged 50, died, March 12, of angina pectoris

Clarence Atwood Baker, Portland, Maine, Medical School of Maine, Portland, 1882, member of the Maine Medical Association, aged 82, died, March 30, in St. Barnabas Hospital of strangulated inguinal hernia

Wladyslaw Josef Alfons Schwarz, Jersey City, N. J., Eclectic Medical College of the City of New York, 1902, member of the Medical Society of New Jersey, aged 73, died, March 4, of angina pectoris

Edgar Oriel Newlin, Fontanet, Ind., Physio-Medical College of Indiana, Indianapolis, 1904, served during the World War, aged 57, died, February 5, in the Union Hospital, Terre Haute, of pneumonia

Samuel Freeman Hassler ♂ Harrisburg, Pa., Jefferson Medical College of Philadelphia, 1894, aged 65, for many years on the staff of the Harrisburg Hospital, where he died, March 21, of heart disease

John Denver Siddall, Carey, Ohio, Eclectic Medical Institute, Cincinnati, 1898, member of the Ohio State Medical Association, served during the World War, aged 61, died, March 15, of pneumonia

William Hill Black, Kansas City, Mo. (licensed in Oklahoma under the Act of 1908), member of the Oklahoma State Medical Association, aged 63, died, February 28, of endocarditis and cholecystitis

William M. Long, Liberty, S. C., Medical College of the State of South Carolina, Charleston, 1896, member of the South Carolina Medical Association, aged 65, died, March 19, of coronary thrombosis

George Morrison Logan ♂ Akron, Ohio, Rush Medical College, Chicago, 1909, served during the World War on the staff of the City Hospital, aged 55, died suddenly, March 21, of heart disease

West Montgomery Carson, Clarksdale, Miss., New York Homeopathic Medical College and Hospital, 1893, veteran of the Spanish American War, aged 62, was shot and killed, Dec. 19, 1933

Robert Burton Newcomb, Cleveland, Western Reserve University Medical Department, Cleveland, 1893, also a lawyer, aged 61, died, March 19, of an incised wound of the throat, self inflicted

Edward William Nolan, Toronto, Ont., Canada, Queen's University Faculty of Medicine Kingston, 1916, served during the World War, aged 43, died, February 25, of cerebral hemorrhage

John Rupert Elliott, Palacios Texas, University of Texas School of Medicine, 1902, veteran of the Spanish-American and World wars, aged 55, died, February 10, of coronary obstruction

Irving Solby, Boston Harvard University Medical School, Boston, 1907, formerly on the staff of the Massachusetts General Hospital, aged 53, died suddenly, March 26, of heart disease

Peter Andrew Snell, Baltimore, University of Rochester (N. Y.) School of Medicine, 1933, aged 27, an intern at the Johns Hopkins Hospital where he died, March 14, of pneumonia

Michael Sheridan McGauran, Lawrence, Mass. Rush Medical College, Chicago, 1888, member of the Massachusetts Medical Society, aged 86, died, March 25, of arteriosclerosis

Walter Waverly Scott ♂ Kensington, Kan., University Medical College of Kansas City, 1906, served during the World War, aged 53, died, March 18, of bronchopneumonia

George Vernon Harecourt, Powassan Ont., Canada Trinity Medical College, Toronto, 1896, member of the legislature, aged 59, died, February 1, in Toronto, of coronary thrombosis

Lucy Anne Kirk, Boston Boston University School of Medicine, 1893, aged 75, died, April 5, in the New England Deaconess Hospital of coronary infarct and diabetes mellitus

Foster Strong Haven, Manasquan N. J., College of Physicians and Surgeons Medical Department of Columbia College, New York, 1886, aged 75, died, March 8, of heart disease

Oswald F. Henning, Los Angeles, Rush Medical College, Chicago, 1904, served during the World War, aged 55, died, March 19, of peritonitis due to perforating gastric ulcer

Charles Chittenden Bradley, Dover, Kan., State University of Iowa College of Medicine, Iowa City, 1890, aged 69, died, February 15, of carcinoma of the esophagus

Edgar Bentley Noland, Bassett's Va., College of Physicians and Surgeons Baltimore, 1910, served during the World War, aged 44, died, March 2, of angina pectoris

Charles Nicholas McCuen, Haverhill, Mass., College of Physicians and Surgeons, Boston, 1902, aged 58, died, March 12, in the Gale Hospital of bronchopneumonia

William Edwards, Spring Hope, N C, College of Physicians and Surgeons, Baltimore, 1884, aged 69, died, February 14, of cerebral hemorrhage and arteriosclerosis

Kelso Carmichael Cairns, Swift Current, Sask., Canada, University of Toronto Faculty of Medicine, Toronto, Ont., 1905, aged 51, died recently, of heart disease

Warren Augustus Bedell, Mount Vernon, N Y, University of the City of New York Medical Department, 1879, aged 80, died, March 26, of angina pectoris

Charles S Snell, Vermontville, Mich., Homeopathic Medical College of Missouri, St Louis, 1875, Civil War veteran, aged 87, died, March 30, of heart disease

William Edward Hughes, Pocahontas, Ark., Memphis (Tenn.) Hospital Medical College, 1900, aged 64, died, March 27, of chronic nephritis and uremia

Robert C Hitchings, Ⓢ Donovan, Ill., Kentucky School of Medicine, Louisville, 1889, aged 70, died, March 26, in St Mary's Hospital, Kankakee, of uremia

Weston Columbus Sumner, Ganado, Texas, University of Louisville (Ky.) School of Medicine, 1909, aged 57, died, March 30, of chronic granular nephritis

Jim M Hart, Fort Worth, Texas, Memphis (Tenn.) Hospital Medical College, 1891, aged 77, died, March 27, of bronchopneumonia and heart disease

Horace Mann Locke, Sturbridge, Mass., Harvard University Medical School, Boston, 1886, aged 73, died, March 5, of bronchopneumonia and myocarditis

Charles Carter Shepard, Ord, Neb., Hahnemann Medical College and Hospital of Philadelphia, 1901, aged 74, died, February 24, of coronary embolism

Caroline Augusta Latham, Leominster, Mass., Boston University School of Medicine, 1891, aged 86, died, March 7, of myocarditis and arteriosclerosis

Jacob A Haerr, Cincinnati, Pulte Medical College, Cincinnati 1881, formerly county coroner, aged 81, died suddenly, March 16, of endocarditis

A A Horger, Harleyville, S C, Medical College of the State of South Carolina, Charleston, 1895, aged 62, died, March 29, of heart disease

Henry F Hewitt, Dunning, Neb., State University of Iowa College of Medicine, Iowa City, 1897, aged 64, died, March 2, of heart disease

Butler Ormond Lewis, Wacissa, Fla., Long Island College Hospital, Brooklyn, 1891, aged 78, died, February 17, as the result of a fractured hip

Arthur B Freeman, San Diego, Calif., Rush Medical College, Chicago, 1885, also a dentist, aged 74, died, January 26, of diabetes mellitus

Joseph Anton Juen Ⓢ Ossian, Iowa, St Louis College of Physicians and Surgeons, 1904, aged 59, died, March 11, of cerebral hemorrhage

William H Stuckenholt, Cleveland, Cleveland Medical College 1894, also a pharmacist, aged 78, died, March 8, of cerebral hemorrhage

William Hall, Fort Qu'Appelle, Sask., Canada, Victoria University Medical Department, Coburg, Ont., 1883, aged 77, died, Dec 31, 1933

John Edward Kitchen, Bone Gap, Ill., Eclectic Medical Institute Cincinnati, 1877, aged 84, died, February 14, of heart disease

Edwin S Naffz, Chicago, Rush Medical College, Chicago, 1893, also a pharmacist, aged 66, died, April 15, of organic heart disease

William Logan Silcox, Hamilton, Ont., Canada, University of Toronto Faculty of Medicine, 1896, aged 62, died, February 27

Mary Eliza McKay, Macon Ga., Woman's Medical College of Baltimore, 1897, aged 75, died, March 26, of cerebral hemorrhage

Martin D Heath, Baldwin Park, Calif., Pulte Medical College Cincinnati, 1880, aged 93, died, January 9, of cerebral hemorrhage

William Crawford, Hamilton, Ont., Canada, University of Toronto Faculty of Medicine, 1892, aged 66, died, February 2

Daniel Samuel O'Brien, Beloit, Kan., Rush Medical College Chicago, 1880, aged 75, died, February 12, of heart disease

Charles F Nelms, Laneburg, Ark. (licensed in Arkansas in 1903) aged 62, died, Dec 25, 1933, of myocarditis

Correspondence

TINTED LENSES

To the Editor —In THE JOURNAL, April 14, page 1223, appeared an article by C H Coblentz, which should meet with enthusiastic approval. The misinformation he discussed has been allowed to go rampant too long without challenge. It is time for the bunk about tinted lenses to be properly aired.

Except for emergency wear, under extreme light conditions, tinted lenses have no legitimate use. They are distinctly harmful when worn constantly, cultivate an acquired photophobia to normal light, and are then no longer sufficient protection against glare. They are totally unnecessary when the correction is right.

Advertising illustrations usually show the wearer comfortably facing glaring light through tints but carefully avoid suggestion of the reduced vision in ordinary, and especially subdued, light, or of the light sensitiveness that follows.

Perfected lenses are excellent and are worthy of more truth in advertising. Claims are made by the manufacturers that through these lenses marginal vision is as good as the central. This claim is largely false. Marginal vision is obtained by turning the eye in the orbit, the muscle pull alters the shape of the globe, and vision is slightly distorted. Obviously, no lens can possibly allow for such distortion. These lenses are useful in high degrees of error, chiefly because of more perfect vertex refraction. In low errors they are little, if any, better than the standard toric, and certainly not worth the additional cost when price must be considered.

I W HAUGHEY, M D, Fort Collins, Colo

THE TYPES OF HUMAN HYPER-SENSITIVENESS

To the Editor —In the article by J A Rudolph and M B Cohen (THE JOURNAL, March 24) the authors distinguish between the reaction in "the artificially sensitized, or anaphylactic man," and "the naturally sensitized man, or man with atopy." They base this distinction primarily on whether or not a history of inheritance can be obtained. The reliance on a negative history as the principal criterion for this distinction is open to criticism because of failure in many cases to obtain satisfactory histories. In my clinical studies on this subject (THE JOURNAL, May 30, 1931, p 1848, Feb 6, 1932, p 446, Ann Int Med 7 1308 [April] 1934), I believe I have clearly demonstrated that the clinical manifestations and the mechanism of these reactions are fully identical whether or not one is dealing with pollen (atopics) or with horse serum (often artificially sensitized) or with any other protein or nonprotein containing antigen.

In the "anaphylactic" man, "the antibody differs from that found in atopy." So far the antibodies in "anaphylactic" and "allergic" shock in men have not been demonstrated. The excellent work of Cooke and Spain, quoted by the authors, includes serum sickness but neither human "allergic" nor "anaphylactic" shock. I have repeatedly tested patients for reagins after "allergic" shock following pollen injections but have never been able to determine these antibodies in the blood soon after shock. Walzer records a similar observation following shock due to an injection of horse serum.

Anaphylactic "sensitivity never produces asthma, hay fever, eczema, urticaria, or other related clinical manifestations of atopy." In the literature, this is a highly controversial question which is not supported by experimental evidence (Ratner, Bret, Jackson, H C, and Gruehl, Helen L. Respiratory Anaphylaxis, Am J Dis Child 34 43 [July] 1927).

The statement that in "anaphylactic" individuals the reactions are less severe, while in atopic ones they may be serious and fatal, is not in accord with clinical observations. In my series of eight deaths following injections of horse serum, which I collected in the state of Michigan, only two gave a previous history of allergy. This would rather indicate that, in fatal cases, "anaphylactic" shock prevails. I have clearly brought out that regardless of whether the sensitized state is acquired or inherited, the severity of a reaction depends primarily on the degree of sensitivity, on the proportion of the overdose to this sensitivity and on the mode and rapidity of absorption (intravenous, backseepage into punctured vein).

Those investigators who share the dualistic conception of atopy and anaphylaxis seem to disregard entirely the fundamental work of Ratner on this subject. The attitude on this question is characteristically expressed by Zinsser, who states in his book (*Resistance to Infectious Diseases*, ed 4, New York, Macmillan Company, 1931) "Were it not for the possibility of confusion in nomenclature [italics mine] we would change this heading [human idiosyncrasies, atopy, allergy] to 'human anaphylaxis,' believing that these conditions in man are based on an immunological mechanism basically identical with anaphylaxis in animals, superficially modified by human anatomical conditions." This matter, I believe, is of more than academic interest because of its bearing on sudden, heretofore unexplained death (*Am J Dis Child* 47:41 [Jan] 1934).

GEORGE L. WALDBOTT, M.D., Detroit

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted on request.

STATISTICAL DATA IN HUMAN ANATOMY

To the Editor—In our daily newspaper (*Grand Rapids Press*) an item caught my eye in the section on "This Curious World." The statement is made that the blood vessels of an adult have a combined length of about 100,000 miles. May I ask you whether this statement has the backing of scientific authority? For a long time I have wanted to know whether any estimates have ever been made of the combined length of nerves of the body and of the blood vessels. Also whether the total number of white and red corpuscles has ever been estimated. These figures would be of interest in talks to the public which I sometimes give. If there is any publication you recommend along this line I will be grateful.

A. W. WOODBURN, M.D., Hastings, Mich.

ANSWER—Estimates of the total length of blood vessels in the adult human body would necessarily be only approximate. Krogh, in his book on the capillaries, has made a calculation of the total length of blood capillaries in the muscles. He states that there are more than 100,000 kilometers of capillaries in the muscles alone (62,000 miles). Since the muscles constitute only about 40 per cent of the weight of an adult healthy body, it would be conservative to estimate the total length of all capillaries in the rest of the body at 38,000 miles. Therefore, the statement that there are more than 100,000 miles of blood capillaries seems to be conservative.

No estimates of the total length of nerve fibers in the human body seem to have been made but several estimates have been made of their number. Vierordt estimates the number of nerve fibers in the spinal nerve trunks at over 800,000, the number of fibers in the cranial nerves from the third to the twelfth inclusive, at 200,000 (*Krause's Anatomy*). The number of fibers in the optic nerve have recently been counted by Arey (1934), the two (right and left) together in the human adult contain about 2,600,000. This gives a total of 3,600,000 fibers without the olfactory nerves. These figures are undoubtedly far too small, because the older counts were made by methods that did not permit observation of the finer fibers. Since many of these nerve fibers branch repeatedly toward their termination, the number of fibers in the nerve trunk would be only a fraction of the total number of nerve fibers in the periphery.

The number of red corpuscles in the body has been estimated at twenty-three million million (Vierordt). The proportion of

white blood cells to red cells is about 1 to 666, so that the blood contains only about thirty-three thousand million white cells.

A good reference book for statistics of this kind is Vierordt's *Anatomische, physiologische und physikalische Daten und Tabellen*, Jena, Gustav Fischer, 1906. A considerable amount of such information is contained in Harvey's *Simple Lessons in Human Anatomy*, Chicago, American Medical Association, 1931.

CLIMATIC RECOMMENDATIONS IN SINUS INFECTION

To the Editor—Given chronic sinusitis (probably streptococci) with rheumatoid arthritis together with intermittent low grade fever and tachycardia but no endocarditis in a man, aged 39 otherwise in good health, with arthritis of two years duration and the tonsils removed is choice of climate or operation better to effect a cure of the sinusitis? Would operation be contraindicated because of an occasional bout of fever? Nose and throat specialists seem very much confused about chronic sinusitis and its treatment. If pus is not found at the time of examination in the sinuses they doubt whether infection is present. However, I think that if the nose feels stuffy most of the time if the mucosae of the sinuses are thickened if mucous cysts are present if the nose stops up at night and the throat becomes irritated by discharge or by cold air not adequately warmed and humidified by passing through the sinuses and if a mucoid or mucopurulent discharge sometimes containing a little blood, is present especially on awakening in the morning one can be assured that he is suffering from chronic sinusitis and all the more certain if systemic infection is present. Please omit name.

M. D., Illinois.

ANSWER—Rheumatoid arthritis with a low grade fever in a patient between 20 and 40 is usually associated with a septic focus. In such cases there is a tendency to rapid pulse with low blood pressure. Fever is no contraindication to operation. The absence of pus in the sinuses at the time of examination is no indication that infection is not present. In such cases it is not unusual to find a thickened and infected membrane, nasopharyngeal inflammation and mucopurulent discharge with blockage of the nose. Removal of foci of infection is generally regarded as a first consideration, not at all an easy matter in nasal sinus disease. If the patient is so circumstanced that he can live in a suitable climate, operative treatment could be limited at first to securing adequate drainage. Following this, favorable hygienic surroundings including fresh air and sunshine, constitute an important factor in recovery.

TREATMENT OF SYPHILIS

To the Editor—March 1, 1933, a couple aged 25 and 23, with secondary syphilis consulted me. The husband stated that he had a chancre two and one-half months prior to the appearance of the rash. A Kahn test was made on both of them, the report was 2 plus on him and 3 plus on her. Each of them received twelve injections of sulpharsphenamine intramuscularly in a dosage of 0.6 Gm. at intervals of seven days and 1 drachm (4 Gm.) of a 50 per cent mercurial ointment daily six days out of seven. They became symptomless and felt normal. I discontinued treatment for six weeks and took another Kahn test which was reported negative for both of them. I prolonged the rest period for an additional two months and took another Kahn test and that one also was negative. I prolonged their rest period for four more months and then the Kahn test showed a 3 plus for both of them. Kindly advise me how and for how long to treat them in order to bring about a cure.

M. D., Illinois

ANSWER—The mode of procedure outlined in this question is a classic example of what not to do for a patient with early syphilis. The most recent investigation by the Clinical Cooperative Group and the United States Public Health Service indicates that the principal source of serologic irreversibility and relapse, together with neurorecurrence, is the introduction of rest intervals into the first eighteen months of treatment for early syphilis. During this period, patients should be continuously under treatment with either an effective arsphenamine or a heavy metal such as bismuth, or both. The practice of depending on serologic tests for the cessation or continuance of treatment in early syphilis is pernicious and certain to result in prolonged infectivity and therapeutically unmanageable cases. Such patients should be treated by a scheduled system that will give them approximately forty injections of either arsphenamine or neoarsphenamine and not less than five ten injection courses of an effective bismuth preparation such as bismuth salicylate, during the eighteen months period of treatment. The serologic tests of course should be taken periodically, but their reversal to negative should not be taken as a signal for the cessation of treatment. Regardless of the schedule mentioned treatment should be continued for one year after all symptoms and signs of the disease have disappeared including the finding of a completely negative spinal fluid examination. It should

be mentioned, moreover, in connection with this question that sulpharsphenamine is not a satisfactory drug for the treatment of adult syphilis, on account of the high incidence of dermatic and purpuric hemorrhagic reactions

If the two patients mentioned in the foregoing question are simply positive on the blood and negative on the spinal fluid at this time, an effort should be made to complete the type of treatment, continuous in schedule, which has just been described. The probabilities are that it will be very difficult to reverse the blood serologic tests to negative, and these patients may easily join the category of Wassermann-fast syphilis. Under no circumstances should they be dismissed from observation over a period of years, and the possibility of pregnancy in the woman should be controlled and treatment administered during the pregnancy in order to prevent the birth of a syphilitic child

INJECTION OF VARICOSE VEIN AND TREATMENT OF PHLEBITIS

To the Editor—A woman aged 41 with three children aged 19, 17 and 14 years had varicose veins and phlebitis developing after the birth of the second child seventeen years ago. She had attacks of phlebitis again four and two years ago. She had a fourth attack lately and is just getting over it. She is otherwise in good health. Her blood pressure has always been normally rather low—systolic 100 diastolic 45. There are moderate varicosities of the saphenous vein in the upper third of the calf. It has given little or no trouble at other times. I have not dared to inject anything into the vein on account of the recurring phlebitis. Do you think injection treatment will be advisable and if so how long after the last attack? Would you advise ligation of the saphenous vein or excision to prevent the danger of embolism? How great is the danger of embolism in a case of recurrent phlebitis? Or would you advise to leave well enough alone the patient being rather well and just out of bed now. Please omit name. M D New Jersey

ANSWER—The mere fact that a patient has had phlebitis is not a contraindication to the injection treatment of varicose veins. Her low blood pressure is not a contraindication. The recent attack of phlebitis may be an entirely separate attack and in no way related. They are entirely separate infections and not a flare up of a latent infection. One might wait at least three months before starting the injection treatment and using the electric baker and hot packs alternately a great deal of the time. Ligation should be done in the foramen ovale and the distal saphenous vein injected at the same time. A supportive bandage should be kept on the lower leg for several days following and then those veins should be injected at one sitting. One need not worry about the danger of an embolus in this case.

REACTIONS AFTER ARSPHENAMINE

To the Editor—During the last six months a number of patients who have been receiving neoarsphenamine have developed reactions. These reactions are of the delayed type occurring from one to four hours after the treatment and consist of severe chills, body pains, prostration and sometimes nausea or vomiting. The reactions are somewhat similar to those seen following the first one or two injections of neoarsphenamine when the patient is started on treatment in the secondary stage. The reactions in question have occurred in patients who are receiving their second or third courses of neoarsphenamine and who previously had no trouble following their injections. My maximum dosage is 0.6 Gm. and these reactions frequently follow smaller amounts such as 0.3 or 0.45 Gm. These reactions have lately been occurring in about 20 per cent of the cases under treatment. I have been using D R L neoarsphenamine and have lately changed to Squibb's neoarsphenamine without noticing any particular lessening of the reactions. Some of these patients are able to tolerate Searle's neoarsphenamine which I am informed does not contain the methyl radical. Can you inform me as to the probable cause of these reactions? While I have always had an occasional patient exhibit hypersensitiveness to this drug I have never before had such a high percentage of reactions. The neoarsphenamine is injected intravenously according to the accepted technique the powder being dissolved in double distilled water and the injection being given very slowly. These patients show no evidence of dermatitis and apparently are able to tolerate an indefinite number of the injections if they are willing to put up with these unpleasant reactions. Different samples of the drug from different batches apparently produce the same effect but the reaction is less with the smaller dosages. Kindly omit name and address. M D Ohio

ANSWER—Reactions of the type described, which do not disappear when the brand of neoarsphenamine is changed suggest the following possibilities:

There may be a technical error in the mixing of the drug. This includes a wide range of possibilities such as contaminated solution, aeration of the drug in mixing, undue agitation and glassware not completely cleaned so as to remove all oxidation products of the drug before the next injection is given. Such difficulties creep in when technicians are employed in an office or a clinic and a change from a more experienced to a less experienced person takes place.

While the rate of injection may also be a factor, rapid injection of the arsphenamines is more prone to give rise to acute vascular reactions following immediately on the injections than to delayed reactions, with chill, fever and gastro-intestinal symptoms.

It must also be considered that there are unaccountable factors in the reactivity of groups of patients from year to year and from season to season and that anxiety factors, poor nutrition, a high carbohydrate intake, and the like, are prone to increase the incidence of reaction and reduce the tolerance of large groups of persons receiving treatment for syphilis. Neglect of instructions regarding light meals just before and for twenty-four hours after treatment may at times be responsible for gastro-intestinal reactions.

As a suggestion for dealing with the situation, the neoarsphenamine, following the recommendation of Colonel Harrison and others, might be made up in 10 cc of a 10 per cent sterile solution of calcium gluconate, which can be obtained in ampule form from the larger pharmaceutical manufacturers. This is said by various observers to reduce materially the incidence of gastro-intestinal reactions. Again, it is important to emphasize that the drug must be given at an extremely slow rate.

DANGERS OF COMMON DRINKING CUP

To the Editor—From a sanitary standpoint I am anxious to know your opinion regarding the use of a public sacrament cup in taking communion. I have given information to a minister who advanced the argument that there is a sufficient amount of alcohol in the wine to act as an antiseptic or protective agency. Not knowing the percentage of alcohol I doubted this statement and am writing you for further information. Kindly omit name. M D Nebraska

ANSWER—The same objections apply to the use of a public communion cup as apply to the use of any common drinking cup. There is no reason to believe that any amount of alcohol present in the wine would act as a protective agent. The percentage of alcohol is too small to expect much germicidal action, the time of exposure is too short, and only part of the contaminated area of the cup would be touched by the wine.

DIAGNOSIS OF UNDULANT FEVER

To the Editor—In making a diagnosis of undulant fever in patients who show the clinical symptoms suggesting the disease I should like to know how high the titer must be in the serologic test before the diagnosis can be safely made. Please omit name and address. M D New York

ANSWER—Diagnostic significance is usually attributed to agglutination in dilutions of 1:80 or above. It cannot be said, however, that there is any arbitrary diagnostic agglutination titer. While the serums of most individuals who exhibit a more or less well defined clinical picture of undulant fever will show agglutination in titers of 1:80 or above, occasional cases will be encountered in which no agglutinins are present or agglutinins will exist in titers of from 1:10 to 1:40. Ordinarily, serum agglutinins do not appear until a week or ten days after the onset of illness. In some cases, however, agglutinins may not appear for several weeks. The titer reaches varying heights during the acute course of the disease and tends to fall as the fever abates. Agglutination in dilutions of 1:160 to 1:1,280 will usually be found during the fourth or fifth week of illness. Many persons will retain antiabortus serum agglutinins for many months or years while in other cases they will entirely disappear a few months after recovery.

About 5 per cent of individuals with undulant fever, including those from whom the organism has been recovered from blood culture, will fail to develop antiabortus agglutinins. In occasional instances, agglutination in titers below 1:80 will be encountered in persons from whose blood *Alcaligenes* organisms have been recovered. In cases in which the clinical manifestations are strongly suggestive of undulant fever the absence of agglutinins or the presence of agglutinins in titers of 1:10 to 1:40 should stimulate further serologic and bacteriologic studies. The skin test is of value in differentiating cases in which agglutinins are absent or are present in low titer. If the agglutination test is repeatedly negative and if the skin test is negative, it is quite probable that the patient does not have undulant fever. One method of carrying out the skin test is by the intradermal injection of 0.1 cc of saline suspension of heat-killed or formaldehyde-killed abortus organisms adjusted to a standard of two billion organisms per cubic centimeter. The *Alcaligenes* (*Brucella*) *melitensis* (abortus) vaccine which is available through trade sources, may be used for the skin test. A positive test is characterized by the gradual development, usually within from twenty-four to forty-eight hours

after injection, of an indurated reddish area, usually about 2 to 4 cm in diameter. The induration usually persists for many days or weeks.

Carpenter and others have demonstrated that antiribortus agglutinins develop only when there has been actual invasion of the tissues by living *Alcaligenes* organisms. Subclinical *Alcaligenes* infections have occurred in some persons who have been exposed to the disease, antiribortus agglutinins have been demonstrated in the serums of such persons in the absence of clinical signs or symptoms of undulant fever.

PROFUSE PERSPIRATION AS SIGN OF
GIANDULAR DISTURBANCE

To the Editor—A white woman aged 40 some weeks ago had a moderately severe bronchitis and cough. She is nervous and quite obese weighing about 200 pounds (90 kg). Under ordinary treatment she has recovered from the respiratory infection but now she complains bitterly about profuse sweats which come on mostly at night when she is asleep. When she goes to bed she feels well but at about 1 or 2 o'clock she is awakened from sleep by a profuse sweat which lasts until about 4 o'clock when she falls asleep and does not sweat any more until the next day when she has periodic sweats. Sweating during the day is not apparently brought on by nervousness but when she begins to sweat she becomes nervous. She does not drink an abnormal amount of water and her appetite is normal. She also says that her voice becomes hoarse toward evening even though she does not use it during the day for long periods. Atropine seems to make the patient worse because it produces marked nervous symptoms. Her temperature is normal and she has no evidences of tuberculosis. The blood pressure is 130 systolic 70 diastolic. The pulse rate is 96. Her obesity is probably due to hypopituitarism. I have questioned her thoroughly with special reference to weakness, nervousness and hunger but these symptoms are not present. There seems to be some abnormality of the nervous control of the sweat glands. Do you believe that pituitary gland therapy would help? If so what preparation and what dose would you suggest? I would appreciate any therapeutic suggestion that you will make. Please omit name.

M D Ohio

ANSWER—The analysis of this report suggests that the sweating is a complication of the acute respiratory infection from which the patient has just recovered. This is not an unusual phenomenon and usually will disappear after the lapse of a little more time. If the symptoms were due to the glandular disturbance it is rather difficult to understand why they should not have come on until after the respiratory infection. On the other hand, there are numerous instances of glandular unbalance in which sweating is a pronounced and marked symptom. Such an instance is seen in the menopause. Therapy is usually difficult, the various endocrine products may be used more or less experimentally.

TYPHOID DEATHS IN CHICAGO

To the Editor—What year before the drainage canal was in use did Chicago have the greatest number of deaths from typhoid? How many deaths were reported? How many infections were reported and what was the population that year? What year after the drainage canal was in use did Chicago have the fewest deaths from typhoid? How many infections were reported? What was the population that year? I am writing a paper for a public health talk at a church and would appreciate anything that you can give me on the effect of sanitation in lowering the death rate and the disease rate from typhoid or any other disease.

G E HENSCHEN MD Sherman Texas

ANSWER—The largest number of deaths from typhoid ever recorded in Chicago was in 1891, when 1,997 deaths from this cause were reported. The estimated population in that year was 1,148,710, making a typhoid death rate of 173.8 per hundred thousand inhabitants. This contrasts with average typhoid death rates in later years as follows:

	Typhoid Death Rate per 100,000
1906-1910	15.8
1911-1915	8.2
1916-1920	2.4
1921-1925	1.4
1926-1930	0.6
1931	0.6
1932	0.4
1933	0.4

The population of Chicago was about three times as large in 1933 as it was in 1891, so that if the same rate had obtained in 1933 as in the earlier year there would have been nearly 6,000 deaths from typhoid, whereas there were actually 12. The number of deaths is considered a better measure of the prevalence of typhoid than the number of cases reported. In general, there are approximately ten to fifteen cases for each death.

Much information on the effect of sanitation in lowering death rates will be found in the files of THE JOURNAL and the *American Journal of Public Health* as well as in modern books on hygiene.

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- NEW YORK June 25-28 Chief Professional Examinations Bureau, Mr. Herbert J. Hamilton Room 315 Education Bldg. Albany
- NORTH CAROLINA Raleigh June 18 Sec. Dr. B. J. Lawrence 503 Professional Bldg. Raleigh
- OHIO Columbus, June 5-8 Sec. Dr. H. M. Platter 21 W. Broad St. Columbus
- OKLAHOMA Oklahoma City June 6-7 Sec. Dr. J. M. Byrum Mammoth Bldg. Shawnee
- OREGON Basic Science Portland May 19 Acting Sec. State Board of Higher Education Mr. Charles D. Byrne Eugene
- SOUTH CAROLINA Columbia June 26 Sec. Dr. A. Earle Boozar 505 Saluda Ave. Columbia
- TENNESSEE Knoxville Memphis and Nashville June 14-15 Sec. Dr. H. W. Qualls 130 Madison Ave. Memphis
- TEXAS Fort Worth June 21-23 Sec. Dr. T. J. Crowe, 918-1920 Mercantile Bank Bldg. Dallas
- UTAH Salt Lake City June 27-29 Dir. Department of Registration Mr. S. W. Golding 326 State Capitol Bldg. Salt Lake City
- VERMONT Burlington June 20-22 Sec. Board of Medical Registration Dr. W. Scott Nay Underhill
- VIRGINIA Richmond June 20-22 Sec. Dr. J. W. Preston 28½ Franklin Road Roanoke
- WYOMING Cheyenne June 4 Sec. Dr. W. H. Hassel Capitol Bldg. Cheyenne

Ohio Reciprocity and Endorsement Report

Dr. H. M. Platter, secretary, Ohio State Medical Board, reports 26 physicians licensed by reciprocity and 3 by endorsement at a meeting held, Jan. 9, 1934. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Georgetown University School of Medicine		(1926)	Michigan
Emory University School of Medicine		(1932)	W. Virginia
Chicago College of Medicine and Surgery		(1917)	Illinois
Loyola University School of Medicine		(1932-2)	Illinois
Northwestern University Medical School		(1933)	Michigan
Rush Medical College		(1893)	Wisconsin
Indiana University School of Medicine	(1930)	(1932)	Indiana
University of Kansas School of Medicine		(1932)	Kansas
University of Louisville School of Medicine	(1930)	(1931)	Kentucky
Johns Hopkins University School of Medicine		(1931)	Maryland
University of Michigan Medical School	(1931)	(1932)	Michigan
Creighton University School of Medicine		(1930)	Kansas
Cornell University Medical College		(1931)	New York

Long Island College of Medicine
Hahnemann Medical College and Hospital of Philadelphia (1909)
University of Pennsylvania School of Medicine (1929)
Meharry Medical College (1932)
University of Tennessee College of Medicine (1931)
University of Texas School of Medicine (1929)
Universität Leipzig Medizinische Fakultät (1926)

New Jersey
Penna
Penna
Georgia
Tennessee
Texas
W Virginia

LICENSED BY ENDORSEMENT

School	Year	Endorsement
Loyola University School of Medicine	(1933)	N B M Ex
University of Michigan Medical School	(1918)	N B M Ex
Columbia Univ College of Physicians and Surgeons	(1927)	N B M Ex

North Dakota January Report

Dr G M Williamson, secretary, North Dakota State Board of Medical Examiners, reports the oral, written and practical examination held in Grand Forks, Jan 2-5, 1934. The examination covered 13 subjects and included 100 questions. An average of 75 per cent was required to pass. Three candidates were examined, 2 of whom passed and 1 failed. One physician was licensed by reciprocity and 3 physicians were licensed by endorsement. The following schools were represented:

School	PASSED	Year	Grad	Per Cent
University of Minnesota Medical School	(1932)	78	5	(1933) 80

School	FAILED	Year	Grad	Per Cent
University of Minnesota Medical School	(1930)			72

LICENSED BY RECIPROCITY

School	Year	Reciprocity
New York Univ, Univ and Bellevue Hosp Med Col	(1931)	New Jersey

LICENSED BY ENDORSEMENT

School	Year	Endorsement
College of Medical Evangelists	(1931)	N B M Ex
Northwestern University Medical School	(1933)	N B M Ex
Rush Medical College	(1932)	N B M Ex

Georgia Reciprocity and Endorsement Report

Mr R C Coleman, joint secretary, State Examining Boards, reports 1 physician licensed by reciprocity and 2 physicians licensed by endorsement from Jan 1 to Jan 5, 1934. The following schools were represented:

LICENSED BY RECIPROCITY

School	Year	Reciprocity
University of Tennessee College of Medicine	(1931)	Tennessee

LICENSED BY ENDORSEMENT

School	Year	Endorsement
George Washington University School of Medicine	(1928)	N B M Ex
Columbia Univ College of Physicians and Surgeons	(1929)	N B M Ex

Book Notices

Treatment in General Practice By Harry Beckman M.D. Professor of Pharmacology at Marquette University School of Medicine Milwaukee. Second edition. Cloth \$10. Pp 889, with illustrations. Philadelphia & London: W B Saunders Company 1934.

In revising this new edition of his popular book, Dr Beckman has been particularly concerned with two objectives—the elimination of unestablished and discarded methods and the addition of well established new methods. He lists as certain entities not previously included acetylsalicylic acid (aspirin) poisoning, agranulocytosis, blackwater fever, bronchomycosis, erythema, erysipelas, food allergy, gasoline and kerosene poisoning, luecap, hyperinsulinism (hypoglycemia) and dysinsulinism, hypothyroidism without myxedema, lead poisoning, lymphogranuloma inguinale (climatic bubo), malnutrition, methyl chloride poisoning, onchocerciasis, oriental sore, dermal and mucocutaneous leishmaniasis, prophylaxis of gonorrhea in the female, serum sensitization and desensitization, simple achlorhydric anemia, strongyloid infection, tear gas burns, tetany, varicose ulcer, and a section on vehicles and incompatibilities. This volume established itself promptly as a practical work in therapeutics. The revision of the book has increased its merit. One finds the section on the treatment of amebic dysentery quite abreast of the time and in accord with the new literature developed as a result of the recent Chicago outbreak. In the treatment of the common cold, which the author discusses under the title of catarrhal fever, he

mentions all the time tried empirically tested remedies that are available. He does not hesitate to mention proprietary products, although he limits himself in the majority of instances to those which have been credited by New and Nonofficial Remedies. Indeed, he quotes this work repeatedly in his discussions of new remedies. In many instances almost the whole of certain discussions is direct quotation from published literature, most of it from THE JOURNAL. The volume is an excellent compilation in which the author has chosen with good judgment and in which he does not hesitate to criticize on the basis of his own practical experience.

Hypertension and Nephritis By Arthur M. Fishberg M.D. Associate Physician to Beth Israel Hospital New York City. Third edition. Cloth Price \$6.50. Pp 668 with 40 illustrations. Philadelphia: Lea & Febiger 1934.

Perhaps no textbook on these complicated and controversial subjects has been so favorably received by the profession as the work of this author. The book is now in its third edition although the original edition was available only a few years ago. Facts on both subjects, ordinarily difficult of correlation are integrated in such a well organized manner that the reader is able for the first time to get a clear understanding of the symptom complex. This is a most important contribution since the vast majority of patients who suffer from hypertensive and renal diseases are cared for by those in general practice. Almost every chapter in this edition has undergone revision. Some of the discussions that have been added since the last edition are those on the nature and treatment of renal and hypertensive disease in pregnancy, allergy and hypertension, the use of acacia in edema, the therapeutic use of magnesium sulphate and salyrgan, and renal lesions accompanying various forms of endocarditis. This book is invaluable to those engaged in the practice of medicine, as it represents one of the most comprehensive works on the subject. It is written from the point of view of clinical medicine and serves as well at the bedside as in the library.

Essentials of Hospital Practice: A Guide for Students and Interns By Royal M. Calder M.D. Instructor in Medicine Duke University School of Medicine, Durham North Carolina. With a section on Surgical Methods By C. E. Gardner, Jr. M.D., Assistant Professor of Surgery Duke University School of Medicine. Fabrikoid Price \$2.75. Pp 262 with 9 illustrations. Durham: Duke University Press, 1934.

About a year ago the American Medical Association published a handbook for interns. Jointly prepared by the Council on Pharmacy and Chemistry and the Council on Medical Education and Hospitals, it was almost entirely devoted to improving the character of hospital prescribing by encouraging interns, at the outset of responsible practice, to continue the use of rational therapeutics as they had been taught in medical school. Some ready reference data were included. In Calder's book, a list of drugs is included but as only one of a number of important aspects of hospital treatment. Treating the subject quite extensively, he divides his material about evenly between physical and laboratory diagnostic methods and routine and emergency treatments of medical and surgical patients. This handbook should be an excellent investment, as much on the basis of continuing usefulness as the filling of an immediate need. The complete index and convenient pocket size are attractive features.

Die Digitalisbehandlung Von Prof. Dr. Ernst Fdems. Second edition. Paper. Price 7 marks. Pp 154 with 80 illustrations. Berlin & Vienna: Urban & Schwarzenberg 1934.

This volume on digitalis therapy is an instructive and useful work, well arranged and well written. It is particularly prepared for the clinical worker and gives a satisfactory summary of the experimental work. Examples of the laboratory and clinical observations in this work are the following conclusions found in the first and in the next to the last chapter.

Chapter I "In frog's hearts, digitalis has shown a systolic and a diastolic effect in nontoxic doses. I. Systolic effect. 1 The systolic tension and shortening of the muscle fibers is quickened. 2 The systolic shortening of the muscle fibers is increased. II Diastolic effect. 1 The duration of diastole is lengthened. 2 The diastolic relaxation of the muscle fibers is increased and diastole deepened (?). The heart in warm blooded animals observed mechanically shows the same

effect from digitalis as does the frog's heart. It pulls itself together in systole more rapidly and forcefully. It dilates in diastole for a longer time and perhaps also in a greater degree, but now follows an important difference, the lengthening of diastole and the slowing of the pulse that is associated with it occur in pronounced form only if the heart is connected through its vagus nerves to the central nervous system. We must conclude from this (1) that the pulse slowing in warm blooded animals in the main depends on stimulation of the vagus center and (2) that the peripheral digitalis effect in warm blooded animals works in some other way than in the case of the cold blooded animals."

Chapter X "The effective strength of a preparation of digitalis for man must be determined on man himself. The effectiveness of different digitalis preparations should never be determined through the comparison of their effects in different patients, but only through their comparison in the same patient."

For the test of effectiveness of digitalis preparations, such cases are most suitable in which the evident systolic effect of digitalis can be measured, that is, cases of heart weakness with evidences of stasis which afford an opportunity for definite measurements. Every sick heart has its own digitalis dosage."

The Lyophilic Colloids (Their Theory and Practice) By Martin H. Fischer Professor of Physiology in the University of Cincinnati and Marian O. Hooker Research Associate in Physiology in the University of Cincinnati. Cloth Price \$4.50 Pp 246 with 84 illustrations Springfield Ill. & Baltimore Md. Charles C. Thomas 1933

This book is not, as one might judge from its title, a general treatise on the lyophilic colloids. It is concerned entirely with work done by the authors during the last fifteen years on certain types of colloid systems. The book is divided into three parts. The first part, which occupies about two thirds of the book, is on the general nature of the lyophilic colloids. In this part the authors present the results of their work on phenol/water, soap/water, gelatin/water and casein/water systems and develop their thesis that the behavior of such systems indicates that they are not solutions of X in water, but of water in X. The second part deals with chemical applications and the final one with biologic applications. The last section, especially, contains numerous statements which are in direct conflict with all accepted views in this field. This book is interesting mainly because it presents a summary of the work and views of the authors. As a presentation of modern concepts concerning the colloidal nature of protein solutions, it would seem to be inadequate. There are no references to work of such men as Sørensen, Svedberg or Krøyt, who have carried out extensive physicochemical and colloidal studies on proteins, and the latest reference to Pauli is twenty years old. It is too restricted in its point of view to give the reader a satisfactory picture of the theory and practice of lyophilic colloids.

Lettsom: His Life, Times, Friends and Descendants By James Johnston Abraham. Cloth Price 30/- Pp 498 with 145 illustrations London William Heinemann Ltd 1933

When any sick to me apply
I physics bleeds and sweats em,
If after that they choose to die
Why Verily!

I Lettsom

The fame of this couplet is world wide and any psychologist might from it alone have much to say about the character of its author. The Quaker physician concerned was a philanthropist and a man of letters who met every one worth meeting in the London of his time, a man who was equally at home in the presence of the king and among the sick in the city prison. His time was that of Hogarth, Dick Turpin, Fothergill, William Cullen, Benjamin Franklin, John Graham the charlatan, Dr Johnson, Edward Jenner and many others. In this atmosphere Lettsom was active as a medical practitioner, an investigator and a citizen. He founded a medical society, wrote many books on medical subjects, led the campaign for prison reform, founded a convalescent hospital at the seashore, aided Edward Jenner in his campaign for vaccination, and eventually died from a streptococcal infection sustained during a postmortem examination. Lettsom is particularly interesting to Americans because he was himself born in the West Indies and because he was constantly in communication with Ben-

jamin Rush, Benjamin Waterhouse and Benjamin Franklin, all great names in the development of American science. This volume is one of the most fascinating medical biographies thus far available. It is full of anecdotes and personal correspondence and gives a fine picture of an eighteenth century physician who endeavored to fill to repleteness the various capacities in which physicians may serve the public. The book is beautifully illustrated with innumerable portraits and facsimiles of documents of historical interest.

Starling's Principles of Human Physiology Edited and revised by C. Lovatt Evans D.Sc. F.R.C.P. Jodrell Professor of Physiology in University College London. The chapters on the Central Nervous System and Sense Organs revised by H. Hartridge M.A. M.D. Sc.D. F.R.S. Professor of Physiology at St. Bartholomew's Medical College. Sixth edition. Cloth Price \$8.75 Pp 1122 with 562 illustrations Philadelphia Lea & Febiger 1933

In the twenty-two years since the first edition of this physiology became available there have been six editions and a Spanish translation. This should be sufficient testimony to the merit of the work and to its appreciation by teachers in this field. In the present edition there have been extensive alterations and rewritings in order to bring the work down to date. The chapters on the circulation, nervous system and sense organs have been revised by Professor Hartridge. A few references have been added to the work in order to provide the reader with modern bibliographic material. Dr Evans points out that at least 4000 papers on physiology are published each year. It would no doubt be simple to point out the failures of the work in regard to certain modern types of investigation. In the section on sleep, for example, there are no references to the recent American investigations on the depth and intensity of sleep or to the use of modern electrical recording devices and motion picture apparatus for such studies. In the section on the blood the suggestion is offered that the blood platelets may be artefacts, yet a few pages farther on there is a serious discussion of their part in blood coagulation. On the whole, however, the work is highly competent, complete and probably as safe a work in the field it concerns as any now available.

Obstetrics and Gynecology Edited by Arthur Hale Curtis M.D. Professor and Head of the Department of Obstetrics and Gynecology Northwestern University Medical School. Volume III and General Index to Volumes I to III. Cloth Price \$35 per set Pp 1201 with 570 illustrations Pp 137 Philadelphia & London W. B. Saunders Company 1933

The third volume of this notable system of gynecology and obstetrics is well up to the standard of the previous two volumes. Here the sections included are on displacement and relaxations, disturbances of function, the endocrines in gynecology and obstetrics, special diseases and important symptom complexes, other gynecologic diseases and symptom complexes, and special topics. The final section is for the general reader, one of the most valuable in the entire work. It includes not only an outline of the methods of examination but also the application of the x-rays, blood transfusion, anesthesia and operative management and the relation of obstetrics and gynecology to other branches of medical science. This volume like the others, is extensively and beautifully illustrated, and there is an adequate index.

La cura specifica delle brucellosi Da Prof. G. di Guglielmo et al. Società medicochirurgica di Catania. Paper Price 15 lire Pp 167 with illustrations Catania Vincenzo Muglia 1933

Sponsored by the Medicochirurgical Society of Catania under the editorship of Professor Guglielmo, a number of eminent clinicians and research workers, among them the pathologist Fichera, a collective review has been published on the specific treatment of brucellosis. A better title than the one using the word "specific" would be "The Biologic Treatment of Brucellosis," since the work is limited to the study of intravenous vaccine therapy of the various clinical forms of brucellosis, including parabrucellosis infection. The various contributions make up a unit of well connected pleas for the value of bacterial vaccines in these infections, and particularly for the intravenous administration instead of the conventional subcutaneous or interdermal uses. Well controlled observations seem to indicate that clinical results amounting to well defined clinical cures have been obtained after four or five injections.

The doses used have been one million killed bacteria for the first injection. The injections have been administered every four or five days in amounts of one hundred million, increasing to from ten to fifty millions at each injection. Dr. Guglielmo reports thirty cases, which were uniformly cured in from seven to eight injections, establishing for that group a record of 100 per cent results. The meningo-encephalic manifestations of brucellosis as well as cases of vegetative endocarditis with degenerative myocarditis are discussed, and anatomopathologic material from necropsies is well presented. On the whole, the review is of extreme interest and replete with good therapeutic suggestions.

A Practical Medical Dictionary of Words Used in Medicine with Their Derivation and Pronunciation Including Dental Veterinary Chemical Botanical Electrical Life Insurance and Other Special Terms. Anatomical Tables of the Titles in General Use. The Terms Sanctioned by the Basle Anatomical Convention and Those Suggested by the Nomenclature Commission. Pharmaceutical Preparations Official in the U. S. and British Pharmacopoeias and Contained in the National Formulary and Comprehensive Lists of Synonyms. By Thomas Lathrop Stedman, A. M., M.D. Twelfth edition. Leather. Price \$7.50. Indexed. \$7 without index. Pp. 1256 with illustrations. Baltimore: William Wood & Company, 1933.

This authoritative work is now in its twelfth revised edition. In the introductory note it is pointed out that it contains about a thousand new titles, which would indicate that the medical language grows by at least one word a day. All the changes of the British Pharmacopoeia of 1932 are indicated, and also changes in anatomic nomenclature. The present issue is thirty-three pages longer than previous issues of what is already one of the most complete medical dictionaries available. Notwithstanding the fact that the publication is dated August 1933, one fails to find reference to ascorbic acid or to dinitrophenol.

The Physician as Man of Letters: Science and Action. By Thomas Kirkpatrick Munro, M.A., M.D., Regius Professor of Medicine in the University of Glasgow. Cloth. Price 10/6. Pp. 212. Glasgow: Jackson, Wylie & Company, 1933.

For many years the author has been collecting data relative to medical men who distinguished themselves in other ways than in the practice of medicine. Nevertheless the work is quite incomplete. It would require far more study and research than the author has been able to give to this subject to supply an adequate list of names. His list is particularly weak so far as concerns Americans, and, strangely enough, he is even deficient in his list of British physicians who have made distinguished names in other fields. In his section on poets one finds Sir Robert Bridges, George Crabbe, Oliver Goldsmith, Keats and John McCrae. One seeks in vain under dramatists for the name of Arthur Schnitzler. Among his writers of fiction one finds Conan Doyle, but missing are Arthur Conan Doyle, Somerset Maugham and Francis Brett Young. His list of ambassadors and statesmen fails to include Geddes, Ramon y Cajal and Virchow. It is amusing to note the physicians who have been pirates and the names of noted criminals. The volume is an interesting beginning of what might be developed into a highly important work.

To Be or Not to Be: A Study of Suicide. By Louis I. Dublin, Ph.D., Third Vice President and Statistician, Metropolitan Life Insurance Company, and Bessie Bunzel, M.A., Research Assistant, Statistical Bureau, Metropolitan Life Insurance Company. Cloth. Price \$3.50. Pp. 443 with illustrations. New York: Horlison Smith & Robert Haas, 1933.

The gradual increase in suicide which has brought self destruction up to a place among the first twenty in the list of causes of death, is a problem that concerns not only the medical profession but workers in all the social sciences. Although the literature, both periodical and book, is extensive, it is safe to say that Dr. Dublin's volume constitutes the most competent word thus far offered on the subject. He considers suicide from the historical point of view. He is concerned with its prevalence with the influence of environment and with its relationship to life insurance. He discusses its psychology and the methods of prevention. The points of view of the various churches are considered as well as the legal aspects. The volume is supplemented by a series of tables presenting the fundamental data. There is also an adequate index. Dr. Dublin sees the answer to the problem of suicide in a more general distribution of the good things of life, a change in our economic system and a more widespread application of education in mental hygiene as well as in the practice of those branches of medicine which deal with problems of personal adjustment.

History of the University of Edinburgh 1883-1933. Edited on Behalf of the History Committee by A. Logan Turner, M.D., LL.D., F.R.C.S. Published for the University. Cloth. Price 10/- Pp. 452 with 27 illustrations. Edinburgh: Oliver and Boyd, 1933.

One of the most distinguished universities in the world deserves fully the biography here made available. The biography has been written by professors in various departments and concerns each of the special schools, containing as well a section on the university portraits and on the life of the student community. This volume is essentially supplementary to the previous one, entitled "The Story of the University During Its First Three Hundred Years," published in 1884. The book is beautifully printed, handsomely illustrated and supplemented by a number of appendices giving biographic notes, donors and similar lists. Of special interest to the medical profession is the chapter on the faculty of medicine, by Prof. John Dixon Comrie. It provides not only a list of each of the men who held the chairs in various departments and of their contributions to medical periodical literature but also some excellent portraits and estimates of the Edinburgh contribution to medical progress. Most important of those included are Sir William Turner and Lord Lister.

Laboratory Medicine: A Guide for Students and Practitioners. By Daniel Nicholson, M.D., Assistant Professor of Pathology, University of Manitoba. Second edition. Cloth. Price \$6.50. Pp. 569 with 127 illustrations. Philadelphia: Lea & Febiger, 1934.

This useful book on laboratory diagnosis is now available in a thoroughly revised edition. The first edition was published four years ago and was well received by the profession. While little of the material has become antiquated in this short time the author has revised and brought each subject to the present. Many new procedures have been added. The revised edition reflects the manner in which the author has anticipated the need of practicing physicians. The chapter on the choice of tests to confirm or disprove their diagnosis has been considerably amplified with new material on the more common conditions seen in practice. This book is highly recommended to the medical student and practicing physician for information on the indication, method and interpretation of laboratory tests that are particularly adapted to the complete study of the patient. It is perhaps one of the most practical and concise textbooks of laboratory medicine in any language.

Medicolegal

Hospitals: Right of Employee to Bind Employer for Payment of Hospital Bill.—About 2 o'clock in the morning, March 29, the back of an employee of the defendant was broken in the course of his employment. The manager of the defendant's plant, where the accident occurred, directed the night engineer, who was in charge of the plant at that time, to call a physician. He called one of the two physicians designated by the defendant's insurance carrier to serve in such emergencies. When the physician found that the injured workman's back had been broken, he directed that his patient be sent to a hospital. The night engineer then summoned an ambulance and the injured man was taken to the plaintiff's hospital, where he remained until he died.

On June 6 more than two months after the patient had been admitted, attorneys for the defendant's insurance carrier notified the hospital that neither the employer nor his insurance carrier would be responsible for any hospital bills in excess of the hospital's proportionate share of \$200, the limit of liability for medical services imposed by the Kansas workmen's compensation act on employers. Subsequently, on June 20, a bill for \$272.40 was sent to the injured workman and on September 15 a bill for \$710.45 was made out against him. The latter bill was not delivered, for the injured workman, whom the hospital had continued to care for, had died the preceding day. Apparently, demand was then made on the employer but payment of anything in excess of \$75 was refused. The insurance carrier represented that that amount was the hospital's share of the money payable by the employer, under

the workmen's compensation act for medical treatment. The tender was rejected and action brought against the employer for the amount of the bill. Judgment was given in favor of the hospital. The employer appealed to the Supreme Court of Kansas.

The hospital contended that under the circumstances of the case there was an implied agreement by the employer to pay the bill for the services rendered its injured employee. The Supreme Court, however, held to the contrary, holding that the night engineer, on whose order the employee was taken to the hospital was not authorized to bind his employer for payment. The fact that the manager of the defendant's plant told the engineer to call a physician did not prove that he directed the engineer to bind the company to pay hospital bills. Said the court:

Authority to bind the corporation for medical services etc. either for employees or for others who are injured in the course of the operation of a railroad is not ordinarily to be inferred from the duties of a subordinate agent or employee such as a conductor, a station agent, a roadmaster, a yardmaster, an engineer or an attorney for the company." 144 C J 455

The Supreme Court therefore reversed the judgment in favor of the plaintiff and directed the trial court to enter judgment in favor of the employer.—*St. Mary's Academy v. Railways Ice Co. (Kan.)* 26 P (2d) 278

Workmen's Compensation Acts Undulant Fever Contracted in Caring for Infected Cattle Compensable—The claimant, Crowley, a dairy instructor in the Idaho Industrial Training School, had to supervise and handle the school's dairy herd. Some of the cows were infected with contagious abortion. At calving time he removed the afterbirths with his bare arm and in the same manner after the calves were born he treated the cows with disinfectants. Some time after he had been so engaged he was stricken with undulant fever and was ill for several months. The industrial accident board of Idaho, however, denied his claim for compensation under the workmen's compensation act, because of legal technicalities, and he appealed to the district court, Fremont County. That court decided the technicalities in his favor, found that the undulant fever from which he was suffering had been contracted in the course of his employment, and reversed the order of the industrial accident board that denied him compensation. His employer thereupon appealed to the Supreme Court of Idaho.

His employer contended that the undulant fever from which Crowley suffered was an occupational disease not an accident and therefore was not compensable under the Idaho act. The Supreme Court pointed out, however, that his disability had resulted from his exposure to contagious abortion in treating the cattle suffering from that disease, that other employees who handled the cows did not become infected, that the usual source of undulant fever is through the human digestive tract by taking raw fat [sic] or milk, and that contracting undulant fever by direct contact with cows carrying its infective germ because they are suffering from contagious abortion is an infrequent occurrence. In *Ramsay v. Sullivan Min Co.* 51 Idaho 366, 6 P (2d) 856 the Supreme Court of Idaho said:

An occupation or industry disease is one which arises from causes incident to the profession or labor of the party's occupation or calling. It has its origin in the inherent nature or mode of work of the profession or industry and it is the usual result or concomitant. If therefore a disease is not a customary or natural result of the profession or industry, per se but is the consequence of some extrinsic condition or independent agency the disease or injury cannot be imputed to the occupation or industry and is in no accurate sense an occupation or industry disease.

In the present case said the Supreme Court, if the injury sustained by Crowley was not an injury inherent in his occupation as commonly understood, but an accident in the popular and ordinary sense of the word, as denoting an unlooked for mishap or untoward event which is not expected or designed, his claim for compensation cannot be denied on the theory that the injury resulted from an occupational disease and not from an accident. The Supreme Court accordingly affirmed the award in favor of the infected employee.—*Crowley v. Idaho Industrial Training School (Idaho)*, 26 P (2d) 180

1 For cases holding substantially contrary to the holding of the Supreme Court of Kansas in this case see: *Page v. Thomas (Texas)* 47 S W (2d) 894 J A M A 100 365 (Feb. 4) 1933 *St. Barnabas Hospital v. Minneapolis*, 68 Minn 254 70 N W 1126

Society Proceedings

COMING MEETINGS

- American Medical Association Cleveland June 11 15 Dr. Olin West
335 North Dearborn Street Chicago Secretary
- American Academy of Pediatrics Cleveland June 11 12 Dr. Clifford C. (rulee) 636 Church Street Evanston Ill. Secretary
- American Association for the Study of Gonorrhea Cleveland June 7 9 Dr. J. R. Yung 670 Cherry Street Terre Haute Ind. Secretary
- American Association for the Study of Neoplastic Diseases Baltimore June 21 23 Dr. Eugene R. Whitmore 2139 Wyoming Avenue N W Washington D C Secretary
- American Association of Genito-Urinary Surgeons Hot Springs Va. May 14 16 Dr. Henry I. Sanford 1621 Euclid Avenue Cleveland Secretary
- American Association of Industrial Physicians and Surgeons Cleveland June 11 12 Dr. Volney S. Cheney Armour and Company Union Stock Yards Chicago Secretary
- American Association of Medical Milk Commissions Cleveland June 11 12 Dr. Harris Moak 360 Park Place Brooklyn Secretary
- American Association on Mental Deficiency New York May 26 29 Dr. Groves B. Smith Beverly Farms Godfrey Ill. Secretary
- American Bronchoesopic Society Cleveland June 11 Dr. Louis H. Clark 110 South 10th Street Philadelphia Acting Secretary
- American Clinical and Climatological Association Toronto Canada May 21 23 Dr. Francis M. Rickemann 263 Beacon Street Boston Secretary
- American Dermatological Association New York June 7 9 Dr. William H. Cuy 500 Penn Avenue Pittsburgh Secretary
- American Gynecological Society White Sulphur Springs W Va May 21 23 Dr. Otto H. Schwarz 610 South Kingshighway St. Louis Secretary
- American Heart Association Cleveland June 12 Dr. Irl C. Riggan 50 West 50th Street New York Executive Secretary
- American Laryngological Association Cleveland June 7 9 Dr. William A. Millin 9204 Euclid Avenue Cleveland Secretary
- American Neurological Association Atlantic City June 4 6 Dr. Henry Alsop Riley 117 East 72d Street New York Secretary
- American Orthopedic Association Rochester Minn June 6 9 Dr. Ralph K. Ghormley Mayo Clinic Rochester, Minn. Secretary
- American Physiotherapy Association Cleveland June 13 16 Mrs. Bess Scaris 1430 West 77th Place Chicago Secretary
- American Proctology Society Cleveland June 11 12 Dr. Frank G. Runyon 1361 Perkiomen Avenue Reading Pa. Secretary
- American Psychiatric Association New York May 28 June 2 Dr. William C. Sandy State Education Building, Harrisburg Pa. Secretary
- American Society of Clinical Pathologists Cleveland June 8 11 Dr. A. S. Jordan 511 North Main Street South Bend Ind. Secretary
- American Surgical Association Toronto Canada June 4 6 Dr. Vernon C. David 59 East Madison Street Chicago Secretary
- American Therapeutic Society Cleveland June 8 9 Dr. Oscar B. Hunter 1835 Eve Street N W Washington D C Secretary
- American Urological Association Atlantic City May 22 24 Dr. Gilbert J. Thomas 1009 Nicollet Avenue Minneapolis Secretary
- Arizona State Medical Association Prescott June 7 9 Dr. D. F. Harbridge 822 Professional Building Phoenix Secretary
- Association for the Study of Allergy Cleveland June 11 12 Dr. Warren T. Vaughan 808 Professional Building Richmond Va. Secretary
- Association for the Study of Internal Secretions Cleveland June 11 12 Dr. F. M. Pottinger Pottenger Sanatorium Monrovia Calif. Secretary
- Connecticut State Medical Society Bridgeport May 23 24 Dr. Charles W. Comfort Jr. 27 Elm Street New Haven Secretary
- Illinois State Medical Society Springfield May 15 17 Dr. Harold M. Camp 14th Building Monmouth Secretary
- Maine Medical Association Bangor May 28 29 Miss Rebekah Cardner 22 Arsenal Street Portland Secretary
- Massachusetts Medical Society Worcester June 4 6 Dr. Walter I. Burrage 182 Walnut Street Brookline Secretary
- Medical Library Association Baltimore May 21 23 Miss Marjorie J. Durrach 645 Mullett Street Detroit Secretary
- Medical Women's National Association Cleveland June 10 12 Dr. Elizabeth Kittredge 3906 McKinley Street Washington D C Secretary
- National Tuberculosis Association Cincinnati May 14 17 Dr. Charles J. Hatfield Henry Phipps Institute Philadelphia Secretary
- Nebraska State Medical Association Lincoln May 22 24 Dr. R. B. Adams Center McKinley Building Lincoln Secretary
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Titles marked with an asterisk (*) are abstracted below.

Alabama Medical Association Journal, Montgomery

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- Neurosyphilis Study of Two Hundred and Forty Cases R C Partlow and F A Kay Tuscaloosa—p 265
- Prophylaxis of Labor J R Garber Birmingham—p 269
- Use of Local Anesthesia in Fractures O R Grimes, Gadsden—p 272
- Respiratory Diseases in Children II Kennedy Jr Birmingham—p 274
- New Uses of Old Drugs J E Cameron Eclectic—p 278

Am J Roentgenol & Rad Therapy, Springfield, Ill

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- Diagnosis and Treatment of Primary Carcinoma of Bronchus or Lung Caldwell Lecture E A Grabam St Louis—p 145
- Early Experiences in Radiation Therapy Janeway Memorial Lecture J Ewing New York—p 153
- Relation of the American College of Radiology to the Future of Radiology A Soiland Los Angeles—p 164
- Roentgen Study of Absorption by Lymphatics of Thorax and Diaphragm of Thorium Dioxide Injected Intrapeurally into Animals L J Menville and J N Ane New Orleans—p 166
- Oblique View for Demonstration of Articular Facets in Lumbosacral Backache and Sciatic Pain R K Ghormley and B R Kirklin Rochester Minn—p 173
- Subdiaphragmatic Abscess A J Delario Paterson N J—p 177
- Barium Meal Examination of Stomach in Presence of Unrecognized Perforated Peptic Ulcer H A Singer Chicago—p 191
- Multiple Diverticula of the Jejunum and Duodenum Simulating Gastric Diverticula and Complicated by Cholelithiasis E A Schmidt and P H Guttman Denver—p 200
- Primary Carcinoma of the Duodenum Case Report P C Swenson and A G Levin New York—p 204
- Roentgenographic Manifestations of Urinary Bilharziasis and Calculous Formations in Egypt, and Intravenous Pyelography M A Afifi Alexandria Egypt—p 208
- Some Unusual Changes in the Lesser Trochanter of the Femur Report of Two Cases M S Burman New York—p 224
- Oral Cholecystography Plea for a Uniform Technic M Feldman Baltimore—p 227
- Roentgenologic Diagnosis of Placenta Praevia Report of Case W H Ude, T W Weum and J A Urner, Minneapolis—p 230
- *Radiosensitive Neuroblastoma H Hauser New York—p 234
- *Radiation Therapy of Keloid and Keloidal Scars F M Hodges Richmond Va—p 238
- Early History of Electron Emission A Mutscheller, New York—p 244

Demonstration of Articular Facets in Lumbosacral Backache—In obtaining an oblique view of the articular facets in sciatic and lumbosacral pain Ghormley and Kirklin have the patient, lying supine on the table, turned slowly to an oblique position, toward the side to be examined until the transverse axis of the pelvis is at an angle of 32 degrees with the horizontal. To effect this precise angulation, a rectangular piece of stiff cardboard, measuring 10 by 12 inches (25 by 30 cm), with a concave lower edge to accommodate the lower part of the abdomen, is employed. On the cardboard is a line drawn radially from the center of the concave lower edge and marking an angle of 32 degrees with the vertical. The tips of the concave edge are applied to the iliac spines the cardboard is held in an approximately perpendicular plane and the position of the patient is adjusted by means of sandbags and cushions. The tube carriage, equipped with a cone 6 inches (15 cm) in length and an aperture of 3½ inches (9 cm), is swung into position and the axis of the rays is directed vertically to the midpoint of Poupart's ligament on the elevated side. This point also lies almost vertically over the opposite articular facets of the fifth lumbar vertebra and they will be depicted approximately in profile. The table is equipped with a flat Potter-Bucky diaphragm and speed screens are employed. A target film distance of 30 inches (76 cm) 65 peak kilovolts and 40

milliamperes of current is used. The time of exposure is varied in proportion to the thickness of the patient's body. The important points that may be observed by an oblique view of the articular facets are (1) narrowing of the space between the articulating surfaces of the facets, (2) marginal proliferation about the articulating surfaces of the facets indicating hypertrophic changes or in many instances traumatic arthritis, (3) fractures through the surfaces of the facets or through the adjacent laminae and pedicles, (4) increased roentgenability of the bony structures making up the facets and their supporting structures and decreased roentgenability of these structures. All these changes may be observed in cases of chronic pain in the back in which no other pathologic change is known to exist than the localized traumatic arthritis that causes these syndromes. Besides these changes, one may observe in these roentgenograms changes in the vertebral bodies and intervertebral disks. One should also note that the sacro-iliac joint is presented in a new aspect and one which may possibly lead to more accurate determination of lesions there.

Radiosensitive Neuroblastoma—Hauser presents a case of neuroblastoma that was sensitive to radiation therapy. Although the patient died of recurrence, the author thinks that radiation therapy may prove to be of value in future cases. The dosage factors used were 200 kilovolts, 30 milliamperes, 0.5 mm of copper filtration, 50 cm target skin distance for the neck and pelvis and 70 cm for the chest. The author believes that earlier recognition and earlier radiation therapy would possibly have given the patient a better prognosis or perhaps a cure and that small, divided doses extended over a period of several weeks with a greater total dosage would have possibly brought about permanent regression.

Radiation Therapy of Keloid—Hodges states that thick old keloids should be removed surgically and postoperative irradiation given. Radium and roentgen radiation are equally efficacious in the treatment of this condition, but the large area of the body surface usually involved makes roentgen radiation the method of choice in the majority of cases. He has obtained excellent results with from 250 to 300 roentgens of unfiltered rays, from 80 to 90 kilovolts every four to six weeks. The large doses in general use have not been necessary. The most important factor in the treatment of keloid is the institution of proper irradiation in the early stages of the disease while the cells composing the growth are radiosensitive. When there are unsightly deformities, irradiation will usually relieve the contractures without surgery, but when there are broad white bands of dense fibrous tissue in addition to the scars, these bands should be removed surgically.

American Journal of Syphilis and Neurology, St Louis

18 1 144 (Jan.) 1934

- Syphilitic Albuminuria Report of Three Cases P H Wosika and F M Thurmon Boston—p 2
- Syphilis of the Pituitary Body Case Report with Review of Literature F S Kennedy and J H Fisher London Ont—p 12
- Aplastic Anemia Following Sulpharsphenamine with Recovery D J Stephens Rochester N Y—p 24
- The Physiology of Electroparalysis C A Neymann and S L Osborne Chicago—p 28
- *Arsenoxide in Relation to Toxicity and Therapeutic Activity of Arsphenamine and Neoarsphenamine J F Schamberg J A Kolmer and H Brown Philadelphia—p 37
- *Treatment of Neurosyphilis with Acetarsone (Stovarol) Given Intravenously Preliminary Report L Spiegel New York—p 56
- Significance of American Distribution of Tahes and Paresis W F Petersen Chicago—p 75
- Value of Negative Hinton Test in Exclusion of Neurosyphilis Clinical and Laboratory Study A Berk and W A Hinton Boston—p 92

Arsenoxide in Relation to Toxicity of Arsphenamine—Schamberg and his associates found the naphthoquinone color test (Rosenthal) for arsenoxide to be highly sensitive for the detection of this substance in solutions of arsphenamine and neoarsphenamine aerated with oxygen or exposed to the air. The test is much less sensitive for the detection of arsenoxide in the tissues after the administration of the arsphenamines. After the intravenous injection of 0.1 Gm of arsphenamine in rabbits arsenoxide was found in the liver in about 0.5 mg per gram of tissue and in about 0.1 mg per gram of kidney. None was found in the muscles. After the intravenous injection of 0.2 Gm of neoarsphenamine per kilogram of weight, arsenoxide was found in about 0.3 mg per gram of kidney, but none

in the liver or muscles. With smaller amounts of arsphenamine and neoarsphenamine, arsenoxide could not be detected in these tissues. Freshly prepared solutions of arsphenamine and neoarsphenamine do not contain detectable amounts of arsenoxide by this test. When approximately 34 per cent of arsphenamine in alkalinized solution was oxidized into arsenoxide with oxygen, the toxicity was about doubled. The amounts of arsenoxide in solutions of neoarsphenamine produced by oxygenation or exposure to air did not correspond as closely with the results of toxicity tests as observed with oxidized solutions of arsphenamine. One lot of neoarsphenamine free of arsenoxide was unusually toxic for the rat. When a solution was oxygenated, the production of arsenoxide was about the same as observed with lots of neoarsphenamine of much lower toxicity. The presence of arsenoxide in solutions of arsphenamine and neoarsphenamine tends to shorten the latent period for trypanocidal effects when injected intravenously into rats with trypanosomiasis but does not appreciably change the minimal curative dose per kilogram of weight as compared with freshly prepared solutions free of arsenoxide. In some tests with neoarsphenamine the presence of arsenoxide appeared to reduce the minimal curative dose. The presence of approximately 34 to 36 per cent of arsenoxide in solutions of arsphenamine and neoarsphenamine not only hastened spirocheticidal effects in rabbits with acute testicular syphilis but reduced the minimal curative dose of each compound about one half. It appears that arsenoxide is more spirocheticidal than trypanocidal.

Treatment of Neurosyphilis with Acetarsone (Stovarsol).—Spiegel used acetarsone intravenously in the treatment of twenty-five patients presenting various types of neurosyphilis over a period of seventeen months. Injections of 1 Gm were given either weekly or twice weekly according to the patient's ability to come for treatment. The initial dose was in all cases from 0.25 to 0.5 Gm for the first three or four doses. The injections were given continuously with no rest periods; the more intensive use of acetarsone seems to offer more encouraging results. In the asymptomatic group the Wassermann reaction on the spinal fluid was reduced from positive to negative in two patients and to doubtful in two others. In one patient a strongly positive fluid with 0.2 cc was reduced to 0.8 cc. In two the negative reactions remained the same. The serologic tests on the blood showed slightly greater positivity in one case following treatment, three remained negative and three showed lessened positivity. The cell count was reduced in all cases, usually after six to ten injections. The protein and globulin content of the spinal fluid was reduced and approached normal figures in all but one case. In six the changes in the colloidal gold curve remained approximately the same, one changed from the first to the second zone. In the group of patients suffering from tabes dorsalis, seven were definitely improved and two had advanced optic nerve changes. The Wassermann reaction of the spinal fluid became negative in these two cases. In two the Wassermann reaction of the spinal fluid was negative in one and plus-minus in the other before treatment was instituted, in four the positive reaction was reduced to negative in two and decreased in the other. In one patient the strongly positive fluid was considerably reduced in all factors. The cell counts varied from 0 to 105 and corresponded to the usual observations of this group, with the exception of one case in which the cell count was unusually high. The protein and globulin fractions gave low figures in all but one case, in which it was increased as the result of accidental contamination of the blood. The serologic tests on the blood were reduced from strongly positive to negative in four, two were negative and remained so, one slightly positive became negative, and another strongly positive was slightly reduced. In the group of six meningovascular patients the Wassermann reaction of the spinal fluid was reduced from positive to negative in two, and in the remaining four the strongly positive fluid showed lessened positivity. The cell counts ranged from 1 to 37. The colloidal gold curves were not distinctive. The protein and globulin was slightly increased in four and considerably increased in two. A decrease in the solids was noted in all the patients. Serologic tests on the blood were reduced from strongly positive to negative in two, and in another the positivity was reduced. One negative reaction remained so, one strongly positive reaction showed no change and one doubtful reaction became negative.

Archives of Otolaryngology, Chicago

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- Management of Chronic Sinus Disease F. Smith Grand Rapids Mich.—p. 157
Pneumatization of the Temporal Bone G. E. Tremble Montreal—p. 172
Histopathology and Clinical Interpretation of Experimental Sinus Disease R. A. Fenlon with the collaboration of O. Larsell Portland, Ore.—p. 183
Tuberculosis of the Larynx D. I. Torm Pittsburgh—p. 193
Recent Advances in Physiology of Hearing W. J. McNally Montreal—p. 201
Nasopharyngeal Fibroma W. B. Allan New York—p. 216
*Irrigation in Treatment of Disease of Frontal Sinus Anatomical Study of Nasofrontal Connections O. E. Van Alstyne Chicago—p. 224

Irrigation in Disease of Frontal Sinus.—Van Alstyne points out that the procedure of catheterization of the frontal sinus is more of a maneuver than an operation. No definite technique is applicable in all cases, but one's search for the natural opening is facilitated if a certain plan is followed. It is not necessary to remove the anterior portion of the middle turbinate. It is kept intact because of its value as a landmark and as a safeguard against injury to the cribriform plate. The turbinate with its attachment on the outer nasal wall outlines the middle meatus and its removal does not in any way facilitate the search for the opening of the frontal sinus. The anesthetic of choice is a cocaine-epinephrine solution. Cotton saturated with this solution is first placed against the anterior border of the middle turbinate and the nasal wall. After a few moments, this is gently pushed into the middle meatus. Application is next made high up in the meatus by means of a thin, bent applicator. This is allowed to remain until the entire area is anesthetized. The cannula is slipped under the anterior attachment of the middle turbinate with the tip in contact with the outer wall. If the opening is located in this space gentle pressure upward with an occasional rotation medially should bring about success. Failing at this point, the operator should explore the entire area of the frontal recess, gradually maneuvering the cannula backward to its posterior boundary. If the tip of the cannula seems to be constantly in contact with hard bony structures, the search is led to the infundibulum. In those cases in which a continuous channel exists between this groove and the frontal sinus, catheterization is comparatively simple. Contact is made with the bulla as the tip of the cannula passes into the hiatus semilunaris. The tip at first directed outward, is gradually shifted medially as it follows the channel to the sinus. Should the progress of the cannula be stopped almost immediately, it is undoubtedly because the tip has entered the terminal infundibulum cell. The next attempt is made more medial, but in the infundibular area. Associated difficulties however are the various ostia of the infundibular ethmoid cells, which may attract the tip of the cannula in its progress upward. Several attempts may be required before this passageway is safely traversed and the sinus is entered. In case of complete failure, efforts are repeated with the terminal curve of the cannula bent at different angles. The tip of the cannula or probe for that reason should be flexible, for often many bendings take place before an angle is found suitable to the case.

Archives of Pathology, Chicago

17 141 290 (Feb.) 1934

- Melanin I Its Mobilization and Excretion in Normal and in Pathologic Conditions V. C. Jacobsen and G. H. Klinck Jr. Albany N. Y.—p. 141
*Experimental Edema Further Experiments on the Type of Edema Produced by a Diet Low in Protein S. A. Shelburne, Dallas, Texas—p. 152
Lipoid Pneumonia J. Rabinovitch and M. Lederer Brooklyn—p. 160
Histology of Certain Organs and Teeth in Chronic Toxicosis Due to Fluorine P. H. Phillips and A. R. Lamb Madison Wis.—p. 169
Nature and Origin of the Xanthoma Cell L. W. Flewett Toronto—p. 177
*Multiple Necroses of the Spleen (Flecked Spleen of Fetus) with Especial Reference to the Associated Renal Lesions P. H. Guttman Denver—p. 187
Structural Changes in the Granular Layer of the Cerebellum E. J. Williams New York—p. 206

Experimental Edema.—Shelburne produced hypoproteinemia and edema in two of four dogs fed a diet low in protein for a long time. A critical level of plasma proteins for the formation of edema in the dog is probably 4 Gm of total protein per hundred cubic centimeters and 2 Gm of plasma

albumin The fatty changes in the renal tubules of all the dogs with hypoproteinemia were shown not to be accidental but the result of the experimental procedure. The author was unable to prove that these fatty changes are not due to the anemia which invariably complicates these experiments, but he offers evidence that the anemia is not a potent factor. This fat is not the same as that found in the convoluted tubules in patients presenting the nephrotic syndrome, for in the dogs the fat is not in the form of doubly refractile spherocrystals.

Multiple Necroses of Spleen—Guttman cites a case of flecked spleen in which the anatomic and histologic changes were similar to those reported by Feitis. The kidneys show the lesions of an advanced stage of arteriosclerosis accompanied by arteriolonecrosis. The necrosis is due to occlusion of the splenic arteries of small and medium size. On the basis of the nature of the vascular lesion, three types of flecked spleen are recognized: arteriosclerotic, arteritic and thrombotic. The arteriosclerotic form is the most common, comprising all but three of the twenty-one cases of flecked spleen reported in the literature. The arteriosclerotic form of flecked spleen is associated with renal lesions of hypertension which in most cases produce death from uremia. The thrombotic form, described in a report of a case of eclampsia, is associated with multiple necroses of the kidney. The arteritic type is described in association with two cases of glomerulonephritis. Flecked spleen should be differentiated from multiple necroses of the malpighian corpuscles associated with acute infectious diseases, as the pathologic changes and pathogenesis in the two conditions are dissimilar.

Florida Medical Association Journal, Jacksonville

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- Unilateral Exophthalmos Case Report J W Taylor Tampa—p 339
Heart Disease of Rheumatic Type C F Roche Miami Beach and T D Jones Boston—p 342
Epidemic Encephalitis General Considerations W T Harrison Washington D C—p 346
Nonsurgical Relief of Prostatic Obstructions R A Hennessey and A D Mason Memphis Tenn—p 348
Sarcoma of Rectum with Metastasis to the Liver Case Report J S Grahe and H R Mills Tampa—p 350
Cancer Conscious D P Bird Lakeland—p 351

Georgia Medical Association Journal, Atlanta

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- Dietary Deficiencies as Etiologic Factors in Psychoses and Psychoneuroses J N Brawner Atlanta—p 41
Diathermy in the Abortive Treatment of Pneumonia R M Harbin Rome—p 45
Pylorospasm or Congenital Hypertrophic Stenosis of the Pylorus J C Brim Pelham—p 51
Management of the Third Stage of Labor C B Lpshaw Atlanta—p 55
Transurethral Resection of the Prostate Gland Report of One Hundred and Twenty-Five Cases E G Ballenger O F Elder and H P McDonald Atlanta—p 60
*Injection of Hydroceles with Newer Sclerosing Solutions Experimental Study E Floyd and J L Pittman Atlanta—p 63
Glaucoma J A Smith Macon—p 68

Injection of Hydroceles Experimental Study—Floyd and Pittman made injections in twenty-four cases of hydrocele, using quinine dihydrochloride in one, dextrose and saline solution in two, varisol (a solution containing 30 per cent of invert sugar, 10 per cent of sodium chloride and 1 per cent of benzyl alcohol) in one, glycerin in one and sodium morrhuate in twenty. They used a 5 per cent solution of sodium morrhuate in the majority of their cases because of the uniform results that were obtained with its use in the injection of varicose veins. Recently, however, they added a 0.5 per cent solution of phenol to it. This was done to make it more bactericidal. After preparation of the skin with mercurochrome, a small welt is made with a 1 per cent solution of procaine hydrochloride over the most dependent portion of the sac. A large caliber needle is then inserted into the sac and the fluid is withdrawn. In order to alleviate the initial pain, a 2 per cent solution of procaine hydrochloride is used as a local anesthetic in the sac itself, a small amount being instilled allowed to remain three minutes and then withdrawn. The solution is then instilled. Ordinarily 8 cc. of the fluid is used and is allowed to remain one minute. One half of this amount is withdrawn. A little manipulation is then done and a snug fitting support is applied.

The patient is sent home and for the next few days there is some swelling of the parts. A week later the scrotum feels firm and may contain some fluid. This is usually only a small amount and is absorbed in ten days. The swelling and firmness disappear eventually and the cure is complete within a month. Rarely is palpable induration of the sac present after this period of time. The authors feel that the sclerosing solutions will obliterate the sacs of the acquired, uncomplicated hydroceles. It must be understood that this method is applicable only to selected types of hydroceles.

Journal of Pediatrics, St Louis

4 159 294 (Feb.) 1934

- Encephalographic Studies in Children B S Brody and P F McAlenney New Haven Conn—p 159
Cause of Death in Infantile Eczema A B Schwartz Milwaukee—p 172
*New Pertussis Antigen Preliminary Clinical Report J M Frawley Fresno Calif M Stallings San Francisco and V C Nichols Berkeley Calif—p 179
Immunization of School Children Against Whooping Cough J M Frawley Fresno Calif—p 184
Pertussis Determination of Immunity by Means of Cutaneous Test S K Siebler and S Okrent Cincinnati—p 188
Study of Nephrosis in Children F H Westcott and R H Dennett New York—p 191
Study of Effect of Preserving Methods on Human Milk W H Eddy and S G Morris New York—p 208
*Recovery from Influenzal Meningitis Case Report D H Duncan and C H Webb Shreveport La—p 216
Tetany of the New Born Case Report J D Craig New York—p 219
Analysis of Sample Diets and Daily Habits of Two Hundred and Six Children from Data Supplied by Parents W P Lucas Helen Brenton Pryor and S T Pope Jr San Francisco—p 221
Prophylactic Use and Tolerance of Haliver Oil with Viosterol in Premature and Weanling Infants E W May and Thelma M Wygant, Detroit—p 226
Study of Breast Milk Fat P E Roller Cleveland—p 238
Nervous Treatment of Chorea S W Marick Pittsburgh—p 242
Chronic Sialodochitis Recurrent Alternating Familial Hereditary H S Meyer Houston, Texas—p 248
Malaria in the New Born J W Epstein Cleveland—p 251

New Pertussis Antigen—The material for the study of Frawley and his associates represents a cross section of a pertussis epidemic raging in California in the winter and spring months of 1932-1933. Injection of a new pertussis antigen (described by Krueger, Nichols and Frawley) was given to 200 children after exposure or during the course of whooping cough. Thirty-five children received injections after exposure but before any symptoms had appeared. Fourteen did not develop symptoms. Of the twenty-one who went on to clinical pertussis, 76 per cent had a favorable therapeutic response. Of the 165 children first seen during the actual course of the infection, eighty-six had been coughing less than one week, 69 per cent of this group gave good response to treatment, with cessation of severe symptoms in less than a week. Seventy-nine children were seen later than one week after the onset of coughing. Treatment in these was not particularly successful, only 45 per cent showing a cessation of severe symptoms within a week. There was little local and no constitutional reaction. The absence of such reactions would preclude the possibility of any significant incidence of nonspecific response. The authors' series gives evidence of the protective value of the antigen, although this protection is not absolute. Cases treated prophylactically in which the disease developed later presented a definitely modified course.

Recovery from Influenzal Meningitis—Duncan and Webb report complete recovery following adequate spinal drainage in a boy, aged 8, who was one of four children with Pfeiffer bacillus meningitis admitted within the space of a month during the winter of 1932-1933 to the Shreveport Charity Hospital. They state that the available evidence indicates that in the treatment of the disease, as in all forms of nonmeningococcal acute meningitis, it appears that adequate drainage of the cerebrospinal fluid is the one essential. Apparently all the persons who have recovered have had repeated drainages of cerebrospinal fluid, although in many instances various serums and vaccines have been administered by different routes. More efficient drainage of the cerebrospinal fluid by laminectomy has been found valuable in one case of Pfeiffer's bacillus meningitis reported by Martner and Davidson and in two cases of streptococcus meningitis reported by Leighton and Pringle. Recov-

cry followed in all three of these cases. Retan advised the simultaneous intravenous injection of hypotonic sodium chloride solution, producing forced drainage through increased formation of cerebrospinal fluid. The high mortality in all forms of nonepidemic meningitis should stimulate study of all measures that offer hope of success in treating these conditions.

Journal of Urology, Baltimore

31 121 256 (Feb) 1934

- Aniline Tumors of the Bladder Introduction R S Ferguson New York —p 121
 Id Etiology of Bladder Carcinoma R S Ferguson, New York —p 122
 Id Carcinogenetic Agent Chemistry and Industrial Aspects G H Gehrmann Wilmington Del —p 126
 Id Pathology of Aniline Tumors of the Bladder D M Gay Wilmington, Del —p 137
 Id Incidence, Symptoms and Signs Results of Survey I W Anderson Wilmington Del —p 148
 Id Treatment of Aniline Tumors of the Urinary Bladder V D Washburn Wilmington Del —p 155
 Experimental Studies in Urinary Infections of Bacillary Type H F Helmholz Rochester Minn —p 173
 Ketogenic Diet in Treatment of Urinary Infections A L Chute Rochester, Minn —p 193
 Chronic Pyuria in Juveniles M F Campbell New York —p 205
 *Relationship of Urinary Infections to Recurrent Calculi J D Keyser Roanoke Va —p 219

Relation of Urinary Infections to Recurrent Calculi—

According to Keyser, aseptic urinary concretions may be formed in consequence of metabolic errors. Pure uratic, cystine and xanthine stones are known examples. While not definitely proved, calcium oxalate and crystalline carbonate and phosphate calculi may at times have such an origin. Stones composed chiefly of triple phosphate and the amorphous carbonate and phosphate of calcium are formed in alkaline urine probably the result of specific urea-splitting organisms. These are the varieties of calculi most frequent to recur and those which are seen most often in patients with stone-forming kidneys. Therapy directed toward the relief of urostris and clearing up of infection is rational and attended with good result. The mechanism of the formation of urinary concretions as determined by physical chemists and by animal experimentation seems to consist of the coalescence of typical crystals in the gels of urinary colloids.

Kentucky Medical Journal, Bowling Green

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- Pyloric Stenosis Plea for Early Diagnosis G Cautner Hopkinsville —p 93
 Gonorrheal Infections of the Female E D Smith Owensboro —p 95
 *Cryptorchism with Incidental Carcinoma J A Bowen, Louisville —p 98
 Erysipelas Report of Recurrent Case M J Flewler, Louisville —p 99
 Spontaneous Rupture of Liver Abscess H S Frazier Louisville —p 106
 Diseases of the Pancreas Diagnostic Consideration V E Simpson Louisville —p 108
 Id Surgery of Pancreas I Abell, Louisville —p 120
 Relationship of Infant Mortality to Prenatal Care S R Boggess Lawrenceburg —p 125
 Factors Affecting the Mortality in Early Infancy L Palmer Louisville —p 128
 Lymphopathia Venerea in Kentucky Preliminary Report R C Alley Lexington —p 130

Cryptorchism with Incidental Carcinoma—Bowen cites a case of cryptorchism because it shows that testicles not in their proper position do not develop proper function and that such atrophic glands tend toward malignant degeneration. Experience has shown that most undescended testicles may readily be brought down into their proper places and develop normally thereafter, if this is done before the age of puberty. This operation is done preferably between the fifth and the tenth year. If they are neglected beyond the age of puberty, removal had best be done under most circumstances. Malignant conditions of the testicle make up about 5 per cent of the malignant changes occurring in man, and approximately 10 per cent of these are found in the undescended gland. They are rapidly growing, fairly early metastasizing tumors, by way either of the lymph or of the blood channels. They usually spread first to the retroperitoneal lymph nodes about the origin of the iliacs and then to those about the kidney pedicle. They then reach the mediastinum and lungs. If they spread by the blood stream,

the lung is, of course, involved earlier. The author believes that, owing to the early stage of the growth in his patient and its apparent complete removal, high voltage roentgen therapy may not have been necessary, but the patient has had three such treatments since his discharge from the hospital. He has gained about 25 pounds (114 Kg) and, except for slight urgency, has no symptoms and feels that he is in good condition.

Medical Annals of District of Columbia, Washington

3 29 54 (Feb) 1934

- Congenital Syphilis T Parran Jr Albany, N Y —p 29
 Primary Carcinoma of the Lung Review with Report of Illustrative Cases C V King, Washington —p 36
 Delayed Extensive Perirenal Extravasation of Urine Following Traumatic Injury to a Kidney Report of Case W C Stirling Washington —p 41
 Fundamentals of Internal Medicine Diseases of Heart W M Yater, Washington —p 43

Medicine, Baltimore

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- Narcolepsy L F Daniels Rochester, Minn —p 1

Michigan State M Society Journal, Grand Rapids

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- End Results in Arthroplasties of the Hip W C Campbell Memphis Tenn —p 49
 Thyroid Surgery in Southern Michigan as Affected by Generalized Use of Iodized Salt R D McClure Detroit —p 58
 Surgery in the Diabetic Patient C F Vale Detroit —p 63
 Suppurative Labyrinthitis Case Reports N Bentley, Detroit —p 69
 Pernoxon as a Preanesthetic E S Hoffman Detroit —p 72
 *Operation of Sterilization H E Randall Flint —p 74

Operation of Sterilization—Randall has used the following technic since 1921 in 700 sterilizations. No operation should be considered that does not resect both tubes. In a woman a 3 inch low midline incision is made or a Pfannenstiel incision may be used. The finger and thumb of the left hand are introduced into the abdomen, grasping the left ovary and tube. With a small retroflexed uterus it is necessary to use a tenaculum hook to bring the uterus up into the wound. While an assistant makes traction on the tube, a curved pair of hemostatic forceps crushes the horn of the uterus and a curved pair of scissors clips off the horn, it being made certain that the excision is carried down into the uterine muscles. This wound is closed with a number 5 Emmett needle threaded with chromic catgut, then 1½ inches of the tube is excised. A needle is introduced throughout the surface of the broad ligament below the round ligament, which next picks up the proximal end of the tube and the needle is passed back through the broad ligament. By traction of this suture the new proximal end of the fallopian tube is brought into contact with the posterior surface of the broad ligament. The suture is then tied. This operation is repeated on the opposite side. In patients who had borne children this technic occasionally resulted in hemorrhage from the wound in the uterus. In these cases a double salpingectomy is preferable. In the male an incision is made over the vas deferens as it is held between the thumb and finger. The vas feels like a small wire and when reached peels out easily and at least 1½ inches is excised. Interrupted chromic catgut sutures including dartos and skin are inserted and the operation on the opposite vas is done in an identical manner. After-care is ten days in bed in the case of women and a week for men.

Missouri State Medical Assn Journal, St Louis

31 45 88 (Feb) 1934

- Management of Bladder Diverticula J E Glenn and C E Burford, St Louis —p 45
 Avoiding Complications in Gynecologic Radium Therapy E A Robinson Kansas City —p 47
 Enlarging Conceptions of Mycotic Infections of Feet and Hands T B Hall Kansas City —p 50
 Nonsurgical Treatment of Pulmonary Tuberculosis Including Artificial Pneumothorax J B Stokes Mount Vernon —p 54
 Diagnosis and Prognosis of Adult Pulmonary Tuberculosis G D Kettelkamp Koch —p 59
 Tuberculosis of Bones and Joints F D Dickson Kansas City —p 63
 Management of the Toxic Goiter Patient Viewed in a New Light W Bartlett St Louis —p 67
 A Preview of My Book on Surgical Pathology of the Mammary Gland. A E Hertzler Halstead Kan —p 72
 Trachoma in the White Population of the United States C E Rice Rolla —p 73

Radiology, St Paul

22 131 260 (Feb.) 1934

- *Value of Meniscus Sign in Roentgenologic Diagnosis of Ulcerating Gastric Carcinoma B R Kirklin Rochester Minn—p 131
- Carcinoma of Lip and Mouth C L Martin Dallas Texas—p 136
- Chronic Arthritis of the Spine H P Doubt Detroit—p 147
- Cancer of Prostate Results of Radium and Roentgen Ray Treatment B P Widmann Philadelphia—p 153
- *New Method for Visualization of Unobstructed Esophagus H C Wright and E B Freeman Baltimore—p 160
- Some New Principles in Design of X Ray Apparatus A Bouwers Eindhoven Holland—p 163
- Efficiency of X Ray Stereoscopy as Influenced by the Method of Trip of the Tube P M Andrus and A Hambleton London Canada—p 174
- Perforation of Peptic Ulcer Following X Ray Examination with a Barium Meal H A Singer, Chicago—p 181
- Correlation of Roentgen and Pathologic Findings in Perthes Disease R W Lewis New York—p 183
- X Ray Study of the Postoperative Stomach J R Carty S Weintraub and R K Felner New York—p 191
- Some Problems and Results in Cholecystography Cassie B Rose Chicago—p 197
- Pneumonoconiosis with Especial Reference to Some of Its Complications J L Dubrow Memphis Tenn—p 202
- Treatment of Uterine Fibromas Leda J Stacy Rochester, Minn—p 212
- Behavior of Intervertebral Disk in Certain Spine Lesions E Freedman Cleveland—p 219
- Relative Value of Stereoscopic and Single Films in Routine Examination of the Chest E B Exner Bellingham Wash and I C Rigler Minneapolis—p 236
- Right Sided Atypical Diaphragmatic Hernia Case W G Herrman Ashbury Park N J—p 241

Meniscus Sign in Diagnosis of Ulcerating Gastric Carcinoma—Kirklin points out that in gastric ulceration when the lesion is on or near the lesser curvature in the vertical portion of the stomach the ulcer crater is seen roentgenoscopically under palpatory pressure as a crescentic shadow, with its convexity directed outward, and that the term "meniscus" is aptly applied to it. When the lesion is on the lesser curvature distal to the angular incisure, the base of the crater bends with the wall and the meniscus is concave above. If the ulcer is on the posterior wall, the crater appears, under manual pressure over the stomach, as a dense irregularly rounded shadow encircled by a transradiant zone, which corresponds to the elevated border. At the Mayo Clinic in every surgical case in which these manifestations are elicited an ulcerating carcinoma has been found at operation. The author believes that although the meniscus form of the crater as seen in typical cases is important, it seems to him that the slightly raised, overhanging border is even more significant. When the pressure necessary to demonstrate it is exerted over a lesion of this character on the lesser curvature, the crater filled with barium is separated from the barium in the stomach by a clear zone representing the approximated overhanging border of the ulcer. Similarly, when the lesion is on the posterior wall, the marginal ridge surrounding the crater is depicted as an encircling transradiant zone. In either instance the zonal defect is quite as striking as the shadowed crater and distinguishes the lesion from benign ulcer which seldom has a raised or overhanging border. Another mark of the meniscus crater is its slowness in emptying under pressure, and for this the marginal shelf is also responsible. To demonstrate these lesions and determine their character roentgenoscopic examination under manipulation is indispensable. Inspection should begin when the first swallow of barium enters the stomach, and the mixture should be distributed over the gastric walls by palpatory pressure to exhibit the entire mucosal relief. By a downward stroking pressure of the examiner's hand, the meniscus complex of the crater and the encircling ridge can be seen clearly above or between the outspread fingers. The complex is demonstrable not only when the lesions are moderately large but also when they are quite small.

Visualization of Unobstructed Esophagus—To visualize the unobstructed esophagus Wright and Freeman have the subject placed standing in the right anterior position against the upright cassette and instructed to take two or three deep breaths. At the end of a forced expiration the subject is told to swallow two or three mouthfuls of a rather thick barium mixture and as soon as this has been accomplished the roentgen exposures are made that is during suspended respiration. This procedure is repeated two or three times in order that there

may be no misunderstanding and to make sure of satisfactory results. By this method the authors were able in the majority of cases to obtain satisfactory outlines of the filled esophagus and they believe that, if this method is followed carefully, any roentgenologist can produce good roentgenograms of the normal filled esophagus without much practice and with no added expense.

Surgery, Gynecology and Obstetrics, Chicago

58 255 550 (Feb 15) 1934

- *Parathyroid Tumors Associated with Hyperparathyroidism Eleven Cases Treated by Operation E D Churchill and O Cope Boston—p 255
- Hyperthyroidism and Associated Diseases G W Crile Cleveland—p 272
- *Mastopathy and Chronic Mastitis H B Whitehouse Birmingham England—p 278
- Ligation of Large Arteries M R Reid Cincinnati—p 287
- Thrombo Angitis Obliterans Buerger's Disease G E Brown Rochester Minn—p 297
- Sympathectomy in Children D E Robertson Toronto—p 312
- *Operative Lengthening of the Femur V Putti Bologna Italy—p 318
- The Common Syndrome of Rupture Dislocation and Elongation of the Long Head of the Biceps Brachii Analysis of One Hundred Cases E L Gilcreest San Francisco—p 322
- Transurethral Surgery J R Caulk St Louis—p 341
- Pathogenesis of Hydronephrosis F Hunman San Francisco—p 356
- Prostate Gland Its Place in General Medicine Newer Conception of Diagnosis and Treatment J F McCarthy, New York—p 377
- Removal of Orbital Tumors W L Benedict Rochester Minn—p 383
- Surgical Correction of Ocular Disfigurements M Wiener St Louis—p 390
- Economics in Otolaryngology B R Shurly Detroit—p 394

Parathyroid Tumors Associated with Hyperparathyroidism—Churchill and Cope state that the immediate result in their eleven cases, in which a parathyroid tumor has been removed either completely or by subtotal resection, has been a correction of the disturbance in calcium and phosphorus metabolism. In fact, postoperative studies showing the return to normal constitute the final step in establishing the diagnosis and efficacy of the treatment. They are notably lacking in the reported cases of Paget's disease and arthritis. Following removal of the tumor in true hyperparathyroidism, the serum calcium values fall with dramatic rapidity. Symptoms and signs of tetany may appear even with a serum calcium above the normal level when hypercalcemia has been present for a long time. The tetany is controlled by a high calcium diet and by the administration of calcium gluconate, viosterol and parathyroid extract. Improvement in many of the symptoms of hyperparathyroidism may be expected within a few days. In several instances the patient has been made conscious of certain long standing but ill defined symptoms such as loss of energy, constipation or fatigue only by their abrupt cessation following operation. These symptoms are then recognized in retrospect as manifestations of the disease. The muscle and joint pains as well as bony tenderness are promptly relieved. The replacement of calcium in the bones takes a longer time and many months may elapse before any change becomes apparent roentgenographically. The bone tumors being osteoclastomas may be expected to disappear, but the bone cysts formed by fibrous replacement of bone substance persist. How far the kidney damage may be repaired is not known. In certain cases some improvement in renal function has been observed. The only fatality in the eleven cases occurred following the removal of a ureteral stone several weeks after the resection of a parathyroid adenoma. The authors outline the plan of operation and the method of dealing with parathyroid tumors contained in the mediastinum.

Mastopathy and Chronic Mastitis—Whitehouse believes that in chronic mastitis one is dealing with the results of a disorder of function and not primarily with an inflammatory condition. Anomalies in mammary activity occur either as excessive epithelialization of individual acini, as hypersecretion on the part of the mammary lobules or in defective absorption and autolysis of the products of secretory activity. From a study of the whole of the pathologic material in the University of Birmingham classified under "chronic mastitis" and the opinions that the author has formed after an investigation of this and his own material he concludes that 1. It is a matter of importance to correlate the microscopic appearance of the mammary acini and ducts with the period in the menstrual cycle

when the material is obtained. Otherwise what is physiologic may be regarded as pathologic. 2 Abnormalities in the sexual rhythm should be carefully noted, as the same factors that cause irregularities in the menstrual function also produce a typical appearance in the breast epithelium. 3 The condition described as "mazoplasia" is commonly associated in the same organ with the lesion described as "cystiferous hyperplasia." 4 In both lesions epithelial hyperplasia is the preliminary dominant factor and in both lesions the presence of the physiologic lymphocyte in large numbers is a constant factor. 5 Mazoplasia in the adult breast appears to be the natural result of excessive stimulation of the mammary epithelium by the luteal hormone. 6 The result of repeated cyclic excessive stimulation of the mammary epithelium results in the production of excessive secretion and cystic disease. The formation of cysts merely appears to represent a breakdown in the normal balance between production and absorption. 7 Mazoplasia cannot be regarded as entirely physiologic. It is physiologic in the sense that it represents functional activity, but this activity is pathologic and is an indicator of excessive zeal on the part of the physiologic stimulus, either in amount or in concentration. 8 The fluid from mammary cysts is quite definitely a secretion of the mammary epithelium. It also contains colostrum cells and epithelium in process of autolysis. It does not contain fibrin and it does not coagulate. Chemically some specimens show evidence of fat and others contain urea and uric acid. In seventeen of the author's twenty cases of mastopathy both pain and swelling of the breasts disappeared after a few months of treatment with theelin during the premenstrual phase, although the effect was not always manifest after the first or second course of injections. He believes that mastopathy may be relieved and the onset of mammary stagnation prevented by the use of the estrus producing hormone in sufficient quantity to counteract the activity of the corpora lutea.

Operative Lengthening of the Femur—Putti in performing his operative lengthening of the femur has the patient prepared surgically the day before the operation. A Putti operating table is used on which the patient can be maneuvered into the desired position. Under ether anesthesia and iodine preparation of the skin, a Kirchner wire is inserted through the soft parts and the underlying greater trochanter of the femur, in the anteroposterior axis. Another wire is inserted through the supracondylar region of the femur running from the outside in. This wire is inserted in the horizontal plane. A long incision is made over the lateral aspect of the thigh in the middle third and is carried through the subcutaneous tissue, fascia lata and vastus externus down to the shaft of the femur. After closure of the wound and the application of the dressings, the patient is transferred to bed and placed in traction on a Braun frame. The upper wire is firmly fixed to the upper part of the bed by heavy braided wire. Increasing traction is applied to the lower Kirchner wire, beginning with from 7 to 8 Kg (15 to 17 pounds) and from then on, 1 to 2 Kg (2 to 4 pounds) is added daily until the desired lengthening—usually from 2½ up to 4 inches—has been attained. The traction period usually requires from eighteen to twenty-one days. Roentgenograms are made about every third day during the entire period of extension. When the desired length has been attained a sacral rest is inserted under the patient while still in traction, and a spica cast is applied from the costal margin down to the tip of the toes on the side operated on. Little padding is applied and great care should be used in fixing the wires snugly in the cast. The traction remains in place until the cast hardens, then it is disengaged and the patient is moved from the Braun frame onto the bed. Pillows are now used to prop up the limb, which is enclosed in the cast. The wires are usually allowed to remain in place for from three to five more weeks. If a roentgenogram reveals adequate callus formation and the patient is comfortable, the wires are removed. After a few more months another cast is applied with less flexion of the joints and the patient is allowed to get up. Should the roentgenogram reveal inadequate callus, the wires are left in place for a longer period unless signs of infection around the wire are present. The patient requires immobilization from eight to ten months in all. In the eleven cases that the author has treated by this method no complications whatever arose other than a single case of temporary "toe

drop" caused by overstretching of the external popliteal nerve presumably due to faulty position of the knee. The paralysis promptly cleared up with rest and postural treatment.

Tennessee State Medical Assn Journal, Nashville

27 33 64 (Feb) 1934

- Aphoria in Acute Leukemia W D Stinson Memphis—p 33
Encephalitis H D Long Chattanooga—p 36
Astigmatism as a Cause of Somatic Dysfunction E L Grubb Knoxville—p 40
Myoma Malignum E D Mitchell Jr, Memphis—p 46

Virginia Medical Monthly, Richmond

60 645 708 (Feb) 1934

- Observations on Hyperthyroidism with Especial Reference to Spontaneous Recovery J M Hutcheson Richmond—p 645
Treatment of Eclampsia A C Davis and P Davis Roanoke—p 645
Factors Influencing Mortality in Operative Carcinomas of Large Intestine A S Graham Richmond—p 652
Coronary Thrombosis J Hundley Jr Lynchburg—p 655
A Discussion of Painless Labor P Rucker Richmond—p 657
Is Polymyositis a Contact Disease? H McG Robertson, Philadelphia—p 660
Some Essentials in Preoperative and Postoperative Treatment in Endodontia H Bear Richmond—p 666
Present Status of Malarial Therapy in General Paralysis P G Hamlin Philadelphia—p 668
Carcinogenesis A Line of Research M Benmosche New York—p 671
Divericulitis R P Hawkins Jr Clifton Forge—p 674
Use of Kirschner Wire Traction T Wheeldon Richmond—p 675
Diagnosis of Acute Appendicitis W H Reed Kingsport Tenn—p 679
Congenital Atresia of the Right Posterior Naris R C Grove New York—p 682

Wisconsin Medical Journal, Madison

33 77 168 (Feb) 1934

- Denervation of the Adrenal Glands G Crile Cleveland—p 87
Nervous Indigestion Roentgenologic Evaluation F H Kuegle, Janesville—p 94
Anemia of the New Born Case Report A B Schwartz Milwaukee—p 98
Rattlesnake Bite Case Report J A Jackson Madison—p 108
*Trichomonas vaginalis Vaginitis Treatment with Sodium Perborate W Smith Ladysmith—p 102
Acute Abdominal Surgery from the Standpoint of the General Practitioner L O Simenstad Osceola—p 104
Treatment of Tuberculosis in General Practice II A L Bangs Wausau—p 109
Anal Fissure A C Gorder Milwaukee—p 111
Ambulatory Treatment of Hemorrhoids J M Scantleton, Sparta—p 114
Disease Prevention and Control of Cancer W D Stovall Madison—p 119

Trichomonas Vaginalis Vaginitis Treatment with Sodium Perborate—Smith describes a method of treatment that has as its purpose the liberation of gaseous oxygen within the vagina, by the introduction of a compound that is not irritating. The patient makes a suspension of one half tea spoonful of sodium perborate powder in half a cup of luke warm water. This is approximately from 30 to 40 grams (2 to 26 Gm) in from 3 to 4 ounces of water. In the recumbent position she gently injects this freshly prepared suspension into the vagina night and morning and continues this treatment during menstruation. In two or three days the patient experiences marked relief from symptoms and as a rule speaks of a great lessening of the vaginal discharge. It is the author's practice at the first examination to instill into the vagina a little of a 5 per cent solution of mercurochrome on a sponge, although he believes this unnecessary. If the routine is continued for one or two months or through one or two menstrual periods, the patient may stop all injections and be free from symptoms. This treatment, though quite empirical has some theoretical basis. It has been shown that *Trichomonas vaginalis* in cultures is found at the bottom of the test tube and also multiplies under true anaerobic conditions. Cleveland has shown that increased oxygen tension is toxic for a number of parasitic species of *Trichomonas*. Davis states clinically that a speculum examination, merely letting air into the vagina, will make it difficult to find the protozoan parasites in the fresh specimen of the patient's vaginal discharge the next day. Sodium perborate as it comes in contact with exudates gives off bubbles of oxygen, but more slowly than hydrogen dioxide.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Anaesthesia, Manchester

11 41 86 (Jan) 1934

- *Intrathecal Nerve Root Block. Some Contributions and a New Technique. W. Etherington Wilson—p. 43.
Anesthetic Technic Employed in Two Australian Teaching Hospitals. F. W. Green and G. Kaye—p. 56.
Present Status of Ethylene. Isabella C. Herb—p. 66.

Technic for Intrathecal Nerve Root Block—Etherington Wilson outlines a vertical ascent method for intrathecal nerve root anesthesia. A simple sedative is given the night before operation and dextrose within two hours of the operation. The lumbar skin is prepared at the same time as the operative field. One hour before operation the patient is placed on a wheeled stretcher, the ears are plugged with absorbent cotton and the average person should receive $\frac{1}{100}$ grain (0.00065 Gm) of scopolamine intramuscularly. It is often necessary to give a second half dose of scopolamine half an hour later. An intramuscular injection of ephedrine should be given ten minutes before lumbar puncture. The patient is made to sit up across the table and leans forward supported by a nurse. A 20 cc syringe filled with 20 cc of a 1:1,500 solution of nupercaine is inserted, the third lumbar space is punctured and when cerebrospinal fluid appears the stylet is reinserted and the needle is pushed a couple of millimeters farther into the canal by a corkscrew movement. The nurse now makes the patient quite upright, the slow injection is commenced (about fifteen seconds for 10 cc), and at the same time the seconds-hand clock is started. A certain number of seconds is allowed to elapse before the patient is put into the dorsal position; the latter is carried out without any delay, and as the patient reaches this position the table is being sloped head down to an angle of 15 degrees. The average doses and times are 10 cc of nupercaine solution (1:1,500) for low, 12 cc for median and 15 cc for high spinal anesthesia, twenty, thirty and forty seconds are allowed for the upright position, respectively. As the fluid has to travel 6, 9 and 13 inches, it will be seen that nupercaine in these doses is traveling at the rate of about three seconds to the inch. After three minutes at an angle of 15 degrees the patient is raised 5 degrees and is kept at this slope for the remainder of the operation. The author states that he has employed this method successfully in forty-six cases.

British Journal of Dermatology and Syphilis, London

46 53 112 (Feb) 1934

- Dermatomyositis and Poikiloderma. J. T. Ingram and M. J. Stewart—p. 53.
*Treatment of Lupus Erythematosus with 'Sanocrysin'. J. L. Franklin—p. 66.

Treatment of Lupus Erythematosus with Gold Compound—Franklin used double thiosulphate of sodium and gold ('Sanocrysin') in treating thirty-one cases of lupus erythematosus. Of these patients twenty were cured, four were improved and seven were resistant to treatment. These results compare favorably with those of other workers. The best results were obtained in those patients who had had the disease for the shortest time. Of the twenty-three patients who had been affected for five years and less eighteen were cured, whereas of the remaining eight patients who had been affected for more than five years only three were cured and three improved. The results also show that the superficial type of the disease is more amenable to treatment with gold salts than the 'fixed' type. Fourteen patients having the superficial type of lupus erythematosus were treated, twelve were cured, one was improved and one was intolerant to the drug but was subsequently cured with another gold compound. Of the seventeen patients with the fixed type of the disease treated eight were cured, three were improved and six did not respond to treatment. The patients who have been cured clinically have been kept under observation for varying periods of time up to two and a half years and although the authors believe that it is too soon to make a statement as to the permanence of the cures there is every reason to believe that those patients who have been healed and who have received thorough treatment will remain cured par-

ticularly those who were affected with the superficial type of the disease. Should relapses occur, however, these patients can usually be given further courses of treatment with the drug. This occurred in one patient who relapsed one year after the end of her first course of treatment and was completely healed after the first three injections of another course of treatment. The first dose should be a small one in case intolerance is exhibited and only exceptionally should a dose of 0.25 Gm be exceeded.

British Journal of Ophthalmology, London

18 65 128 (Feb) 1934

- Data Concerning Radiation and Protective Glasses. Note on Retinoscopes. A. Rugg-Gunn—p. 65.
Transparent Protractor for Scotometers. J. Foster—p. 98.
Extensive Oculopalpebral Neoplasm. Excision of Lids and Enucleation of Eyeball Followed by Occlusion of the Orbit. Elena Puscariu—p. 101.

British Medical Journal, London

1 179 224 (Feb 3) 1934

- Some Practical Points in Treatment of Pulmonary Tuberculosis by Artificial Pneumothorax. A. L. Punch—p. 179.
Effect of Fluid Complicating Artificial Pneumothorax. R. R. Trail—p. 183.
Chronic Appendicitis. W. M. Dickson—p. 184.
*Anaphylactic Basis of Rheumatism. C. E. Jenkins—p. 186.
Thrombosis, Embolism and Their Treatment. G. Bankoff—p. 189.
Torsion of the Normal Fallopian Tube. A. McLachern—p. 190.

Anaphylactic Basis of Rheumatism—Jenkins points out that the parallelism that exists between the syndromes of the two diseases anaphylaxis and rheumatism and between the drugs used in their treatment are, when itemized, far too numerous to be dismissed as a series of coincidences. There being no other theory that will account for all the phenomena of rheumatism and its treatment he submits that the anaphylactic explanation must be accepted as the only alternative to a position that is no more than a contradictory muddle of mysteries.

Indian Journal of Medical Research, Calcutta

21 467-660 (Jan) 1934. Partial Index.

- Comparative Biochemical Findings in Blood of Normal and Malaria Infected Monkeys. R. C. Wats and B. M. Das Gupta—p. 475.
Electrocardiograms. Part I. Blood Pressure and Electrocardiographic Changes with Muscle Extract. R. N. Chopra, S. G. Chaudhury and J. C. Gupta—p. 483.
Preliminary Note on Pharmacologic Action of Antiaris Toxicaria. R. N. Chopra and P. De—p. 513.
Biologic and Colorimetric Assay of Vitamin A in Some Indian Fresh Water Fish Oils. N. C. Datta and B. N. Banerjee—p. 535.
Some Experimental Studies on Leprosy. R. Row, N. P. Dalal and G. V. Gollerkeri—p. 545.
Effect of a Plasmodial Infection in Increasing Susceptibility to Leishmania Infection in Monkeys. L. E. Napier, R. O. A. Smith and K. V. Krishnan—p. 553.
Effects of Insulin on Contractions of Intestinal Muscle. S. Prasad—p. 563.
Photodynamic Action of Methylene Blue on Fixed Rabies Virus. H. E. Shortt and A. G. Brooks—p. 581.
*Morphologic Studies on Rabies. Part I. Salivary Glands. H. E. Shortt and B. N. Lahiri—p. 587.
Some Observations on Cardiovascular Action of Urea Stibamine. J. C. David, N. Rajamanikam and R. Krishnaswamy—p. 617.
*Study on Parasites of Kala-Azar and Their Distribution in the Body. M. N. De—p. 627.
Contributions to Protozoal Immunity. Part II. Immunity to Malaria in Monkeys and Effect of Splenectomy on It. K. V. Krishnan, R. O. A. Smith and C. Lal—p. 639.

Morphologic Studies on Rabies—The prolonged study of a large amount of rabid material of Shortt and Lahiri, including dog, monkey and man has revealed that while characteristic appearances are found in the salivary glands of rabid animals these are in most cases the results of an exaggerated physiologic response of the glands to hyperstimulation and do not necessitate the specific presence of a living virus, although this is probably the cause of the stimulation in rabies. No evidence was obtained of the visible presence of any bodies that could be identified as bacteria, protozoa or filtrable viruses or, indeed, of any living causative agent.

Study on Parasites of Kala-Azar—De describes the different technical methods for the demonstration of the parasites in kala-azar and other leishmania infections and discusses their relative values. The parasites are always found in large

numbers in the liver, spleen and bone marrow and only occasionally in the other parts of the body. The parasites do not remain as freely circulating bodies but are always inside large swollen phagocytic mononuclear cells, the reticulo endothelial cells of Aschoff or the plasmatocytes of Ranvier. The author could not verify the presence of parasites inside the vascular endothelium and he does not see why it should show power of phagocytosis, in view of the fact that vascular endothelium is considered to be a highly specialized tissue very well differentiated functionally. When parasites are present in areas other than the liver, spleen and bone marrow there is usually an inflammatory reaction excited by some cause. The relationship of inflammatory reaction to the infection of the reticulo-endothelial cells by leishmania has been discussed.

International Journal of Psycho-Analysis, London

15 1116 (Jan.) 1934

- Bodily Pain and Mental Pain. E. Weiss—p. 1
Folie à Deux. C. P. Oberndorf—p. 14
Monstrous and Genuine Beauty. Study in Bisexuality. F. Wittels—p. 25
Treatment of Bewitchment in a Puritan Community. M. Middlemore—p. 41
Early Infantile Sexuality of Males Compared with Sexual Maturity of Other Mammals. M. Levy-Suhl—p. 59

Journal of State Medicine, London

12 162 (Jan.) 1934

- The Harben Lectures 1933. Modern Views of Vitamins and Their Functions. I. Recent Studies of Chemistry of Vitamins. J. C. Drummond—p. 3
Id. II. Physiologic Function of Vitamins. J. C. Drummond—p. 20
Id. III. Vitamins in Relation to Practical Problems of Human Nutrition. J. C. Drummond—p. 31
Sea Breezes as a Climatic Factor. E. G. Bilham—p. 40
Pollution of Air by Smoke. J. S. Owens—p. 51

Medical Journal of Australia, Sydney

1 81110 (Jan. 20) 1934

- Calcium and Phosphorus Metabolism in Diseases of Thyroparathyroid Apparatus. Part II. Problem of Mode of Action of Vitamin D. I. S. Hansman—p. 81
Rest and Movement. Fry Maclure—p. 95
Site Predisposition to Cancer. R. D. Wright—p. 99
1 111146 (Jan. 27) 1934
Review of Mastoid Surgery. W. J. Dench—p. 116
Aphasia. J. M. Gill—p. 122

Quarterly Journal of Medicine, Oxford

3 1136 (Jan.) 1934

- Rhythm of Paroxysmal Tachycardia. Electrocardiographic Study. A. U. Mackinnon—p. 1
*Evulsion of Phrenic Nerve in Treatment of Pulmonary Tuberculosis. B. W. Anderson—p. 15
Basophil Adenoma of Pituitary Gland. J. Craig and B. Cran—p. 57
Blood Urea Clearance Before and After Giving Urea. T. S. Fowweather—p. 63
Further Note on Plasma Cholesterol in Nephritis. J. Maxwell—p. 79
*Clinical and Biochemical Observations on Hunger Osteopathy, Juvenile and Late Rickets (Osteomalacia). A. M. Crawford and D. P. Cuthbertson—p. 87
*Prevention and Treatment of Individual Attacks of Angina Pectoris (Angina of Effort). W. Evans and C. Hoyle—p. 105

Evulsion of Phrenic Nerve in Treatment of Tuberculosis.—Anderson performed phrenic evulsion in fifty-one cases of pulmonary tuberculosis and discusses its indications and results when performed as a preliminary to thoracoplasty in conjunction with artificial pneumothorax and as a sole operative procedure. Twenty-three of his patients when last heard of were alive and well, eleven others were alive, but the outlook in these was still doubtful, sixteen were dead and one was dying. If the series is viewed from the point of view as to whether or not the indication for operation was fulfilled, it is seen that in thirty-six instances the indication was definitely fulfilled, in four it was doubtfully fulfilled and in eleven not at all. When no definite indication for operation existed, no change took place. Phrenic evulsion, whether used as a sole operative procedure or in conjunction with other methods of pulmonary collapse, has a somewhat limited, but still definite and valuable place in the treatment of pulmonary tuberculosis.

Hunger Osteopathy, Juvenile and Late Rickets.—Crawford and Cuthbertson present data derived from a clinical and biochemical investigation of a case of hunger osteopathy, and corresponding observations in cases of juvenile and late rickets (osteomalacia). The essential difference between the metabolism of the case of hunger osteopathy and the rachitic conditions lay in the fact that the former rapidly stored calcium, phosphorus and magnesium without the addition of vitamin D, increased intake of mineral matter leading to increased retention, while on the other hand the rachitic cases only showed retention of mineral matter when vitamin D was added to the diets. The authors consider that hunger osteopathy and late rickets (osteomalacia) are not necessarily identical in their nutritional origin, but that late rickets (osteomalacia) is a form of hunger osteopathy, namely, that due to deficient vitamin D.

Treatment of Angina Pectoris.—Evans and Hoyle observed 122 patients with angina pectoris (angina of effort) over a period of three years with especial reference to the comparative value of vasodilator drugs for the immediate treatment and prevention of attacks. Syphilis was present in twenty-five cases. Coronary thrombosis was considered only a complication. The comparative results show that glyceryl trinitrate in tablet form when absorbed from the mouth is by far the most effective agent for relieving attacks and for their immediate prevention. Of the 122 patients, 86 per cent obtained great relief and a further 11 per cent moderate relief. Other preparations of glyceryl trinitrate and other remedies tried did not give such good results. Glyceryl trinitrate tablets do not cause objectionable symptoms. Amyl nitrite proved to be disappointing for the relief of attacks and it can be recommended only for those rare cases in which glyceryl trinitrate fails. It has the further disadvantage of being useless for the prevention of attacks. The use of glyceryl trinitrate tablets immediately before expected anginal attacks is a safe means of preventing pain and should be used far more widely in routine treatment than it is at present. Of the authors' patients 84.5 per cent obtained great benefit, and a further 12.5 per cent obtained moderate benefit by using the drug in this way. This is a greater measure of improvement than was found when any of the other remedies were tried. Most patients preferred to take the drug at their own discretion, and this method of administration proved more effective than when it was taken at short fixed intervals, except for those patients who could not predict attacks with certainty. No harmful effects were encountered from such treatment, though patients used the drug freely for upward of two to three years, and often this enabled them to take more physical exertion and lead a fuller life than had previously been possible.

South African Medical Journal, Cape Town

8 4176 (Jan. 27) 1934

- Rotylon as an Anthelmintic. W. L. Gossill—p. 43
Duodenal Diverticula. S. N. Sennett—p. 45
A Few Unusual Cases. H. Lewis—p. 47
Interesting Case of Extra Uterine Pregnancy. G. S. Van Der Merwe—p. 50
Spastic Ileus. C. D. Brink—p. 52

Quart. Bull., Health Org., League of Nations, Geneva

2 551752 (Dec.) 1933

- Fourth Analytic Review of Reports from Pasteur Institutes on Results of Antirabies Treatment. A. G. McKendrick—p. 553
Suburban Settlements for the Unemployed in Germany. F. Schmidt—p. 600
Medical Education and Reform of Medical Studies. E. Burnett—p. 670

Japanese Journal of Experimental Medicine, Tokyo

11 515650 (Dec. 20) 1933

- Influence of Parenteral Introduction of Liver Cell Constituents on the Blood Gas. I. Influence of Liver Cell Constituents on Normal Rabbit Blood Gas. N. Owada—p. 515
Id. II. Influence of Cell Constituents of Other Organs Than the Liver on Normal Rabbit Blood Gas. N. Owada—p. 535
Relation Between Hemolysis and Electrolytes. H. Moriyama—p. 571
Study on Virus of Epidemic Encephalitis in Japan. T. Fujita—p. 599
Studies on Mucus Producing Bacteria. III. Mutant Forms of Paratyphus B. Bacillus Producing Mucus. S. Yasuda—p. 619
Studies on Tularemia Bacillus. I. Its Filtrability. M. Kudo—p. 633

Annales de Médecine, Paris

35 81 160 (Feb.) 1934

- Basal Metabolism in Man According to Latest Investigations F G Benedict —p 81
- *Role of Neurovegetative System and Endocrine Glands in Normal and Pathologic Mammary Function G Roussy and M Mosinger —p 108
- Gouty Arteritis L Mathieu L Colleson and R Choltus —p 124
- *Pneumothorax and Variation of Altitude Physiopathologic Studies C Trocme —p 138

Neurovegetative System and Endocrine Glands in Mammary Function—Roussy and Mosinger reviewed the role of the neurovegetative system and the endocrine glands in mammary function. They studied five patients showing a unilateral or predominantly unilateral mammary hyperplasia. In three of these there was marked tenderness to pressure at the point of emergence of the second and third perforating branches. The authors state that the mammary function depends on both the nervous system and the endocrine glands, which often exert a correlated action. Treatment of pathologic galactorrhea is not on an established basis, but they suggest that resection of the fourth intercostal nerve or its perforating branch might give good results.

Pneumothorax and Variation of Altitude—Trocme analyzes the factors involved in changes of altitude on pneumothorax. He believes that they can be expressed in physical formulas and made accessible to calculation. The gaseous pocket of an artificial pneumothorax tends to dilate at increased altitudes by a volume expressed as $\Delta V_M = V \lambda$. V is the initial volume of the pneumothorax and λ a factor dependent solely on the barometric conditions at the points of departure and arrival. Each pneumothorax patient withstands the dilatation differently and exactly as it withstands slow insufflation of the pleura with a like volume ΔV_M . The tension of the pneumothorax is expressed $\Delta t = \frac{\Delta V_M}{\mu}$ where μ is a factor peculiar to

each pneumothorax which shows the usual conditions of capacity and elasticity. The test of the ascension gives a means of calculating the volume of a pneumothorax by the formula $V = \Delta t \times \frac{\mu}{\lambda}$. These facts apply to all closed plant cavities, such as the ear, stomach, and intestine. They thus assume the role of aneroid barometer to the variations in external pressure.

Gynecologie et Obstetrique, Paris

29 97 192 (Feb.) 1934

- Study of Anatomic Effects of Diathermocoagulation on Chronic Cervical Metritis J Chosson and E Casalta —p 97
- Pelvic Congestion Its Etiopathogenesis and Treatment C. A. Castaño —p 104
- *Role of Trichomonas Vaginalis in Gynecology N Kissling —p 116
- Treatment of Postpartum and Postabortive Infections with Serum of Umbilical Cord S Raphaelkes and A Koroleva —p 146
- Treatment of Cerebromeningeal Hemorrhages of the New Born H Slobozianu —p 160

Rôle of Trichomonas Vaginalis in Gynecology—Kissling states that the incidence of leukorrhea and vaginitis due to Trichomonas is high. The presence of Trichomonas may be tolerated without producing any symptom. The existence of Trichomonas is often combined with a vaginitis presenting characteristics and a reaction so specific to treatment that its pathogenic role would never be denied all the more as its disappearance coincides with cure. The frequency of leukorrhea due to Trichomonas is lowered according to age. It attains its maximum between 18 and 35 years of age. The author studied 260 cases of abnormally profuse menstruation 96 of which presented Trichomonas. He found that the usual treatment of leukorrhea by means of vaginal injections of potassium permanganate and of chlorine compounds has no effect. The author cites as the treatment of choice intravaginal administration of pills of chinofon followed by osules of borated glycerin at 5 per cent. This treatment leads to a rapid disappearance of Trichomonas and of the inflammatory symptoms. It is necessary, however, before interrupting treatment to make sure that Trichomonas has definitely disappeared. Relapses after menstruation become constantly less serious, provided treatment is kept up. The relapses are probably due to uncured forms inaccessible to treatment. In only one case

did the author find Trichomonas free from other associations. Most of the time it is found associated with a rich flora of cocci. Many authors report its association with the gonococcus and the author presents two such cases. Like all associations into which the gonococcus enters, this is of short duration. The presence of these parasites may be easily established by Gram's method, gentian violet or Loeffler's methylene blue.

Presse Médicale, Paris

42 329 344 (Feb. 28) 1934

- Complete Latent Fractures of Neck of Femur in Adults A Mouchet and Alain Mouchet —p 329
- *New Management of General Anesthesia Basal Anesthesia by Intravenous Injection of Paraldehyde with Dextrose I I Nitzescu and J Iacobovici —p 331
- Value of Roentgenologic Examination of Cancer of Colon G Maingot and R Sarasin —p 333

New Management of General Anesthesia—Nitzescu and Iacobovici report favorably on the use of a basal anesthetic consisting of paraldehyde with dextrose. An isotonic solution of dextrose is prepared (566 Gm to the liter). A small amount of this solution is poured into a serum apparatus of from 250 to 300 cc capacity. From 15 to 20 cc of paraldehyde is added with a pipet or sterilized graduate in the proportion of from 6 or 8 cc to 100 cc of dextrose solution. The solution mixes easily on shaking. The solution is injected in the proportion of from 0.15 to 0.21 cc of paraldehyde per kilogram of body weight and at a rate of about 15 or 20 cc a minute. The authors used this method of basal anesthesia in eighty-two patients with good results. The initial irritative stage of induction of general anesthesia was much improved, as was the waking stage. The principal disadvantage of basal anesthesia lies in the inability to remove or alter its effects once the anesthetic is introduced. With paraldehyde prepared in this way the authors feel that the low toxicity and wide margin of safety do much to obviate even this difficulty.

Schweizerische medizinische Wochenschrift, Basel

64 201 240 (March 10) 1934

- *Vesical Ectopy Monnier —p 202
- *Serologic Maturation Processes and Latent Immunity Hanna Hirsfeld and L Hirsfeld —p 203
- Use of a Modified Protein Cream Milk According to Feer in Nutrition of Infants A Frank —p 205
- *Relations of Otitis Media to Diarrheal Disorders During Childhood H Brokman —p 208
- Partial Spontaneous Pneumothorax in the New Born A Hotz —p 209
- Scarlet Fever Prophylaxis W Hoffmann —p 211
- Suggestions for Construction of Children's Sanatorium Bossard —p 212
- Observations on Measles in Home Practice P Ryhner —p 212
- Progeria Dwarfism of Senile Type E Schiff —p 213
- Diagnosis and Therapy of Hydrocephalic and Related Conditions G Fanconi —p 214
- Child Aged 2 Years Poisoned by Cleansing Fluid Containing Large Amounts of Monochlorobenzene H Reich —p 223
- Clinical Aspects of Glandular Fever O Koegel —p 224
- Alcaligenes Abortus Infection During Childhood Case E Ziegler —p 225
- Expense of Nutrition of Nurslings R Rehsteiner —p 226
- *Painful Paralysis of Young Children (Perinular Radial Subluxation) W Feer —p 228
- *Early Persisting Spontaneous Pneumothorax During Nursing Age H Willi —p 229
- Congenital Tuberculosis Two Cases H Sulzer —p 233
- Myelitis Following Mumps and Measles C Kousmine —p 235
- Epidemic of Measles in Scarlet Fever Ward in Children's Hospital in Zurich Ruth Uehlinger Frauchiger —p 237

Vesical Ectopy—In twenty-five years, Monnier treated nine cases of vesical ectopy. He reviews therapeutic methods that have been recommended and reaches the conclusion that the Coffey-Mayo method is the best. In this procedure the ureters are severed before their entrance into the bladder, the peripheral section is closed by a ligature and the oral portion is transplanted obliquely into the sigmoid. An ascending infection is prevented if implantation is done in such a manner that from 4 to 5 cm of the ureter passes between the mucosa and the musculature. Thus the intra-intestinal pressure closes the implanted section so that backflow is impossible. Another advantage of the operation is that the technic is so simple that it can be performed on young children. Eventually it can be done in two stages. A complication developing in one of the cases in which the author employed the Coffey-Mayo method, convinced him that the following factors should be given attention. 1 The ureters should be mobilized only as far as it is

absolutely necessary, so as not to impair their nutrition. The preparatory treatment of the intestine should be taken care of. In order to secure an aseptic implantation, the technical suggestions of Coffey should be followed, that is during the operation the inside of the intestine should be treated with irrigations and tamponade and the anastomosis should be done with closed mucous membrane and with a suture which after it has been cast off will establish a connection between intestine and ureter.

Serologic Maturation Processes and Latent Immunity—The Hirszfelds point out that the irregular susceptibility of various races for pathogenic micro organisms and observations on families and on twins indicate that the constitution plays a part in infectious diseases. However because of the multiplicity of internal and external factors it is difficult to recognize the constitutional principle. In the Schick test for diphtheria the Brokman test for dysentery and the Dick test for scarlet fever, the negative skin reaction is generally ascribed to the presence of antitoxins but the authors point out that the predisposition of the tissues must be given consideration. They assume that there are forms of immunity which can be traced to a deficiency in the reaction capacity. With the aid of the skin reactions racial differences have been demonstrated in the susceptibility for diphtheria and scarlet fever. Other investigations demonstrated an increase in the antitoxin carriers with advancing age. The problem is whether this increase is due to a spontaneous development of the antibodies or to latent immunity. The authors investigated several cutaneous reactions. They reach the conclusion that the development of epidemics is largely dependent on the number of susceptible persons. In case of high virulence of the pathogenic micro organism the constitutional factors are of minor significance but if prolonged contact of the pathogenic micro organism and the macro organism has produced a mutual habituation the constitutional differences in susceptibility play an important part.

Otitis Media and Diarrhea in Children—Clinical analysis of the acute diarrheas in more than 100 children by Brokman showed that the principal symptoms were otitis media, diarrhea, disturbances in the intermediate metabolism and disturbances of the central nervous system. Pathologic, bacteriologic and serologic investigations corroborated the clinical unitarian theory. A number of disease entities which so far were considered otogenous sepsis, atypical alimentary intoxication or atypical dysentery have become a unit. The primary etiology is still unknown and the pathogenesis has been cleared only partly but this point of view is an attempt to form a new clinical, therapeutic and epidemiologic foundation for these serious disturbances occurring in small children.

Painful Paralysis of Arm of Young Children—Feer describes a painful paralysis of the arm which develops in small children after slight traumas. The condition occurs comparatively often but as a rule only in children less than 5 years of age. The trauma that causes the condition often develops in the following manner: A child is led by the hand and stumbles but in order to avert a fall the person leading the child pulls the arm. The child cries and the arm hangs limp as if paralyzed. Touching of the arm and attempts at movement are painful. It has been determined on the cadavers of children that by a jerking pull on the hand the arm can be brought into a position similar to this form of painful paralysis. In this condition the head of the radius has slipped partly out of the annular ligament and the ligament is incarcerated between the radius and the humerus. This explains the great painfulness of all movements in the elbow joint. On the cadaver, the adjustment of the head of the radius and of the annular ligament could be accomplished by supination and flexion of the forearm. The condition has been designated as perannular radial subluxation or as subluxation of the radius by elongation. It is identical with the so called painful paralysis of young children.

Spontaneous Pneumothorax in Nurslings—Will relates the clinical histories of three nurslings with spontaneous pneumothorax. All three showed a good general development in spite of the early appearance and persistence of the pneumothorax. The most important clinical symptoms are dyspnea

contraction of the thorax and displacement of the heart. Typical changes in the physical aspects of the lung do not become manifest until later. Roentgenoscopy reveals less density on the side of the pneumothorax and displacement of the heart and the mediastinum toward the opposite side, the yieldingness of the so called weak site being especially pronounced. In case of a left-sided pneumothorax, a massive collapse of the right upper lobe becomes manifest. The diagnosis is made more difficult by faint pulmonary outlines in the regions of lesser density and by the indistinct margins of the collapsed lung. Puncture and the determination of the pressure are of great significance for the diagnosis. Measurements of the pressure in the described cases indicated that the assumption of a hyperpressure of a tension pneumothorax was not justified. In one of the cases the measurements revealed a negative intrathoracic pressure, but in spite of this there was an enormous displacement of the heart and of the mediastinum. This seems to indicate that merely a pressure difference between the two halves of the thorax is sufficient to produce a great displacement of the mediastinum. In the differential diagnosis, massive pulmonary collapse, atelectatic pneumonia, cystic and honeycombed lung and hypoplasia of the lung have to be considered. The prognosis is doubtful because of the danger of chronic bronchitis and of bronchiectasis. Treatment does not promise great results, for conservative measures do not counteract the pneumothorax and puncture produce only temporary results. If the child shows a fairly good development, the parents are usually reluctant to give their consent to an intervention. The author considers a congenital pulmonary defect the probable cause of the spontaneous pneumothorax in children.

Polichinico, Rome

41 121 184 (March 1) 1934 Medical Section

Research on Nephropathies: Value and Significance of Polypeptiduria in Some Groups of Nephritis. C. Manzini—p. 121

*Reaction of Takata-Ara in Serum and Ascitic Fluid of Diseases of Liver. G. Lazzaro—p. 144

Experimental Research on Hypoglycemic Action of Bile. D. Beggi and A. Picasso—p. 152

Pneumothorax Treatment of Pulmonary Gangrene. G. Dalla Torre—p. 157

Modification of Takata-Ara Test—Lazzaro performed Jezler's modification of the Takata-Ara test in 200 cases. Nine small tubes are prepared and 1 cc of the 0.9 per cent physiologic solution of sodium chloride is placed in each tube. To the first tube is added 1 cc of the liquid to be examined (serum or ascitic fluid). 1 cc of this mixture is pipetted off and added to the second tube. The same procedure is repeated in the other tubes until there is a series of dilutions of from 1:2 to 1:512. To each tube is added 0.25 cc of a 10 per cent solution of sodium carbonate and 0.3 cc of the reagent of Takata, which is prepared at the moment of use by mixing equal parts of a 0.5 per cent solution of corrosive mercuric chloride and a 0.2 per cent aqueous solution of fuchsin. The tubes are kept at room temperature and corked. After six and twenty-four hours respectively the reaction is determined. The reaction is positive in serum if there is a flocculation in at least three tubes and if the first flocculation is observed in a dilution of 1:32 or in a higher dilution. The reaction is positive in the ascitic fluid if the first flocculation appears in a dilution of 1:8 or higher. The reaction is weakly positive if the flocculation shows in a dilution of 1:32 or 1:8 in two tubes, and if it is scarcely evident in the third tube from either end. In twenty normal persons the reaction was constantly negative, it was negative in sixty patients presenting pernicious anemia, hemolytic icterus, gastric and duodenal ulcer, leukemic myelosis, diabetes mellitus, typhoid malaria, exudative pneumonia, pulmonary tuberculosis, cardiac diseases and croupal pleurisy. Of twenty-nine cases of cirrhosis of the liver, twenty-four showed a positive, four a weakly positive and one a negative reaction. In two cases of severe catarrhal icterus the reaction was positive during the acute period of the disease and became negative during convalescence. In cases evincing a positive reaction the increased globulin content was lower than 1. The inversion of the increased globulin content does not necessarily determine the possible outcome of the reaction, as many diseases show inversion of the content and a negative reaction.

Archiv für klinische Chirurgie, Berlin

179 1210 (Feb 22) 1934

- Symptomatology and Treatment of Ureteral Papilloma W Sinnreich —p 1
 *Nicotine in Etiology and Postoperative Management of Ulcer Disease R Friedrich —p 9
 Osteosynthesis of Fractures of Middle of Neck of Femur F Felsenreich —p 29
 Electrocoagulation Through Subcutaneous Puncture W Forscherler —p 33
 *Nonspecific Inflammatory Reactivity in Surgical Disorders and Surgical Interventions K Ebhardt —p 71
 Traumatic Lesions of Spinal Roots T Mauss —p 122
 Contribution to Knowledge of Muscular Trismus of Jaw K H Link —p 169
 Fat Embolism of Retina After Trauma R Oppolzer —p 176

Nicotine in Ulcer Disease—Friedrich believes that the role of nicotine in the etiology of ulcer disease has been rather underestimated. Ulcer disease, especially the prepyloric ulcer, has been on the increase since the war. This increase has been predominantly in men. There has likewise been a steady increase in the consumption of tobacco. The author investigated 153 men who were operated on for ulcer disease and found that 79.7 per cent of them were pronounced smokers, averaging from twenty to thirty cigarettes a day. Studies of the effect of nicotine on the tonus of the splanchnic vessels and the motility and secretion of the stomach demonstrated that it is capable of altering the normal course of gastric function. The postoperative results were better in persons who smoked but little or not at all before the operation, when contrasted with those who were heavy smokers even after the operation. Nicotine was found to influence the gastric function in the postoperative period as well. In addition to the effect of nicotine swallowed with the saliva and absorbed from the oral mucosa and the mucosa of the respiratory passages a reflex effect must be taken into consideration. The author believes that irritation of the mucous membrane of the mouth results in a reflex stimulation of gastric secretion. Thus smoking may be compared to sham feedings with the resultant flow of gastric juice which cannot be utilized. The recent studies of Buchner and Moskowicz showed that such gastric juice is dangerous even for the healthy cells. It would appear therefore, that smoking on an empty stomach is particularly damaging.

Inflammatory Reactivity in Surgical Operations—Ebhardt points out that the inflammatory reaction of the skin is taken as the measure of defense mechanism of the body. Studies in allergy demonstrated that the skin occupies a prominent position as a general reactive organ. The method of study consisted in applying to the leg a cantharides plaster for twenty-two hours. The contents of the blister resulting from the cantharides irritation were then studied as to the cellular content. The response to cantharides irritation on the part of the skin is regarded as a mobilization of the reticulo endothelial cells of the skin. In observations made on uncomplicated appendectomies in the surgical clinic of the University of Greifswald the author noted that the first stage of the cantharides exudate presented a suppurative character and was regularly followed by a transition to a lymphohistiocytic type of cells. Eosinophils did not appear earlier than the sixth postoperative day. A postoperative rise in cells was noted in practically all cases. In appendicitis of longer duration, several days the increase in the number of cells may fail to take place and transition to the lymphohistiocytic type may be delayed, and the eosinophils, as a rule, will appear immediately after the operation. The later complications of appendicitis are more clearly reflected in the inflammatory cell picture than in the temperature curve or the blood picture. A return to the suppurative reaction takes place. The course in conservatively treated perforative appendicitis was characterized by a suppurative reaction in the febrile state which in the course of encapsulation and absorption of the pus gradually shifted to the lymphohistiocytic phase. The study of various subacute chronic infections showed a constant increase in lymphohistiocytes, with a tendency to fluctuations as pronounced as from 10 to 70 per cent. The conclusion was drawn that the more the mesenchyma participated in the defense mechanism the stronger was the histiocytic reaction in the rest of the organism and also in the skin. The author thinks that the occasional remarkable

effect of an exploratory operation in tuberculous peritonitis may be ascribed to the stimulation of the reticulo endothelial system. Stimuli and irritants influence the cantharides exudate by mobilizing the histiocytes and the eosinophils. The effect of an operation or of injury on a normal organism is one of an unspecific irritant and is followed by a typical reaction in two phases, the leukocytic combative and the lymphohistiocytic convalescent phases. The author concludes that repeated studies in the course of a surgical disturbance of the cantharides exudate offer a valuable biologic method of estimating the cellular defense mechanism.

Dermatologische Zeitschrift, Berlin

68 241 304 (Feb.) 1934

- *Epidermophytides and Epidermophytin A E Ruete and Ursula Scholz —p 241
 Yerruca Peruviana (Carrion's Disease) Case W Frohn —p 245
 Gonorrheal Lymphangitides Originating in Distant Metastases Problem of Rarity C Carrie —p 252
 *Experimental Herpetic Folliculitis Percutaneous Inoculation with Herpes and Problem of Natural Tissue Infection H Hruszek —p 258

Epidermophytides and Epidermophytin—The development of epidermophytides and the positive outcome of the intra-dermal epidermophytin reaction are cited by Ruete and Scholz as proof that epidermophytosis is not merely a superficial disturbance. They found that vaccination with epidermophytin (filtrate from epidermophyton cultures) gave positive results in 100 per cent of the patients with epidermophytosis. Moreover, the reaction seems to be specific for epidermophytosis, for it was negative in a form of trichophyton infection and in pityriasis versicolor. However, further tests will be necessary to demonstrate the specificity definitely. The experiences with the immunoreaction induced the authors to try the therapeutic application of epidermophytin. They treated fifteen patients by means of epidermophytin wheals and effected prompt cures. The injections are not painful. With the exception of a slight itching, they produce no undesirable sensations and no fever. The authors cite case reports, which indicate that the injections hasten the frequently prolonged course of the disorder and that in combination with iodine and a sulfonated bitumen powder they may replace the unpleasant treatment with ointments.

Experimental Herpetic Folliculitis—Hruszek shows that the manifestations which have been traced to the herpes virus are manifold. As the port of entry of the herpes virus and the mechanism of its first infection has not been fully explained as yet, the author made studies with percutaneous inoculation. Inoculation of human skin was accomplished by rubbing it with human herpes material. A typical herpetic folliculitis developed. The herpetic nature of the folliculitis was demonstrated on the cornea of rabbits and in further human passages by means of scarification. The further development of the herpes that was produced by rubbing herpes material into the skin and its tendency to successive crops and to relapses were identical with those of the herpes that had been produced by scarification. The author thinks that there are perhaps other forms of simple herpes in which a herpetic etiology has not been thought of. He mentions particularly follicular dermatoses (according to Naegeli some cases of "nonparasitic" sycosis) that do not necessarily have to present a vesicular monomorphic picture but may appear also as papules, urticarial efflorescences and pustules.

Jahrbuch für Kinderheilkunde, Berlin

142 168 (Feb.) 1934

- *Acetonemic Convulsions During Childhood Significance of Hypoglycemia G Fanconi —p 1
 Postvaccinal Disturbances W Blacher —p 26
 Second Attacks and Relapses in Acute Infectious Diseases of Childhood H Zischinsky —p 43

Acetonemic Convulsions During Childhood Significance of Hypoglycemia—Fanconi describes seven cases of acetonemic convulsions. Gastro-intestinal disturbances particularly lack of appetite and vomiting preceded the attacks by at least several hours. Diarrhea was absent in some cases and constipation existed. The convulsions were preceded by an aura. The first attack lasting several minutes did not complete the picture but an epileptic state developed and between

the attacks the children were either in a coma or were somnolent and apathic. The condition differs from true epilepsy in the rapid succession of the attacks and in the prolonged stupor, and, whereas true epileptic attacks generally develop during the night or on awakening these acetoneic convulsions developed during the day. The temperature was increased during the convulsions. The urine contained acetone and acetic acid but the sugar test was negative. The cerebrospinal fluid was normal, with the exception of the increased sugar content that characterizes all convulsive states. Examination of the blood revealed unusually low sugar values during the coma and the convulsions in spite of the fact that the patient had received sugar either by mouth or parenterally. After several days the blood sugar returned to normal. In dextrose tolerance tests that were performed immediately after the cessation of the convulsion the blood sugar increased hardly at all but the subsequent decrease to normal or subnormal values was extraordinarily pronounced. Tolerance tests that were made later gave mostly normal results. The author concludes that in the carbohydrate hunger that develops following gastrointestinal disturbances the normal child protects itself against hypoglycemia and its sequels (convulsions and so on) by limiting the insulin production. The child with acetoneic convulsions fails to do this, and in this deficient regulation of the insular apparatus the author sees the cause of spasmophilia. He recommends an easily digestible diet with high carbohydrate but low fat and protein content. During the comas dextrose should be administered. If a child has had an attack of acetoneic convulsions the parents should see to it that it never fasts for longer periods and even during diarrhea and fever the child should be given sufficient amounts of sugared tea and fruit juices.

Medizinische Klinik, Berlin

30 233 288 (Feb. 23) 1934

- Pathogenesis and Therapy of Hay Fever. E. Urich —p. 253
 Speech Disturbances and Heredity. H. Cutzmann —p. 256
 *Do Neutralization and Flocculation Speeds of Diphtheria Serums Exert an Influence on Therapeutic Action? W. Kolle and R. Prigge —p. 258
 Aspects of So Called Noduli Cutanei. W. Frieboes —p. 260
 Preparatory Treatment in Operations on Account of Closure of Cholelithus. E. Seifert —p. 261
 *Disturbances in Vascularization Simulating Leukoderma. F. Dietel —p. 262
 Occurrence of Macrocytic Anemia in Carcinoma of Stomach. H. E. Bock —p. 263
 Endocarditis Lenta with Aortic Embolism. Case. E. Hasenjaeger —p. 266
 Value of Kauffmann's Water Test in Functional Examination of Heart. O. Zimmermann —p. 267
 Observation on Kinetocytes in Dark Field. A. Neumann —p. 268
 Cause of Multiple Sclerosis. G. Steiner —p. 269
 Dietary Treatment in Gynecology and Obstetrics. A. Bauer —p. 271

Therapeutic Action of Diphtheria Serums.—The failure of diphtheria antitoxin in certain cases has been ascribed to different causes. The theory has been advanced that the rapidly flocculating serums and those which in the test tube neutralize toxins rapidly have a greater therapeutic value. Kolle and Prigge decided to investigate this problem. They reach the conclusion that the acidity (neutralization and flocculation speeds) of the diphtheria serums exerts no noticeable influence on the therapeutic action. They maintain that the results of the serotherapy of diphtheria depend primarily on the time at which the serum is administered. The earlier after the onset of the infection the serum is injected, the better are the prospects for a cure.

Disturbances in Vascularization of Skin Simulating Leukoderma.—Dietel describes peculiar whitish spots that give the impression of circumscribed areas of depigmentation, which occurred more frequently during the cold season. The incidence and the extent of the disorder were greater in women than in men. In many of the patients there existed a tendency to acrocyanosis. The irregularly distributed whitish spots, which vary in size but do not exceed that of a pea appear as a rule on the backs of the hands and on the forearms. If the arms are stretched upward for a while the spots tend to disappear. Obliteration of the spots can be accomplished also by the production of active hyperemia for instance by prolonged rubbing, hot baths and so on, but, as soon as the irritation

subsides, they reappear. Cold baths produce a bluish red coloration of the skin and an intensification of the spots. It was demonstrated that the whitish spots always reappear at the same site. The author considers them the result of disturbances in the vascularization of the skin. The cause is apparently a vascular spasm in a precapillary arteriole, so that the apparent depigmentation is probably nothing but an ischemic area. To a certain extent the condition is related to cutis marmorata, but it differs from the latter in that the reticular patterns are absent. The author thinks that the whitish spots are often the result of slight degrees of freezing. In the majority of cases the condition involves the hands and arms, but one case is described in which the spots appeared on the legs of a girl, aged 15, who had been in the habit of going without stockings. The author suggests the term "pseudoleukoderma."

Monatsschrift für Psychiatrie und Neurologie, Berlin

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- Active Immunization Experiments in Neurosyphilis with Apathogenic Spirochaeta Pallida. Ninety Six Cases. L. Benedek —p. 1
 Senile Paralysis with Fatal Arteriosclerotic Cerebellar Hemorrhage. M. Fiebers —p. 30
 Disturbances in Position and Their Modifiability. Clinical Examination of Patients with Mobile Spastic Torticollis. F. Quadfasel and H. Kroyenbuhl —p. 39
 *Comparison of Fluids Obtained by Cisternal and Spinal Punctures in Patients with Nervous and Mental Disturbances. F. Kulcsar —p. 87
 Changes in Cerebrospinal Fluid in Repeated Punctures on Dogs. E. M. Sieblow and A. B. Mandelboim —p. 104

Cisternal and Spinal Punctures in Mental Disturbances.—To determine whether the examination of the fluid obtained by cisternal puncture gives as valuable diagnostic information as that obtained by spinal puncture, Kulcsar compared the data on the two punctures from 150 patients. He is convinced that in normal cases the differences in the two specimens manifest themselves only in a somewhat higher sugar value of the cisternal fluid and a slightly greater cell count of the spinal (lumbar) fluid. In disorders of the central nervous system the differences are greater and generally show a higher number of cells and a higher globulin content of the spinal fluid while in the cisternal fluid the Wassermann reaction and the colloidal reactions show a lesser positivity. If this is taken into consideration the observations on the cisternal fluid will permit conclusions about the changes in the fluid obtained by spinal puncture and even slight changes in the cisternal fluid can be considered pathologic. In most cases the examination of the cisternal fluid gives just as valuable information as that of the spinal fluid. But it is natural that the fluid which is withdrawn from the region of the pathologic focus shows the severest changes. In disorders of the spinal cord or of the roots, it is logical for the spinal puncture to be done in addition to the cisternal puncture. In nervous and mental disturbances however the cisternal puncture should be made first because there is hardly any meningism following it, and the result of the examination of this specimen gives about as much information as does that of the spinal specimen. The spinal puncture should be made only if certain conditions make it necessary.

Ugeskrift for Læger, Copenhagen

96 215 236 (Feb.) 1934

- Height and Weight in Children. Monrad —p. 215
 *Hereditary Anonychia and Onychatrophy. T. Kemp and P. V. Andersen —p. 218
 Possibility of Preserving Tooth in Follicular Cysts of Jaw. J. Hertz —p. 217
 Quickest, Easiest and Cheapest Method for Examination of Blood Sugar. Johanne Christiansen —p. 220
 Coarse Bread. M. Hindhede —p. 221
 Carrot Poisoning (Aurantiobasis Cutis Baeltz Carotenemia). Case. P. Vogt Møller —p. 223

Hereditary Anonychia and Onychatrophy.—Kemp and Andersen say that these conditions occur partly as isolated malformations partly with other abnormalities particularly patellar defect, other bone and joint malformations and hand dystrophy. In the family described nineteen out of thirty three members in six generations had anonychia or onychatrophy, inherited as a dominant monomeric characteristic. No other hereditary anomalies appeared in the family.

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SUPPURATIONS OF THE PETROUS TIP

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NEW YORK

The symptoms and signs, the essential pathologic changes and the treatment of simple mastoiditis are known to physicians throughout the world. In the few years, otologic journals have contained many reports of a similar but somewhat more obscure disease of the temporal bone, namely, petrositis or inflammation of the petrosal portion of the bone. During the four years that routine serial sections of the temporal bones have been done in the Department of Pathology of the Stryker Hospital, six cases of meningitis of otic origin have been sectioned out of 1,165 general autopsies.

All these patients had petrositis.¹ Four of the improved cases were from the medical wards and two in the ear service. This suggests that the disease might be of considerable interest to the general medical

suppurations of the temporal bone other than those of the middle ear, mastoid and zygoma have been recognized more and more since 1904, when Gradenigo² first described a syndrome of external rectus paralysis and terminal pain associated with a discharging ear. He placed particular stress on the external rectus paralysis, which he ascribed to disease of the bone in the neighborhood of Dorello's canal, in which runs the abducens nerve. In other words, he described a type of posterior petrositis. Many writers since Gradenigo have shown that unilateral trigeminal pain is perhaps the most important symptom of petrositis, because sixth nerve paralysis can be caused by many other conditions.³ But the most characteristic pain, which is behind the eye, can also be produced by cavernous, petrosal or sigmoid sinus thrombosis, by brain tumor or brain abscess of tasteless origin, as well as by a simple toxic neuritis of the fifth nerve from a distant focus so that these must be considered in the differential diagnosis of the disease.

Recently Kopetzky and Almour⁴ have written a monograph on petrositis in which they survey the literature and clarify the subject. They have furthermore devised an operation to drain the petrous tip even pass a dental drill between the cochlea and the otoid canal or above them and so afford an outlet

for the pus in the bone beyond. Eagleton⁴ has also developed an operation for draining the tip and the basilar meningitis, which often occurs when a suppurative process breaks through the cortex of the tip. He makes a large decompression based on the approach to the gasserian ganglion operation for tic douloureux and then skeletonizes the temporal bone posteriorly if there is a meningitis present.

In a study of this subject it is important to remember that not only the mastoid and zygomatic portions of the temporal bone may be pneumatized. Kopetzky and Almour estimate that about one third of all temporal bones show some air cells in the petrous tip. It has been shown by Wittmaack⁵ that the air cells in the mastoid are developed by invagination of epithelial elements from the middle ear. The cells in the petrosa are developed by a similar invagination. The air cells communicate with one another and, more important still, they communicate with the middle ear, so that if there is an inflammatory process in the middle ear there is usually more or less inflammatory reaction in the mastoid and the petrous cells. That is, with every otitis media there is always more or less mastoiditis, and if there are cells in the petrosa, always more or less petrositis. The more pneumatized the petrosa the more likely is involvement of this portion of the bone, but occasionally, as will be described later, there is disease present even when the spaces between the bone trabeculae are entirely filled with marrow.

The diagnosis of petrositis is not as easy as that of simple mastoiditis, a series of histories, however, shows that there is a more or less typical disease picture.

REPORT OF CASES

CASE 1—A Negro, aged 37, a music teacher, had a mild ache in the left ear four weeks before his admission to the hospital. Two weeks before admission a left sided frontal and parietal headache developed for which he consulted a physician. The latter treated him for sinusitis without relief. The day before admission the patient had quite a severe headache, but he managed to work all day. That evening he began to vomit and then quickly became delirious. He was admitted next morning to the medical wards in a coma with a temperature of 106.5 F and all the classic symptoms and signs of meningitis. There was slight bulging of the left drum, but no pus appeared after myringotomy. Examination of the throat, chest and abdomen was entirely negative. The spinal fluid contained 130,000 cells per cubic millimeter, with 89 per cent polymorphonuclear neutrophils and pneumococcus type III. Culture of the blood was negative. He died in the evening, twenty-four hours after first going into coma.

Roentgenograms in the mentovertical position taken after death show a definite washing out of the cells of the tip on

From the Department of Pathology, Columbia University College of Physicians and Surgeons, under funds from the Department of Otolaryngology, the New York League for the Hard of Hearing and the American Otological Society.

¹ Head permission is granted in only one third of the cases and in less than two suspected cases microscopic preparations have not as yet been made.

² Gradenigo Giuseppe. Arch f Ohrenh. 62: 253, 1904.

³ Perkins C E. Ann Otol Rhin & Laryng. 19: 692, 1910.

⁴ Kopetzky S J and Almour Ralph. Ibid. 39: 966 (Dec) 1930. 40: 157 (arch) 1931.

⁴ Eagleton W P. Unlocking of the Petrous Pyramid for Localized Bulbar (Pontile) Meningitis Secondary to Suppuration of the Petrous Apex. Arch Otolaryng. 13: 386 (March) 1920.

⁵ Wittmaack Karl. Ueber die Pneumatization des Schläfenbeines. Jena. Gustav Fischer. 1918.

the left side (fig 1). There is some thickening of the cell walls on both sides suggestive of a chronic disease of long standing or repeated attacks of otitis. Curiously enough, however, when the temporal bones were removed there was very little gross difference between the two sides. Perhaps the left petrous tip was a bit more succulent, but several observers were unable to be sure of any disease in either side. However, microscopically there is a vast difference. The temporal bones are of the pneumatic type (fig 2). On one side the cells are filled with a purulent exudate consisting of large mononuclear cells and occasional polymorphonuclear neutrophils (fig 3). The cell walls are thick and in many places there is a regrowth of pink staining bone as well as areas of osteoid, which suggests a chronic as well as an acute process (fig 4). There is a mild inflammatory process in the cells of the mastoid and petrous on the right. Here, too, there may have been a chronic osteitis. It is significant that grossly this lesion was not apparent. After all, the surgeon sees the lesion grossly and in



Fig 1 (case 1)—Base plate in the mentovertical position. Pneumatization has occurred and cells in the mastoid and petrosa on the left have a more washed out appearance.

this case he would have found no creamy pus and he would have found no necrotic bone. With the hemorrhage always present in mastoid operations, this bone would have looked perfectly normal to him.

The mode of invasion of the meninges in this case is problematic. There is no break in the dura, macroscopically. With the low power of the microscope, however, many small cells are seen to drain into the vessels of the dura. Since this is a common finding in ordinary mastoiditis, one is forced to the theory that the virulence of the organism in this case was responsible for the infection of the meninges.

CASE 2—A man aged 21 one week before admission came to Vanderbilt Clinic with a history of five or six days of pain in both ears. Myringotomy was done and considerable relief obtained. The next day there was no drainage from the ears and no more pain. Three days later the patient returned to the clinic and reported that he was feeling well. There was at this time also no drainage from the ears. Six days after the myringotomy, he was admitted to the ear service with a history of severe left sided headache and delirium since the night before. A thin purulent material was discharging from the left ear. Examination of the nose, throat, chest and abdomen

was negative. He had a stiff neck, and a positive Babinski and Kernig reflex. Lumbar puncture showed 5,000 cells with 90 per cent polymorphonuclear neutrophils and an encapsulated diplococcus, which on culture proved to be pneumococcus type III. Roentgen examination showed a clouding of the cells in the left mastoid. A simple mastoid operation was done, but the patient's temperature climbed to 106° F and he died the day following admission. Culture from the left mastoid showed pneumococcus type III, as did a blood culture. Autopsy showed a meningitis, most marked at the base, and no involvement of the large venous sinuses. There was no portal of entry apparent in the dura. Microscopically there was an inflammatory lesion in both petrous tips, but much more on the left than on the right. There was also much less inflammation in the cells about the cavity made by the operation than there was in the cells of the tip. About the carotid canal were dehiscences through which an inflammatory process was invading the wall of the carotid artery. Since the vasa vasorum of the artery drain from the subarachnoid space, it is conceivable that the invasion of the meninges in this case was a retrograde affair along these vessels. Similar cases have been described by Freisner and Druss⁶ and others.

CASE 3—This case was similar, but less acute. A man, aged 24 a divinity student, two months before admission had had "grip" and an acute otitis. Three weeks after myringotomy he developed right sided frontal headache, thought to be sinusitis. Thirty-six hours before admission meningeal symptoms developed. Pneumococcus type III was recovered from a simple mastoid operation and he died four days later.

At autopsy he had a diffuse leptomeningitis. The dura over the mastoid was perforated. More medially, in the neighborhood of the gasserian ganglion, and not connected with the perforation the bone under the dura was soft, necrotic, yellowish and crumbly. Microscopically all the intertrabecular spaces of the bone were filled with a purulent exudate so that the labyrinth was practically sequestered. There was a break in the wall of the internal auditory meatus anteriorly, which was probably the route of invasion of the meninges.

CASE 4—This case ran a somewhat more chronic course. A man aged 45 had had a right sided otitis media off and on for twenty years. One day there was a cessation of the discharge for three or four hours accompanied by excruciating pain on the right side of the head just lateral to the eye. Although the ear began discharging again pain continued. Three days later he was admitted to the medical wards with symptoms of meningitis. In the spinal fluid were 3,000 cells, 90 per cent polymorphonuclear neutrophils but no organisms. A simple mastoidectomy was done and a cholesteatoma found. The right sided headache disappeared and the temperature went down for five days but then the headache reappeared and the patient died two weeks after admission.

At autopsy an abscess was found in the right temporal lobe and purulent material could be seen draining into the meninges from the cells of the petrous. This case is similar to the first and in all probability the drainage was through venous or lymphatic channels into the dural systems.

CASE 5—A woman aged 54 had had a chronic left sided otitis following scarlet fever at the age of 12. She had diabetes and a chronic process in the head of the right humerus, thought to be a typhoid osteomyelitis. She was admitted twice without any mention of headache or any symptoms referable to the ear except chronic discharge. On her third admission a radical mastoidectomy was done to eradicate the chronic focus of infection. After the operation the discharge continued profusely and a revision of the mastoidectomy was done one month later. The discharge still continued. Five months after the operation she came in with severe headache in the frontal and occipital regions definitely lateralized to the left, with many attacks of vertigo and fainting. She came in with a stiff neck, a positive Babinski reflex and tenderness over the mastoid on the left. The spinal fluid contained 700 cells, 60 per cent polymorphonuclears and a hemolytic streptococcus. A new revision of the mastoid was attempted, but she died a few hours later.

6 Freisner, J. and Druss, J. G. Osteitis of the Petrous Pyramid of the Temporal Bone. *Arch. Otolaryng.* 12: 342 (Sept.) 1930.

Autopsy showed a break in the dura over the petrous tip, which had a greenish tinge and was soft and necrotic. Microscopically all the spaces in the left temporal bone were filled with exudate and granulation tissue. She had a purulent labyrinthitis, as well as mastoiditis and petrositis. There was a small area in the endochondral capsule near the second turn of the cochlea, where there was an osteitis of the wall.

CASE 6—A Grecian woman, aged 35, in whom generalized edema had developed at the age of 10 following scarlet fever, at this time also had her first running ear. The edema reappeared with her third pregnancy and the patient was



Fig. 2 (case 1)—Well pneumatized petrosa. Horizontal section through the superior semicircular canal from normal (right) side.

followed in the hypertension-nephritis clinic for two years with a diagnosis of chronic glomerular nephritis. Two months before admission she had an attack of edema, hematuria and vomiting following a cold. She was admitted with a blood pressure of 178 systolic, 114 diastolic, her physical examination being typical of chronic glomerular nephritis. There is no record of any recent trouble in her ears. However, while she was in the ward pain developed in both ears, especially in the right. Myringotomy was done and a green streptococcus with a few colonies of hemolytic streptococcus was recovered. The spinal fluid showed 152 cells and a positive culture for hemolytic streptococcus after many days of growth. Roentgen examination of the mastoid showed slight clouding on the right. The patient became rapidly worse and finally a right simple mastoidectomy was done. A few days later she lost the slight improvement which directly followed the operation, she became comatose, both eyes deviated externally, reflexes were weak on the left, her neck was stiff, and the patient died in coma two weeks after the operation, with a clinical diagnosis of chronic glomerular nephritis.

At autopsy she showed the typical changes of a chronic intracapillary glomerular nephritis and in addition a subdural abscess beneath the right temporal lobe, whose base lay in the petrous tip (fig. 5). The abscess was ruptured and an acute leptomeningitis was also present. Microscopically there was very little inflammatory disease in the cells about the cavity made by the operation. In the petrous tip no cortex was present superiorly where the abscess had lain, and the marrow below showed a chronic osteomyelitis.

COMMENT

Some of these cases presented well pneumatized tips and some did not. In the classification of Kopetzky and Almour,³ those with pneumatized tips would have been called "petrositis" and those with diploic tips would have been called osteomyelitis. In reality the term "petrositis," which means inflammation of the petrous portion of the temporal bone, should be used as a general diagnosis and should have as subheadings: (1) osteitis of the tip, i. e., inflammation of the bone separating the air cells of a pneumatized tip; (2) osteomyelitis of the tip, i. e., inflammation of the marrow and the bone of the tip; and (3) osteitis or osteomyelitis of the case may be of the perilabyrinthine regions. In pathologic material when a diseased tip is only par-

tially pneumatized there is an osteitis of the cells near the middle ear and then if the process proceeds farther an osteomyelitis of the remainder of the bone, while if the tip is wholly pneumatized there is simple necrosis of the bone and mucoperiosteum of the air cells. Both could be called petrositis and both might end in meningitis and death.

The patients in this report all died with the same primary disease, suppuration of the bone about the labyrinth. Presumably this suppuration was an extension from middle ear disease. Why did they die? In microscopic section they all showed some evidence of chronic otitis. In each case there was some sclerotic bone about the hypertympanic space. Is it not possible that previous inflammation produced bone of the type shown in figure 4 in the cells about the orifice of the eustachian tube and so cut off proper drainage from the tip? There are large enough spaces in this bone for infection to enter, but with swelling of the mucoperiosteum secondary to the inflammation, return drainage would be impossible and the process would seek other outlets for escape. This occurs in the mastoid. It is very common to find great destruction of the air cells in cases presenting highly sclerotic antrums and a history of past healed otitis media. This sclerosis of the antral cells has been claimed to be due to faulty development.⁵ In some cases it probably is, but most otologists will agree that often it is obviously the result of inflammatory disease. Sections of these cases show growing bone about the middle ear and good pneumatization elsewhere. This would indicate that the original pneumatization was normal but that bone grew in and blocked off certain pneumatized areas. The anatomic arrangement of this sclerotic bone probably determines the route of invasion of subsequent infections. This is an argument against too conservative treatment of chronic middle ear disease, for certain virulent organisms such as pneumococcus type III and the hemolytic streptococcus pass through or around the sclerotic bone with greater ease and then, as suggested before, drainage is shut off by swelling mucoperiosteum, and a serious condition is produced in distant portions of the bone.



Fig. 3 (case 1)—Well pneumatized petrosa and mastoid filled with exudate. The diseased side. Compare with figures 1 and 2.

There is considerable controversy as to the incidence of petrositis. It is rightly stated that no one symptom or group of symptoms is always pathognomonic of the disease. Pathologic sections from routine autopsies undoubtedly show a higher incidence of exudate in the petrosa than can be apparent clinically. It would seem that a purulent discharge from the middle ear, especially the anterior part of the middle ear, after a satisfactory simple or radical mastoidectomy, is perhaps the most reliable sign of disease in the petrosa. If the

zygoma, mastoid and middle ear have been well cleaned out where else can the discharge come from? If in addition there is trigeminal pain or internal strabismus, or roentgen evidence of destruction in the tip, further surgical intervention is to be considered. After all, entirely too many of these patients die. Out of ninety-five cases of abducens paralysis, in most of which recovery occurred, there were thirteen cases reported by Perkins⁶ as definite petrositis, of these patients, only one lived. The others died of meningitis or complications due to the suppuration in the tip breaking into the posterior pharynx. On the other hand, the forty-two patients with trigeminal pain presumably from other causes recovered.

To illustrate that something conservative can be done even when there is suppuration in the petrous tip, the following case is reported from the service of Prof. Cornelius G. Coakley, through the courtesy of Dr. John Kernan.

G. S., a white boy, aged 7 years, admitted in December 1930, had a typical left otitis and mastoiditis. A simple mastoidectomy revealed a highly pneumatic mastoid and zygoma and many scattered cells filled with yellow pus. The upper part of the posterior wall was broken down as well as the mastoid tip and the sigmoidal angle. After operation the patient had a high temperature for a few days and continued to discharge a serous exudate from the external canal for many months. One year later (Dec. 11, 1931) he was admitted for a modified left radical mastoidectomy. The canal was found to be markedly narrowed by proliferation of bone along the posterior wall. The middle ear and antrum were filled with granulation tissue but the remaining cells of the mastoid were surprisingly healthy. December 27 there was a rise in temperature associated with swelling behind the ear. Reopening the wound under gas and oxygen revealed very little pus in the mastoid cavity but considerable creamy pus in the middle ear. This continued to discharge and produced a large amount of granulation tissue which kept blocking the external canal in spite of frequent curetting and application of silver nitrate. By Feb. 25, 1932, he had begun to complain of pain in the left eye and a



Fig. 4 (case 1)—Osteoid tissue and new bone from the region of the eustachian tube. (Leitz 3 objective.)

low grade fever had developed. He was seen by Dr. Kernan who advised a roentgen examination of the petrous tips.

Dr. Ross Golden reported that films of the skull in the mentovertical position and stereoroentgenograms in the Caldwell position showed the right petrous pyramid to be pneumatized at its tip. A little farther out its shadow was markedly increased in density. The stereoroentgenograms showed an apparent destruction of the upper margin of the left petrous bone beginning at its tip and extending laterally to 2.5 cm. It looked as though this destroyed area began only about 1 cm

inward from the point where the mastoid operation left off. The picture was quite characteristic of petrositis, as described by Taylor.⁷

Dr. Kernan operated, March 9, and reported that the cavity of the previous operation which embraced the mastoid and the middle ear, was found to be full of soft granulations and pus. There was an area of necrosis with a fistula in the roof of the eustachian tube. The fistula led to an abscess supposed to be about the tip of the petrous portion of the temporal bone. The bone underlying the granulation tissue had a soft wormy appearance.



Fig. 5—Base of temporal lobe abscess in petrosal tip. Note absence of cortex and chronic osteomyelitis. Slightly reduced from a photomicrograph with a magnification of 10 diameters.

An incision was made along the line of the previous scar. The ear was turned forward. All the granulation tissues were scraped out of the mastoid cavity and middle ear, and the bony wall was exposed. The facial canal promontory, oval window, carotid canal and eustachian tube were all identified. When the probe was being passed into the eustachian canal a fistula was found leading upward and inward, which exuded about 1 drachm (4 cc.) of thick pus. The tegmen tympani was then taken away and all bone in the region of the eustachian tube exposing the area of the fistula. The cavity was packed with iodoform gauze and the wound was left wide open.

After the operation the pain in the eye disappeared and the aural discharge slowly decreased in amount. In three months the canal was dry, but a small sinus developed which drained serous fluid for still another three months. Now one year after the last operation he is perfectly well and there is no discharge from the ear.

CONCLUSION AND SUMMARY

1. Petrositis is much more common than is generally supposed.

2. Meningitis often brings patients with petrositis to the general medical man or neurologist. The eye symptoms occasionally bring him to the ophthalmologist.

3. Petrositis should be considered in the presence of trigeminal pain, abducens paralysis or an aural discharge after a well executed mastoidectomy.

4. Petrositis should be watched for on the affected side if the mastoid and zygoma on either side is highly pneumatized. The two sides usually pneumatize in the same fashion. If one side becomes sclerotic, especially about the antrum or hypertympanic region, this sclerotic bone may cut off drainage from the deeper and more pneumatized portions of the bone and so lead to pockets in the mastoid or petrosa.

5. Partial pneumatization may lead exudate into the tip where it may pocket or extend into the marrow spaces to produce an osteomyelitis.

6 Petrositis usually subsides spontaneously with adequate drainage from the middle ear. If this is not facilitated by the ordinary mastoid operations, further curetting, especially in the peritubal and perilyabyrinthine regions, will often uncover a pocket of pus.

7 Inadequate drainage of the petrosa may result in a chronically discharging ear or meningitis and death.

8 The method of invasion of the meninges may be manifold, either directly through a subdural abscess or through the veins draining the area, through the labyrinth through the carotid sheath or through the blood stream.

630 West One Hundred and Sixty-Eighth Street

A BETTER METHOD OF TREATING FRACTURES OF THE JAWS

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The management of regional fractures has engaged the attention of the general surgeon and the specialist throughout the history of surgery. The only answer to any medical discussion is the patient himself. Whatever method contributes most to the well being of the sick or disabled is the method of choice. The principles and methods of modern orthodontia supply the

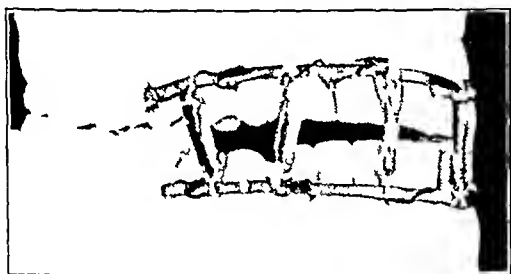


Fig 1—Common type of jaw fracture

means of managing fractures of the jaws, regardless of the type or extent of injury. The more difficult the case, the more convincing and satisfactory the method becomes. In fractures of other bones, immediate reduction and immobilization are required. In fractures of the jaws with displacement, immediate complete reduction is rarely possible. Here one must be content with gradual reduction. Overriding fractures of the femur present the sort of problem seen in the majority of all jaw fractures. Even the beginning of treatment may be delayed for days or weeks because of complications such as associated fractures of the skull, concussion, serious general injury and infection, and still a good result may be obtained. The orthodontist has given a very important principle in the movement of the roots of teeth in the jaw. He has shown that mechanical irritation, brought about by pressure in regulating teeth, stimulates the activity of the osteoclasts on one side of the root and osteoblasts on the other. This principle is very important in the management of old fractures. Moreover, speaking parenthetically, elastic traction is most useful in the management of large defects in the skin from burns, wounds and the like. Elastic traction used over a sufficient period will make possible immediate removal and closure of a large defect which ordinarily would call for skin grafting, pedicle or tube flap and similar procedures.

The majority of and by far the most frequent complicated fractures of the jaw occur in the mandible. From the cuspid to and including the angle, the greatest number are seen. Fractures of the ramus and condyle are less frequent. Fractures between the cuspids

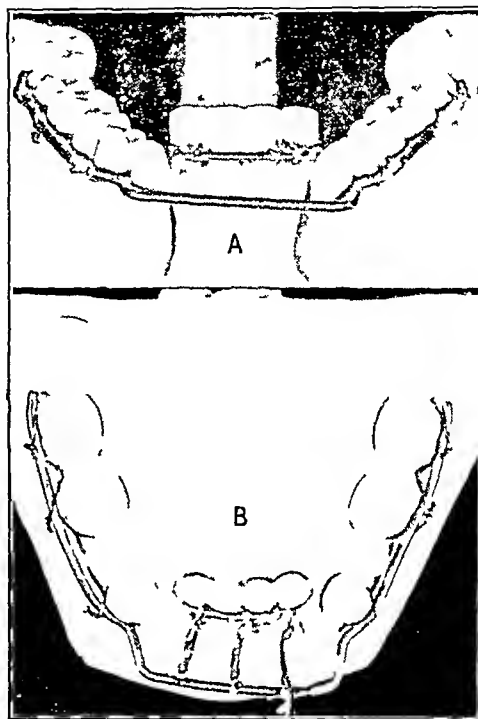


Fig 2—Reproduction of a fracture recently under management. A, the wire is fashioned to fit the arch and also to extend forward from the cuspid teeth. B, showing the application of the rubber bands. The four teeth in the fractured segment were driven backward and upward.

are usually associated with fractures in the bicuspid and molar region and at the angle. Fractures involving the ramus or condyle usually require no treatment. Displacement is rare. When the patient is informed that his jaw is fractured in these localities, he will exercise sufficient care to insure a good result without immobilization.

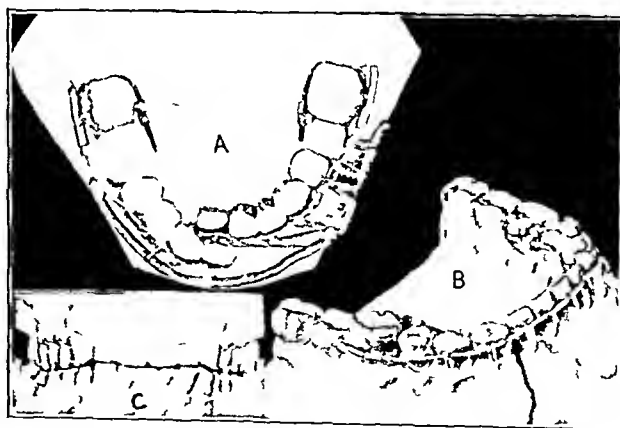


Fig 3—A, exact reproduction of appliance used on a fracture seven weeks old before any treatment was undertaken. There was no bony union. B, regulation Angle ribbon arch. C, plaster model made from impressions taken on completion of the case.

The most frequent fracture of the upper jaw is associated with the incisors and cuspids. Direct violence will produce a fracture of the alveolar process with the teeth loosened, broken or knocked out. The

jaw bone proper is not involved. The alveolar process is easily molded back to normal alignment and the teeth are held by a figure of eight silk ligature. When the roots are fractured or the circulation to the pulp is destroyed, the problem is one for the dentist to manage. Unilateral or total fractures of the upper jaw are next in frequency and require very specific management.

My purpose in this brief thesis will be served best by illustrating in detail these various types of fractures

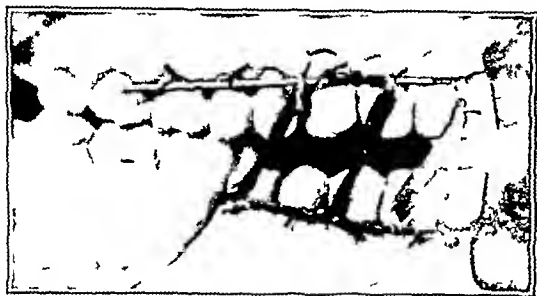


Fig 4—Direction of traction in relation to the line of fracture

and their treatment. I employ elastic traction in practically all cases in which reduction is required. The mechanism employed in reduction frequently serves equally well for satisfactory immobilization. Under traction the parts are brought into proper relation and held with slight movement, which materially aids in repair. Any fracture held in anatomic alignment and held with slight movement will repair more rapidly than one completely immobilized. This factor, when combined with ease, simplicity and accuracy, proves the value of the method.

Figure 1 illustrates a common type of jaw fracture. This figure may represent as well a fracture at any point from the cuspid to the third molar. The short



Fig 5—Skull cap and chin support made with starch bandage hooks and rubber bands adjusted as indicated

fragment is pulled up by the masseter internal pterygoid and temporal muscles while the long fragment is pulled down by the mylohyoid, digastric geniohyoid and external pterygoid. Reduction is easily brought about by a simple appliance. A flat or round wire is

molded with a pair of pliers to fit the arch and is fastened to the neck of the teeth with wire or silk ligatures. Orthodontia rubber bands are attached to the wire on each jaw with silk ligatures. As soon as full occlusion is reached the pull automatically ceases, and the appliance then acts to hold the bones in proper line, and the patient may keep the appliance therefore until union has taken place. After two or three weeks the rubber bands may be removed to see whether occlusion is retained, without help, and if so the appliance may be discarded and a retaining appliance, shown in figure 3 B, may be used if necessary.

Figure 2 illustrates the reproduction of a fracture recently under management. The wire is fashioned to fit the arch and also to extend forward from the cuspid teeth to provide ample space for the application of rubber bands. The four teeth in the fractured segment were driven backward and upward. Reduction, therefore, called for forward and downward traction. This type of appliance may be used in other similar fractures.

Figure 3 A is an exact reproduction of a fracture seven weeks old before any treatment was undertaken. There was no bony union. The marked overriding complicated both reduction and immobilization. This appliance was made by Dr. B. O. Sippy, orthodontist. The rubber bands are attached to the wire extending well outside the teeth on the left. The elasticity of the rubber bands and the spring in the wire furnished double traction. In two days the reduction was complete. This appliance was kept in place a month, when an immobilizing appliance, figure 3 B, was used. This is the regulation Angle ribbon arch. This retaining appliance may be used for lower jaw fractures and is very useful for working people. Full use of the jaw is permitted in eating soft food and talking. Figure 3 C is a plaster model made from impressions taken on completion of the case. This case illustrates one of the most difficult jaw fractures, managed easily and with perfect result by traction.

Figure 4 illustrates the direction of traction in relation to the line of fracture. The roentgenogram will show the line of fracture, and traction should be applied directly in this line.

Total fractures of the upper jaw with downward and backward, downward and forward, or downward and lateral displacement are reduced best by the appliance shown in figure 5. A skull cap and chin support are made with starch bandage, hooks and rubber bands

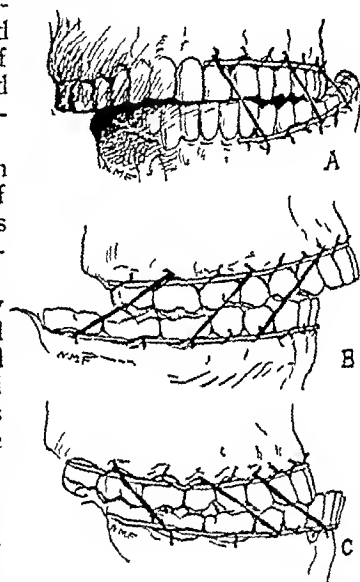


Fig 6—A lateral displacement, B forward displacement, C backward displacement. In forward and backward displacements traction is always made on both sides. When the displacement is lateral the correction can usually be made by traction on one side. If not an extra rigid wire should be used to include all teeth in each arch. With all teeth in both arches solidly fixed adequate traction may be made from one side. The appliance inside the mouth is used conjointly with the head and chin caps.

adjusted as indicated. In a few days the upper jaw will be pushed up to a normal position. Forward, backward or lateral displacement is usually corrected as the jaw is pushed up. If, however, these displacements are not corrected, additional correction may be used, as illustrated in figure 6.

The head appliance is used with equal success in edentulous jaws. The patient's artificial dentures are placed in the mouth and traction is applied. If the dentures have been broken, they can usually be repaired by the dentist.

The greatest difficulty arises in edentulous jaws when the artificial dentures have been lost or so badly broken that they cannot be repaired. The dentist then can build a vulcanite splint, which may be used instead of the artificial dentures. It is rarely necessary to wire the fragments by an open operation. The partially edentulous mouth will have to be dealt with according to varied conditions.

Unilateral fractures of the upper jaw, with downward displacement, are managed as shown in figure 7. The appliance is placed on the opposite side from the fracture. Traction on the sound side will push the fractured jaw upward until full occlusion is reached.

A simple method of holding lateral stumps of the lower jaw, following resection of the anterior portion, is shown in figure 8. This may also be used to hold one half of the lower jaw following resection of the opposite half. The rubber bands hold the jaw in occlusion with the upper jaw without fixing it. This simple appliance holds the stump or stumps in line during the process of healing and simplifies the introduction of a bone graft later.

A problem of paramount importance is infection. Most jaw fractures are compound, and a majority of these are infected to a lesser or greater degree, in some cases leading to abscess formation and even to necrosis. Vigorous means should be employed as soon as the patient is seen to prevent or control infection. The mouth should be cleansed, first by removing gross deposits of tartar from the teeth, followed by the use of hydrogen dioxide, 25 per cent, and iodosaline. For

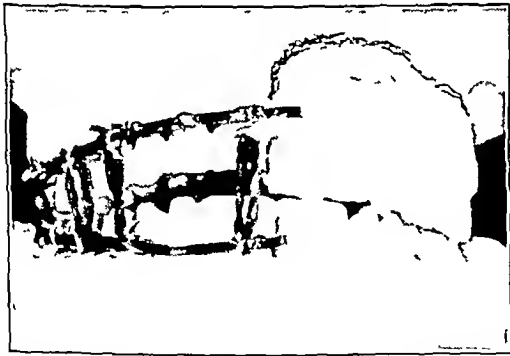


Fig 7—Unilateral fractures of the upper jaw with downward displacement

practical purposes iodosaline may be prepared by using one-half teaspoonful of salt to an ordinary glassful of hot water. To this is added from 30 to 40 drops of tincture of iodine. The hydrogen dioxide is used first and then the iodosaline. The mouth should be vigorously rinsed with these solutions every two or three hours. A stronger solution of tincture of iodine should be employed to irrigate the wound or wounds in the soft tissues leading to the point of fracture. For this

a water syringe with a fine metal point is used. The Berlin syringe, made by the S S White Dental Manufacturing Company is ideal. Too much emphasis cannot be laid on scrupulous hygiene of the mouth during the period of treatment.

Another item that needs special attention is the amount of traction to be applied. Until one has had some experience, one will invariably apply too much force. It is far better to apply too little than too much.

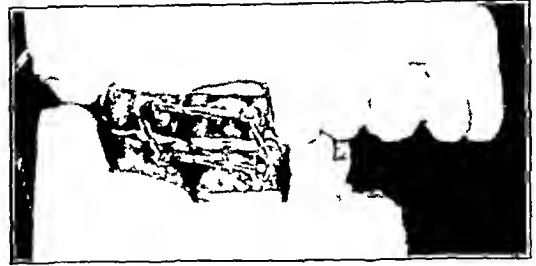


Fig 8—Simple method of holding lateral stumps of the lower jaw following resection of the anterior portion

One should start with a moderate amount of traction and watch the case for twenty-four or forty-eight hours. If sufficient progress is not being made, one or two additional bands should be added on each side. Again judgment will have to be exercised, for in one case reduction should be complete in a day or two while in another case one may reasonably figure on a week or more. It follows, naturally, that if too much traction is applied to the slow case, harm is apt to follow. In all cases the teeth must always be fastened *en bloc*. A rubber band must not be attached to an individual tooth, the rubber bands are always attached to the wire, which in turn is attached to all the teeth in the field. The pull, therefore, is equally distributed and will never result in a tender or loose tooth.

The illustrations are intended to emphasize the principle and method of treating fractures of the jaw. The details of making and adjusting the simple appliances are naturally related to the individual case. Talking and taking soft and liquid foods are not interfered with in the use of elastic bands. The mouth may be kept clean and the patient quite comfortable throughout the period of management.

30 North Michigan Avenue

Studies That Widen the Sympathies—Professional work of any sort tends to narrow the mind, to limit the point of view and to put a hall-mark on a man of a most unmistakable kind. On the one hand are the intense, ardent natures absorbed in their studies and quickly losing interest in everything but their profession, while other faculties and interests "rust" unused. On the other hand are the bovine brethren, who think of nothing but the treadmill and the corn. From very different causes, the one from concentration, the other from apathy, both are apt to neglect those outside studies that widen the sympathies and help a man to get the best there is out of life. Like art, medicine is an exacting mistress, and in the pursuit of one of the scientific branches sometimes, too, in practice, not a portion of a man's spirit may be left free for other distractions but this does not often happen. On account of the intimate personal nature of this work the medical man, perhaps more than any other man, needs that higher education of which Plato speaks, "that education in virtue from youth upwards, which enables a man eagerly to pursue the ideal perfection." It is not for all nor can all attain to it, but there is comfort and help in the pursuit even though the end is never reached.—Sir William Osler. *The Master-Word in Medicine*, Address delivered at Toronto, 1903.

PAINFUL HEELS AMONG CHILDREN
(APOPHYSITIS)

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Since the discovery of roentgen rays less than forty years ago, the study of the pathologic physiology of bone has been markedly facilitated and, as was to be expected, a number of hitherto unknown pathologic conditions of bone have been revealed. Beginning with Osgood's report in 1903, an important group of syndromes, accompanied by certain definite symptoms and by similar epiphyseal changes observed roentgenographically, have been described and elevated to the dignity of specific diseases. Among these diseases are avulsion of the tibial tubercle (Osgood, 1903, Schlatter, 1908), tarsal scaphoiditis (Kohler, 1908), osteochondritis deformans of the hip (Legg, 1910, Perthes, 1910), infraction of metatarsal heads (Freiburg 1914), kyphosis dorsalis juvenilis (Buchmann, 1925) and traumatic malacia of the carpal semilunar bone (Kienbock, 1910). Furthermore, it has gradually become apparent that there are marked similarities in the general pattern of these diseases, for they all seem to follow trauma of one kind or another, occur generally in growing children, affect ununited epiphyses, and are very often accompanied by such characteristic roentgenographic evidence of changes in epiphyses as rarefaction, fragmentation and, later, abnormal calcification.

A seemingly uncommon type of this epiphyseal involvement is epiphysitis of the heel, or the so-called calcaneal apophysitis¹ that is evidenced by painful heels and a limp among young, rapidly growing boys.² To date, less than forty cases of this condition have been reported in the literature, although doubtless many other cases have been seen from time to time that have not been reported.³ As we shall mention later only twenty-one such cases have been seen in the Mayo Clinic.

ETIOLOGY

The epiphysis of the heel is a "pressure epiphysis" and is subject to direct trauma. In this respect it is similar to the epiphyses of the femoral head or vertebral bodies. Furthermore, as in the epiphyses of the tibial tubercle or olecranon, the epiphysis of the heel is also a "traction epiphysis" and is subject to strong

lateral pull from the attached muscles.⁴ Consequently, the heel is unique in being subject both to direct and to indirect trauma. Another distinction of the epiphysis of the heel is that it is encased in tendinous tissue and is situated at a point where a strong pull from the muscles is deflected around an angle. In the transformation from amphibian to mammalian posture the ankle joint became dorsiflexed, the achilles tendon was pulled over the tip of the calcaneus, and gradually a sesamoid bone developed at this point of pressure. In addition, man's erect posture led to a lengthening of the body of the calcaneus, posteriorly, to provide more leverage in the power arm, and to the development of a longitudinal arch in the foot.⁵ These changes in turn brought the sesamoid of the achilles tendon (the calcaneal epiphysis) in close relation to the posterior aspect of the heel. Thus the epiphysis of the heel still retains its strong tendinous attachments above and below, the pull of the muscles of the calf is, for the most part, counteracted by the strong plantar ligaments, and epiphyseal separation is unknown in this region.



Fig 1—Calcaneal epiphysitis. Arrow denotes sclerotic epiphysis with transverse fracture lines.

OCCURRENCE

Epiphysitis of the heel occurs most commonly in boys between the ages of 8 and 12, or during the period of their greatest growth. A history of definite injury may or may not be elicited, although, in any case, these youngsters are usually active and vigorous. The condition ordinarily is bilateral. At first, slight pain at the back of the heel is noted, the patient walks with a limp, and soon he finds it uncomfortable to complete the step. There may also be aching pains along the achilles tendon or in the muscles of the calf. Climbing stairs becomes quite painful and, at times, these children may walk on their toes in order to relax the pull of the achilles tendon.

On examination, the heels are found to be tender posteriorly, and there may be some lateral thickening at the insertion of the achilles tendon. There is voluntary limitation of dorsiflexion of the foot, and forced motion aggravates the pain. Often the children are overweight or present other gross evidence of glandular

- From the Section on Orthopedic Surgery the Mayo Clinic
- 1 Jacobstahl H. Ueber Fersenschmerzen. Arch f klin Chir 88 146 190 1909.
 - 2 Haglund Patrik. Ueber Fraktur des Epiphysenkerns des Calcaneus nebst allgemeinen Bemerkungen uber einige ahnliche juvenile Knochenkernverletzungen. Arch f klin Chir 82 922 930 1907.
 - 3 These have been reported by
 - Allison, Nathaniel. Apophysitis of the Os Calcis. J Bone & Joint Surg 22 91 94 (Jan) 1924.
 - Balensweig Irvin. Affections of the Epiphyses Peculiar to the Second Decade. M J & Rec 124 144 147 (Aug 4) 192 197 (Aug 18) 1926.
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 - Jacobstahl H.
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 - O Ferrall J T. Apophysitis of the Os Calcis. South M J 19 549 550 (July) 1926.
 - Sever J W. Apophysitis of the Os Calcis. New York M J 95 1025 1029 (May 18) 1912.

- 4 Parsons F G. Observations on Traction Epiphyses. J Anat & Physiol 28 248 258 (April) 1904.
- 5 Bland Sutton John. Selected Lectures and Essays Including Ligaments Their Nature and Morphology. ed 4. London: William Heinemann 1920.
- Straus W L Jr. Growth of the Human Foot and Its Evolutionary Significance. in Carnegie Institution Contributions to Embryology. Washington 19 93 134 No 101 1927.

sturbance and, as Sevei³ pointed out, they are many times found to be wearing either low sandals or no shoes at all

PATHOLOGIC CHANGES

The most convincing diagnostic feature of all, however, is the characteristic roentgenographic change that occurs with these symptoms. In the lateral view of the foot, the epiphysis of the heel is seen to be fluffy, both eaten, somewhat flattened, or partially fragmented, according to the stage of the disease. Furthermore, there is usually considerable irregularity of the adjacent posterior surface of the calcaneum and a pinched-out appearance in this region due to the alteration of areas of rarefaction with areas of increased density. Finally, the epiphyseal line typically appears cloudy and abnormally irregular. These changes, in varying degree, should assure a positive diagnosis.

Of the pathologic changes that take place in this disease, all are dependent directly or indirectly on disturbance in circulation. This may result from undue trauma to the peripheral nerves in the region that tends to alter the local blood supply. Leriche and Policard's hypothesis was that the injury was in the nature of an "axon reflex," trauma to nerves leading to vasodilatation and more or less permanent vascular imbalance, which in turn produced rarefaction of the bone and local tenderness. Afterward, local edema resulted which accumulated the increased calcification, so clearly seen in the roentgenogram⁶ (fig 1). Bentzon investigated the arterial supply of the calcaneus in this condition and concluded, similarly, that there was a "paralytic hyperemia" of the heel following trauma to nerves that led to proliferative phenomena ("pathologic callus formation"). Others believed the disturbed blood supply followed a partial separation of the epiphysis from muscular pull, or from direct injury to the epiphyseal cartilage.⁸ In any event, all symptoms disappear at the time of union of the epiphysis with the calcaneus and the consequent restoration of an adequate blood supply. Since the epiphysis of the heel normally appears late in the tenth year of life and unites with the calcaneus in the seventeenth year, it is apparent that apophysitis can occur only in this brief period of growth.⁹ Scarlini¹⁰ reported the condition in a woman, aged 22, but there are general features of the story that invalidate his diagnosis.

SYMPTOMS AND INCIDENCE

Apophysitis of the heel can be clearly distinguished from any similar syndrome on the basis of (1) the restricted age incidence (from 10 to 17 years), (2) aggravation of symptoms by forced dorsiflexion of the foot, (3) prompt relief of symptoms by elevation of heel of shoe, (4) absence of general disease, (5) sharply localized tenderness over the attachment of the Achilles tendon, and (6) the characteristic roentgenographic appearance. Inflammation of the bursa under the Achilles tendon produces sharply localized tenderness but no roentgenographic changes. Subcutaneous abscessitis over the heel is quite superficial and follows local irritation. Tenosynovitis of the Achilles tendon usually manifests itself by palpable crepitation on

movement. The painful heel of arthritis occurs in later life, is aggravated by focal infection, other joints may be involved, the tenderness is most often at the attachment of the plantar ligaments, and the roentgenograms usually reveal bony spurs at the points of tendinous insertion. Tuberculosis of the os calcis affects the body of the bone, produces more destruction and leads to more generalized tenderness. Osteomyelitis in this region is accompanied by severe generalized symptoms with acute pain and tenderness, and does not produce roentgenographic changes like those of apophysitis (fig 2).

Twenty-one cases of apophysitis of the heel have been seen at the Mayo Clinic. There were two girls and nineteen boys in the series, including one pair of twin boys. The average age of onset of the disease was 10.2 and the ages ranged from 7½ to 17 years. Only two patients gave any history of a previous fall on the heels, although one patient mentioned a sprained ankle received some time before. One patient was born with marked bilateral clubfoot. Four patients stated that they were more comfortable when they walked on

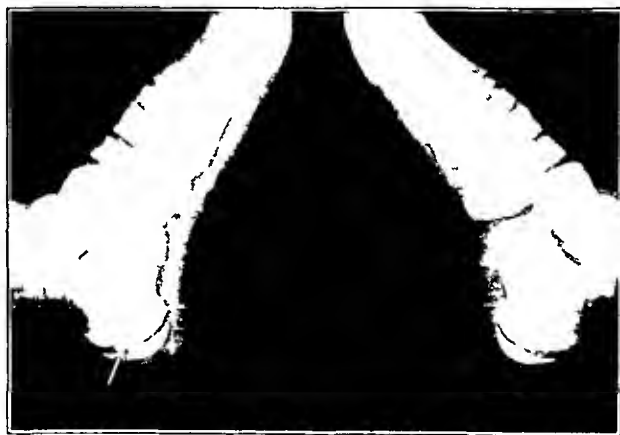


Fig 2—Calcaneal epiphysitis. Arrow denotes area of osteomyelitis of the calcaneus which had been drained surgically.

their toes, fourteen, or two thirds of the group had bilateral involvement of the heels. One patient had had osteomyelitis of the calcaneus following a severe injury, the intensity of the pain varied from a slight ache or painless lump to a severe disabling cramplike pain in the calves of the legs.

TREATMENT

The treatment of this condition is palliative and, fortunately, is extremely simple. As a general measure, any focus of infection should be removed. Local heat and massage to the feet in the interval of acute pain may relieve the pain somewhat. But the most efficacious treatment consists of elevation of the heels to relieve tension on the Achilles tendon. Heel pads in the shoes are also of benefit, and avoidance of any strenuous exertion is indicated until the acute phase of the condition is over. In the more severe or resistant cases it may become necessary to immobilize the foot, in slight plantar flexion, for several weeks with plaster-of-paris casts. Following this, the heels of the shoes must be raised to prevent any recurrence of symptoms. Symptoms subside promptly under such a regimen and, as mentioned before, the condition disappears when the patients reach the age of 17 years, when the epiphyses become completely united.

⁶ Leriche, Rene and Policard, A. The Normal and Pathological Physiology of Bone. St. Louis: C. V. Mosby Company, 1928.
⁷ Bentzon, P. C. K. Ein Fall von Morbus Haglundii calcanei mit seinen roentgenologischen Aenderungen. Acta chir. Scandinav. 67: 80, 1930.
⁸ Haglund, Hass, Julius. Ueber die Osifikationstörung des Calcaneus-epiphysen nebst mikroskopischen Befund. Zeitschr. f. orthop. Chir. 30: 309, 1930.
⁹ Davies, D. A. and Parsons, F. G. The Age Order of the Appearance and Union of the Normal Epiphyses as Seen by X Rays. Anat. 62: 58-1 (Oct.) 1927.
¹⁰ Scarlini, quoted by Bergmann.¹¹

COMMENT

There is little doubt that the epiphyses of the heels of healthy children are often injured and that roentgenograms would reveal the typical structural changes of this disease. Very mild symptoms, or none at all, normally divert suspicion from the heels, and roentgenograms are not likely to be taken if symptoms are absent. Beigmann¹¹ found, in a large series of cases, that the characteristic roentgenographic changes of apophysitis were often present when symptoms were completely absent. Moreover, in almost 25 per cent of the cases observed at the clinic the patients were sons of physicians who had easy access to roentgenographic services.

A factor that doubtless contributes to the frequency of this disease is the common modern practice of robust boys engaging in vigorous games in heelless athletic shoes. This undue strain on the calcaneal epiphysis during the period of greatest growth of the bones no doubt engenders an appreciable amount of epiphyseal change that is never discovered. Therefore we feel justified in concluding that destructive changes in the epiphyses of the heels are common among young vigorous children and that failure to recognize them depends on absence of symptoms and consequent neglect in obtaining roentgenograms.

CONGENITAL HEART BLOCK

REPORT OF THE THIRD CASE OF COMPLETE HEART
BLOCK STUDIED BY SERIAL SECTIONS
THROUGH THE CONDUCTION
SYSTEM

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It is becoming increasingly apparent that congenital heart block is not so rare as has been thought. As with many other supposedly rare conditions increasing knowledge and more definite criteria of diagnosis have made physicians more alert to its occurrence. The case to be reported is the third case of complete heart block of congenital origin to be studied by serial sections through the conduction system. The two cases previously studied were reported by Yater¹ and by Yater, Lyon and McNabb². The only other case of congenital heart block studied in a similar manner was one of partial (2:1) block reported by Wilson and Grant³.

The criteria which have been adopted for the diagnosis of congenital heart block are that (1) the auriculoventricular dissociation must be proved by graphic methods in a relatively young individual (2) the brady-

cardia must have been noted at a fairly early age and (3) there must not be a history of any infection which might cause heart block after birth, such as rheumatic fever, chorea, diphtheria or congenital syphilis. The occurrence of syncopal attacks at an early age is fairly good evidence of the existence of the heart block prior to the attacks. The presence of signs of congenital

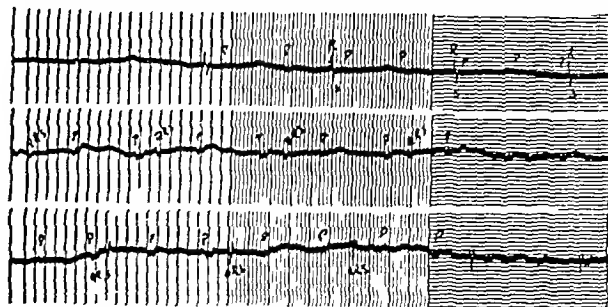


Fig. 1—Complete heart block the auricular rate being 100 the ventricular 50 per minute

heart disease adds weight to the probability of the congenital origin but it must not be forgotten that congenital heart lesions, such as a patent interventricular septum, may be the seat of acquired endomyocarditis. Signs of congenital heart disease are not necessary however, to establish the diagnosis of congenital heart block since in some instances of congenital cardiac defects signs are absent or not distinctive.

Using these criteria one of us¹ in 1929 collected from the literature thirty-one cases of congenital heart block from among many which had been designated by the authors as such. Some of the others may well have been instances of congenital heart block, but the criteria were not all fulfilled. In 1933 Yater, Lyon and McNabb² in a similar review brought the number up to forty-four. A very probable case reported clinically by Mahaim⁴ as observation XXXII in his book was overlooked. The patient was a girl aged 16 years, whose bradycardia had been noted for four years and in whom physical signs suggestive of patent interventricular septum were elicited. The clinical case of Wood and Rogers⁵ was also not included but probably should have been. The physical signs were those of mitral stenosis, and if this condition existed it may have been acquired in intra-uterine life, since it seems doubtful that it could have developed within the first three months of life when it was discovered. Since then, Blackford and McGehee⁶ have reported the clinical case of a boy aged 19 years who was known to have had a slow pulse since birth; the physical signs were those of aortic regurgitation which makes it difficult to decide whether the lesion was developmental or inflammatory. Ellis⁷ mentioned two cases in a clinical study of heart block but did not report them in detail. The present case has previously been reported without complete anatomic study and without any histologic examination⁸.

Theoretically the cause of congenital heart block is some developmental defect of the bundle of His or

11 Bergmann, Ernst. Die Calcaneusepiphyse. Arch f. Klin. Chir. 141: 463-471, 1930.

From the Georgetown University School of Medicine and the Army Medical Museum.

1 Yater, W. M. Congenital Heart Block. Review of the Literature. Report of a Case with Incomplete Heterotaxy, the Electrocardiogram in Dextrocardia. Am. J. Dis. Child. 38: 112 (July) 1929.

2 Yater, W. M., Lyon, J. A., and McNabb, P. E. Congenital Heart Block. Review and Report of the Second Case of Complete Heart Block Studied by Serial Sections Through the Conduction System. J. A. M. A. 100: 1831 (June 10) 1933.

3 Wilson, J. G., and Grant, R. T. A Case of Congenital Malformation of the Heart in an Infant Associated with Partial Heart Block. Heart. 12: 295 (March) 1926.

4 Mahaim, Ivan. Les maladies organiques du faisceau de His. Tawara. Paris. Masson & Cie. 1931. observation XXII, p. 522.

5 Wood, W. A., and Rogers, Hobart. Congenital Heart Block. Report of a Case. California & West Med. 26: 397 (June) 1932.

6 Blackford, L. M., and McGehee, H. M. Congenital Heart Block. A Case with Other Cardiac Anomalies in a Student of Twenty-One Years. Am. Heart J. 9: 96 (Oct.) 1933.

7 Ellis, I. B. Studies in Complete Heart Block. II. A Clinical Analysis of 43 Cases. Am. J. M. Sc. 183: 225 (Feb.) 1932.

8 Leaman, W. C. Congenital Heart Disease Including Report of a Case of Congenital Heart Block with Autopsy Findings. N. Clin. North America. 17: 853-869 (Nov.) 1933.

prenatal endomyocarditis or syphilis involving the bundle. Thus far, only the first cause has been demonstrated in the six cases in which necropsy was performed.⁶ In two of these cases histologic studies were not made. The accompanying table gives the salient data in these six cases.

In the cases reported only clinically the diagnosis, made either by the original authors or by Yater, Lyon and McNabb from the description, was patent interventricular septum in twenty-six. In six cases clinical evidence of a developmental defect other than the heart block or transient cyanosis was not found. Patent ductus arteriosus, pulmonary stenosis and aortopulmonary communication were diagnosed in some instances.

Salient Data in the Six Cases of Congenital Heart Block Studied at Necropsy

Case	Author	Sex	Age at Death	Grade of A-V Block	Cardiac Malformations	Histologic Studies
1	Wilson and Grant, 1925 ³	♀	14 mos	Partial 2:1	Rudimentary interventricular septum atresia of root of pulmonary artery patent ductus arteriosus	No complete break in bundle, but fibers buried in fibrous tissue of rudimentary septum
2	Perotti 1923 ⁴	♀	3 days	Not determined	Absence of membranous portion of interventricular septum	None
3	Yater, 1930 ¹	♂	2 wks	Complete	Complete transposition except ventricles	A-V node completely separated from bundle of His by central fibrous body
4	Abbott and Moffatt 1931 ⁵	♂	20 yrs	Complete	Displaced left auricles transposition of great arterial trunks double mitral ostium cor bistratum trilocular right conus stenosis pulmonary arteriovenous aneurysm	None
5	Yater Lyon and McNabb 1933 ²	♂	2 mos	Complete	Large defect in upper middle portion of interventricular septum absence of membranous portion of septum	A-V node in upper edge of defect bundle of His in lower edge and completely separated from node
6	Yater Teaman and Cornell 1934 ⁶	♂	18 hrs	Complete	Absence of interauricular septum and membranous septum and minor anomalies	A-V node completely separated from bundle of His by anomalous central fibrous body

Previously reported incompletely by Leaman

The ventricular rate per minute in the series varied from 20 to 90 and was fastest usually in the youngest patients. On the whole it was considerably faster than in most cases of heart block since most of the patients were infants or children. The degree of auriculoventricular dissociation was complete in all but nine cases and in these it was partial in six alternating from complete to incomplete in two and not determined in one. Symptoms of congestive heart failure were rarely observed. Cyanosis was present in twenty cases and to a marked degree in only six. Clubbing of the fingers

was noted in only three cases. Cardiac hypertrophy ranged in degree from none to marked. Death occurred in nine cases and was sudden in most instances. The oldest patient died at the age of 20 years.

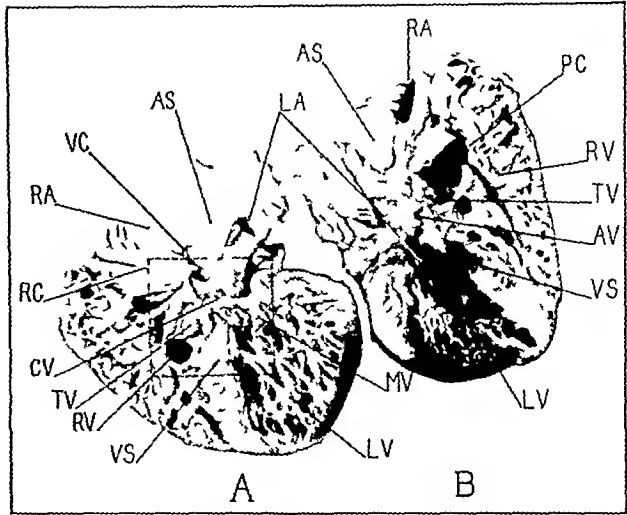


Fig 2—The interior of the heart bisected in the sagittal plane. A the posterior half and B the anterior half. The square drawn in A indicates the block of tissue removed for serial sectioning an enlargement of which is shown in figure 3. AS interventricular septum RA right ventricle TV tricuspid valve CV openings of coronary veins in auricle RC right coronary artery RA portion of common auricle corresponding to normal right auricle IC common orifice of vena cavae AS spur in roof of common auricle dividing it incompletely into right and left halves LA portion of common auricle corresponding to normal left auricle MV mitral valve LV left ventricle PC pulmonary conus, AV, aortic orifice under anterior leaflet of mitral valve.

REPORT OF CASE

An infant boy, aged 18 hours at the time of death, was the sixth child of a woman, aged 28. The father and mother and the other children were supposedly free of congenital defects. The mother's prenatal period was entirely uneventful, and the delivery was normal. The Wassermann test of the mother's blood was negative. On delivery which occurred at 3 a. m., May 6, 1932, the child cried feebly and became intensely



Fig 3—Block removed from posterior half of heart for serial sectioning from above downward. Horizontal lines with numbers indicate sites of sections shown in figure 4.

cyanotic. The respiration was very shallow and irregular, and the child was admitted to the Hospital of the Woman's Medical College of Pennsylvania three hours later.

On admission the infant was well developed and well nourished and was apparently a full-term baby. No defects were noted. The length of the body was 51 cm. of the upper extremities 19 cm., and of the lower extremities 19.5 cm. The

¹ Yater: Yater Lyon and McNabb. ² Wilson and Grant. ³ Teaman. ⁴ Perotti. ⁵ D. Blocco cardiaco congenito con vizio di conformazione del cuore. Boll. d. Soc. med. chir. di Pavia 3: 1, 1923. ⁶ Abbott and Moffatt reported in Abbott M. E. in Nelson 1000 Leaf Medicine section on Congenital Heart Disease New York Thomas Nelson & Sons 4: 207, 1932.

weight was 8 pounds (3,630 Gm). There was intense cyanosis of the body generally and of the lips, ears and nails especially. Examination of the lungs showed impaired resonance at the left apex posteriorly. The breath sounds were harsh over both lung fields, and there were many crepitant rales throughout. Substernal inspiratory retraction was present. The left border of the heart was 7 cm from the midsternal line in the fourth interspace. The right border was 2.5 cm from the midsternal line in the fourth interspace. The first sound was obscured by a blowing systolic murmur, and the second sound was weak. The murmur was audible over the entire chest, but the center of intensity was in the second interspace at the left of the sternum. The rate of the heart beat was 40 per minute. There were no thrills. The liver and spleen were not palpable, and the rest of the examination was negative.

The child was taken to the heart station of the hospital, where electrocardiograms were made at intervals for the next few hours. All tracings showed complete heart block, with the ventricular rate of 50 and the auricular of 100, and low

NECROPSY

Except for intense cyanosis of the body generally, and of the lips, ears and nails especially, great congestion of the liver and compression of the lungs by the large and dilated heart, there was nothing of interest except the heart.

Macroscopic Appearance of the Heart—The heart measured 8 cm in its transverse diameter and lay in its usual position. The apex was opposite the seventh rib. The heart was cut in the sagittal plane by the pathologist into anterior and posterior halves. It will be described as it appeared after fixation.

Anterior Surface of the Heart About two thirds of the ventricular portion was composed by the right ventricle and one third by the left. The right ventricle was roughly rhomboid in outline, the left ventricle was roughly triangular. The greatest dimension across the ventricles was 5.5 cm, and the distance from the origin of the pulmonary artery to the apex was 3.8 cm. The two ventricles were separated by the anterior descending branch of the left coronary artery. The aorta and the pulmonary artery were in fairly normal relationship, except that the aorta seemed to arise a little more to the right than usual. When both vessels were held open and looked down into, the pulmonary valve was seen to be to the left of the aortic valve. The aorta was large, and the pulmonary artery was about the same size, if not larger. The ductus arteriosus was not seen in the specimen although it appeared that this vessel was cut just at its beginning. The left auricular appendage was long and narrow, crossing the front of the heart beneath the pulmonary artery and extending half way across the right ventricle. It was 3.3 cm across the front of the heart. The right auricular appendage was larger but not nearly as long, lying just to the right of the root of the aorta, between it and the right extremity of the right ventricle.

Posterior Surface of the Heart About the fifth of the posterior ventricular surface was made up of the left ventricle and two fifths the right, both were roughly triangular in outline. A coronary artery passed down between the two, there was a large branch of the artery going across the left ventricle and several small branches going down across the right ventricle. The posterior surface of the combined auricle was roughly quadrilateral, there was only one apparent large opening for the venae cavae. What appeared to be two large openings for pulmonary veins lay to the left, opposite the caval opening. The bifurcation of the trachea was seen on the specimen just above the left auricle.

Internal Appearance of the Posterior Heart (fig 2A) The two ventricles were equal size and were separated by the interventricular septum, which at its middle was 0.5 cm in thickness and between its upper and lower extremities measured 2.4 cm. The membranous portion of the septum was absent. The walls of the

ventricles were thick, and the musculature was greatly trabeculated, the thickness of each ventricle was about 1.1 cm. The cavity of the right ventricle in this half was 1.5 cm in diameter and about 1 cm deep. Most of the cavity of the right ventricle lay in this half of the heart, whereas most of the cavity of the left ventricle lay in the anterior half. There was no interauricular septum except for a muscular spur in the middle of the roof of the common auricle which was triangular on cross section. This spur was somewhat cone shaped, with the apex pointing downward medial to the caval opening. It was probably a rudimentary septum secundum. There was a well formed tricuspid valve with a papillary muscle in the bottom of the right ventricular cavity between the anterior and posterior leaflets. The mitral valve was well formed. The posterior leaflet as well as the posterior portion of the anterior leaflet was attached to a papillary muscle in the upper posterior wall of the ventricle. There was another but smaller papillary muscle lateral to this

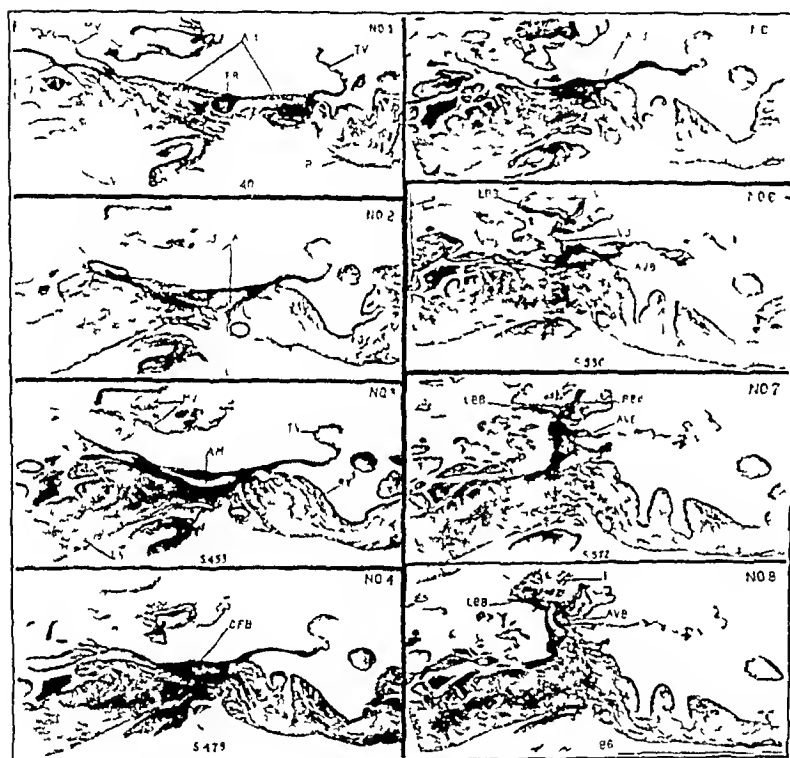


Fig 4—Series of photomicrographs of eight of the serial sections showing main portion of conduction system each reduced from a magnification of 12 diameters. The serial section number is shown on each. The interior of the heart is above in all sections. AM auricular musculature MV mitral valve TV tricuspid valve PR fibrous rod dividing common auricular musculature LV left ventricle RV right ventricle CFB central fibrous body AVB auriculoventricular bundle (in this case only ventricular) IVS interventricular septum VJ junction of mitral and tricuspid valves, LBB left bundle branch RBB ? probable right bundle branch

voltage (fig 1). At 12 10 p m oxygen was administered, with slight improvement in the cyanosis. The electrocardiogram was not altered. Electrocardiograms were made at intervals of ten minutes while the following experiments were performed. At 12 15 $\frac{1}{1000}$ grain (0.00006 Gm) of atropine sulphate was given hypodermically. The ventricular rate increased to 60 per minute, the auricular rate remained at 100, and the block persisted, the cyanosis was not improved. At 12 30 the injection of atropine was repeated ($\frac{1}{1000}$ grain). Very soon many premature ventricular contractions began to appear, and the child's color improved considerably. The block persisted, however, and after a short time the premature beats ceased, the ventricular rate returning to 50, the auricular rate remaining at 100.

The child was taken back to the ward and kept in an oxygen tent. A roentgenogram of the chest showed the heart shadow to be very large in all diameters. The child died at 8 o'clock on the evening of its birth.

to which the chordae tendineae of the posterior leaflet were also attached. The median leaflet of the tricuspid valve and the posterior leaflet of the mitral valve were attached together to the upper edge of the interventricular septum. About 0.5 cm above the mitral and tricuspid valves, in the posterior wall of the common auricle, were two small openings about 0.5 cm apart, which were the orifices of the right and left coronary veins, there being no coronary sinus. The common opening of the venae cavae was about 0.5 cm above the right auriculoventricular orifice and was about 0.5 cm in diameter. The cavity of the left part of the auricle was apparently smaller than the right. The two openings already described as pulmonary vein openings were in its posterior wall.

Internal Appearance of the Anterior Half (fig 2B) The cavity of the left ventricle was mainly in this half and was about 2.2 cm deep, and about 1 cm in diameter. Like the right ventricle, it was greatly trabeculated. The interventricular septum ascended in this half to fuse with the anterior wall of the left ventricle anterior to the aortic or anterior leaflet of the mitral valve. This leaflet was attached obliquely posterior to the aortic orifice in approximately its normal position. Part of the other leaflet of the mitral valve was attached laterally in its usual location. There was a small anterior papillary muscle just below this point. The right ventricle showed only a small portion of its cavity opposite the upper third of the interventricular septum. The rounded infundibulum was above this, roughly 1 cm in all dimensions, from which the pulmonary artery emerged in its anterior and medial portion. The median cusp of the tricuspid valve and the anterior portion of the lateral leaflet of the valve were attached along the upper edge of the ascending interventricular septum, and there was an anterior papillary muscle with its chordae tendineae passing across above the upper part of the cavity of the right ventricle between the latter and the infundibulum. Thus there were two complete auriculoventricular orifices with practically normal valves except that they were joined together at the upper edge of the interventricular septum. The aortic and pulmonary valves appeared to be entirely normal. The orifices of the coronary arteries were in normal position.

Microscopic Examination of the Heart—A block of tissue was excised from the posterior half of the heart which included the lower middle portion of the posterior part of the auricles, the major portion of the mitral and tricuspid valves, the upper middle portion of the posterior part of the ventricles, and the upper posterior part of the interventricular septum (figs 2 and 3). This block measured approximately 2 by 2 cm on its upper and lateral edges. It should logically contain the major portion of the conduction system. The block was embedded in paraffin, and serial sections of 8 microns in thickness were made horizontally from above down to the number of 1200. Every tenth section was mounted and stained with van Gieson's connective tissue stain. Later, many of the intervening sections between sections 400 and 600 were mounted and stained, since it was in this region that the main portion of the conduction system was found. The auricular musculature was found from above down to about section 440 to be incompletely divided by a vertical rod of fibrous tissue. A short distance below the orifices of the two coronary veins (from about section 330) the musculature on the right side of this fibrous rod seemed to be somewhat differentiated from that on the left and, as subsequent sections demonstrated, was certainly the counterpart of the auriculoventricular node (1, 2 and 3 fig 4). From about section 440 to section 490 this musculature became gradually surrounded by fibrous tissue, apparently the counterpart of the central fibrous body, and finally it disappeared except for a few fibers at the auriculoventricular junction, where there was practically no muscular communication between auricles and ventricles (4 fig 4). Farther down at about section 500 there began to appear a small bundle of differentiated muscle fibers in the right extremity of the central fibrous body (5, fig 4). This gradually grew larger attaining its maximum at about section 535 (6 fig 4, and fig 5). This bundle was cut somewhat obliquely and ran along the upper edge of the defective interventricular septum from behind forward, at first downward and then more or less horizontally. The fibers were definitely muscle fibers but they were stained lighter than the myocardial fibers; the cross striations were less distinct and the nuclei were smaller. This

bundle, definitely the auriculoventricular bundle of His, gave rise to a narrow left branch, which extended along the left surface of the interventricular septum as far forward as the septum existed in the block (7 and 8, fig 4, and fig 6). The endocardium superficial to the branch was thick, and subjacent to the branch was some fibrous connective tissue, so that the branch was well demarcated. A clear-cut right bundle branch could not be found, although there were certain suggestive groups of fibers. This bundle is very difficult to locate in normal hearts of infants. The left branch was easily followed down the left edge of the septum. The fibers assumed the characteristics of Purkinje fibers, and the bundle became broader and went down across the ventricle in one of the trabeculae to the lateral wall, where it spread out into several trabeculae.

Principal Abnormalities—The main defect of the heart was the almost complete absence of the interauricular septum and of the membranous portion of the interventricular septum. The coronary veins emptied separately into the middle of the posterior wall of the common auricle. The venae cavae had a common opening. The mitral and tricuspid valves were completely formed and were attached medially to the upper edge of the interventricular septum. The aorta and the pulmonary artery had approximately normal relationship.

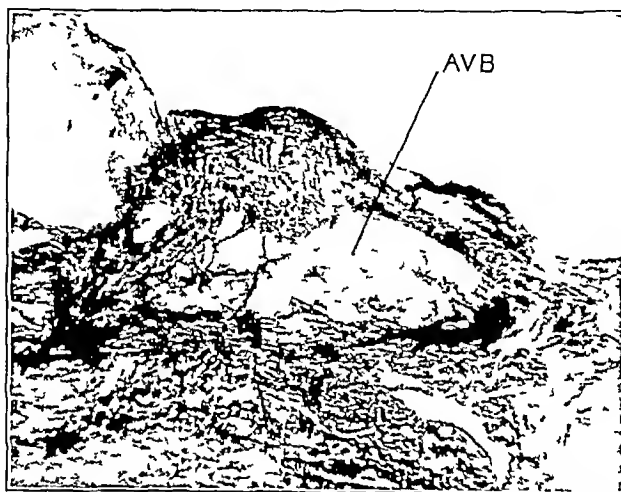


Fig 5—Enlargement of section 536 showing cross section of bundle of His AVB reduced from a photomicrograph with a magnification of 200 diameters.

Microscopically, it was observed by means of serial sections that there was practically complete absence of the conduction bundle between the common auricle and the ventricles. The central fibrous body had almost completely severed the auriculoventricular node from the auriculoventricular bundle. The bundle of His and the left bundle branch were well developed, but a definite right bundle branch could not be found, although there was a suggestion of one.

COMMENT

The heart in this case is an example of a three-chambered heart with one auricle and two ventricles, or trilobular biventriculosum. Other cases of heart block of congenital origin associated with this anomaly have not been reported. The auriculoventricular dissociation was caused by an anatomic separation of the muscular conduction bridge between the auricular and the ventricular portions of the heart. This anatomic separation was of developmental and not of inflammatory origin. In the great majority of cases of defects of all kinds between the two sides of the heart the small specialized muscular bundle between the auricles and the ventricles is preserved, although its course may be somewhat abnormal. The bundle passes downward and forward from the node of Tawara which lies on the right side of the interauricular septum just anterior

to the coronary sinus. Whether the greater part of the auricular septum, the greater part of the ventricular septum or the greater part of both septums are absent, the bundle enters the ventricles uninterruptedly and divides into branches for these chambers. Its location is always along the upper edge of the muscular portion of the interventricular septum, whether this is normal, slightly defective or only rudimentary, as demonstrated by Monckeberg. In a case anatomically similar in most respects to our case (case of Bostroem-Monckeberg) the auriculoventricular bundle was unbroken.

Monckeberg¹⁰ demonstrated a similar preservation of the conduction pathway in the nearest related anomaly, persistent ostium primum, in which there is a large defect in the lower part of the interauricular septum. Morison¹¹ found a rather anomalous course of the conduction system in a heart with the same defect, but apparently conduction was essentially normal. Yater, Barrier and McNabb¹² studied the heart of a woman, aged 59, at the time of death, who had had Adams-Stokes attacks for nearly three years and in whose

the seventh and the tenth week. The bundle is preserved between the posterior endocardial cushion and the posterior portion of the annulus fibrosis. In our case these structures fused, and muscular communication between auricles and ventricles was destroyed in this region and in all other portions of the auriculoventricular junction where normally no communication is preserved.

SUMMARY

Only six cases of congenital heart block including the one here reported have been studied at necropsy. In all six, congenital defects in the septum between the right and left sides of the heart were present. In four of these cases, studies of the conduction system by serial sections were made. One was a case of partial (2:1) heart block.³ The present case is the third case of complete heart block of congenital origin to be studied histologically. The interauricular septum was almost completely lacking, as was also most of the membranous portion of the interventricular septum. There was practically complete separation of the auricles and ventricles by the central fibrous body in the region where the specialized muscle bundle normally bridges the auriculoventricular groove. The bundle of His was well formed but was disconnected from the auriculoventricular node in this region.

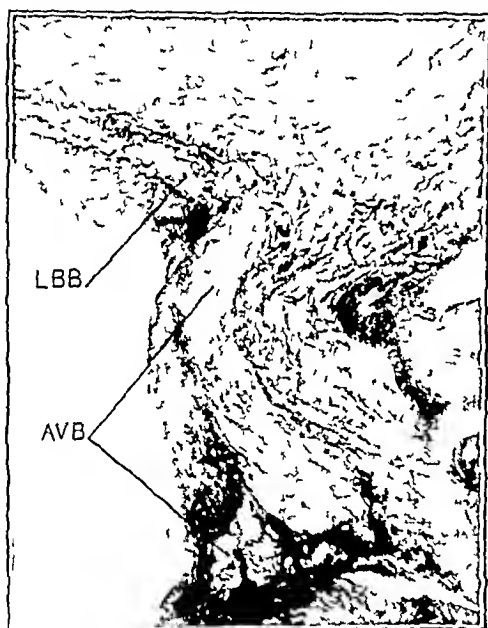


Fig. 6—Enlargement of section 586 showing bundle of His, AVB and left bundle branch LBB, reduced from a photomicrograph with a magnification of 200 diameters.

case electrocardiographic records showed progressively increasing degrees of heart block during this time. The heart had a persistent ostium primum but the course of the conduction system was essentially normal. The acquired heart block was due to fibrosis, apparently from strain, of the upper edge of the interventricular septum where the bundle of His was located.

The reason for the almost constant preservation of the muscular connection between the auricles and ventricles probably lies in the fact that the special bundle appears in the fifth week of fetal life,¹³ whereas the membranous separations between the auricles and the ventricles and between the ventricles take form between

THE ARTIFICIAL TRANSMISSION OF MALARIA AMONG INTRAVENOUS DIACETYLMORPHINE ADDICTS

1. PRELIMINARY NOTE ON THE USE OF ATABRINE IN MALARIA

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It is astonishing that until recently the relationship of malaria to drug addiction has been either not recognized or not fully appreciated. In 1929, Biggam¹ reported ten cases of malignant malaria associated with the administration of diacetylmorphine (heroin) intravenously. In 1930, Biggam and Arafat² reported on a series of more than 100 cases of artificially induced malaria. All their patients were inhabitants of Cairo, Egypt. To the best of our knowledge, the first contribution on this subject in this country was made by Eaton and Feinberg³ in 1933. These authors reported two cases of malaria in intravenous diacetylmorphine addicts under their observation at the Cook County Hospital, Chicago.

During the past six months thirty-nine addicts admitted to Bellevue Hospital were found to be suffering from malaria. Ten of these patients were observed in the Fourth Medical Division and formed the basis of our study.

REPORT OF CASES

CASE 1—W. W., a man, aged 35, a sailor, admitted to the hospital, Oct. 13, 1933, complained of severe intermittent chills.

From the services of Dr. Harlow Brooks and Dr. Herman O. McEnthal, Fourth Medical Division. Dr. Charles H. Nammack, director.

¹ Biggam, A. G. *Tr. Roy. Soc. Trop. Med. & Hyg.* 23: 147 (Aug.) 1929.

² Biggam, A. G. and Arafat, M. A. *Tr. Roy. Soc. Trop. Med. & Hyg.* 23: 591 (April) 1930.

³ Eaton, L. M. and Feinberg, S. M. *Am. J. M. Sc.* 186: 679 (Nov.) 1933.

¹⁰ Monckeberg, J. G. *Handbuch der speziellen pathologischen Anatomie und Histologie*, Berlin: Julius Springer, Herz und Gefässe 2: 31 and 40, 1924.

¹¹ Morison, A. *Auriculoventricular Node in a Malformed Heart. Its Nature, Connections and Distribution*, *J. Anat. & Phys.* 47: 459, 1913.

¹² Yater, W. M., Barrier, C. W. and McNabb, P. E. *Acquired Heart Block with Adams-Stokes Attacks Dependent upon a Congenital Anomaly (Persistent Ostium Primum). Report of a Case with Detailed Histopathologic Study*, *Ann. Int. Med.* to be published.

¹³ Mall, F. P. *On the Development of the Human Heart*, *Am. J. Anat.* 13: 249 (July) 1912. Tandler, J. *Anatomie des Herzens*, Jena: Gustav Fischer, 1913, p. 212.

and fever of four weeks' duration and progressive swelling of the lower extremities for the past two weeks. He had been taking diacetylmorphine intravenously for the past five years and had been in the habit of sharing his hypodermic outfit, known as "the works," with other addicts. He had been residing in New York City for the past year. Five years before, while in Africa, he contracted malaria, for which he was treated and apparently cured. He remained perfectly well until the onset of the present illness.

On physical examination he appeared well nourished. There was moderate edema and pallor of the face. Moist rales were present at the bases of both lungs. The heart was normal. The blood pressure was 124 systolic and 50 diastolic. The liver and spleen were enlarged, and their edges were felt about four fingerbreadths below their respective margins. There was marked edema of the right arm and both legs. Both antecubital fossae and the upper halves of the flexor surfaces of the forearms showed numerous scars of previous puncture marks surrounded by dark greenish pigmentation along the course of the veins. Some of the veins appeared thickened and cordlike. The reflexes were normal. The temperature curve, showing abrupt rises every seventy-two hours, suggested the diagnosis of quartan malaria. This was confirmed by study of the blood smear, which showed the presence of both rings and adult forms of the quartan plasmodium. The urine showed a moderate trace of albumin and a few casts. The red blood count showed 3,200,000 cells with 60 per cent hemoglobin. The white blood count was 7,000, with 74 per cent polymorphonuclears and 24 per cent lymphocytes. The blood chemistry showed a nonprotein nitrogen of 32 mg and a sugar of 84 mg per hundred cubic centimeters.

October 25, following four paroxysms of chills and fever, the patient was put on quinine therapy and made an uneventful recovery.

The relationship of the malaria to the intravenous administration of diacetylmorphine in this case is suggestive but not clear cut. It is impossible to say whether the original attack was transmitted by a mosquito or was artificially induced. It is also hard to decide whether the present illness is a recurrence of the previous attack of malaria or newly acquired in association with the diacetylmorphine habit.

CASE 2—G M., a man, aged 46, admitted to the hospital, Nov. 4, 1933, complained of headache, general malaise, stiffness of the neck, and chills and fever of three weeks' duration. The chills occurred every third day. He had been taking diacetylmorphine intravenously for the past seven years, sharing a hypodermic outfit with other addicts. He had always lived in New York City and had never visited any malarial districts. There was nothing relevant in the past history.

On examination, he appeared cachectic and pale. His neck was stiff and motion was limited in every direction. There were, however, no Brudzinski or Kernig signs. The reflexes were all normal. The heart was normal. The blood pressure was 70 systolic and 40 diastolic. There were diffuse coarse rales throughout the lungs. The spleen was just palpable. Both forearms showed typical puncture marks and scars with pigmentation along the course of the thickened veins. There was moderate edema of both legs. The temperature was 102 F on admission and rose to 105 F within thirty-six hours. The white blood count was 20,000, with 85 per cent polymorphonuclears. The red blood count was 2,230,000, with 65 per cent hemoglobin. The nonprotein nitrogen was 47 mg per hundred cubic centimeters. The spinal fluid was clear and showed no increase in globulin, normal sugar content, and 4 cells. Examination of the urine was entirely negative. The blood smear showed numerous rings and adult forms of the quartan plasmodium. The blood culture was negative.

November 9, he became irrational and delirious. The same day a diffuse purpuric eruption over both legs was observed. Quinine therapy was instituted at this time.

November 11, his general condition was distinctly worse. On examination he was comatose and jaundiced, had generalized spasticity of all the muscles and showed signs of pneumonia in both lungs. Another spinal tap performed yielded a normal fluid. He died, November 13.

In this case, it seems to us, there can be little doubt that the malaria was transmitted accidentally in connection with the intravenous administration of diacetylmorphine. The marked leukocytosis was due either to the severe malarial infection or to the pneumonia. It is somewhat difficult to explain the marked muscular spasticity and neck rigidity, but it is not unlikely that these signs of meningeal irritation were features of a severe toxemia. His jaundice likewise was probably a toxic manifestation.

CASE 3—R C., a man, aged 38, a sailor, was admitted to the hospital, Jan. 1, 1934, in a comatose state. The history obtained after his recovery was as follows:

He was born in Puerto Rico but had never had malaria before and, in fact, had never been sick before. He became a snuffer of diacetylmorphine in September 1933. Early in December he commenced injecting solutions of diacetylmorphine by means of an eye dropper into puncture wounds made with a safety pin. He received his first intravenous injection of diacetylmorphine on December 29. This was administered by another addict employing an eye dropper attached to a needle. December 31, he began to have headache, chills and fever. Jan. 1, 1934, he was admitted to the hospital in a deep stupor.

Physical examination on the day of admission showed the patient to be in deep coma. There was extensive herpes labialis. The heart was normal. The blood pressure was 114

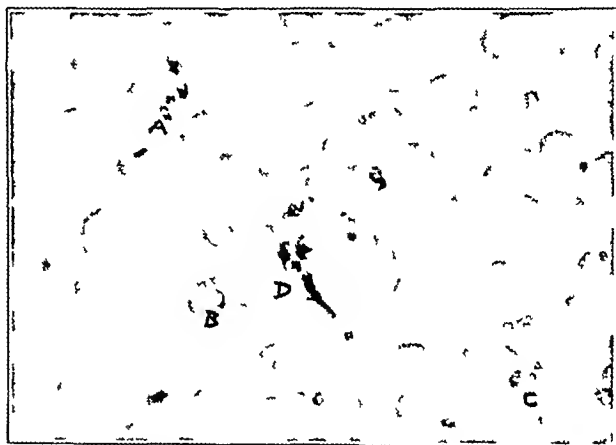


Fig. 1—Estdio autumnal parasites. Ring forms are seen at A, B and C and gametocytes are seen at D.

systolic and 78 diastolic. The lungs were clear. The spleen was enlarged to four fingerbreadths below the left costal border. Both arms and legs showed many puncture marks, and one of these was directly over a vein in the left antecubital fossa. There was slight rigidity of the neck but negative Brudzinski and Kernig signs. All the deep reflexes were exaggerated. The pupils were equal and reacted to light. Examination of the fundi showed moderate hyperemia of the finer vessels of the disks, giving them a marked rosy brilliant color. The larger vessels showed no changes and there were no hemorrhages, exudate or edema. The temperature was 104 F, the pulse 120, and respirations 22.

The white blood count was 32,000 with 73 per cent polymorphonuclears and 23 per cent lymphocytes. Lumbar puncture yielded 20 cc of clear fluid under increased pressure. The spinal fluid on examination showed 252 cells, mostly mononuclears, globulin 2+ albumin 2+ and sugar 3+. Urinalysis showed albumin 2+, an occasional hyaline cast, and red and white blood cells. A study of the blood smear showed an overwhelming number of malarial plasmodia. Most of these were ring forms, but several gametocytes were also found (fig. 1). This was definitely a case of the pernicious form of estivo autumnal malaria.

Shortly after admission 40 grains (2.6 Gm) of quinine sulfate in suspension was administered by stomach tube.

January 2, the patient's condition remained unchanged with persistence of deep stupor and high temperature. On this date 25 grains (1.6 Gm) of quinine dihydrochloride was administered intravenously in divided doses.

January 3, the patient was still in coma with no improvement in the general condition. Ten grains (0.6 Gm) of quinine dihydrochloride was again given intravenously. On the afternoon of the same day when he appeared to be going rapidly downhill, the intravenous administration of atabrine was resorted to. The first dose was 150 mg and was given at 3 p. m. Four hours later he was given 200 mg of the drug. About midnight he was given another dose of 100 mg.

January 4, in the early morning hours the patient began to show definite improvement. His temperature dropped to 100 F, and he had lucid intervals. One hundred milligrams of atabrine was again given intravenously. In the afternoon he was quite clear mentally, and his temperature was 99 F. The use of atabrine by mouth was begun on this date the dose being 1½ grains (0.1 Gm) three times a day, and it was continued for the next five days.

January 5 the patient's general condition was very satisfactory. He was quite clear mentally and his temperature was normal. The spleen was much smaller and softer. A spinal tap yielded 15 cc of clear fluid under normal pressure. On examination this fluid was practically normal. The white blood count was now 8,400 with 65 per cent polymorpho-



Fig. 2—Numerous schizont and malarial ring forms are seen at A, B and C.

nuclei and 31 per cent lymphocytes. The red blood count was 3,800,000 with 70 per cent hemoglobin. No malarial parasites were found in the blood smear. The nonprotein nitrogen was 45. Both the blood and spinal fluid Wassermann tests were negative.

From this time on the patient's condition remained satisfactory. Repeated blood smears failed to show the schizonts, but gametocytes were repeatedly found. In order to eradicate the gametocytes, we proposed to put him on plasmoquine as recommended by many workers,⁴ but January 28 the patient insisted on obtaining his discharge.

This case was cited in detail in order to illustrate some interesting and important points. This was a typical example of cerebral malaria and was by far the most severe and malignant form of the disease which did not end in death. It seems to us that there can be little doubt that in this case the malarial infection was artificially induced, Dec. 29, 1933 by an unclean hypodermic outfit. So far as we know, this is the first record in this country of the intravenous use of atabrine for malaria. It is of course difficult to decide whether the atabrine alone or its use in combination with the quinine was responsible for the recovery.

Certainly there was no improvement in the clinical picture before the atabrine was administered. This drug may, therefore, be regarded at least as a contributory factor toward the recovery of this patient.

CASE 4—J. C., a man, aged 20, admitted to the hospital Jan. 9, 1934, complained of progressive swelling of the face, hands, genitalia and legs of three weeks' duration. He also had marked nocturia. For the past two months the patient had had episodes of chilly sensation followed by fever, occurring every third day. For the past sixteen months he had been taking diacetylmorphine intravenously, often sharing the hypodermic outfit with other addicts.

He was born in Maine but spent his childhood in North Carolina, where, at the age of 8 years, he claimed to have had an attack of malaria. He had lived in New York City for the past three years and had been free from any febrile attack from his childhood to the present illness.

Physical examination showed him to have a pasty appearance, with puffiness of the face and eyelids. He also had marked edema of all the extremities and evidence of ascites. There were the typical puncture marks over the forearms. The heart showed no abnormal signs. The blood pressure was 130 systolic and 78 diastolic. The lungs had moist rales at both bases. The reflexes were normal. The eyegrounds showed no hemorrhages or other abnormal manifestations. The temperature was normal on admission but later presented a typical quartan curve.

The white blood count was 4,800, with 56 per cent polymorphonuclears and 44 per cent lymphocytes. The red blood count was 3,200,000, with 60 per cent hemoglobin. On the blood smear there were numerous adult and ring forms of the malarial parasite. The urine examination on several occasions showed a moderate amount of albumin, a few granular casts and an occasional red and white blood cell but failed to show the presence of doubly refractile lipid bodies. The nonprotein nitrogen was 36, cholesterol 130, sugar 100, uric acid 3.7 and creatinine 1.7 mg per hundred cubic centimeters of blood. The serum albumin was 2.8 and the globulin was 1.9 per cent.

January 14, after the diagnosis of quartan malaria was definitely established, the patient was started on atabrine therapy. He received 1½ grains three times a day for a period of ten days. On the fourth day of treatment he showed marked improvement. His temperature was normal and the edema had practically disappeared. The spleen was now palpable. No malarial parasites were now found. The urine was negative except for an occasional finely granular cast. His condition remained satisfactory and he was discharged, January 26.

It seems to us that the patient's vague history of malaria in childhood is not in any way related to his present illness, as there was an interval of well being of more than twelve years. The relationship of his malaria to the injections of diacetylmorphine is there fore quite probable. In this connection it is of importance to note that a diacetylmorphine addict in another service with whom he shared injections was also suffering from quartan malaria at the same time. This case also illustrates that nephritis is an important complication of malaria. The prompt response of this patient to atabrine was indeed gratifying.

CASE 5—A. C., a man aged 34, admitted to the hospital, Jan. 10, 1934, complained that for the past week he had had attacks of chills and fever, which occurred from one to three times daily. For the past four days he had noticed marked swelling of the face, abdomen and extremities. He also had nocturia.

He had been a drug addict for the past fifteen years and for the past twelve years had been in the habit of taking diacetylmorphine intravenously in the usual manner. Since 1922 he had been a resident of New York City but prior to that time he had traveled in the southern states, where he contracted malaria. When he came to New York he was still suffering from the active phase of the disease and was treated intensively with quinine and apparently was cured within a

⁴ Barber, M. A. and Komp, W. H. W. Ann. Rep. M. Dept. United Fruit Company 16: 54, 1927. Barber, M. A. Komp, W. H. W. and Newman, B. M. Pub. Health Rep. 44: 1409 (June 14), 1929. Macphail, N. P. Ann. Rep. M. Dept. United Fruit Company 18: 13, 1929. Manson-Bahr, Philip. Proc. Roy. Soc. Med. Sect. Trop. Dis. 20: 919 (April) 1927. Lancet 2: 496 (Sept. 8) 1928.

short time. From that time on he had been free from all symptoms and signs referable to malaria up to the present illness, which apparently developed after he shared injections with an addict who at that time had similar symptoms. After the onset of the malarial infection, the patient shared injections with his roommate, who also developed symptoms suggestive of malaria.

On examination, the patient appeared acutely ill, with pronounced swelling of the face, especially about the eyelids. The heart showed no abnormal signs. The blood pressure was 128 systolic and 70 diastolic. There were moist rales at the bases of both lungs. There was marked edema of the torso, scrotum and lower extremities. There was also evidence of ascites. On the forearms there were the typical puncture marks with marked thickening of the veins. He was clear mentally and his reflexes were normal. Ophthalmoscopic examination showed hemorrhages in both fundi. Most of the hemorrhages were flame shaped, while one was oval with a pale center. The temperature on admission was 105 F and dropped to normal the next day. Subsequently the patient had an irregular fever, ranging between 101 and 105 F.

A study of the blood smear showed many plasmodia. Most of these were ring forms, but there were also a few gametocytes. The diagnosis was estivo-autumnal malaria. The urine examination on several occasions showed a heavy trace of albumin, no casts and an occasional white blood cell and no doubly refractile lipoids. The phenolsulphonphthalein excretion was 45 per cent in two hours. The nonprotein nitrogen was 27 and the sugar was 110 mg per hundred cubic centimeters. The serum albumin was 2.4 and the globulin, 2.2 per cent. The white blood count was 3,200 with 71 per cent polymorphonuclears and 29 per cent lymphocytes. The red blood count was 2,850,000, with 55 per cent hemoglobin.

On the fifth day of his stay in the hospital the patient was put on atabrine therapy, receiving $1\frac{1}{2}$ grains three times a day. This was continued for ten days. The patient responded promptly to the treatment and the clinical improvement was rapid. On the fourth day of treatment no plasmodia could be found in the blood smear and examination of the urine was entirely negative. He was discharged from the hospital, January 26, in excellent condition.

In this case the relationship of the malaria to the drug addiction is somewhat uncertain. However the long interval of well being that followed his first attack of malaria and the details of his present illness suggest very strongly that the recent attack of this disease was conveyed by intravenous injections of diacetylmorphine. This case also presents some interesting clinical features. There was very pronounced involvement of the kidneys, as indicated by the albuminuria and marked generalized edema. The eveground changes were unusually interesting. The response to atabrine was quite prompt.

CASE 6—F W, a man aged 26, admitted to the hospital, Jan. 28, 1934, complained of chills and fever for the past three weeks. The chills occurred at irregular intervals. He was born in Florida, where at the age of 15 he had an attack of malaria, which was cured with quinine. He had had asthma for many years. He had been living in New York City for the past three years and for the past two years he had been taking diacetylmorphine intravenously.

On examination, he appeared thin, pale and pasty. Apathy was quite pronounced. There was herpes labialis. There were marked generalized twitchings. The lungs presented the usual signs of chronic bronchitis. The heart presented no abnormal signs. The blood pressure was 76 systolic and 44 diastolic. The spleen was not felt. On his forearms were the typical puncture marks along the course of the veins. There was moderate rigidity of the neck, but there were no Kernig or Brudzinski signs. The knee jerks were active. The fundi showed increased tortuosity of the vessels with moderate congestion of the disk capillaries and a small flame-shaped hemorrhage on the left side. The temperature on admission was 100.5 F but mounted to 106 F the next day. It remained irregularly high, ranging between 102 and 105 F until specific therapy was instituted.

Examination of the urine was entirely negative. The blood chemistry showed a nonprotein nitrogen of 35 and a sugar of 125 mg per hundred cubic centimeters. The white blood count was 6,800, with 78 per cent polymorphonuclears and 22 per cent lymphocytes. The red blood count was 3,600,000, with 60 per cent hemoglobin. The blood smear showed numerous malarial plasmodia, most of which were ring forms and a few crescents. The diagnosis of estivo-autumnal malaria was definitely established. The signs of moderate meningeal irritation and the apathy suggested early or impending cerebral involvement. This impression was confirmed by analysis of the spinal fluid, which showed 25 cells, mononuclears, a slight increase in albumin and globulin, a normal sugar, and a negative Wassermann reaction.

January 31, three days after admission the patient was started on atabrine receiving $4\frac{1}{2}$ grains (0.3 Gm.) three times a day. February 1 there was decided improvement. The temperature was normal and the apathy was much less pronounced. On this day he received 3 grains (0.2 Gm.) of atabrine three times. A yellowish tinge of the sclerae and of the skin was noted the same day. This was regarded as an atabrine manifestation. From this time on the clinical improvement was progressive. The temperature remained normal and he was quite clear mentally. The yellowish discoloration of the skin, however, persisted for several days. The atabrine was continued in doses of $1\frac{1}{2}$ grains three times a day until February 6.

February 7 the temperature suddenly rose to 104 F. Examination on this day showed early signs of pneumonia. The blood smear was negative for malarial plasmodia. Within a few days there were frank signs of consolidation of the left lower lobe associated with marked toxemia. A typing of the sputum showed pneumococcus type 30. The blood culture was negative. The blood count was 5,300, with 88 per cent polymorphonuclears and 12 per cent lymphocytes. He died, February 12.

In view of the fact that this patient had been entirely well for eleven years following his previous attack of malaria it is fair to assume, it seems to us, that his recent attack of this disease was conveyed by a contaminated hypodermic outfit. There was definite evidence in this case of early cerebral involvement. The prompt response to atabrine was indeed striking, as evidenced by the sudden drop in temperature and the marked improvement in the mental picture. The other interesting features in this case were the ocular changes and the development of pneumonia. The pulmonary complication was undoubtedly the cause of death.

CASE 7—J D, a man aged 35, was admitted to the hospital Feb. 9, 1934, in a state of deep coma. The history was obtained from his brother who stated that the patient had collapsed suddenly shortly before admission. He was known to have been an intravenous drug addict for a number of years. He had always lived in New York City and had never had malaria before.

Physical examination showed the patient to be in deep coma. The temperature was 105 F. The heart was somewhat enlarged to the left and the sounds were of poor muscular quality. The veins of the neck were dilated. The blood pressure was 138 systolic and 74 diastolic. The lungs were clear. The spleen could not be felt. On the thighs were shallow scars of old puncture marks. In the antecubital fossae overlying the veins were many puncture marks, surrounded by bluish brown pigmentation. There was slight rigidity of the neck. There was moderate spasticity of the extremities and hyperreflexia. The examination of the fundi revealed marked engorgement of the fine vessels of the disks, giving them a brilliant red appearance. The disk edges were somewhat indistinct. There were no hemorrhages or edema. The larger retinal vessels appeared normal.

The urine showed a heavy trace of albumin, many hyaline and granular casts, and a few white and red blood cells. The white blood count was 16,000 with 74 per cent polymorphonuclears and 26 per cent lymphocytes. The red blood count was 4,800,000 with 70 per cent hemoglobin. The blood smear showed numerous malarial ring forms (fig. 2) and a few gametocytes. The blood culture was negative. The spinal

fluid came out under increased pressure, was clear, contained 50 cells, and showed a 2+ albumin and globulin, and a normal sugar.

The diagnosis of estivo-autumnal malaria, cerebral form, was definitely established. The patient was promptly put on atabrine therapy, the first dose being 200 mg intravenously. The same dose was repeated three hours later. Four hours after admission, signs of pulmonary edema and marked circulatory collapse developed. The pulse was very rapid and thready. The blood pressure dropped to 80 systolic and 60 diastolic. The skin was cold and clammy. Active stimulation was resorted to, but the patient died several hours later.

There can be little doubt that in this case the malarial infection was transmitted by means of a contaminated hypodermic outfit. The most striking clinical feature in this case was the severe cerebral involvement. The eyeground changes were quite characteristic. There was also evidence of renal involvement. Death was obviously due to complete circulatory collapse.

CASE 8—II M, a man aged 22, was admitted to the hospital Feb 9, 1934, in a stuporous state. A complete history could not be obtained. He was known to have been an intravenous drug addict for the past seven years. The present illness began two days before with marked drowsiness which progressed rapidly to complete stupor.

On examination, the patient was in a state of coma. The respirations were shallow but the lungs were clear. Except for a short systolic murmur at the apex the heart was normal. The blood pressure was 130 systolic and 80 diastolic. The spleen was palpable. There were numerous hypodermic puncture marks along the course of the veins of both forearms. All the reflexes were exaggerated. There was a positive bilateral Babinski and Oppenheim reflex. The fundi showed marked engorgement of the small vessels of the disks giving them a brilliant red appearance. The disk edges were indistinct. There was no edema or changes in the larger retinal vessels. There were a few scattered flame-shaped hemorrhages in the left eye. The temperature was 102 on admission and within twelve hours mounted to 108.6 F. There was a proportionate rise in pulse from 90 to 160. The respirations were 36.

The urine showed a slight trace of albumin and bile. The white blood count was 10,500 with 68 per cent polymorphonuclears, 26 per cent lymphocytes and 6 per cent transitionals. The red blood count was 2,800,000, with 70 per cent hemoglobin. The nonprotein nitrogen was 40 mg per hundred cubic centimeters of blood. The spinal fluid was clear, contained 15 cells and had a 2+ albumin and globulin and a normal sugar. The blood culture was negative. A study of the blood smear showed a small number of malarial parasites, ring forms and gametocytes.

As this was obviously a case of the cerebral form of estivo-autumnal malaria, the patient was immediately given 200 mg of atabrine intravenously. During the following twenty-four hours, he received 700 mg of the drug intravenously in divided doses. The patient however failed to respond to the intensive therapy. His condition became rapidly worse. He had several convulsive seizures with projectile vomiting, and a marked hyperpyrexia developed. He died approximately twenty-four hours after admission.

In this case the malaria was very likely related to the intravenous drug addiction. Of course this relationship could not be established with absolute certainty because of the inadequate history. This case was very interesting from a number of angles. It was the first instance of cerebral malaria in which convulsions and hyperpyrexia were outstanding symptoms. It is also to be noted that, in spite of severe clinical manifestations, very few parasites were found in the peripheral blood. Finally, the eyegrounds presented typical changes.

We had two other intravenous diacetylmorphine addicts who were admitted to the hospital in a state of deep coma and died shortly after admission. The diag-

nosis of malaria in these cases was not made clinically but was established at necropsy.

COMMENT

The artificial transmission of malaria is now a recognized fact. Many persons have been inoculated with the disease for therapeutic purposes, especially in the treatment of dementia paralytica. Wenyon⁵ and Netter⁶ report instances of malaria transmitted by nonsterile injection of arsphenamine. Accidental transmission of the disease in blood transfusions has been noted by Korabelnikoff⁷ and Decourt⁸. According to Bass,⁹ malaria results almost every time when injected intravenously, less frequently when it is injected intramuscularly or subcutaneously. It is not surprising, therefore, to find this infection disseminated among intravenous drug addicts who share injections by means of a nonsterile hypodermic outfit.

In our series, there can be little doubt that malaria was artificially induced in cases 2, 3 and 7. In case 4, the relationship between the malaria and the injections of diacetylmorphine is very probable. In cases 1, 5 and 6, the relationship between the drug addiction and the present attack of malaria is somewhat less certain. Of course, no definite conclusions can be drawn in cases 8, 9 and 10, because of the inadequate histories.

There is therefore sufficient evidence to show that a number of intravenous diacetylmorphine addicts have accidentally acquired malaria while sharing injections with other addicts who were afflicted with this disease. Furthermore, the number of such cases is apparently on the increase. In this connection, one must also bear in mind the fact that anopheles mosquitoes are known to breed even in the northern section of the United States. The possible dissemination of malaria in the northern parts of the country must therefore be seriously considered. This extraordinary manner of malarial transmission may thus assume importance as a public health problem.

In this connection, it may be of interest to describe briefly the method of group injection practiced by the drug addicts. The drug used is exclusively diacetylmorphine and is invariably administered intravenously. The addicts usually congregate in groups. The drug is put into a tablespoon and tap water is added. The contents are then brought to a boiling point by using a candle or match flame. A small piece of cotton is put into the tablespoon and the solution is drawn up through the cotton into a large medicine dropper. Strips of paper are wrapped around the tip of the dropper in order to fit the needle. After a tourniquet is applied to the arm, the needle is inserted into one of the antecubital veins. When they observe the flow of blood into the eye dropper, the tourniquet is released and the solution is injected into the vein. The hypodermic outfit is never sterilized and is passed around from one addict to another.

From a clinical point of view these cases were extremely interesting. The severity of the malarial infection in most of the patients was rather striking. In only one instance was the disease comparatively mild. The mortality was unusually high, six of the ten patients having died.

⁵ Wenyon, C. M. *Protozoology: A Manual for Medical Men*. Vet. erinarrians and Zoologists. New York: William Wood & Co. 1926, p. 925. cited by Eaton and Feinberg.³

⁶ Netter, L. *Bull. Soc. path. exot.* 22: 318, 1929, cited by Eaton and Feinberg.³

⁷ Korabelnikoff, I. *Zentralbl. f. Bakt.* 54: 1218 (May 14), 1927, cited by Eaton and Feinberg.³

⁸ Decourt, P. *Rev. de med. et d'hyg. trop.* 23: 32 (Jan. Feb.) 1931, cited by Eaton and Feinberg.³

⁹ Bass, C. C. *Nelson's Loose Leaf Medicine* 2: 241, 1932.

As to the causative plasmodium, three of the cases were of the quartan variety, while the remaining seven were estivo-autumnal in type.

The cases with cerebral manifestations were by far the most serious ones. The term "cerebral malaria" was applied to this group. Six of our cases were of this type. They were all caused by the estivo-autumnal parasite. All but one of our patients with cerebral malaria were in a comatose state on admission. The exception was a patient who showed marked apathy but who was not in a stupor. Five of the six patients died. However, one of the deaths was due to pneumonia and not to the moderate degree of cerebral involvement, which was apparently controlled with antimalarial therapy. This was confirmed at necropsy. The seriousness of the cerebral form of malaria is therefore quite apparent.

The occurrence of nephritis as a complication of malaria is a matter of common observation. Indeed, there have been many contributions on the subject. Particularly noteworthy are the recent reports by Giglioli,¹⁰ Lorando¹¹ and Goldie.¹² According to Goldie, nephritis in malaria may be either hydremic in type, with edema as the dominant clinical feature or azotemic, with nitrogen retention as the cardinal symptom. He believes that renal complications occur most frequently in the quartan form. Malarial nephritis, of course, is not to be confused with the albuminuria often observed during the febrile attacks of the disease.

In our series there was definite clinical evidence of nephritis in cases 1, 4, 5 and 7. These patients showed in the urine moderate or marked amounts of albumin, casts and red and white blood cells. In cases 1, 4 and 5 there was also marked edema. None of these patients had azotemia or hypertension. Two of the patients had estivo-autumnal and two had quartan malaria. Under treatment the symptoms of nephritis were promptly relieved in cases 1, 4 and 5. Many observers have commented on this remarkable response of the renal symptoms to the antimalarial therapy.

In the modern literature on malaria there are very scant references to the eyeground changes. The older writers, however, especially those of the German and French schools, investigated the subject very thoroughly. Raynaud¹³ in 1892, in an excellent monograph on the ocular disturbances in malaria described the fundus changes in great detail. He emphasized that the most common pathologic finding is hyperemia of the disks and that this change is in most instances responsible for the transitory amblyopia. The hyperemia of the finer vessels gives the disks a rosy brilliant appearance. This remarkable finding was observed in cases 3, 6, 7 and 8 of our series. In the last two of these cases there was also a blurring of the edges of the disks. It may be of interest to note that Peunoff¹⁴ in 1879 was probably the first to describe accurately the disk changes in malaria.

Another remarkable change is the presence of retinal hemorrhages which occur most often in the course of the larger vessels, although they may occupy the disk. Gueneau de Mussy¹⁵ in 1872 was the first to describe

these hemorrhages in malaria patients. Poncet¹⁶ made a thorough study of the subject in 1878 and reported the presence of these hemorrhages in 10 per cent of his cases. There was also an excellent contribution on these fundus changes by Sulzer¹⁷ in 1890. More recently, this subject was discussed by Collins and Mayon,¹⁸ who mentioned two types of retinal hemorrhage—small peripheral and large central ones. The latter these authors assert, are due to blockage of the retinal vessels by the parasites.

We observed retinal hemorrhages in three of our patients (5, 6 and 8). Most of the hemorrhages were rather small and flame shaped. In one instance there was a large oval hemorrhage with a pale center.

It should be noted that none of the patients showed marked papilledema or the presence of exudate. Engorgement and increased tortuosity of the larger retinal vessels were observed in only one instance.

It may be of interest to discuss briefly the blood counts in our series. As will be noted in the accompanying table a moderate degree of anemia was almost a constant feature. On the other hand, the classic leukopenia was rather the exception than the rule, being present in only two instances. A marked leukocytosis was noted in two cases. One was a patient with cerebral malaria who recovered, and the other was a patient who had a pneumonic process.

Blood Counts

Case	Red Blood Cells	Hemoglobin per Cent	White Blood Cells	Polymorpho-nuclears	Lympho-cytes
1	3,200,000	60	7,000	74	24
2	2,230,000	65	20,000	85	15
3	3,800,000	70	32,000	73	23
4	3,200,000	60	4,800	56	44
5	2,550,000	55	3,200	71	29
6	3,600,000	60	6,500	78	22
7	4,500,000	70	16,000	74	26
8	2,500,000	70	10,500	68	26

Another laboratory test which appeared to be of distinct value, was the spinal fluid examination. In all the patients with cerebral involvement there was a moderate increase in the cells, most of which were mononuclears, and definite increase in the albumin and globulin.

This group of cases was particularly interesting from a therapeutic standpoint. Quinine was used in cases 1 and 2 while patients 4, 5, 6, 7 and 8 were treated with atabrine, which is an alkyl amino-acridine derivative. Patient 3 was treated with both quinine and atabrine.

In recent years atabrine, which is a synthetic compound has been used rather extensively in tropical countries, apparently with very favorable results. There is an extensive literature on the subject, especially by German and British workers. We were particularly impressed with the favorable reports of Cordes and de la Torre,¹⁹ Green,²⁰ Hoops,²¹ Thonnard-Neumann and LeDou, ²² and Russell.²³ The only report on its intravenous use was by Mayer²⁴ in 1933.

16 Poncet (de Cluny) *Ann d'ocul* May 1878 cited by Raynaud¹³

17 Sulzer E. *Arch d'ophth* May June 1890 cited by Raynaud¹³

18 Collins E. T. and Mayon M. S. *Pathology and Bacteriology of the Eye*. Philadelphia: P. Blakiston's Son & Co. 1925

19 Cordes W. and de la Torre T. *Ann Rep M. Dept. United Fruit Company* 20: 51, 1931

20 Green Richard. *Lancet* 1: 826 (April 16) 1932

21 Hoops A. L. *Tr. Roy. Soc. Trop. Med. & Hyg.* 26: 289 (Nov.) 1932

22 Thonnard-Neumann E. and LeDou H. A. *Ann Rep M. Dept., United Fruit Company* 20: 57, 1931

23 Russell P. F. *Plasmochin*. Plasmochin with Quinine Salts and Atabrine in Malaria Therapy. *Arch. Int. Med.* 53: 309 (Feb.) 1934

24 Mayer Martin. *Arch. f. Schiffs u. Tropenhyg.* 37: 472 (Nov.) 1933

10 Giglioli George. *Malarial Nephritis. Epidemiological and Clinical Notes on Malarial Blackwater Fever, Albuminuria and Nephritis in the Interior of British Guiana Based on Seven Years' Continual Observation*. London: J. and A. Churchill, 1930

11 Lorando V. J. *Bull. Soc. path. exot.* 23: 384, 1910

12 Goldie Horatio. *Tr. Roy. Soc. Trop. Med. & Hyg.* 23: 303 (March) 1930

13 Raynaud Lucien. *Troubles oculaires de la malaria*. Paris: H. Jouve, 1892

14 Peunoff Centrallbl. f. praktische Angew. 1879 cited by Raynaud¹³

15 Gueneau de Mussy Henri. *J. d'ophth.* 1: 1, 1872 cited by Raynaud¹³

In our series, atabrine was given by mouth only to patients 4, 5 and 6. As commented on previously, the response to this form of therapy was very prompt. Within twenty-four to forty-eight hours the temperature dropped to normal, and within four days the blood smears failed to show schizonts.

We administered this drug intravenously to three patients. In case 3 the atabrine was used after the patient apparently failed to respond to the intravenous use of quinine. There was rapid improvement after the use of atabrine. Of course it is difficult to decide whether or not the quinine was also a factor in this patient's recovery. It is to be noted that atabrine failed to destroy the estivo-autumnal gametocytes. Cases 7 and 8 failed to respond to intensive intravenous atabrine therapy. Of course patients with cerebral malaria as a rule, fail to respond to any therapeutic measure. The treatment of the pernicious form of the disease certainly merits further study.

We observed no untoward results from the use of atabrine, with the exception of a slight yellowish discoloration of the skin in one instance. This, however, cleared up within a week. Furthermore, the drug is not unpleasant to take and is not depressing.

Of course we are not prepared to draw definite conclusions in regard to the value of atabrine in malaria from so small a series of cases. It is our impression, however, that this drug is a valuable adjunct to quinine and in our opinion deserves further trial.

50 West Ninety-Sixth Street

UNDULANT FEVER DUE TO BRUCELLA OF THE PORCINE TYPE— BRUCELLA SUIIS

REPORT OF A MILK-BORNE EPIDEMIC

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Through the work of Hardy and his associates,¹ undulant fever is probably as well recognized in Iowa as in any other state. Yet, prior to 1933, only four cases of the disease were reported from the town of Council Bluffs with a population of 42,000. One of these cases occurred in 1929 and three in 1932, the last of the patients being taken ill, Nov. 7, 1932. Moreover, two of the four patients came to Council Bluffs for diagnosis.

During the months of February, March and April 1933 the disease appeared in epidemic form. In all, thirty persons were involved and of those twenty-seven were known to obtain their milk from one dairyman, who supplied approximately eighty households with raw milk. One other patient obtained milk from a grocery of which part of the milk supply came from the suspected dairy.

None of these patients were known to have contact with animals or to handle raw meat.

The clinical histories and symptoms of the patients did not differ materially from those given in previous descriptions of the disease. In some cases, however, the patients looked more seriously ill than is generally found in infections with *Brucella abortus* (the type of organism responsible for contagious abortion in cattle). From their appearance alone they gave rise to the suspicion that the infection was with the porcine type (*Brucella suis*).

The histories of the patients and the treatment used are given in brief in the accompanying table.

We do not consider that any estimate of the efficacy of the various methods of treatment used can be made on the small number of cases given here. Undulant fever is notoriously uncertain in its duration. Only by collecting and comparing a large number of cases treated by different agents will an estimate of their relative value be attained. It is in the hope that we may be of assistance in this object that we record the methods of treatment used in this epidemic.

May 4, 1933, twelve of the patients were visited and blood was taken for culture. The method used was that practiced in the Iowa State Hygienic Laboratories.^{2b} The cultures were incubated in Council Bluffs overnight and taken to the laboratory at Iowa City the next day. Four of these cultures proved positive. The dates on which a growth of *Brucella* was obtained will be found in the table of cases.

In every instance subcultures made from the original positive broth cultures on liver infusion agar yielded a vigorous growth of *Brucella* within forty-eight hours under normal atmospheric conditions.

In addition to these cultures, a culture in litmus milk (J. K.) was received, May 4, from Dr. A. A. Johnson, Council Bluffs. In direct smears from this culture he considered that he could see *Brucella*. On arrival at the laboratory this culture was transferred to liver infusion agar. It gave a vigorous growth of *Brucella* under normal atmospheric conditions in twenty-four hours. Two guinea-pigs were inoculated intramuscularly with the original milk culture. One of these died seventeen days later. At autopsy it showed lesions typical of *Brucella* infection, and the organism was found in cultures from the liver and spleen. The other guinea-pig of the pair was killed after fifty-six days and again showed lesions typical of *Brucella* infection. The organism was recovered from the spleen.

A further culture (H. P.) in liver infusion broth was taken, May 22. From this a growth of *Brucella* was obtained, May 29.

The rapid and vigorous growth of *Brucella* from these cultures under ordinary atmospheric conditions suggested the porcine type. Differentiation by the dye plate and hydrogen sulphide production methods of Huddleson² confirmed this.

Thus in blood cultures from fourteen of the patients a growth of *Brucella suis* was obtained in six.

As twenty-seven of the patients had obtained their milk from the one dairy (here designated as S), the evidence seemed to point strongly to this being the source of infection.

It was found that the dairyman had a herd of twenty cows and one bull. Inquiries into a history of contagious abortion gave essentially negative results. Eight years previously the disease had been present in the

1 (a) Hardy A. V. Pub. Health Rep. 43, 503-511 (March 2) 1928. (b) Hardy A. V., Hudson M. G. and Jordan C. F. J. Infect. Dis. 45, 271-282 (Oct.) 1929. (c) Hardy A. V. Undulant Fever J. A. M. A. 93, 891-897 (Sept. 21) 1929. (d) Undulant Fever Symposium Tr. Am. Pub. Health A. 1929. (e) Undulant Fever J. A. M. A. 92, 853-860 (March 16) 1929. (f) Hardy A. V., Jordan C. F., Borts I. H. and Hardy G. C. Nat. Inst. Health Bull. 158, 1930. (g) Hardy A. V., Jordan C. F. and Borts I. H. Pub. Health Rep. 47, 187-193 (Jan. 22) 1932. (h) Jordan C. F. J. Infect. Dis. 48, 526-540 (June) 1931.

2 (a) Huddleson I. T. Tech. Bull. 100 Agr. Exper. Sta. Michigan State College. (b) Undulant Fever Symposium Tr. Am. Pub. Health A. 1929. (c) Am. J. Pub. Health 21, 491-498 (May) 1931.

herd and the cattle had been vaccinated with a killed vaccine. Of the animals then involved none remained in the herd at the time of the inquiry. Since that time there had been no contagious abortion in the herd. One animal had indeed, aborted during the previous year but the abortion was early in pregnancy and might well have been of traumatic origin. Another cow was said to be difficult to get in calf.

There were no hogs on the farm.

Agglutination tests carried out on the blood serum of the animals showed six to be definite reactors and two to be suspicious.

May 2, milk samples were obtained from the four reacting animals still remaining in the herd. On arrival at the laboratory the gravity cream was removed and agglutination tests were performed on the whey. One sample gave a positive agglutination test to a titer of 1:500 by Huddleson's rapid method.³ The cream from this milk was inoculated in 2 cc amounts into each of a pair of guinea-pigs. One of these animals died fifteen days after inoculation and at autopsy was found to have enlargement of the lymphatic glands in the region of inoculation. Apart from postmortem changes there was no other gross pathologic change. Cultures were made from the lymph glands and spleen, and a growth of *Brucella suis* resulted.⁴ The other guinea-pig, killed after fifty-eight days, showed lesions typical of *Brucella* infection. Culture was again positive.

It was found that the recent additions to the herd consisted of five animals. All had been purchased at the same farm (T) and were bought in calf. Three were obtained one year before and two four months before the onset of the epidemic of undulant fever. At the time of the investigation, four of these animals remained. They were all reactors and it was from one of these that the milk was obtained which was proved to contain *Brucella suis*.

The farm T was visited and there it was learned that two years before the farmer had bought some hogs in the hope of having a good yield of young pigs. Instead all his sows aborted. At this time there was no contagious abortion among the cattle but it had been present one year before.

The herd at farm T consisted of ten animals. Of these, six proved to be definite reactors and two suspicious reactors to the agglutination test for contagious abortion. By the inoculation of cream samples into guinea-pigs three of these cows were shown to be excreting the organism in their milk. The organism isolated from the inoculated guinea-pig proved, however, to be *Brucella abortus*.

The sale of milk from dairy S was stopped, April 17. The last patient to contract undulant fever in the epidemic took ill thirteen days later. Since that time till the date of writing (June 26) there has been only one further case in Council Bluffs, a patient who became ill on June 15.

COMMENT

This epidemic involved thirty persons. Of these, twenty-seven were known to have obtained their milk from one dairy. Inquiry failed to reveal any other source of infection and the last epidemic case occurred thirteen days after the sale of milk from the suspected dairy was stopped.

In blood cultures from fourteen patient *Brucella suis* was obtained in six instances. No other type of

Brucella was obtained. Among the cows remaining at the dairy, only one was found to be shedding *Brucella* in her milk. The organism was again *Brucella suis*.

It would therefore appear justifiable to assume that this was a milk-borne epidemic of undulant fever due to *Brucella suis*.

It has long been known that cattle may be experimentally infected with the porcine variety of *Brucella* and that the organism may settle in the mammary gland.⁵

Whether under natural conditions cattle may become infected with *Brucella suis* has been more in doubt.

Schroeder and Cotton⁶ failed to produce infection in cattle by feeding and cohabitation experiments. Graham and Thorp⁷ found that a small percentage of previously nonreacting cattle during twenty-six months' exposure to reacting sows and to the premises of reacting sows gave a temporary positive agglutination test for Bang's disease.

Cohabitation and feeding experiments do not, then, give very definite evidence of the likelihood of cattle becoming infected with *Brucella suis* under natural conditions. More definite evidence that this is possible is to be found in the work of Huddleson,^{2b} who out of ninety-six strains of *Brucella* isolated from bovine sources found eight to be of porcine type, in the work of Plastring and McAlpine,⁷ who out of sixty found eight porcine type and in the work of Gilman and Milks,⁸ who found four out of 117 strains isolated from cow's milk to be of porcine type.

With the exception of two cases reported by Carpenter and Merriam,⁹ no outbreaks of undulant fever due to cow's milk appear to have been reported in which the porcine variety of *Brucella* was isolated from both the milk and the patient.

Cases due to milk infected with the bovine variety of *Brucella* are common, but, none the less, there are few when compared with the amount of infected raw milk that is consumed. Traum¹⁰ estimates that approximately 20 per cent of the cattle in the United States are infected and that from 6 to 10 per cent are excreting *Brucella* in their milk. Carpenter and Boak¹¹ estimate the incidence of infection in cattle at from 15 to 20 per cent.

Milk-borne infections with the bovine variety are as a rule, scattered and rarely do more than four or five cases occur on one milk route. Exceptional is the epidemic reported by Farbar and Mathews,¹² in which twenty cases on a college campus were attributed to milk from a herd of twenty-three cows.

This disparity between the opportunity for human infection and the actual occurrence of illness has led to the belief that the bovine variety of *Brucella* is of low virulence for man. Wilcox¹³ considers that the danger of infection is relatively small when milk is used containing the bovine variety in considerable dilution.

⁵ Hadley, F. S. and Beach, B. A. Res. Bull. 55 Wisconsin Agr. Expt. Sta. 1923. Cotton, W. E. J. Am. Vet. M. A. 62: 179-192, 1922. Schroeder, E. C. and Cotton, W. E. ibid. 66: 550-561, 1925. Carpenter, C. M. and King, M. J. Undulant Fever Symposium. Tr. Am. Pub. Health A. 1929.

⁶ Graham, R. and Thorp, F. North American Vet. 13: Jan. 1912. Plastring, W. A. and McAlpine, J. G. J. Infect. Dis. 40: 127-134 (Aug.) 1931.

⁷ Gilman, H. L. and Milks, C. H. Cornell Vet. 23: 130 (April) 1933.

⁸ Carpenter, C. M. and Merriam, H. E. Undulant Fever from *Brucella abortus*. J. A. M. A. 87: 1269-1271 (Oct. 16) 1926.

⁹ Traum, J. Am. J. Pub. Health 20: 935-942 (Sept.) 1930.

¹⁰ Carpenter, C. M. and Boak, R. A. Am. J. M. Sc. 185: 97-109 (Jan.) 1933.

¹¹ Farbar, M. E. and Mathews, F. P. Ann. Int. Med. 2: 875-880 (March) 1929.

¹² Wilcox, H. I. Am. J. Pub. Health 22: 1157-1160 (Nov.) 1932.

¹ Huddleson, I. F. Tech. Bull. 128 Agr. Expt. Sta. Michigan State College, Huddleson, I. F. and Abell, Elizabeth. J. Infect. Dis. 12: 242-247 (March) 1928.

⁴ Dr. I. F. Huddleson kindly checked the typing of this organism and of the isolated from the patients.

It would appear probable that mild or subclinical infection with *Brucella abortus* (bovine type) is more common than are active infections. Jordan in 1931th in a community of persons drinking large quantities of raw milk from an infected herd, found 8 per cent to have agglutinins to a titer of 1:20 or more and 35 per cent to a titer of 1:10 or more. From one of the members of this community, a man with no symptoms of undulant fever, *Brucella abortus* was found in cultures

from the blood. One of us (C. P. B.) in 1933 tested 197 persons in the same community and found that 6.6 per cent had agglutinins on a titer of 1:20 or more. On 193 of these persons an intradermal test was performed, a dose of 0.1 cc of a killed *Brucella* culture standardized to approximately 6 million organisms per cubic centimeter being used, 20.8 per cent gave a definitely positive reaction. None had clinical symptoms of undulant fever.

Observations in Thirty Cases of Undulant Fever

Cu. c*	Age	Sex	Date of Onset	Duration of Illness	Severity of Illness	Signs and Symptoms	Treatment	Amount of Milk Consumed Daily	Agglutination Titer	Blood Culture	Source of Milk
1 V. M.	14	♀	February	12 weeks	Moderate	Intermittent temperature chills headache 3 bouts of fever each 1 week in duration	Symptomatic	2 3 glasses	1:1280 3/20/33	Positive 5/26/33	Grocery many sources
2 M. H.	5	♀	Feb. 7	12 weeks	Moderate	Chills fever sweats	Symptomatic	1 quart	1:2560 3/14/33	Not done	S dairy
3 R. C. (A)	18	♂	Feb. 11 (elreu)	14 weeks	Moderate	Intermittent attacks of fever chills sweat joint pains	Symptomatic	Coffee and cereals only	1:640 4/23/33	Negative 5/13/33	S dairy
4 S. K. B. (B)†	42	♂	Feb. 23	23 days	Severe	Elevated temperature headache general malaise	Autogenous blood serum well 2 weeks after treatment begun	2 quarts	1:640 4/11/33	Contaminated no <i>Brucella</i>	S dairy
5 M. T. L.	40	♂	February	6 weeks	Severe	Chills fever sweats joint pains	Intravenous neutral acriflavine 1 cc 5 doses of 10 cc temperature normal 2 weeks after first dose	Coffee and cereals only	1:640 5/3/33	Not done	S dairy
6 Mrs. I. O. (A)	44	♀	March 1	12 weeks	Moderate	Malaise night sweats aching	Symptomatic	Coffee and cereals only	1:1280 4/26/33	Contaminated no <i>Brucella</i> 5/13/33	S dairy
7 H. P.	7	♂	March 1	12 weeks	Moderate	Headaches anorexia fever sweats	Symptomatic	3 4 glasses	1:640 5/6/33	Positive 5/29/33	S dairy
8 H. A. P.	42	♀	March 1	4 weeks		Pharyngitis and influenza immediately before onset slight temperature tiredness pain in joints and upper part of abdomen	Symptomatic	1 glass 3 4 glasses since onset of influenza	1:160 4/19/33	Not done	S dairy
9 M. A. (C)	23	♀	March 1	14 days	Ambulatory	Malaise fever chills	Symptomatic	Occasional glass and in cereal and coffee	1:320 5/6/33	Not done	S dairy
10 E. B. (B)†	10	♂	March 4	8 weeks	Severe	Fluctuating temperature headache general malaise	Autogenous blood serum remission after treatment	1½ quarts	1:640 3/13/33	Not done	S dairy
11 B. S. (D)	12	♀	March 12	8 weeks	Moderate	Headache elevated temperature	Symptomatic	3 glasses	1:320 4/13/33	Not done	S dairy
12 F. La M.	18	♂	March 12	7 weeks	Moderate	Fever weakness aching pains tender spleen	Intravenous neutral acriflavine 0.5% 5 doses 20 cc every third day temperature normal 2 weeks after first dose	Coffee and cereals only	1:640 4/12/33	Negative 5/13/33	S dairy
13 Mrs. O. E. A. (O)	50	♀	March 13	7 weeks	Moderate	Elevated temperature headache malaise exhaustion	Undulant fever vaccine	Coffee and cereals only	1:320 4/1/33	Negative 5/13/33	S dairy
14 C. F.	8	♂	March 15	Not known	Severe	High temperature headache and general malaise	No information	2 glasses	1:640 4/18/33	Negative 5/13/33	Grocery many sources
15 Mrs. G. A.	23	♀	March 15	Not known	Moderate	Fever chills	No information	4 glasses	1:640 4/23/33	Not done	Grocery which obtained some milk from S dairy
16 D. A. (O)	20	♀	March 20	7 weeks	Moderate	Headache elevated temperature chill malaise	Undulant fever vaccine	2 3 glasses	1:1280 4/1/33	Negative 5/13/33	S dairy
17 J. H.	18	♂	March 23	4	Severe	Dizziness headache weakness	Symptomatic and neutral acriflavine by mouth (1 grain tid)	4 5 glasses	1:2560 4/23/33	Positive 5/6/33	S dairy
18 Mrs. H. S. (D)	41	♀	March 27	16 weeks	Moderate	Elevated temperature legs and body sorefulness in chest headaches	Symptomatic	Coffee and cereals only	1:80 4/14/33	Not done	S dairy

Observations in Thirty Cases of Undulant Fever—Continued

Case	Age	Sex	Date of Onset, 1933	Duration of Illness	Severity of Illness	Signs and Symptoms	Treatment	Amount of Milk Consumed Daily	Agglutination titer	Blood Culture	Source of Milk
19 O D	14	♂	April 13	10 days	Moderate	Chills headache malaise enlarged spleen	Undulant fever vaccine	3 4 glasses	1 1 250 4/24/33	Not done	S dairy
20 R L	7	♀	April 18 (circa)	8 weeks	Mild	Tired aching pains in legs sweats fever chills	Symptomatic	2 3 glasses	1 2 500 5/5/33	Not done	S dairy
21 O E A (C) ¹	30	♂	April 15	4 weeks	Moderate	Chills elevated temperature 102, malaise, aches	Symptomatic	1 glass	1 320 5/6/33	Not done	S dairy
22 P C	4	♀	April 20	12 weeks	Moderate	Intermittent temperature headache	Symptomatic	3 glasses	1 20 4/29/33	Positive 5/13/33	S dairy
23 A M	17	♀	April 23	40 weeks	Moderate	Pain in knees and calves mild abdominal pain high temperature with remissions	Intravenous neutral acriflavine 1% 2 doses of 10 cc and 4 doses of 20 cc temperature fell to normal in 2 weeks after first dose	2 glasses	1 1 250 5/1/33	Not done	S dairy
24 C M	20	♂	April 20	46 days	Moderate	Cough weakness loss of weight fever pain in chest profuse sweats	Intravenous neutral acriflavine 1% 5 doses of 10 cc first dose given in fifth week of disease temperature returned to normal 1 week after start of treatment	2 3 glasses	1 40 6/3/33	Not done	S dairy
25 F J A	10	♀	April 27	6 weeks	Moderate	Weakness cramps over body and in stomach and bowels constipation loss of appetite fever	Intravenous neutral acriflavine 0.5% 10 cc undulant fever vaccine 4 doses of each temperature returned to normal in 1 month	4 glasses	1 80 5/13/33	Not done	S dairy
26 Mrs S T H	26	♀	April 30	8 weeks	Severe	General malaise headaches nose bleeds high temperature	Symptomatic	1 2 glasses	1 1 250 5/29/33	Not done	S dairy
27 C D (E) ²	9	♂	Late April	6 weeks	Moderate	Fever chills sweats joint pains	O'Neil goat serum 1 dose of 10 cc temperature returned to normal 2 weeks thereafter	Not known	1 640 5/6/33	Not done	S dairy
28 D D (E) ²	20	♂	Late April	6 weeks	Moderate	Fever chills sweats joint pains	O'Neil goat serum 1 dose of 20 cc temperature returned to normal 2 days thereafter	Not known	Not done	Positive 5/13/33	S dairy
29 M D (E) ²	23	♀	Late April	4 weeks	Moderate	Fever chills sweats tired	O'Neil goat serum 1 dose of 20 cc temperature returned to normal 1 week thereafter	Not known	Not done	Positive 5/13/33	S dairy
30 I S	38	♂	May 1	6 weeks	Very mild	Fever headache tiredness only tested because of drinking milk from suspected dairy	Symptomatic	2 3 glasses	1 1 250 6/7/33	Not done	S dairy

A B C D and F indicate that the patients were of the same family.
¹ The autogenous blood serum used in these cases was prepared by defibrinating blood and inactivating it at 56 C. In each case six doses were given at five day intervals starting with 0.1 cc and increasing by 0.1 cc for each dose.
² Patients were visited on May 4, 1933. Two other members of the household Mrs. O. L. A. and D. A. were then ill in bed with undulant fever. M. A. and O. F. A. had not taken to bed but complained of chills and malaise. O. F. A. subsequently had to take to bed.
³ O'Neil goat serum is an immune serum prepared by Dr. A. E. O'Neil of Cincinnati (Ohio State M. J. 20:48 [July] 1932) by inoculating goats with killed detoxified cultures of *Brucella*.

Dooley¹⁴ records an epidemic of subclinical infection in 7 boys boarding school, and Johns, Campbell and Tennant¹⁵ report the results of their investigation in a hospital for epileptic patients whose milk came from an infected herd. Of the group of 100 that they studied 41 per cent gave agglutination in titers of 1:10 and over and 45 per cent reacted positively to an intradermal test. By careful physical examination and temperature records 22 per cent were found to be mild ambulatory crises of undulant fever. Welch

and Mickle¹⁶ also bring forward evidence of the existence of subclinical *Brucella* infection.

The greater virulence of *Brucella suis* for experimental animals has been frequently demonstrated.¹⁷

Morales-Otero,¹⁸ by feeding experiments on human volunteers, showed the greater virulence for man of the porcine strain. These results are borne out by the observations of many workers in the United States.

¹⁶ Welch, Henry and Mickle, F. L. J. Lab. & Clin. Med. 18: 627 (March) 1933.

¹⁷ Cotton, Schroeder, E. C. and Cotton, W. E. J. Am. Vet. M. A. 65: 211-215, 1924. Smith, Theobald, J. Exper. Med. 43: 207-223 (Feb.) 1926. Huddleson, I. F. and Hallmann, E. T. J. Infect. Dis. 15: 293-303 (Oct.) 1929.

¹⁸ Morales-Otero, Pablo. Puerto Rico J. Pub. Health & Trop. Med. 6: 388 (Sept.) 1930.

¹⁴ Dooley, Parker. Undulant Fever. Arch. Int. Med. 50: 373-379 (Sept.) 1932.

¹⁵ Johns, E. P., Campbell, F. J. H. and Tennant, C. S. Canad. M. A. J. 27: 490-492 (Nov.) 1932.

that in packing houses a much higher proportion of the men employed in handling hog carcasses contract undulant fever than those handling cattle or sheep carcasses.

One would then expect a greater number of cases of active illness to be associated with a milk supply infected with *Brucella suis* than with one infected with *Brucella abortus*. In the epidemic here reported, this expectation was realized. In one fourth of the households supplied by dairy S, one or more cases of undulant fever developed.

At this stage no additional argument should be needed for the pasteurization of milk. If one is wanted, it will be found in the possibility of milk containing *Brucella suis*.

SUMMARY

1 In a milk-borne epidemic of undulant fever thirty cases occurred. Of these patients, twenty-seven obtained their milk from the same dairy.

2 The dairy, from a herd of twenty cows, supplied approximately eighty households, in eighteen of these, cases of undulant fever developed.

3 *Brucella suis* was obtained in blood culture from six of fourteen patients and from the milk of one of the cows in the herd.

4 The epidemic ceased thirteen days after the stoppage of the sale of milk from the dairy.

5 There is a greater virulence of *Brucella suis* than of *Brucella abortus*. The possibility of milk containing *Brucella suis* must be considered.

Clinical Notes, Suggestions and New Instruments

INFLUENZAL MENINGITIS REPORT OF A CASE WITH COMPLETE RECOVERY

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The reasons for reporting this case of influenzal meningitis are twofold: first, such cases are comparatively rare and, second, the patient made a complete recovery.

REPORT OF CASE

H. Z., a girl, aged 8 years, on the morning of February 8 complained of a headache, which had been present since her evening meal the night before. A tentative diagnosis of a gastric upset was made and treatment prescribed. The following day, about thirty-six hours after the onset, after a careful examination, the only manifestation that could be elicited was a suggestion of nuchal rigidity. She had vomited that morning. A spinal puncture revealed cloudy fluid under a great deal of pressure with a cell count of 1,300. The patient was then sent to the St. Agnes Hospital.

The past medical and family histories contained nothing of importance in relation to the illness. On examination the child was mentally alert. There was a definite Brudzinski's sign and a positive Kernig's. The reflexes were slightly exaggerated. The pupils were equal and reacted to light and in accommodation. The remainder of the examination was negative.

On admission, the patient's temperature was 103.4 F, pulse 132, respiration rate 34. Having received three toxin-antitoxin injections five years previously, she was desensitized by the injection of 0.1 cc of antimeningococcus serum hypodermically, the dosage being increased 0.1 cc every half hour until 5 cc was used; she was then given 30 cc of antimeningococcus serum intravenously. Another spinal puncture was done and 15 cc of antimeningococcus serum was introduced. The spinal fluid was cloudy, the cell count was 370, with a differential of polymorphonuclear cells 88 per cent, and lymphocytes 12 per

cent. Examination of the sugar was negative, globulin was 4+, and the smear and culture were also negative. The blood count was as follows: red blood cells, 3,840,000, white blood cells, 25,200, hemoglobin, 80 per cent, polymorphonuclear cells, 76 per cent. The urine was neutral with a specific gravity of 1.038, there was a trace of albumin and an occasional white blood cell. Within the following forty-eight hours she was given 30 cc of antimeningococcus serum intravenously, and, after as much spinal fluid as possible was withdrawn, 15 cc of the same serum was introduced intrathecally at intervals of eight hours. Between 25 and 40 cc of spinal fluid was removed at each puncture to lower the pressure to normal. These specimens showed a cell count varying between 94 and 438, with a preponderance of polymorphonuclear leukocytes, examination of the sugar was negative, globulin was 4+, and the chlorides varied between 580 and 680 mg per hundred cubic centimeters. The Levinson test was negative, and no acid-fast bacilli were found. On the second day the spinal fluid showed a growth of gram-negative bacilli, which at first were mistaken for diplococci but were later proved to be influenzal bacilli. During this forty-eight hour period the temperature varied between 100.2 and 105 F, the pulse between 100 and 136, and the respirations between 24 and 38. The patient complained of severe headache. The nuchal rigidity was always aggravated after the serum was introduced into the spine.

On the third day of admission several smears of the spinal fluid revealed gram-negative bacilli similar to those found in the positive culture the day before, and a positive diagnosis of influenzal meningitis was made by Dr. John Kolmer. It was then decided that anti-influenzal serum should be used. After the spine was drained 15 cc of anti-influenzal serum mixed with from 3 to 5 cc of fresh complement was introduced intrathecally every eighth hour. This was continued for forty-eight hours. During this period the cell count varied between 101 and 220. Examination of the sugar was negative and the globulin was reduced to 2+. All smears were negative. The temperature varied between 100.4 and 103.2, and the reflexes were almost entirely gone. The nuchal rigidity was very marked at this time, the patient acquiring the position of opisthotonos, but there was no evidence of paralysis or mental disturbance. The serum was now given every twelfth hour. At times the spinal fluid was under greater pressure than at others, remaining cloudy, but the sugar was beginning to return. The globulin was 2+, and the chlorides varied between 540 and 680 mg per hundred cubic centimeters. The twelve hour treatment was continued for two days, after which time an anti-influenzal serum of another biological house was used. Although it was realized that the patient was improving clinically and the spinal fluid was approaching normal, the pressure was diminished, sugar was returning, and globulin dropped to 2+, the change of serum was made because several smears still showed gram-negative bacilli, and it was felt that the new serum was probably made from different strains of influenzal bacilli. This serum was given every twelfth hour for three days and then once daily. The globulin gradually decreased and sugar slowly returned. Several smears still showed gram-negative bacilli. The temperature gradually came down as did the pulse and respiration rates. The last positive smear was reported February 21, the serum being discontinued three days later. However, the spine was tapped every other day until February 27, each smear being reported negative. Sugar was normal but there was still a slight increase in the cell count and globulin. The increase in the cells and globulin was due to the irritation of intrathecal medication. During the course of the illness, almost 750 cc of spinal fluid had been removed and 565 cc of serum introduced into the spine.

February 15, six days after admission, an urticaria developed, which was controlled by epinephrine hypodermically and calcium gluconate by mouth. The urticaria was probably due to the antimeningococcus serum given intravenously.

The temperature reached normal February 24 and remained so until the time of her discharge from the hospital, March 9, twenty-eight days from the time she had been admitted. The spinal fluid was entirely normal, and at present (six months following her illness) she is enjoying perfect health.

1 This serum was procured through the courtesy of Dr. L. J. Wenger.

ETIOLOGY

Influenzal meningitis belongs to the group of acute purulent meningitides. It is caused by the influenza bacillus or bacillus of Pfeiffer. There are numerous strains of the organism, which explains the difficulty at times of recognizing it microscopically. It is a gram-negative rod varying in size and shape from small diplococci to short or long bacilli staining at the poles.

Influenzal meningitis most commonly occurs in children under 2 years of age, usually in the fall and early winter. Curiously enough it rarely occurs during an epidemic of influenza but this may be due to the fact that the strains of the bacilli that cause meningitis are not prevalent during an epidemic. It may occur as a primary disease as the case here cited or it may be secondary to an influenzal infection elsewhere. Neal² is of the opinion that most cases are secondary and believes that, if a careful inquiry into the history is made an otitis media or sinus infection can be found.

The symptomatology of this disease is not unlike that of other purulent forms of meningitis.

DIAGNOSIS

The diagnosis rests on the changes in the spinal fluid. The spinal fluid is usually under increased pressure and shows the characteristics of an inflammatory exudate. The cells are increased with a preponderance of polymorphonuclear leukocytes, albumin and globulin are increased, and sugar is diminished or absent. It is important to mention not only that the cells should be counted promptly after the spinal puncture but that a tube of the fluid should be centrifuged at once, a smear made and stained immediately, to avoid not only contamination but also autolysis of the organisms. The interpretation of stained smears is more important than culture of the fluid, and since it is difficult to grow the bacilli, it would take several days to make a diagnosis. The frequent study of the smears aids in the diagnosis and in determining whether or not the spinal fluid is bacteria free. The latter is a guide as to whether or not the serum should be continued in the treatment of the case.

PROGNOSIS

The mortality is extremely high. Griffith and Mitchell³ and Morse⁴ state that they have never seen a patient recover. Bloom⁵ collected reports of 302 cases, with a mortality of 92 per cent. Jenks and Radbill⁶ reported a mortality of 98 per cent in eighty-seven cases. The small percentage of patients who do survive are usually crippled because of various palsies or are left mentally retarded from a hydrocephalus.

TREATMENT

The most important factor in the treatment of this disease is an early diagnosis. Until the causative organism is found each case of meningitis should be treated as that of meningococcic meningitis. No harm can be done if the canal is drained and meningococcus serum is introduced. If Pfeiffer's bacillus is found immediate treatment with the anti-influenzal serum should be instituted.

The serum was obtained after five months' injection of a horse with twelve selected strains of influenza bacilli, recently isolated from cases of influenzal meningitis and acute respiratory infections. Selection of strains for injection of horses was determined by the character of colony (smooth) by the degree of antigenicity and by the polyvalence. Selection of serum for therapeutic uses was determined by its agglutination titer against the strains of influenza bacilli.

In the treatment the introduction of 15 cc of the serum with 5 cc of fresh complement is recommended after as much spinal fluid as possible has been removed. The latter is used because there is no complement in the spinal fluid in influenzal

meningitis.⁸ Fresh human serum in combination with anti-meningitis serum, however, definitely increases opsonic activity.⁹ It is best procured from either parent by removing about an ounce of blood several hours before it is used and icing it at once. A clot will form, and the serum can be removed easily with a sterile glass pipet. This treatment should be repeated every eighth hour for two or three days, then every twelfth hour for two or three days and finally, once a day. If there is blockage in the canal, use of either the fontanel, if open or the cisterna may be resorted to. If an infection of the skin develops owing to the numerous punctures, another site should be selected to avoid introducing an infection into the canal. If there is no improvement within two or three days, a change of serum is advisable as the biologic houses do not employ the same strains of bacilli in the preparation of the serum. Daily injections of the serum should be continued until three successive negative smears are found. Should the bacilli return after several negative days, the daily injections should be repeated.

Absolute rest in bed with a soft diet and plenty of fluids are essential. The secondary anemia, which usually accompanies or follows the illness, should be treated during the convalescence with iron and arsenic by mouth and by injection, if necessary.

CONCLUSIONS

Since the mortality of influenzal meningitis is very high, an early diagnosis, with frequent spinal drainage and intrathecal treatment with specific serum, is the only means at present by which the mortality and morbidity may be reduced.

5400 West Arlington Street

TORSION OF THE NORMAL OVARY

CASE OF REOCCURRENCE OF A RARE PATHOLOGIC CONDITION

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The annals of American medicine and surgery contain many rare reports, but it is seldom that the rarity occurs in the same individual on two different occasions. In a previous paper¹ a report was given of the torsion of a normal ovary and its tube with rupture of the ovary. With an addendum² to the first paper twenty-six cases of torsion of the normal ovary with and without the normal fallopian tube were gathered from all the available literature. However in no instance had the identical condition reoccurred. A perusal of the available literature since the previous papers also supplies no such double occurrence. The nearest like double occurrence was reported by Mankad.³ In this case a right cystic ovary was found twisted and on inspection of the left ovary it was found to be normal but twisted, buried in adhesions. In the present case, two years and three months elapsed between the two identical surgical conditions.

REPORT OF CASE

W. S., a girl May 14, 1931, when 7 years of age was operated on for acute appendicitis with a mild peritonitis as the provisional preoperative diagnosis. When the peritoneal cavity was entered a mass shaped like a kidney, attached to a pedicle about 3 cm long was found in the pelvic midline. On its medial side could be seen the right fallopian tube and on its lateral side could be seen a rent about 1.5 cm long, with no blood issuing from it. The mass and its tube as well as the appendix was removed. Before the abdomen was closed, examination of the left ovary and tube revealed them to be normal in size and consistency. The pathologic diagnosis was torsion of the right normal ovary and tube with rupture of the ovary. After a stormy convalescence for the first three days the patient made an uneventful recovery.¹

⁸ Kolmer J. A. Toyama Huzo and Matsunami Totsu. *J. Immunology* 3: 159 (May) 1918.

⁹ Matsunami Totsu and Kolmer J. A. *J. Immunology* 3: 181 199 (May) 1918.

¹ Norhcutt J. D. and Baron Charles. *Torsion of a Normal Ovary and Tube with Rupture of the Ovary and Review of All Literature to Date*. Kentucky M. J. 29: 590-593 (Nov.) 1931.

² Baron Charles. *Torsion of a Normal Ovary and Tube with Rupture of the Ovary and a Review of All Literature to Date. An Addendum*. Kentucky M. J. 30: 232 (April) 1932.

³ Mankad C. R. *Torsion of Ovary on Both Sides*. Indian M. (Ar) 66: 22 (Jan) 1931.

² Neal Josephine B. in Tice Frederick. *Practice of Medicine*. Hagerstown Md. W. F. Prior Company 10: 256 1921.

³ Griffith J. P. C. and Mitchell A. C. *Diseases of Infants and Children* ed. 2 Philadelphia W. B. Saunders Company 2: 614 1926.

⁴ Morse J. I. *Clinical Pediatrics*. Philadelphia W. B. Saunders Company 1926. p. 731.

⁵ Bloom C. J. *Influenzal Meningitis*. New Orleans M. & S. J. 53: 453 (Jan.) 1931.

⁶ Jenks H. H. and Radbill S. A. *Influenzal Meningitis*. Arch. Pediat. 48: 1 (Jan.) 1931.

⁷ Wenger L. J. Personal communication to the author.

Following this operation, she had brief periods of pain in the region of the left brim of the pelvis. Laxatives relieved it. A slight constipation was always relieved by laxatives. Aug 17, 1933, at the age of 9, about two years and three months following the first operation, she woke up with pain in the left lower quadrant. An enema gave complete relief. Two days later she awoke at 6 a. m. with pain in the same region. An enema and laxatives failed to relieve her. Three or four enemas were given during the day and, no relief being obtained, codeine was given. During the day she began to vomit, four times in all. The next morning, the fourth day, enemas and oil failed to relieve her and she was then brought to the hospital. When she entered, she was experiencing attacks of pain at hourly, one and one-half hourly and two hourly intervals. She began to vomit again. The abdomen was slightly distended. Abdominal palpation revealed no rigidity but there was distinct tenderness in the right lower quadrant just above the pelvic brim. A rectal examination revealed the presence of a mass in the midline that could not be identified as any definite viscera or as a foreign mass.

Roentgen examination revealed a considerable accumulation of gas in the colon but no definite evidence of obstruction. The kidney outlines were not made out. The entire abdomen was opaque, accumulation of fluid being present.

The preoperative diagnosis of torsion of the ovary was made for the following reasons: 1 A mass was felt in the midline, too large to be the uterus. 2 The appendix had previously been removed. 3 Timing of the pains ruled out obstruction or intussusception. 4 There had been a previous torsion of the left ovary.

Under ethyl chloride and ether anesthesia an abdominal incision was made in the median line. There was no free fluid in the peritoneal cavity. Over the uterus in the midline was found a kidney-shaped, dark red ovary twisted one and one-half times to the right, with a pedicle about 0.5 cm long. After the pedicle had been clamped with difficulty, tied and cut the ovary and tube were removed. The abdomen was closed with out drainage. The patient stayed in the hospital eleven days and made an uneventful recovery.

Pathologic examination showed the ovary and oviduct to be a deep purplish red. On section the serosa and the muscularis and the mucosa of the oviduct were a uniform purplish red and the tissue was rather friable. The cut surface was covered with blood. The attached ovary was kidney shaped and measured $3\frac{1}{2}$ inches (9 cm) in length. The cut surface was a uniform deep purplish red and was covered with blood. Throughout the ovary there were multiple follicles, normal in size but filled with blood. The ovarian tissue was more friable than normal. Microscopic examination of the ovary and oviduct revealed massive hemorrhage into the tissues which was so extensive that the normal structures could not be identified. The pathologic diagnosis was hemorrhagic infarction of the ovary and oviduct, the clinical diagnosis, torsion of the left ovary and tube.

COMMENT

It is interesting to recall¹ that anatomic anomalies were considered to be the chief predisposing factors in producing torsion of the ovary. It had been felt that 'our patient had originally a large ovary, etiologic factor stressed by Norris⁴ and Auvray.⁵ Second, the ovary had an abnormally large pedicle that had formed when the large ovary had drawn away from the broad ligament also suggested by these two men. Third, with these factors already present, her straining at stool for the past year was the needed factor to bring about repeated pelvic congestion and bring about the torsion as stressed by Rost.⁶ Having been able in a most fortunate manner to see the second and remaining tube and ovary in situ at the first operation and having seen no evidence of anatomic anomalies I am forced to the conclusion that anatomic anomalies are probably not the chief factors necessary toward torsion of the uterine adnexa. This can safely be said for the second torsion but cannot be

said for the first since the latter was not seen beforehand. In addition, the pedicle was considerably longer the first time. Because of the obscurity of a definite clinical picture denoting a bowel involvement, coupled with the palpation of a mass near the uterus and because of a past history of a like preceding pathologic condition, a correct diagnosis of torsion of the ovary was made preoperatively.

CONCLUSIONS

1 A case of torsion of the normal ovary and tube was observed in which the same condition occurred twice, involving one ovary and its tube and then the other, in a space of two years and three months. It is believed that this is the first case on record in which this rare pathologic condition occurred in the same individual twice.

2 It is believed that this is the first time that a positive diagnosis of torsion of the normal ovary has been made preoperatively.

3 In the differential diagnosis of abdominal pain in young girls torsion of the uterine adnexa must be considered.

4 Factors other than anatomic anomalies must be considered in the predisposing causes toward torsion of the normal uterine adnexa.

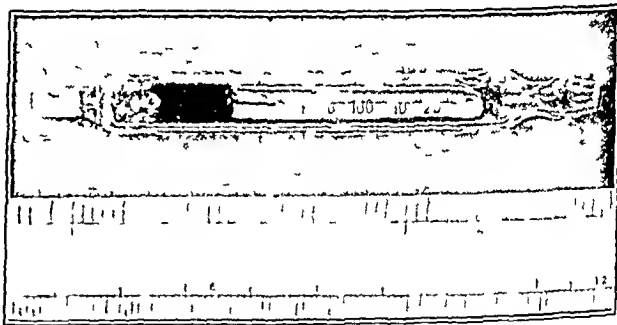
3807 Decoursey Avenue

A COMBINED NEEDLE ADAPTER AND THERMOMETER FOR INTRAVENOUS INFUSIONS

PAUL TITUS, M.D., PITTSBURGH

A thermometer with a limited range of from 90 to 120 Fahrenheit which is sufficient for intravenous infusions of various sorts has been inserted within the lumen of an enlarged but otherwise ordinary glass adapter the tip of which is ground for intravenous needles with a standard Luer hub. This is a spirit thermometer with a colored (red) fluid and thus is easily read.

Glass adapters for the attachment of the needles are used for practically all intravenous injections. The use of the usual large infusion thermometers involves the addition of an extra breakable part and an extra piece of rubber tubing. Con



Combined needle adapter and thermometer for intravenous infusions

sequently the combination of these two parts in one makes for simplicity, at the same time allowing for more accurate information regarding the actual temperature of an intravenous infusion as the thermometer is located near to the point of entry of the fluid into the vein.

When an injection is begun blood should not be allowed to "back up" into the infusion thermometer, as it may be held by capillary attraction and the tube may therefore be difficult to clean later. When this does occur, prolonged immersion in a small amount of hydrogen dioxide alternating with a weak solution of nitric acid, will ordinarily clean the tube.

These infusion thermometers are relatively inexpensive and are made by Becton, Dickinson and Company of Rutherford, N. J.

1015 Highland Building

From the John C. Oliver Memorial Research Foundation, St. Margaret Memorial Hospital.

4 Norris, C. C. Torsion of Normal Ovary. Proc. Path. Soc. Phila. delphia 14: 77, 1911.

5 Auvray. Un cas de torsion spontanée de la trompe et de l'ovaire normaux. Bull. Soc. d'obst. et de gynec. 1: 727-731, 1912.

6 Rost, W. L. Twisted Ovarian Pedicle. Arch. Pediat. 40: 787-789 (Nov.) 1923.

*Special Article*TYPHOID IN THE LARGE CITIES OF THE
UNITED STATES IN 1933

TWENTY-SECOND ANNUAL REPORT

This report deals with the same ninety-three cities that have been discussed in the corresponding articles covering the years 1930, 1931 and 1932. The number of deaths from typhoid during 1933 in each city (except Scranton, as explained in a note to table 2) has been supplied by the respective health department. As the United States Bureau of the Census has found its usual method of computing the midyear populations of the large cities unsatisfactory for 1933 on account of the effects on such populations of the present economic conditions and has therefore made no estimates as of July 1, 1933, the rates in the present article are based on the estimates of the Census Bureau for July 1, 1932.

The problem of including in the rates for each city the typhoid deaths of nonresidents is as conspicuous as it has been for some years. In thirty-one of the

TABLE 1—*Death Rates of Fourteen Cities in New England States from Typhoid per Hundred Thousand of Population*

	1933	1932	1931	1926 1930	1921 1925	1916 1920	1911 1915	1906 1910
Fall River	0.0	0.0	0.0	2.2	2.3	8.5	13.4	13.5
Lynn	0.0	0.0	0.0	1.5	1.6	3.9	7.2	14.1
Waterbury	0.0	0.0	0.0	1.2	1.0	8.0	18.8	
Boston	0.2	0.5	0.9	1.2	2.2	2.5	9.0	16.0
Worcester	0.5	1.5	0.5	1.0	2.3	3.5	5.0	11.8
Hartford	0.6	0.6	3.6	1.3	2.5	6.0	15.0	29.0
Springfield	0.6	1.9	2.6	0.4	2.0	4.4	17.6	19.0
Bridgeport	0.7	0.0	0.7	0.5	3.2	4.8	5.0	10.3
Lowell	1.0*	2.0	1.0	2.6	3.4	5.2	10.2	13.9
New Haven	1.2	1.2	1.2	0.6	4.4	6.8	18.2	30.8
Providence	1.2	0.8	1.6	1.3	1.8	3.8	8.7	21.5
Cambridge	1.8	1.7	0.0	2.1	4.3	2.5	4.0	9.8
New Bedford	1.8*	0.0	1.8	1.5	1.7	6.0	15.0	16.1
Somerville	1.9	0.0	0.0	1.3	1.6	2.8	7.9	12.1

* Rate computed from population as of April 1, 1930, as no estimate for July 1, 1932, was made by the Census Bureau.

ninety-three cities we are informed that one third or more of the typhoid deaths were in nonresidents, in seven of these thirty-one cities all the typhoid deaths were in nonresidents. These are indicated in table 9, which should be referred to also in studying tables 1-8.

Particulars as to the data that are unavailable for certain cities (noted in tables 2-8 as "incomplete data") are given in the report covering the year 1932 and in the footnotes to these tables in all earlier articles.

The large New England cities again make an excellent record (table 1). Three cities (Fall River, Lynn and Waterbury) had no typhoid deaths within their borders for the third consecutive year. Two other cities in this group (New Haven and Worcester) report that the only typhoid deaths occurring in 1933 were in nonresidents. In the past four years (1930-1933) all but five (Boston, Hartford, Springfield, Lowell and Providence) of the New England cities

have had at least one year of complete freedom from typhoid mortality. Perhaps the most remarkable record in this group is that of Boston, which registers the very low rate of 0.2, the lowest in its history and one of the lowest ever recorded by an American city with more than 500,000 population. At that, it is stated that one third or more of the reported typhoid deaths were in nonresidents. The group as a whole reports a new low average for 1933, making it practically certain that the

TABLE 2—*Death Rates of Eighteen Cities in Middle Atlantic States from Typhoid per Hundred Thousand of Population*

	1933	1932	1931	1926 1930	1921 1925	1916 1920	1911 1915	1906 1910
Elizabeth	0.0	0.0	4.3	1.6	2.4	3.3	8.0	16.6
Pateron	0.0	0.7	2.9	1.0	3.3	4.1	9.1	19.3
Reading	0.0	0.9	0.0	1.6	6.0	10.0	31.9	42.0
Utica	0.0	1.9	0.0	1.1	3.9*			
Yonkers	0.0	0.7	1.4	0.5	1.7	4.8	5.0	10.3
Pittsburgh	0.1	1.3	1.2	2.4	3.9	7.7	15.9	65.0
Buffalo	0.3	1.2	0.7	2.7	3.9	8.1	15.4	22.8
Jersey City	0.3	0.6	0.3	0.9	2.7	4.5	7.2	12.6
Rochester	0.3	0.3	0.9	1.7	2.1	2.9	6.6	12.8
Newark	0.4	0.9	0.2	0.9	2.3	3.3	6.8	14.6
Philadelphia	0.6	1.3	0.9	1.1	2.2	4.9	11.2	41.7
Albany	0.8	0.8	2.3	1.8	5.6	8.0	18.6	17.4
Erie	0.9	1.7	0.8	0.9	2.3	6.9	49.0	46.6
New York	0.9	0.8	1.1	1.3	2.6	3.2	8.0	13.5
Syracuse	1.8	0.5	0.5	0.8	2.3	7.7	12.3	15.6
Trenton	2.4	0.8	1.6	2.1	8.2	8.6	22.3	28.1
Camden	3.3	2.5	4.2	4.4	5.9	4.9	4.5	4.0
Scranton†	3.4	1.4	2.1	1.8	2.4	3.8	0.8	31.5

* Incomplete data.

† Typhoid deaths for Scranton furnished by Pennsylvania Department of Health, Harrisburg.

New England cities, with a population of more than 2,500,000, will not average one typhoid death per hundred thousand inhabitants in the current five year period. This group of cities is excelled only by those of the East North Central states (table 4).

The cities in the middle Atlantic states show even greater improvement in 1933 than in the preceding year and record an average rate of less than one per hundred thousand for the second year in succession (table 2). Five cities in this group (Elizabeth, Paterson, Reading, Utica and Yonkers) report the complete absence of typhoid deaths during the year 1933. Elizabeth for the second year in succession. Utica has had

TABLE 3—*Death Rates of Nine Cities in South Atlantic States from Typhoid per Hundred Thousand of Population*

	1933	1932	1931	1926 1930	1921 1925	1916 1920	1911 1915	1906 1910
Baltimore	0.4	0.6	3.1	3.2	4.0	11.8	23.7	35.1
Jacksonville	1.4	2.8	3.0	4.4				
Richmond	1.6	2.7	1.6	1.9	5.7	9.7	15.7	34.0
Tampa	1.8	2.8	3.8	3.8	10.1	43.9†		
Wilmington	1.9*	0.9	1.9	3.1	4.7	25.8†	23.2†	33.0
Miami	2.7	1.8	1.8	3.5				
Washington	3.6	1.4	3.9	2.8	5.4	9.5	17.2	26.7
Norfolk	7.8*	0.8	5.4	2.2	2.8	6.8	21.7	42.1
Atlanta	6.0	8.8	12.6	11.1	14.5	14.2	31.4	58.4

* Rate computed from population as of April 1, 1930, as no estimate for July 1, 1932, was made by the Census Bureau.

† Incomplete data.

a perfect record in three out of the past four years. Pittsburgh, which twenty-five years ago lost annually from typhoid about one of its citizens in every 1,500 of population, now reports but a single typhoid death in a population of approximately 700,000. Both Philadelphia and New York now have typhoid rates under 1 per hundred thousand. Camden, which still has relatively a technically high rate, reports that all the deaths were in nonresidents so that there is evidently some missionary work to be done in the environs of that city. Scranton, which brings up the foot of the list, seems to have had more typhoid than for some years.

The preceding articles in this series were published in THE JOURNAL May 31, 1913, p. 1702; May 9, 1914, p. 1473; April 17, 1915, p. 1322; April 22, 1916, p. 1305; March 17, 1917, p. 845; March 16, 1918, p. 777; April 5, 1919, p. 997; March 6, 1920, p. 672; March 26, 1921, p. 860; March 25, 1922, p. 890; March 10, 1923, p. 691; Feb. 2, 1924, p. 389; March 14, 1925, p. 813; March 27, 1926, p. 948; April 9, 1927, p. 1148; May 19, 1928, p. 1624; May 18, 1929, p. 1674; May 17, 1930, p. 1574; May 9, 1931, p. 1576; April 30, 1932, p. 1550; and May 13, 1933, p. 1491.

1. The problem of the nonresident has been discussed at some length in our previous reports, for example, J. A. M. A. 100, 1491 (May 13), 1933, and 9S, 1:550 (April 30), 1932.

The cities in the South Atlantic states have not done quite so well as a group. Wilmington, Miami, Washington and Norfolk all showing increases as compared with 1932 (table 3). Miami and Norfolk, however, report that one third or more of typhoid deaths were in nonresidents. Baltimore in this group makes a particularly fine showing, reporting the lowest rate ever recorded in that city. Atlanta also shows remarkable

TABLE 4—Death Rates of Eighteen Cities in East North Central States from Typhoid per Hundred Thousand of Population

	1933	1932	1931	1926-1930	1921-1925	1916-1920	1911-1915	1906-1910
Canton	0.0	0.0	1.9	1.4	3	8.9		
Evansville	0.0	1.9	0.9	0.2	0	17.5	12.0	3.0
Flint	0.0	1.8	0.0	1.6	4.6	22.7	18.5	46.9
Fort Wayne	0.0	2.5	1.7	4.2	12.0	7.3		
Grand Rapids	0.0	0.0	1.2	1.0	1.9	9.1	25.5	29.7
Chicago	0.3	0.4	0.4	0.6	1.4	2.4	8.2	1.5
Milwaukee	0.7	0.0	0.3	0.8	1.6	6.5	1.6	27.0
Cleveland	0.5	0.2	3.4	1.0	2.0	4.0	10.0	15.7
Dayton	0.5	1.0	0.4	1.0	1.3	9.3	14.8	22.1
Indianapolis	0.5	1.0	1.6	2.7	4.6	10.3	20.5	0.4
Detroit	0.0	0.1	0.7	1.3	4.1	8.1	1.4	22.5
Cincinnati	0.0	3.0	0.4	2.5	3.2	3.4	7.5	10.1
Peoria	0.0	1.8	1.8	0.2	3.7	7	16.4	15.4*
South Bend	1.0	0.0	0.0					
Akron	1.1	0.4	1.6	1.5	2.4	10.6	21.0	21.7
Columbus	1.7	1.7	2.4	2.1	3.1	7.1	1.8	40.0
Youngstown	2.1	1.1	1.7	1.1	7.2	19.2	29.1	31.1

* Incomplete data

improvement although it has still far to go before it can rival Baltimore. Many of the cities in this group have, as is well known, a large Negro population and it used to be supposed that the high typhoid rates of these and other Southern cities were due in large part to the excessive mortality from typhoid among the Negro populations. Analyses of the typhoid death rates in several Southern states, however, have shown that in many localities the white typhoid mortality is as high as the typhoid mortality among Negroes, and in some localities even higher. Racial distribution of the population, therefore, can no longer serve as an explanation for the relatively high typhoid mortality in the cities in the South Atlantic and East South Central states. The remarkable improvement in Baltimore in the past two decades should serve as a stimulus to the other cities in this group. Is there any reason why Washington should not be able to do as well as Baltimore? For three years it has lagged a little.

TABLE 5—Death Rates of Six Cities in East South Central States from Typhoid per Hundred Thousand of Population

	1933	1932	1931	1926-1930	1921-1925	1916-1920	1911-1915	1906-1910
Louisville	1.9	2.9	2.0	3.7	4.9	9.7	10.7	52.7
Chattanooga	2	8.0	1.6	8.0	18.6	27.2	35.8*	
Birmingham	4.0	2.5	3.0	8.0	10.8	31.5	41.3	41.7
Knoxville	7.1	8.0	7.3	10.7	20.8	25.3*		
Memphis	7.6	11.4	7.3	0.3	18.9	27.7	42.5	51.2
Nashville	7.6	7.6	3.2	18.2	17.8	20.7	40.2	61.2

* Incomplete data

The cities of the East North Central group (table 4) again lead all other sections of the country in having the lowest typhoid average of any geographic division and increase their 1932 lead over the New England cities. Five cities in this group (Canton, Evansville, Flint, Fort Wayne and Grand Rapids) have perfect scores and Chicago, Milwaukee and Cleveland are not far behind. All but five of the eighteen cities in this division have rates less than 10, and the highest is only 23.

The six cities of the East South Central states (table 5) with a population about one-eighth as great as the eighteen cities of the East North Central division have registered a larger number of typhoid deaths in 1933 (77 East South Central, 68 East North Central) and a typhoid rate nearly ten times as high, viz., 4.91 in contrast to 0.55 (table 12). Some improvement over 1932 is, however, manifested particularly by Chattanooga and Memphis. The Nashville rate remains surprisingly high for the second year in succession. The racial analysis of Nashville typhoid for 1932, already referred to, shows that the typhoid mortality in the white population in that city was nearly double that among the Negroes. Only one other American

TABLE 6—Death Rates of Nine Cities in West North Central States from Typhoid per Hundred Thousand of Population

	1933	1932	1931	1926-1930	1921-1925	1916-1920	1911-1915	1906-1910
Minneapolis	0.2	0.8	0.6	0.8	1.0	5.0	10.6	3.1
Omaha	0.5	1.4	1.8	1.3	3.3	5.7	14.9	40.7
Kansas City, Kan.	0.8	0.0	1.6	1.7	5.0	9.4	31.1	74.5*
Duluth	1.0	1.0	1.0	1.1	1.7	4.4	19.8	45.5
St. Paul	1.4	0.7	1.1	1.4	3.4	3.1	9.2	15.3
Wichita	1.7	1.7	0.0	1.2	6.3			
Des Moines	2.0	0.0	0.0	2.4	2.2	6.4	15.9	23.7
St. Louis	2.2	1.2	2.0	2.1	3.0	6.5	17.1	14.7
Kansas City, Mo.	2.4	1.4	1.5	2.8	3.7	10.6	16.2	35.6

* Incomplete data

TABLE 7—Death Rates of Eight Cities in West South Central States from Typhoid per Hundred Thousand of Population

	1933	1932	1931	1926-1930	1921-1925	1916-1920	1911-1915	1906-1910
Tulsa	0.0	0.0	2.0	8.3	10.2*			
El Paso	2.8	5.6	4.8	0.1	10.8	30.7	42.8	
Oklahoma City	3.4	3.9	5.6	7.4*				
Houston	4.0	3.7	3.2	4.8	7.6	14.2	33.1	49.5
San Antonio	4.9	3.6	4.2	4.6	0.8	23.3	29.5	35.9
Dallas	5.3	7.4	7.3	7.3	11.2	17.2		
Fort Worth	7.6	2.0	5.4	5.0	6.1	16.3	11.9	27.8
New Orleans	9.1	8.0	13.9	0.9	11.6	17.5	20.9	35.6

* Incomplete data

TABLE 8—Death Rates of Eleven Cities in Mountain and Pacific States from Typhoid per Hundred Thousand of Population

	1933	1932	1931	1926-1930	1921-1925	1916-1920	1911-1915	1906-1910
Portland	0.0	0.6	1.0	2.3	3.5	4.5	10.8	23.2
Salt Lake City	0.0	0.7	1.4	1.9	6.0	9.3	13.2	41.1
San Francisco	0.1	1.5	1.4	2.0	2.8	4.6	13.6	26.3
Long Beach	0.0	0.0	0.0	1.1	2.1*			
Los Angeles	0.6	0.6	0.7	1.5	3.0	3.6	10.7	19.0
Oakland	0.7	1.0	1.0	1.2	2.0	3.8	8.7	21.5
Seattle	0.8	1.1	0.5	2.2	2.6	2.0	5.7	25.9
Spokane	0.0	1.7	0.8	2.2	4.4	4.9	17.1	50.3
Tacoma	0.9	1.6	0.9	1.8	3.7	2.9	10.4	19.0
Denver	2.7	0.7	3.4	2.6	5.1	5.8	12.0	3.1
San Diego	4.3	0.6	0.6	1.0	1.6	7.0	17.0	10.5

* Incomplete data

city on our list (New Orleans) exceeded Nashville in 1933 in its typhoid rate. Nashville, nevertheless, is showing marked improvement over the period 1916-1930, when hardly any typhoid reduction occurred (table 5).

The cities in the West North Central states (table 6) did not fare quite as well in 1933 as in 1932, five of the nine showing a typhoid increase and two a stationary rate. Kansas City, Mo., indeed recorded a typhoid mortality nearly as great as the average for 1926-1930. Since a large proportion of deaths among nonresidents is reported by this city, conditions just outside the

political boundaries evidently need looking into. Minneapolis and Omaha in this group have remarkably fine records.

The eight cities in the West South Central states (table 7) show on the average a slight increase over the preceding year, although Tulsa maintains its perfect record and El Paso shows a substantial decrease. Fort Worth and San Antonio, however, have not done

TABLE 9—Death Rates from Typhoid in 1933

Honor Roll No Typhoid Death (Sixteen Cities)			
Canton	Grand Rapids	Salt Lake City	
Elizabeth	Lynn	Tulsa	
Evansville	Paterson	Utica	
Fall River	Portland	Waterbury	
Flint	Reading	Yonkers	
Fort Wayne			
First Rank from 0.1 to 1.0 Deaths per Hundred Thousand (Fifty Two Cities)			
Pittsburgh	0.1	Long Beach	0.6
San Francisco	0.1	Los Angeles	0.6†
Boston	0.2†	Philadelphia	0.6
Minneapolis	0.2	Springfield	0.6
Buffalo	0.4†	Bridgeport	0.7
Chicago	0.3†	Oakland	0.7
Jersey City	0.3	Albany	0.8
Milwaukee	0.3†	Kansas City Kan	0.8
Rochester	0.3*	Seattle	0.8
Baltimore	0.4†	Cincinnati	0.9†
Newark	0.4	Elie	0.9
Cleveland	0.5	New York	0.9
Dayton	0.5*	Peoria	0.9*
Indianapolis	0.5	Spokane	0.9
Omaha	0.5	Tacoma	0.9
Worcester	0.5*	Duluth	1.0
Detroit	0.6	Lowell	1.0
Hartford	0.6	Wilmington	1.0
Second Rank from 2.0 to 4.0 (Eighteen Cities)			
Des Moines	2.0	Miami	2.7†
St. Louis	2.2	El Paso	2.8†
Youngstown	2.3	Chattanooga	3.2
Kansas City Mo	2.4†	Camden	3.3*
Trenton	2.4†	Oklahoma City	3.4
Denver	2.7	Beranton	3.4†
Third Rank from 5.0 to 9.0 (Seven Cities)			
Dallas	5.3	Fort Worth	7.6
Atlanta	6.0†	Memphis	7.6†
Knoxville	7.1	Nashville	7.6
		New Orleans	9.1†

* All the typhoid deaths reported were stated to be in nonresidents.
† One third or more of the reported typhoid deaths were stated to be in nonresidents.

so well, the former recording the highest rate it has had for a number of years. It is not a good advertisement for a section of the country interested in attracting visitors in search of health to have the large cities in the Southwest afflicted with the highest average

TABLE 10—Number of Cities with Various Typhoid Death Rates

	No. of Cities	10.0 and Over	5.0 to 9.0	2.0 to 4.0	1.0 to 1.9	0.1 to 0.9	0.0
1916-1919	77	7	2	0	0	0	0
1911-1915	79	5	19	2	0	0	0
1916-1919	84	22	32	20	0	0	0
1911-1915	89	12	17	43	12	0	0
1916-1919	92	3	10	30	37	12	0
1916	91	9	17	28	20	17	0
1927	92	6	10	28	27	13	8
1928	92	5	9	29	22	17	10
1929	92	2	9	21	27	25	8
1930	93	2	6	30	24	23	10
1931	93	2	6	24	28	22	12
1932	93	1	7	13	29	29	14
1933	93	0	7	18	19	30	16

typhoid rate in the country, as was the case in 1933 (table 12).

The cities in the Mountain and Pacific states (table 8) average slightly less than in the preceding year, but the rates range more widely. Portland and Salt Lake City report no typhoid deaths and San Francisco a rate of only 0.1. San Francisco is rivaled only by Pittsburgh in its remarkably low typhoid rate among cities of more

than 500,000 population. San Diego reports its highest rate (4.3) for a decade or more. While such a figure does not perhaps indicate an epidemic, there is evidently something that needs looking into in that

TABLE 11—Total Typhoid Rate for Seventy-Eight Cities 1910-1933*

	Population	Typhoid Deaths	Typhoid Death Rate per 100,000
1910	22,573,437	4,637	20.54
1911	23,211,341	3,900	17.02
1912	23,835,999	3,132	13.14
1913	24,457,989	3,985	13.4
1914	25,091,112	2,781	11.08
1915	25,713,846	2,434	9.47
1916	26,257,700	2,191	8.34
1917	26,860,408	2,016	7.50
1918	27,086,666†	1,874†	6.73
1919	27,735,084†	1,111†	4.15
1920	28,344,474	1,088	3.8†
1921	28,859,662	1,141	3.95
1922	29,473,746	963	3.26
1923	30,087,430	900	3.16
1924	30,701,614	904	3.07
1925	31,315,596	1,070	3.44
1926	31,929,782	907	2.84
1927	32,543,966	648	1.99
1928	33,158,150	628	1.89
1929	33,772,334	637	1.90
1930	34,386,717	634	1.61
1931	34,999,915	563	1.60
1932	35,614,101	442	1.24
1933	36,228,287	423	1.18†

* The following fifteen cities are omitted from this table because data for the full period are not available: Canton, Chattanooga, Dallas, Fort Wayne, Jacksonville, Knoxville, Long Beach, Miami, Oklahoma City, San Antonio, Tampa, Tulsa, Utica, Wichita, Wilmington.

† Data for Fort Worth lacking.
‡ The rate for the ninety-three cities in 1933 is 1.24 (total population 37,735,612; typhoid deaths 470), whereas in 1930 the corresponding rate was 1.64. In 1931 it was 1.65 and in 1932 it was 1.34.

vicinity. Denver also reports a relatively high rate, with notable fluctuations in the past three years. Nearly all the other cities in this geographic division show a more or less substantial decline, and the rate for the group as a whole shows a slight but gratifying decrease.

TABLE 12—Total Typhoid Death Rate per Hundred Thousand of Population for Ninety-Three Cities According to Geographic Divisions

	(1933) Population	Typhoid Deaths		Typhoid Death Rates				
		1933	1932	1933	1932	1931	1930	1929
New England	26,150,000	18	10	0.68	0.72	1.07	1.31	2.48
Middle Atlantic	13,035,500	102	126	0.78	0.97	1.06	1.40	2.07
South Atlantic	23,770,000	55	53	2.31	2.23	4.29	4.50	7.01*
East North Cen								
trial	9,700,000	54	68	0.55	0.70	1.00	1.29†	2.32†
East South Cen								
trial	1,242,000	61	77	4.91	6.20	4.00	8.31	13.00
West North Cen								
trial	2,700,000	41	25	1.71	1.03	1.34	1.63	2.43
West South Cen								
trial	1,961,000	106	102	5.40	5.19	6.97	7.32	10.00†
Mountain and Pa								
cific	4,023,000	33	35	0.82	0.87	1.07	1.60	2.27

* Lacks data for Jacksonville and Miami.

† Data for South Bend for 1929-1930 are not available.

* Lacks data for Oklahoma City in 1929.

† Lacks data for Oklahoma City.

In 1933 for the first year since our summaries were undertaken, no city in the United States registered a typhoid mortality rate greater than 10 per hundred thousand (table 10). Sixteen of the ninety-three cities had no typhoid deaths at all in 1933, the largest number of cities yet reported with a perfect score. The American people can congratulate themselves that the improvement in typhoid mortality is still going on. This is substantiated by the figures in table 11, in which it is shown that the typhoid rate for 1933 reached the lowest point ever registered. It should be noted also

that the improvement probably is actually somewhat greater than the figures indicate, since the 1932 population estimate is used without making any allowance for possible increase. From the figures given in this table, a notable saving of life has resulted from the campaign against typhoid in the past twenty-three years. It is a little surprising, however, to find what a marked improvement is still taking place, the typhoid mortality rate in American cities of more than 100,000 population is now less than half what it was only seven years ago.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT
H. A. CARTER, Secretary

BURDICK WATER-COOLED LAMPS ACCEPTABLE

The Burdick Corporation, Milton Wis. manufactures quartz mercury vapor arc water cooled lamps which are recommended for therapeutic use when local application of ultraviolet radiation is required. Several models were considered. They are as follows:

- Self Contained Mobile Water Cooled Unit Receptor Model
 - I W 505 for Alternating Current
 - I W 205 for Direct Current
- Suspension Casing Model Self Contained Unit
 - LW 510 for Alternating Current
 - LW 210 for Direct Current
- Suspension Casing Model Faucet Type Water Cooled Unit
 - I W 531 for Alternating Current
 - LW 231 for Direct Current
- Receptor Model Faucet Type Water Cooled Lamp
 - I W 530 for Alternating Current
 - I W 230 for Direct Current

The water-cooled unit, that is, the lamp proper consists essentially of a quartz mercury vapor arc burner surrounded by a double wall casing between the walls of which cold water circulates to cool the lamp. A small circular quartz window in the casing permits the passage of ultraviolet and visible radiation but practically eliminates the heat radiation. The quartz window looks like a small crystal drum and the hollow space is filled with highly distilled water. This distilled water does not come directly in contact with the circulating water. The radiant heat passing through the window is largely absorbed by the distilled water and transparent quartz and is conducted to the circulating water through the periphery of the quartz drum. Then the excess heat in the lamp is carried away either by water circulating in the radiator, which in turn is dissipated to the air, or by tap water circulating through the lamp from a faucet. When running an indicator shows instantly whether water is circulating. It is possible therefore to use the lamp in close approximation to the affected or injured part and to apply pressure against the soft parts to facilitate greater penetration of the ultraviolet radiation.



Burdick
Water Cooled
Lamp

All models use the same type of lamp and burner. The difference in the models depends on the accessories. The Self-Contained Mobile Water-Cooled Unit, receptor model, is provided with a cabinet which has a movable door located in the rear, thus making the unit accessible for lubrication or draining of the water system. This unit is mounted on four ball-bearing casters with solid rubber-tired wheels and can be moved about the hospital or physician's office easily.

The Suspension Casing Model Self-Contained unit is essentially the same as the previously described unit. In addition it is supplied with a special counterbalanced upright, to which the lamp is attached. The Suspension Casing Faucet Type Water-Cooled unit is essentially the same as the last mentioned unit, except that the cooling water supply is obtained from a faucet connection. The Burdick Receptor Model Faucet Type Water-

Cooled Lamp contains all the essential features of the "mobile" type, differing in that the cooling water is obtained from a faucet of the local water supply.

ELECTRICAL CHARACTERISTICS

Alternating Current

- Line voltage 105 to 120 volts (60 or 25 cycles)
- Line starting amperage 17.5 amperes
- Line operating amperage (5 amperes 220 volt line)
(7.5 amperes 115 volt line)

Operating amperage of burner 4.5 amperes

Burner voltage always kept at 55 by means of manual voltage regulator. (There is therefore no maximum or minimum burner voltage as it is kept at 55 volts.)

Direct Current

- Line voltage 105 to 120 volts
- Starting amperage 10 amperes
- Operating amperage (120 volts 4.5 amperes)
(220 volts 4.5 amperes)

Burner voltage always kept at 55 by means of manual voltage regulator.

One unit was examined in a clinic acceptable to the Council. The report of this investigation indicated that the claims made for the device were in agreement with the Official Rules of the Council on Physical Therapy. The Burdick Water-Cooled Lamps therefore are eligible for inclusion in the list of accepted devices.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary

DIPHTHERIA TOXOID, ALUM PRECIPITATED (REFINED)—(See THE JOURNAL, Feb. 24, 1934, p. 605, and New and Nonofficial Remedies, 1934, p. 393)

Lederle Laboratories, Inc., Pearl River, N. Y.

Refined Diphtheria Toxoid (Alum Precipitated) Lederle—Prepared from diphtheria toxin the L+ dose of which is 0.2 cc and which has been detoxified with 0.2 and 0.4 per cent solution of formaldehyde to make diphtheria toxoid. The toxoid is refined by precipitation with a 4 per cent solution of potassium aluminum sulphate washed with sterile physiological solution of sodium chloride and resuspended in the same menstruum. It is preserved with Merthiolate 1:10,000. The product is tested for antigenic potency according to the method prescribed by the National Institute of Health: guinea pigs weighing 500 Gm. given one human dose must produce at the end of six weeks at least two units of diphtheria antitoxin in each cubic centimeter of blood. Marketed in packages of one 1 cc. vial (one immunization), ten 1 cc. vials (ten immunizations) and one 10 cc. vial (ten immunizations).

MERCURIC SUCCINIMIDE (See New and Nonofficial Remedies, 1934, p. 293)

Refined Solution Mercuric Succinimide 16 grain (0.01 Gm.) 1 cc. Mercuric succinimide N. N. R. 0.01 Gm. benzyl alcohol 0.01 cc. and glycerin 0.013 Gm. in sufficient distilled water to make 1 cc.

Prepared by the Cheplin Biological Laboratories, Inc., Syracuse, N. Y. No U. S. patent or trademark.

SOLUBLE STOMACH EXTRACT-FAIRCHILD—A concentrated extract of material derived from mammalian stomach mucosa. It is marketed in vials containing approximately 3 Gm. of substance representing material derived from 100 Gm. of fresh stomach mucosa.

Actions and Uses—Soluble stomach extract-Fairchild is proposed for oral administration in the treatment of pernicious anemia.

Dosage—This is determined by the condition of the patient. Ordinarily, the contents of from three to six vials (approximately 8 to 16 Gm.) are given daily in cool fluids. The maintenance dose is determined individually for each patient.

Manufactured by Fairchild Bros. & Foster, New York. No U. S. patent or trademark.

Soluble stomach extract Fairchild is a light buff colored powder possessing the characteristic odor and taste of preparations of this type. It is almost completely soluble in cold water.

To prepare soluble stomach extract Fairchild the entire stomach mucosa is ground to a fine pulp directly into water. The resulting mixture is adjusted to a pH of 1.8, submitted to a temperature of 38°C. for a period of about six hours and then partially neutralized to a pH of 5. The resulting product is clarified by filtration and dried in vacuum at low temperature.

TRIBASIC CALCIUM PHOSPHATE (See New and Nonofficial Remedies, 1934, p 134)

Ucoline Calcium Phosphate Cocoa Wafers Each wafer contains tribasic calcium phosphate N N R 0.585 Gm (9 grains) cocoa 0.65 Gm (10 grains) powdered sugar 0.3 Gm (5 grains) starch 0.021 Gm ($\frac{1}{4}$ grain) and saccharin 4.8 mg ($\frac{1}{10}$ grain) flavored with coumarin, vanilla oil of peppermint, and salt

Prepared by Ucoline Products Company, Chicago No U S patent or trademark

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT
PAUL NICHOLAS LEECH Secretary

MERCUROSTICKS NOT ACCEPTABLE FOR N N R AND CAUSTICKS, CAUSTICK APPLICATORS AND SPECIAL CAUSTICK APPLICATORS (SILVER NITRATE 75 PER CENT), CUPRICSTICKS, CUPRIC APPLICATORS AND SPECIAL CUPRIC APPLICATORS (COPPER SULPHATE 20-25 PER CENT), STYPSTICKS, STYPSTICK APPLICATORS AND SPECIAL STYPSTICK APPLICATORS (ALUM 75 PER CENT AND POTASSIUM NITRATE 25 PER CENT) OMITTED FROM N N R

Some years ago the Council accepted for inclusion in New and Nonofficial Remedies a line of "medicated sticks" for application of various medicaments manufactured by the Tappan Zee Surgical Company and marketed under the names Causticks, Caustick Applicators and Special Caustick Applicators (Silver Nitrate 75 per cent), Cupricsticks, Cupric Applicators and Special Cupric Applicators (Copper Sulphate 20.25 per cent), Stypsticks, Stypstick Applicators and Special Stypstick Applicators (Alum 75 per cent and Potassium Nitrate 25 per cent)


In 1928 the firm presented an additional medicated stick under the name "Mercurosticks" stated to bear a tip of solidified mercurochrome-H W & D. The Council held that the name was not sufficiently informative since it might be applied to any mercury preparation and the Tappan Zee Surgical Company was informed that the product would be acceptable under the name "Mercurochromesticks." The firm took no action to make the product acceptable. During the examination of the material recently sent by the firm in connection with the reconsideration of other products of its manufacture a label for "Mercurosticks" was discovered. The firm was reminded of the Council's action with regard to Mercurosticks and was asked to make a statement for the Council's information. The firm replied, in effect that it could not give up the coined name "Mercurosticks." The Council therefore declared the product unacceptable for New and Nonofficial Remedies because it is marketed under an insufficiently descriptive name.

In accordance with the Council's custom the Tappan Zee Surgical Company was informed of the Council's action but made no reply. A second letter which unfortunately lacked sufficient postage, was sent the firm and was returned endorsed with a facetious remark. Convinced that some irresponsible person had made the endorsement the Council's Secretary sent a registered letter thinking thereby to reach some responsible person in the concern. This letter was refused. Meanwhile, the Council had reaccepted the products of the firm, the acceptance of which had expired. No acknowledgment was received of the notification sent the firm of this reacceptance. Refusal of a firm to receive correspondence from the Council makes it impossible for the Council to check adequately the claims made for the firm's product.

In view therefore of the unwarranted refusal of the Tappan Zee Surgical Company to cooperate with the Council the Council concluded that continued recognition of its products is impossible. The Council therefore reaffirmed its rejection of Mercurosticks and omitted from New and Nonofficial Remedies the accepted products of the firm, namely Causticks, Caustick Applicators and Special Caustick Applicators (Silver Nitrate 75 per cent), Cupricsticks, Cupric Applicators and Special Cupric Applicators (Copper Sulphate 20.25 per cent), Stypsticks, Stypstick Applicators and Special Stypstick Applicators (Alum 75 per cent and potassium nitrate 25 per cent).

Committee on Foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.  RAYMOND HERTWIG Secretary

FAIRWAY BRAND IODIZED TABLE SALT

Distributor—Twin City Wholesale Grocer Co., St. Paul and Minneapolis

Packer—Morton Salt Company, Chicago

Description—Table salt containing 0.023 per cent of potassium iodide, 0.1 per cent of sodium carbonate and 0.7 per cent of magnesium carbonate. Same as Morton's Iodized Salt, THE JOURNAL, Feb 18, 1933, page 499

Claims of Manufacturer—For all table and cooking uses of salt. The added sodium and magnesium carbonates tend to preserve its free running qualities. Used daily as the only salt on the table and in cooking it richly supplements the iodine of diets deficient in that element and thus helps to protect against goiter caused by insufficient iodine in the diet.

(1) BRIMFULL BRAND CRYSTAL WHITE SYRUP (2) BRIMFULL BRAND AMBER TABLE SYRUP

Distributor—H A Marr Grocery Company, Denver, Colo., Enid, Okla., Omaha, Neb., and Amarillo, Texas

Manufacturer—Wheeler-Barnes Company, Minneapolis

Description—(1) A table syrup, corn syrup flavored with rock candy syrup. Same as White Oak Brand Crystal Table Syrup, THE JOURNAL, Oct 15, 1932, page 1353

(2) A table syrup, corn syrup flavored with refiners' syrup. Same as Golden Oak Brand Amber Syrup, THE JOURNAL, Dec 3, 1932, page 1948

Claims of Manufacturer—For table use and as a carbohydrate supplement for milk modification in infant feeding

E-JAY BRAND UNSWEETEND EVAPORATED STERILIZED MILK

Distributor—E J Evans Company, Van Wert, Ohio

Packer—Amboy Milk Products Company, Amboy, Ill

Description—Canned, unsweetened evaporated milk the same as Amboy and Melody Brands Unsweetened Evaporated Sterilized Milk (THE JOURNAL, May 7, 1932, p 1655)

TRUPAK APPLE SAUCE

Distributor—Haas Brothers, San Francisco and Fresno, Calif

Packer—Lyndonville Canning Company, Inc., Lyndonville, N Y

Description—Canned apple sauce prepared from peeled and cored apples with added sucrose. Same as VB (Visscher Brothers) Old Fashioned Apple Sauce, THE JOURNAL, Aug 6, 1932, page 476

Claims of Manufacturer—A slightly sweetened apple sauce for table use

SUNKIST PANCAKE FLOUR BLEACHED

Manufacturer—Manev Milling Company, Omaha

Description—Self rising flour containing first clear wheat flour, corn rye and rice flours, dried skim milk, dextrose, calcium acid phosphate, salt and sodium bicarbonate

Manufacturer—The ingredients are thoroughly mixed in a batch mixer and automatically packed in cartons

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SATURDAY, MAY 19 1934

LYMPHATICS OF THE SKIN

The part played by lymphatics in various skin phenomena and in skin physiology is generally recognized. Yet knowledge of lymphatics to a large extent has been anatomic, based mostly on the delicate technic of injecting the fine lymphatics in living animals or in dead human tissue. Though a new world of fine anastomosing network of channels was thus revealed, it was only a first step in the knowledge of lymphatic behavior. Observations of living channels is of greater importance and has in fact been extensively achieved on human blood capillaries. Functional knowledge of the capillaries has thus advanced rapidly, especially with the aid of the motion picture camera. The blood capillary is visible and the red corpuscles coursing through bring it into bold relief under appropriate conditions, so that the living channels can be studied directly. The lymphatics, on the other hand are invisible, for their lumens are filled with fluid of the same color and nature as the surrounding tissue juice. Lymphatic channels may be seen, to be sure when they are inflamed as the beaded red streaks of acute lymphangitis, but normally they are hidden. Hence functional knowledge of them has been indirect and based largely on observations on lower animals.

Recently the lymphatics of living human skin have been directly visualized and their behavior has been studied in a striking way. Hudack and McMaster,¹ working at the Rockefeller Institute of New York, have published observations made on themselves and on others by the use of several vital dyes of various diffusibilities following the original use of such colored substances some years ago by Rous.² They have found that intradermal injections with a fine needle tear open the tiny lymphatics, which then readily absorb the solution and are rendered plainly visible. Under the microscope and especially with the motion picture camera a vivid view of these dye-filled channels is revealed and

their behavior under various conditions can be watched. Within a minute or two a minute plexus of extensively anastomosing channels in the superficial layer of the corium is seen. Some of the dye occasionally escapes into the deep lymphatics. While this superficial lymphatic plexus has been described before by anatomists, it was supposed to represent local areas, each acting independently. With the technic mentioned, the wide connections of these anastomosing plexuses were observed for the first time.

The rapidity of lymph flow in these vessels was extraordinary, an observation contrary to the work of previous investigators, who reported that there is almost no lymph flow from a resting limb. With the more nearly ideal conditions used by the New York workers, i. e. normal unanesthetized living human tissue, it was found that dye introduced into the resting forearm reached the axilla within a few minutes. Thus the local injection rapidly became a general one. Since the technic was essentially that used clinically in any intradermal test, it must be assumed that such injections likewise are not local ones, as so often assumed but may reach the general circulation rather quickly. Individual differences in the rapidity of lymph flow also were observed and may prove to be of some significance.

Further physiologic observations concerned the permeability of these tiny channels. It was found that the human lymphatic walls act essentially as a semipermeable membrane, behaving in fact the same as similar vessels in the mouse. The similarity has the practical value of permitting many of the observations in the lower animal to be applied to the solution of human problems in this field. In both species, changes in permeability of the visualized lymphatics are great and rapid. Thus the effect of injury increases this permeability tremendously. Even the slight wheal produced in certain persons by the stroke of a blunt instrument on the skin causes the dye to pass through the lymphatic wall almost as if no barrier existed. Heat, ultraviolet rays and bacterial products have a similar effect. So does histamine. On the other hand, once a wheal is formed it may so compress the lymphatics as to interfere mechanically with the drainage and absorptive function, which becomes so accelerated during moderate inflammation.

Serums and bacterial products are daily being injected into the skin of patients for diagnostic or therapeutic purposes. The great role of the skin in resistance to infection is also realized and emphasized, for the skin presents, so to speak, the first line of defense against the outside world of pathogenic bacteria. Skin diseases in general present many and varied problems. In all these fields the part played by the lymphatics must be an important one. The vital dye technic furnishes a new tool for the investigation of these problems. The fundamental observations here noted point the way to a more complete understanding of skin phenomena in

¹ Hudack S. S. and McMaster P. D. The Lymphatic Participation in Human Cutaneous Phenomena. *J. Exper. Med.* 57: 721 (May) 1933.

² Rous Peyton. Relative Reaction Within Living Mammalian Tissues. *J. Exper. Med.* 41: 739 (June) 1923.

general and hence may prove applicable to the important field of immunity and resistance. The relative ease of their use would seem to make these dyes of wide value in the clinical investigations of the physiology and pathology of the skin.

NERVOUS STIMULATION TO LACTATION

The unique place occupied by milk in nutrition has been adequately established. Both experimental and practical studies have repeatedly demonstrated that the peculiar chemical constitution of milk admirably fits it for its essential role in the feeding of the young. It is to be expected, therefore, that more than usual attention should be devoted to the biologic circumstances surrounding its elaboration. Lactation is part of the reproductive process both by mechanism and by purposeful association. The mammary gland first enlarges during puberty, and at each successive estrous cycle there is a response in the structure of the gland. From this circumstantial evidence it appears that these changes occur in response to hormone stimulation. This so-called physiologic hypertrophy as well as that produced experimentally in the intact virgin female, spayed female and intact or castrated male by injection of ovarian hormone obtained from the follicle, placenta or pregnant urine consists primarily of an enlargement of the duct system without proliferation of the milk-secreting cells. With parturition, however, there occurs a stimulation to actual secretion from the anterior pituitary; there has been prepared a hormone, prolactin, presumed to be the agent that promotes the activity of the secreting epithelium in the gland whose ducts and supporting tissue have previously been enlarged and thus prepared for the production of milk. Studies on the functional activity of transplants of the mammary gland indicate that the prolactin acts independently of the nerve supply.

Once the milk flow is established, it is well known that its continuance ordinarily depends on the removal of the secretion. The mechanism that correlates the act of milking with the production of additional prolactin and the consequent secretion of more milk has not been clear. In a recent report, Selye¹ describes experiments which indicate that the act of suckling plays an important part in prolonging the active secretion of milk. In studies with rats it was observed that removal of the young from the lactating mother resulted in a disappearance of milk in from three to five days. However if the main duct was cut without injuring the nipples the act of suckling by the young stimulated the secretion of milk to the point of turgidity and rupture of the alveoli. Removal of all the nipples with the consequent absence of suckling led to early cessation of function and atrophy of the glands, yet if some of the nipples were left intact, even though the main duct was cut, all the alveoli secreted actively.

These observations lead to the conclusion that the act of suckling is a nervous stimulus to milk secretion, motivated indirectly through the pituitary. Furthermore, it appears that it is the withdrawal of this stimulus which is responsible for cessation of milk production rather than accumulation of milk in the alveoli.

Evidence indicating that the act of suckling by the young exerts a general nervous response has been cited by Parsons.² In studies on lactating females it was observed that the act of suckling was followed by rises in the urea concentration in the blood, often of considerable magnitude. As the extent of these changes in the blood was not always related to the quantity of milk withdrawn, it was interpreted to mean that suckling produced an emotional response in the mother. It is currently believed that mechanical stimulation plays a part in the secretory activity of many glands, notably certain of those in the gastro-intestinal tract. It has not been determined whether there is usually a hormone involved in the mechanism, though this appears more than likely in view of the foregoing observations on milk production.

SYPHILIS IN PREGNANCY

The increased emphasis on the diagnosis and treatment of syphilis during pregnancy, manifest in current medical literature,¹ may be considered an indication of past neglect of this significant topic. Accurate statistics on the incidence of syphilis in private obstetric practice are lacking. Even allowing for a much lower rate than is shown elsewhere, however, it is apparent that meticulous attention should be given to syphilis in all pregnancies without exception.² Among the clinic class of patients the frequency of syphilis in pregnancy varies, largely dependent, apparently, on geographic and racial factors. Thus, in a recent summary³ of the incidence reported by various authors, there was a variation from 12 per cent from the University of Oklahoma to 34 per cent among colored in Atlanta. In general, however, from 5 to 10 per cent of pregnant women (white clinic class) are syphilitic. The percentage is noticeably higher among the Negroes. Corroboratory evidence is presented by Cole and his collaborators⁴ in studies based on 3,817 syphilitic women in five cooperating clinics. Of the 603 of this group who experienced pregnancy during or after treatment for their infection, 277 were white and 326

2 Parsons Helen T. *J Biol Chem* **88** 311 (Aug.) 1930

1 Reinberger J. R. and Toombs P. W. The End Results of Ten Years Study of Treatment of Pregnancy Syphilis in Trimesters South M. J. **26** 532 (June) 1933. Beckers R. Syphilis et gestation. *Bruxelles med* **30** 1521 (Oct. 22) 1933. Vigne P. and Trillat P. De l'emploi systematique des examens serologiques dans une consultation prenatale. *L. avenir med* **30** 261 (Nov.) 1933. Philipp E. and Richter W. Lues und Geburtshilfe. *Munchen med Wchnschr* **80** 1540 (Oct. 6) 1933.

2 Keyes E. L. The Importance of Establishing a Conditioned Reflex Pregnancy Syphilis in the Minds of the Medical Profession. *Am J Obst & Gynec* **26** 71 (July) 1933.

3 Ingraham A. R. and Kahler J. E. The Diagnosis and Treatment of Syphilis Complicating Pregnancy. *Am J Obst & Gynec* **27** 134 (Jan.) 1934.

4 Cole H. N. and others. Syphilis in Pregnancy. Venereal Disease Information U. S. Public Health Service **15** 83 (March) 1934.

1 Selye Hans. *Am J Physiol* **107** 535 1934.

were colored. It was noted that there was a higher percentage of latent cases of syphilis among the colored than among the white, thus suggesting either neglect on the part of the colored in seeking early and adequate treatment or a high incidence of symptomless infection in Negroes.

The difficulties in the way of diagnosis of syphilis in pregnant women are more apparent than real. From the history and physical examination alone the diagnosis can be made in from 25 to 64 per cent of the cases.³ Routine use of serologic methods, preferably before, during and after pregnancy, materially increases the proportion of correct diagnoses. Even in the presence of the disease the serologic reaction is of important prognostic significance. Thus a negative Wassermann reaction in syphilitic mothers during pregnancy insures a higher percentage of living and apparently nonsyphilitic children than does a negative Wassermann reaction before the pregnancy.⁴

The relation of time of diagnosis and initiation and character of treatment on the ratio of miscarriages, stillbirths and syphilitic children has been the subject of numerous investigations. In a group of 268 pregnancies reported by McKelvey and Turner⁵ in which the mother had not received treatment either before or during pregnancy, 45.9 per cent resulted in a still-born infant and 54.1 per cent were born alive. Among the living infants in whom the ultimate status was known, 35.4 per cent were normal and 64.5 per cent were demonstrated clinically or at necropsy to have syphilis. Rising from this group with poor prognosis from the standpoint of the child, statistics are available showing an improving outlook depending on the stage of pregnancy in which treatment is instituted. Thus, 78 per cent of pregnant syphilitic mothers in whom treatment was instituted before the fifth month bore living, apparently nonsyphilitic, children as contrasted with only 61 per cent when treatment was started later. There were, moreover, more than three times as many syphilitic children in the latter group as in the former.⁴ The adequacy of antisyphilitic treatment has an additional significance. When ten injections of an arsenical and ten of a heavy metal were given before the fifth month of the pregnancy, living, apparently nonsyphilitic, children resulted in 91 per cent of the cases. When much of the arsenical and little of the heavy metal was used, the percentage of nonsyphilitic children fell to 85, and when little arsenical and much heavy metal was employed, to 75.⁴ The best results are therefore obtained when adequate treatment consisting of both an arsenical and a heavy metal is instituted early. Still better results occur when antisyphilitic treatment is given both before and during pregnancy.

These observations are applicable in private practice as well as in the clinic. The woman of child-bearing

age should be given the best possible chances of having a living, healthy child. Careful history and physical examination of every pregnant woman, with syphilis in mind, should certainly not be omitted. Routine serologic tests preferably before, and certainly as early as possible in, pregnancy should invariably be performed.

Current Comment

THE LIPIDS OF EPITHELIAL TISSUE

Epithelial tissue not only is a protective covering but also appears to have a metabolism of its own. The lipid fraction of this tissue seems to be intimately associated with definite important aspects of this metabolism, recent investigations indicate that the secretion of lipids is characteristic of all epithelial tissue and contains a relatively high proportion of sterols. The experiments of Sperry and Angevine¹ have demonstrated this fact for intestinal mucosa, Schonheimer and Hrdina² have found large amounts of sterols in the secretion of the colon. Further evidence for a production of unsaponifiable lipids by the intestinal epithelium is reported by Burger and Oeter.³ These investigators analyzed the mucosa of the large bowel and concluded that the sterol content was not sufficient to support the view that the high concentration of these substances in the feces is due to desquamated mucosa, a secretion of sterols by the intestine was therefore postulated. The important functions that have been assigned to these lipids of the epithelial tissue emphasize the value of more specific information concerning their chemical nature. Of particular interest are the fatty substances of the skin, the fact that the latter contain a precursor of vitamin D is sufficient to warrant their detailed study. In addition, the germicidal or immunologic properties of the skin and the maintenance of the normal physical state of this tissue have been related to its content of fat. An investigation of the chemical composition of the lipids of the skin has been reported from the Washington University School of Medicine in St. Louis.⁴ Analyses were made of both the fatty material of the surface of the skin and that from the stratum corneum, the most striking finding was the high concentration of unsaponifiable material. Of the latter group of substances, the sterols represented two thirds of the total in the case of the stratum corneum lipids and slightly less than half of the unsaponifiable fraction of the superficial skin lipids. The saponifiable fractions were characterized by a high content of free fatty acids, in contrast to the relatively small amount of uncombined fatty acids found in most body tissues. These results are additional evidence of the excretion of lipids by epithelial tissues, they suggest important metabolic functions and chemical importance for these substances and show the need for further fundamental knowledge concerning the chemistry of epithelial tissue.

¹ Sperry, W. M. and Angevine, R. W. *J. Biol. Chem.* **96**: 769 (June) 1932.

² Schonheimer, R. and Hrdina, L. *Ztschr. f. physiol. Chem.* **212**: 161, 1932.

³ Burger, M. and Oeter, H. D. *Ztschr. f. physiol. Chem.* **184**: 257, 1929.

⁴ Engman, M. F. and Kooyman, D. J. *Lipids of the Skin Surface* *Arch. Dermat. & Syph.* **29**: 12 (Jan.) 1934.

⁵ McKelvey, I. L. and Turner, T. B. *Syphilis and Pregnancy* *J. A. M. A.* **102**: 63 (Feb. 17) 1934.

EMBRYONIC TISSUE "ORGANIZERS"

The rapidly increasing knowledge of the intrinsic growth factors in embryonic tissue cells has suggested numerous working hypotheses in many fields of clinical research. For example, its application has led to the apparently successful production of quasimalignant conditions in frogs. Embryologists have found that growth and differentiation of early embryonic tissues are determined largely by intracellular "organizers" or chemical "inductors." These local growth hormones are thermostable, resembling in this particular certain organ-specific lipoids.¹ In some embryonic tissues these inherent growth factors are held in check by relatively unstable chemical "inhibitors,"² which resemble serum complement in that they can be inactivated by heat or by other deleterious factors. Such inactivation releases the previously latent local growth stimulants. Making use of this lability, Witschi³ of the University of Iowa zoological laboratory allowed frog's eggs to undergo spontaneous degeneration for from three to five days before fertilization. Certain of the growth inhibitors were apparently lost or inactivated by this process. From these senile or overripe eggs, atypical frog embryos developed. These were characterized by low grade cellular differentiation and by a tendency to tumor formation, melanotic cell masses, for example, being found in internal organs. Since such senile embryos rarely live more than two weeks, Witschi resorted to the expedient of transplantation into normal tadpoles. These tadpoles afterward developed into mature frogs. Most of the transplants underwent degeneration. A few, however, remained alive. Aggressive, invasive tumor growth took place in the peritoneal cavities, with secondary nodules occasionally appearing in distant organs or tissues. The transferable cell masses, therefore, had properties simulating malignancy.

Association News

THE CLEVELAND SESSION

Alumni Dinner of Washington University School of Medicine

The alumni dinner of the Washington University School of Medicine will be held on Tuesday evening, June 12, at 6 30, at the Hotel Statler.

Alpha Omega Alpha Lecture at Annual Session

The annual Alpha Omega Alpha dinner and lecture will be held in Cleveland at the Hotel Statler on Thursday evening, June 14. The speaker, Dr. Lewellys F. Barker (Baltimore), will discuss the life of Dr. William H. Welch.

Dinner of Section on Orthopedic Surgery

The annual get-together dinner of the Section on Orthopedic Surgery will be held at the Westlake Hotel, Rocky River, Ohio, Wednesday evening, June 13, at 7 30. This will be preceded by a lake ride, yachts leaving East Ninth Street Pier, which is about two blocks east and one-fourth mile north of the Auditorium Building, for Rocky River at 6 o'clock. In case of inclement weather, Westlake taxicabs will leave the

¹ Organ Specific Lipoids editorial J A M A 97 1628 (Nov. 28) 1911

² Holtfreter J Naturwissenschaften 21 766 1933

³ Witschi Emil Proc. Soc. Exper. Biol. & Med. 27 475 (March) 1930 31 419 (Jan.) 1934

Carter Hotel, Prospect Avenue near East Ninth Street, at 6 30. For those who do not wish to take the lake ride, suitable transportation will be provided.

Tickets will be for sale at \$2 at the meeting hall in the Auditorium.

MEDICAL BROADCASTS

National Broadcasting Company

The American Medical Association broadcasts on a coast-to-coast network each Monday afternoon from 4 to 4 15 Central daylight saving time (4 o'clock Eastern standard time, 3 o'clock Central standard time, 2 o'clock Mountain standard time, 1 o'clock Pacific standard time).

The next three broadcasts will be as follows:

May 21 Disease by Air, W. W. Bauer, M.D.
May 28 The Family Medicine Chest, Morris Fishbein, M.D.
June 4 The Hazards of Summer, Morris Fishbein, M.D.

Columbia Broadcasting System

The Association broadcasts on a Western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4 30 to 4 45, Central daylight saving time. The next three broadcasts will be as follows:

May 24 Character of a Quack, Morris Fishbein, M.D.
May 31 Health Slogans, W. W. Bauer, M.D.
June 7 The First Month, W. W. Bauer, M.D.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Rural Health Service—Dr. Ira O. Church, health officer of Alameda County, has appointed Dr. Luther Michael, district health officer to serve San Leandro and a large part of the unincorporated territory surrounding that city; Dr. Paul E. Dolan, health officer of Livermore, the rural district of Murray Township, within which Livermore is located; Dr. Richard Heinz, health officer of Pleasanton, Pleasanton Township; Dr. Elmo M. Grimmer, Irvington, Washington Township; and Dr. John A. Azevedo, that portion of Eden Township which surrounds Hayward, while Nelson C. Clemens, D.V.M., continues as health officer of that city. All district officers are serving the county health department without financial reimbursement.

COLORADO

Society News—A tissue study conference, devoted to "Pathology of the Thyroid Gland," was held by the Colorado Society of Clinical Pathologists, April 21, led by Drs. William C. Black and George Z. Williams, Denver. Dr. Richard W. Whitehead gave an illustrated lecture in the evening on "Newer Advances in Endocrinology." The next meeting of the society will be held in October—Dr. George B. M. Baker, Rocky Ford, addressed the Crowley County Medical Society at Ordway, April 11, on "Orchitis: Its Cause and Treatment." At a meeting of the El Paso County Medical Society, April 11, speakers included Drs. Alfred L. Briskman, Colorado Springs, on "Arterial Hypertension: Its Prognostic Significance"; Bernhard B. Gloeckler, Colorado Springs, "Multiple Sclerosis"; Frank T. Stevens, Colorado Springs, "Differential Diagnosis in Multiple Sclerosis"; and Von H. Brobeck, Colorado Springs, "The Eyes in Multiple Sclerosis."—Dr. Roy E. Davis, Pueblo, discussed onchocerciasis before the Pueblo County Medical Society, April 17.

DISTRICT OF COLUMBIA

Medical Bills in Congress—H. R. 6130 has been reported to the House with recommendation that it pass, proposing to prevent misrepresentation and deception in the sale of milk and cream in the District of Columbia.

Society News—The Washington Urological Society was addressed April 30 by Drs. John H. Morrissey and Moses Swick, New York, on "Phases of Prostatic Resection" and

"Excretion Urography," respectively—Speakers before the Washington Medical and Surgical Society, March 26, included Dr Joseph F Elward on "X-Ray Diagnosis of Gastric Carcinoma" Dr John C Eckhardt, among others, addressed the society, recently, on "Calcium in Asthma"

ILLINOIS

Dr Williams Honored—The Adams County Medical Society held a banquet in honor of Dr William W Williams, Quincy, March 12, in recognition of his completion of fifty years in the practice of medicine Dr Nathaniel G Alcock, Iowa City, presented a floral tribute on behalf of the University of Iowa College of Medicine, where Dr Williams graduated in 1884, and Dr Philip H Kreuscher, Chicago, president, Illinois State Medical Society, presented a gold watch on behalf of the Adams County Medical Society Dr Williams has practiced in Quincy for thirty-nine years On the scientific program, Dr Alcock discussed resection of the prostate, and Dr Kreuscher, backache

Society News—Dr David C Todd, St Louis, recently addressed the Macoupin County Medical Society in Carlinville on the economic side of the general practice of medicine—At a meeting of the Franklin County Medical Society in Benton, April 26, speakers included Dr Max S Wien, Chicago, on "Relation of Dermatology to General Medicine"—Drs George T Palmer, Springfield, and George H Vernon Jr discussed "Blood Sedimentation in General Practice" before the Christian County Medical Society in Taylorville, April 18—At a meeting of the Jefferson-Hamilton County Medical Society in Vernon, April 12, Dr James A Warner, St Louis, spoke on treatment of bacterial diseases—A symposium on cancer was presented before the La Salle County Medical Society in La Salle April 25, by members of the staff of Washington University School of Medicine, St Louis Drs Isaac Y Olch, James Barrett Brown and Nathan A Womack

Chicago

United Medical Service, Inc, Sued—Quo warranto proceedings were instituted, May 12, in the Superior Court, Cook County, by the attorney general of Illinois, questioning the right of the United Medical Service, Inc, 23 East Jackson Boulevard, to engage in the corporate practice of medicine under the provisions of the medical practice act of Illinois The United Medical Service, Inc, was organized as an Illinois corporation and chartered, Dec 15, 1930, with an authorized capital stock of \$40,000 (THE JOURNAL, Oct 8, 1932, p 1267) Dr Joseph G Berkowitz, formerly director of the Public Health Institute, is president of United Medical Service, Inc

Society News—Dr George H Weaver was elected president of the Society of Medical History of Chicago, May 2, Dr David J Davis, vice president, and Dr Irving S Cutter, secretary—Speakers before the Chicago Orthopedic Club, May 11, were Drs Marcus H Hobart on "Myositis Ossificans," Ferdinand C Seidler, "Fracture Dislocation of the Shoulder," and Henry Bascom Thomas, "Undifferentiated Osteogenic Sarcoma"—The Chicago Gynecological Society was addressed, May 18, by Drs James E Fitzgerald on "Management of Pregnancy in Women with Heart Disease," and Lester E Frankenthal Jr, "The Cardiac Patient in Pregnancy, with a Report of a Case of Coronary Occlusion During Pregnancy" Among others, Drs Leonard E Markin and Leon Bloch will speak before the Chicago Society of Allergy, May 21, on "Allergic Colitis"—Speakers before the Chicago Ophthalmological Society, May 21, will review a century of progress in ophthalmic therapeutics, ophthalmic teaching and ophthalmic surgery, they will be Drs Oscar Dodd, Evanston, Ill William E Gamble Los Angeles and Harry Woodruff, Joliet, Ill—Dr Percival Bailey will discuss "Peculiarities of Tumors of the Nervous System in Infants and in Childhood" before the Chicago Pediatric Society, May 22

INDIANA

Tuberculosis Meeting—Dr Merlin H Draper, Fort Wayne, was elected president of the Indiana Tuberculosis Association at the twenty-third annual meeting in Indianapolis, April 17-18 Speakers at the scientific sessions included

- Dr Harry E Kleinschmidt New York Can Modern Medicine Abolish Tuberculosis?
- Dr Harvey L Murdock Fort Wayne When Should Hygiene Treatment of Tuberculosis Be Concluded?
- Dr Paul D Cimm Evansville Illustrated Demonstration of Thoracic Surgery
- Dr Willis D Gatch Indianapolis Surgery in the Treatment of Tuberculosis

Society News—Dr Robert B Osgood, Boston, addressed the Fifth District Medical Society in Terre Haute, May 4, on "Treatment of Arthritis"—Dr Edward A Oliver, Chicago, will address the Tenth District Medical Society, May 29, on "Diagnosis and Treatment of Some of the Commoner Skin Diseases"—Dr William F Hughes, Indianapolis, discussed common diseases of the eye before the Cass County Medical Society in Logansport, April 20—At a meeting of the Posey County Medical Society in New Harmony, April 12, Dr Thomas F Reitz, Evansville, spoke on coronary occlusion—The Porter County Medical Society was addressed in Valparaiso, April 24, by Dr Herbert E Landes, Chicago, on genito-urinary diseases

IOWA

Society News—A recent meeting of the Boone Story County Medical Society in Nevada was addressed by Drs Homer S Elmquist, Cambridge, and George J Severson, Slater, on "Diseases of the Blood" and "Purpura Hemorrhagica," respectively—Speakers before the Calhoun County Medical Society in Rockwell City recently were Drs Oscar R Prettyman, Manson, and Louis E Eslick, Rockwell City, on urinalysis and general practice, respectively—Dr Clifford J Barborka, Chicago, addressed the Clinton County Medical Society in Clinton, recently, on "Present Conception of the Relation of Diet to Health and Disease"—Dr Frederick L Nelson, Ottumwa, addressed the Davis County Medical Society in Bloomfield in March on "Diagnosis of Surgical Urology"—The March meeting of the Sac County Medical Society was addressed, among others, by Dr Fred L Knowles Fort Dodge, on "Care of Fractures of the Neck of the Femur"—At a meeting of the Scott County Medical Society in Davenport, recently, Dr Carl A Hedblom, Chicago, spoke on "Treatment of Pulmonary Abscess and Empyema"—Dr Charles Mayo, Rochester, Minn, will discuss "Glandular Regulators of Physiologic Activity" before the Linn County Medical Society, Cedar Rapids, June 7

KANSAS

Society News—Dr Don Carlos Peete, Kansas City, discussed "Myocarditis, with Special Reference to Myocardial Damage Resulting from Influenza" before the Douglas County Medical Society, recently—At a meeting of the Shawnee County Medical Society, recently, Dr Merritt Paul Starr, Chicago, spoke on "Treatment of Pernicious Anemia" April 2, Dr John A Crabb, Topeka, spoke on "Synergistic Bacterial Gangrene of the Abdominal Wall," and Mr Ross L Laybourn, bacteriologist "Problems in the Transmission of Bacterial Disease"—Speakers before the Wyandotte County Medical Society, Kansas City, May 1, included Dr Lee V Hill on "Diagnosis and Treatment of Infections of the Hand, with Anatomical Demonstrations"

KENTUCKY

Survey of Syphilis—The bureau of venereal diseases of the state board of health has announced a survey of prenatal and congenital syphilis in counties throughout the state, to be made by a field nurse in cooperation with county health departments, practicing physicians and civic groups Efforts will be made to have all cases brought under treatment, either by family physicians or by health officers, the latter confining themselves to the indigent

University News—About fifty rare medical books, principally on diseases of the lungs and of the skin, were recently given to the University of Kentucky by a senior student, Ralph G Edwards The books were formerly the property of physicians in his family and their publication dates range from 1820 to 1840 Another gift consisted of 175 volumes of medical works, note and account books of the late Dr John W Crenshaw Versailles, presented by his daughter A third gift of 100 volumes was given by Dr John C Lewis, Lexington, son of the late Dr John A Lewis, Georgetown It includes several volumes of early transactions of the Kentucky State Medical Society and copies of the *Richmond and Louisville Medical Journal* from 1871 to 1876

LOUISIANA

State Medical Election—Dr Courtland P Gray Sr, Monroe, was chosen president-elect of the Louisiana State Medical Association at its annual meeting in Shreveport in April and Dr Stanford Chaille Jamison, New Orleans, was inducted into the presidency Vice presidents elected are Drs Marcy J Lyons, New Orleans Joseph M Gorton, Shreveport and Rhett G McMahon Baton Rouge and Paul T Talbot, New Orleans, was reelected secretary

MASSACHUSETTS

Health Education Session—The New England Health Education Association will convene for its annual conference, June 1-2, at the Massachusetts Institute of Technology, Boston. Among others, Dr. Wilson G. Smullic, professor of public health administration, Harvard University School of Hygiene and Public Health, will discuss present stage of research into the cause of the common cold, and Prof. Edward C. Lindeman of the New York School of Social Science, adult health education.

Society News—Dr. Clarence B. Gay, Fitchburg, was elected president of the Worcester North District Medical Society at its seventy-fifth annual meeting, April 25, in Fitchburg. Dr. Andrew R. MacAusland, Boston, delivered the annual oration on "Recent Trends in the Treatment of Fractures."—Dr. Richard M. Smith addressed the South End Medical Club in Boston, April 17, on "Acute Abdominal Conditions in Children."—Dr. Frederick T. Lord, Boston, was chosen president of the Massachusetts Tuberculosis League at its annual meeting, April 12. Speakers included Drs. Henry D. Chadwick, state health commissioner, and Kendall Emerson, New York.—Dr. Leybourne Stanley P. Davidson, professor of medicine, University of Aberdeen, addressed the Harvard Medical Society, April 10, on "Incidence, Etiology and Treatment of Nutritional Anemia."

MICHIGAN

Alumni Day Clinics—The annual Alumni Day of Detroit College of Medicine and Surgery, now the Wayne University College of Medicine, will be held June 7. Diagnostic medical clinics will be conducted by Dr. Charles P. Emerson, professor of medicine, Indiana University School of Medicine, and Dr. William C. MacCarty, director of the department of surgical pathology of the Mayo Clinic. In addition they will hold a clinicopathologic conference, and a skin clinic has been arranged by the Detroit Dermatological Society. Dr. James W. Inches will be the principal speaker at the evening banquet which will be a testimonial to Drs. Angus McLean, Don M. Campbell and Andrew P. Biddle. Detroit College of Medicine and Surgery was merged in January with other city colleges to form Wayne University and at that time assumed its present title.

MINNESOTA

Radiologic Meeting—Included among the speakers at the winter meeting of the Minnesota Radiological Society at the University Hospital, Minneapolis, March 10, were the following:

- Dr. Leo G. Rigler, Minneapolis: Roentgenologic Studies of Multiple Births.
- Dr. John B. Eneboe, Incidence of Para Esophageal Hernia in Pregnant Women.
- Dr. Joseph T. King and Karl W. Stenstrom, Ph.D.: Radiation Effects on Tissue Cultures of Lymph Nodes.
- Dr. Jacob Sagel: Benign Strictures of the Stomach.
- Dr. Kano Ikeda: Roentgen Observations on Acute Amebic Colitis.
- Dr. Byrl R. Kirlin, Rochester, The American Board of Radiology.
- Dr. William T. Peyton: Observations on Diagnosis and Treatment of Malignancy.

Lectureship in Honor of Dr. Carman—An annual lectureship in radiology has been established in honor of the late Dr. Russell D. Carman, the Minnesota Radiological Society announces. It is to be known as the Russell D. Carman Memorial Lecture, and the first in the series will be given by Dr. Alexander B. Moore, Washington, D. C., at the meeting of the Minnesota State Medical Association in Duluth, July 16. At this meeting Dr. Donald C. Balfour, Rochester, will also deliver an address on the life of Dr. Carman, whose entire career was devoted to roentgenology. He held several teaching positions in his specialty and from 1913 until his death was head of the section on roentgenology at the Mayo Clinic. He was also professor of roentgenology in the Graduate School of the University of Minnesota. He served as president of the American Roentgen Ray Society and of the Radiological Society of North America.

MISSOURI

University News—The class of 1899 of Missouri Medical College will hold a reunion at the University Club, June 9 in St. Louis. Dinner will be at six o'clock. Plans have been changed since the announcement in THE JOURNAL, May 12, p. 1578. Further information may be had from Dr. J. Clay Heinrichs, 306 North Grand Avenue, St. Louis.

Dinner for Colonel Skinner—Col. George A. Skinner, surgeon of the seventh corps area, U. S. Army, was honored

at a dinner at Hotel Melbourne, St. Louis, April 19. Colonel Skinner has been conducting an inactive duty training period for officers of the medical department of the reserve corps at St. Louis University. Speakers included Lieut. Col. Theodore P. Brooks, Col. William E. Leighton, Major Amand N. Ravold, Lieut. Col. Norville W. Sharpe, Major James E. Phillips, Major John R. Hall, Major Lee D. Cady and Major Millard F. Arbuckle. A certificate of esteem was presented to Colonel Skinner, who will soon retire from active service.

Society News—Dr. Willis C. Campbell, Memphis, addressed the Pettis County Medical Society at Sedalia, April 16, on "Ankylosis of Joints."—Speakers before the Linn County Medical Society recently included Drs. Charles C. Conover and Theodore H. Aschmann, Kansas City, on "Circulation of the Myocardium in Health and Disease" and "Causes and Treatment of Sterility," respectively.—At a meeting of the Caldwell-Livingston County Medical Society in Clullicoth, March 12, Drs. John H. Ogilvie and George E. Knappenberger, Kansas City, discussed hyperthyroidism and hyperemotionalism in the nervous state, respectively.—Dr. Noe F. Chostner discussed the "Diagnosis and Preoperative Treatment of Acute Appendicitis" before the Cape Girardeau County Medical Society at Cape Girardeau, March 12.

NEBRASKA

State Medical Meeting at Lincoln—The annual meeting of the Nebraska State Medical Association will be held at the Cornhusker Hotel, Lincoln, May 22-24, under the presidency of Dr. Joseph Bixby, Geneva. Guest speakers listed on the tentative program are:

- Dr. Walter L. Biering, Des Moines, Iowa, subject not announced.
- Dr. Walter A. Fansler, Minneapolis: Malignancies of the Colon.
- Dr. Edwin P. Sloan, Bloomington, Ill.
- Dr. Thomas G. Orr, Kansas City, Mo.: Acute Peritonitis.
- Dr. Clifford J. Barborka, Chicago: Diets and Disease.
- Dr. Kellogg Speed, Chicago: Knee Joint Injuries.

Among Nebraska physicians on the program will be:

- Dr. John V. Reilly, Grand Island: Pseudoparalysis in Childhood.
- Dr. Robert Bruce Eldredge, Omaha: Intravenous Therapy in Pediatrics.
- Dr. Harry H. Everett, Lincoln: Choice of Operation in Disease of the Biliary Tract.
- Dr. Maurice C. Howard, Omaha: Management of Hemorrhage in Peptic Ulcer.
- Dr. James Dewey Bisgard, Omaha: Treatment of Chronic Empyema.
- Dr. Benjamin F. Loran, Auburn: Federal Funds for Physicians Rendering Service to the Indigent.
- Dr. Samuel A. Swenson, Oakland: Cancer with Special Reference to Palliative Treatment.
- Dr. William A. Colburn, Lincoln: Treatment of Infantile Eczema.

NEW JERSEY

Society News—Dr. William P. Healy, New York, addressed the Atlantic County Medical Society, Atlantic City, May 11, on cancer of the female pelvic organs.—Dr. Frederick William Sunderman, Philadelphia, discussed diabetes before the Gloucester County Medical Society, Pitman, April 19.—Drs. Percy S. Pelouze, Philadelphia, and Arthur J. Casselman, Camden, addressed the Bergen County Medical Society, Hackensack, May 8, on "Gonorrhea in the Male and Its Treatment" and "Cooperation in the Control of Gonorrhea and Syphilis," respectively.—The program of the Hudson County Medical Society was presented by the staff of Greenville Hospital, Jersey City, May 1, as follows: Drs. Robert H. Stockfisch, "Neurologic Procedure for the General Practitioner," and Solomon Ben Asher, "Use of Quinidin in Heart Affections." Dr. Leo J. Ward, Elizabeth, demonstrated unusual and interesting roentgenograms.

NEW YORK

Society News—Dr. Richard B. Cattell, Boston, addressed the Ontario County Medical Society, Clifton Springs, April 10, on diagnosis and treatment of carcinoma of the colon.—Dr. Oswald S. Lowsley, New York, was the speaker at the annual dinner of the Geneva Academy of Medicine, April 19, on "Diagnosis and Surgical Treatment of Kidney Pathology."—Dr. Roscoe R. Graham, Toronto, Ont., addressed the Rochester Academy of Medicine, April 5, on surgical therapy in duodenal ulceration.—Drs. Andrew Macfarlane and Thomas Parran, Jr., addressed the Medical Society of the County of Albany, April 25, on "The Family Physician Past, Present and Future" and "Health Services of Tomorrow," respectively.—Speakers at the spring meeting of the Chautauque County Medical Society, Fredonia, in March were Drs. James H. Borrell and John M. Barnes, Buffalo, on "Common Urological Conditions" and Roy G. Pfotzer, Buffalo, "What to Expect from an Electrocardiogram."—Dr. Edgar W. Phillips, Rochester, addressed the Niagara County Medical Society, March 13, on surgery in pulmonary tuberculosis.

New York City

Biggs Memorial Lecture—The Hermann M. Biggs Memorial Lecture of the New York Academy of Medicine was given by Dr Arthur J. Bedell, Albany, on "Causes and Prevention of Blindness," May 3.

Sydenham Hospital Adopts Group Plan—A plan of group hospitalization to be placed in operation by fall has been announced by Sydenham Hospital. Single persons earning not more than \$3,000 and married persons earning not more than \$5,000 will be entitled to three weeks' hospitalization for \$10 a year. Laboratory work and treatments will be furnished at cost, the maximum fee for any patient not to be more than \$100 even in cases of operation. No charge will be made for use of operating room and anesthesia.

Annual Art Exhibit—The New York Physicians' Art Club held its seventh annual art exhibit at the New York Academy of Medicine early in April. About 300 pictures were entered, but the exhibition also included sculpture, wood carving, jewelry, lithographs and etchings. About seventy physicians contributed, including Drs Otto P. Diederich, Fresno, Calif., Isaac Seth Hirsch, Walter Beran Wolfe, Paul E. Bechet, Solomon Stan Bauch, Alpheus Freeman, Arnold Galambos, Winfred M. Hartshorn, Alfred Braun, Louis Rachlin and Henry S. Patterson.

Conference on Artificial Fever—The fourth annual conference on fever was held at the College of Physicians and Surgeons of Columbia University, April 27, under the chairmanship of Dr. William Bierman. Among the speakers were

Dr. Walter M. Simpson, Dayton, Ohio, Report of Progress in Artificial Fever Studies at Miami Valley Hospital
Drs. Ferd D. Streeter and Stafford L. Warren, Rochester, Further Observations on Cases of Dementia Paralytica Treated with Artificially Induced Fever
Drs. Bierman and Edward A. Horowitz, Results of Hyperpyrexia in Gynecologic Conditions
Dr. Charles L. Short, Boston, General Diathermy in Treatment of Rheumatoid Arthritis
Dr. Heinrich F. Wolf, Willard Parker Hospital, Application of Hyperpyrexia to Monkeys Infected with the Virus of Poliomyelitis

Officers of Society for Prevention of Asphyxial Death—The board of directors of the Society for the Prevention of Asphyxial Death elected the following officers at a meeting, March 29: Dr. Paluel J. Flagg, president, Col. Charles R. Reynolds and Dr. Pol N. Coryllos, vice presidents, and Capt. Ernest W. Brown, M. C., U. S. Navy, Washington, D. C., secretary. The board of directors has recently been reorganized with the following members:

Captain Brown	Dr. Richard N. Pierson, New York
Dr. Ethan F. Butler, Elmira, N. Y.	Colonel Reynolds
Dr. Coryllos	Dr. Royd R. Sayers, U. S. Public Health Service, Washington, D. C.
Dr. Henry Hall Forhes, New York	Dr. Amos O. Squire, Ossining, N. Y.
Dr. Lee M. Hurd, New York	Dr. Cassius H. Watson, New York
Dr. Chevalier L. Jackson, Philadelphia	Dr. Joseph S. Wheelwright, New York
Dr. John Devereux Kernan, New York	Dr. Horatio B. Williams, New York
Dr. Harrison S. Martland, Newark	
Dr. Matthias Nicoll, Jr., White Plains, N. Y.	
Dr. Charles Norris, New York	
Dr. George Ornstein, New York	

NORTH DAKOTA

Personal—Dr. George M. Williamson, Grand Forks, secretary, state board of medical examiners, was guest of honor at a dinner given by the Minneapolis editorial board of the *Journal-Lancet*, February 15. Dr. and Mrs. Andrew Carr, Minot, celebrated their golden wedding anniversary recently. Dr. Carr is a past president of the North Dakota State Medical Association.

Society News—The North Dakota Hospital Association was recently organized at Bismarck with Mr. J. T. Tollefson, Fargo, president, and Dr. Henry L. Halverson, Minot, secretary. Sixteen hospitals were made charter members. Dr. Ruth M. Mahon, Grand Forks, addressed the Grand Forks District Medical Society, March 21, at Grand Forks, on blood dyscrasias. Drs. William T. Peyton, Minneapolis, and Leonard W. Larson, Bismarck, discussed tumors of the breast at a meeting of the Sixth District Medical Society, Bismarck, in March.

OHIO

Dr. Bachmeyer Resigns as Dean—Dr. Arthur C. Bachmeyer, dean of the University of Cincinnati College of Medicine for the past nine years, recently submitted his resignation, effective September 15. Dr. Bachmeyer will continue as superintendent of the Cincinnati General Hospital and as professor of hospital administration.

Society News—A symposium on pediatrics was presented before the Summit County Medical Society, Akron, May 1, by Drs. Ray S. Friedley, James G. Kramer, Joseph M. Ulrich, William D. Lyon and Myrl M. Miller. Dr. Walter C. Alvarez, Rochester, Minn., addressed the Academy of Medicine of Cleveland, May 18, on "Some Causes of Nervous Indigestion." Dr. Harry H. McClellan, Dayton, addressed the Washington County Medical Society, April 11, on "Physical Causes of Mental and Nervous Diseases." A symposium on chronic abdominal pathology was presented before the Miami County Medical Society, Troy, April 6, by Drs. James R. Caywood and Robert D. Spencer, Piqua, and Don F. Deeter, Pleasant Hill. Drs. Myron Eli Millhon and Howard E. Boucher, Columbus, addressed the Pickaway County Medical Society, Circleville, April 6, on medical and surgical treatment, respectively, of diabetes. Dr. Donald E. Yochem, Newark, addressed the Licking County Medical Society, Newark, March 30, on recent developments in diseases of the chest. Dr. Ralph F. Massie, Ironton, discussed treatment of varicose veins at a meeting of the Hempstead Academy of Medicine, Portsmouth, April 9. Dr. Max Cutler, Chicago, will address the Cincinnati Academy of Medicine, May 21, on "Indications and Limitations of Radium in the Treatment of Cancer."

OKLAHOMA

Society News—Dr. Cyrus C. Sturgis, Ann Arbor, Mich., addressed the Ottawa County Medical Society in March on the anemias. Drs. Marvin E. Stout, Oklahoma City, and Raymond G. Jacobs, Enid, addressed the Garfield County Medical Society, Enid, March 29, on "The Ruptured Appendix" and "Pelvic Inflammatory Disease Treated by the Elliott Method," respectively. Drs. Paul C. Carson, and Ernest M. Seydell, Wichita, Kan., addressed the Kay County Medical Society, Ponca City, March 22, on heart disease in children and removal of foreign bodies by the bronchoscope, respectively. Physicians who addressed the Carter County Medical Society, Ardmore, March 5, were Drs. Arthur W. White, Oklahoma City, on peptic ulcer, LeRoy D. Long, Oklahoma City, gonor, and Leonard S. Willour, McAlester, cooperative medicine, basic science and public health. Drs. Hugh G. Jeter and Grider Penick, Oklahoma City, discussed anemia and pelvic tumors, respectively, before the Cleveland County Medical Society at a meeting at the state hospital, Norman, March 8.

PENNSYLVANIA

Society News—The medical and dental societies of Delaware County were guests of the Delaware County Pharmacists' Association in Chester, May 10, mutual medical problems were discussed by Drs. Wilmer Krusen, Philadelphia, and Ralph E. Bell, Media. Harry Cornfeld, Ph.D., Collingdale, and S. B. Luckie, D.D.S., Chester. Dr. Meredith F. Campbell, New York, addressed the Pittsburgh Urological Association, May 14, on "Lower Urinary Tract Obstruction in Infants and Children."

Philadelphia

Portrait Presented—A portrait of the late Dr. David Bushrod James, once professor of gynecology at Hahnemann Medical College and Hospital, was presented to the college by the professional staff at a memorial meeting, April 20. Dr. Earl B. Craig, successor to Dr. James, made the presentation.

Personal—Dr. John A. Kolmer, professor of medicine, Temple University School of Medicine, was elected director and president of the board of trustees of the Research Institute of Cutaneous Medicine, April 26. The institute was founded in 1922 by Drs. Kolmer, George Raiziss and the late Jay Frank Schamberg. Dr. Henry B. Ingle was recently elected president of the Philadelphia alumni society of the University of Pennsylvania School of Medicine.

Premedical Requirements Raised—The faculty of the Woman's Medical College of Philadelphia recently recommended after a study of records of its students that applicants for admission in September 1935 be required to present evidence of completion of three years of premedical college study. The corporation of the college confirmed the recommendation. Special consideration will be given to cases in which unusual ability or equivalent training may warrant exceptional action.

Society News—"Jefferson Medical College Night" was observed at the meeting of the Philadelphia County Medical Society, April 25, with the following speakers: Drs. Baxter L. Crawford and Thomas C. Stellwagen, Jr. on tumors of the kidney, and Martin E. Rehfuess and Edward J. Klopp, diseases of the gallbladder. Drs. Francis C. Grant and Stuart V.

Rowe, among others, addressed the Philadelphia Neurological Society, April 27, on "Neurogenic Origin of Duodenal Ulcer" and "Localization of the Sleep Mechanism," respectively

VIRGINIA

Society News—The Norfolk County Medical Society held its annual all day clinic, April 11, at the Hospital of St Vincent de Paul and Protestant Hospital, Norfolk. In the evening Dr J Shelton Horsley, Richmond, delivered an address on "Symptoms, Diagnosis and Treatment of Carcinoma of the Gastro Intestinal Tract"—Dr Charles Howard Marcy, Pittsburgh, was a guest speaker at the annual meeting of the Virginia Tuberculosis Association at Richmond, April 5, on "Tuberculosis in the Negro"—The Virginia Society of Otolaryngology and Ophthalmology held its annual meeting in Lynchburg, May 5, with Drs Samuel J Crowe, Baltimore, and John H Dunnington, New York as guest speakers—Edward L Corey, Ph D, and Edwin P Johnson, DVM, addressed the University of Virginia Medical Society, March 5, on "Physiology of the Mammalian Fetus and 'Etiology and Histogenesis of Leukosis in Fowls,' respectively Dr Dean Lewis, Baltimore, President, American Medical Association, addressed the society, March 26, on "Hypothesis The Relation of Chemical Syndromes to Specific Cellular Changes"—Drs Joseph T Buxton and Landon E Stubbs, Newport, addressed the Warwick County Medical Society, Newport, on "Pulmonary Complication Following Surgical Operations" and "Pregnancy in Diabetes," respectively

GENERAL

Specialties Board to Meet in Cleveland—The recently created Advisory Board for Medical Specialties will hold its annual meeting in Cleveland, Sunday, June 10, at 6 p m, at the Hotel Cleveland Buffet supper will be served. This meeting is for the purpose of transacting general business concerning certification of specialists and also to receive applications from the special groups now engaged in the formation of new certifying boards in their respective specialties. Representatives of these boards making applications will be invited to attend. More detailed information as to requirements and procedure may be obtained on application to Dr Paul Titus, secretary, Advisory Board for Medical Specialties, 1015 Highland Building, Pittsburgh

Bequests and Donations—The following bequests and donations have recently been announced

Nathan Littauer Hospital Gloversville, N Y, \$25 000 under the will of the late Millard F Button
Ella M Brown Charitable Circle which operates Oak Lawn Hospital Marshall Mich \$48 000 by the will of George A Johnson
St Vincent's Hospital, New York, \$65 000 by the will of Margaret Crane Hurlburt
Mercy Hospital, Philadelphia, \$1 000 by the will of Hannah H Williams
Children's Hospital Philadelphia will ultimately receive the most of the \$160 000 estate of Mrs Mary V Lewis Sayres, the income to be used for maintenance
New York Hospital \$5 000 by the will of the late Helen Jay Garretson
Herman Knapp Memorial Eye Hospital New York \$20 000 and Columbia University \$10 000 for biologic research by the will of the widow of Dr Frederick Kammerer
Cancer Hospital House of Calvary Bronx N Y \$2 000 by the will of the late Dr Frederick S Dennis
University of Pennsylvania School of Medicine department of otolaryngology will receive the bulk of the \$40 000 estate of the late Dr George Fetterolf

Annual Meeting of Urologists—The American Urological Association will hold its thirty-first annual meeting at the Claridge Hotel, Atlantic City, May 22-24. Guest speakers will be Mr J Swift Joly, London, England, who will give the Ramon Gutierrez Lecture on "Etiology of Urinary Calculi" and Prof Luigi Caporale, Turin, Italy, who will speak on "Experimental Researches on Ureteral Sympathectomy." Among other speakers will be

Dr Heinrich L Wehrheim and Louis Nerb Ph D Brooklyn Bacteriophage in the Treatment of Kidney and Bladder Infections
Dr John R Cawlk St Louis Cavity Punch Operation for the Removal of Obstructive Lesions at the Vesical Orifice in Women and Children
Dr Hugh H Young Baltimore Prostatic Calculi
Dr Clyde Leroy Deming Dr Ralph H Jenkins and Gertrude van Wageningen Ph D New Haven Conn Endocrinological Relationships of Prostatic Hypertrophy
Drs Hugh Cabot Waltham Walters and Virgil S Counseller Rochester Minn Successful Plastic Operations for Hypospadias
Drs Abraham Hyman and William H Mencher New York Causes of Death Following Operations on the Urinary Tract
Dr Jose C Ferrer San Juan Puerto Rico, Filariasis of the Spermathe Cord and of the Epididymis

Sir Henry Wellcome Awarded the Remington Medal—The fourteenth Remington Honor Medal awarded by the New York Branch of the American Pharmaceutical Association

has been conferred on Sir Henry Wellcome, London. Sir Henry is a native of Wisconsin and a graduate of the Philadelphia College of Pharmacy. After establishing the firm of Burroughs-Wellcome and Company, pharmaceutical manufacturers, in London he became a British subject. He has established the Wellcome Physiological Research Laboratories, Wellcome Chemical Research Laboratories, Wellcome Historical Medical Museum, Wellcome Bureau of Scientific Research, all in London, Wellcome Tropical Research Laboratories, Gordon Memorial College, Khartoum, Africa, and the auxiliary Floating Tropical Research Laboratory on the Upper Nile. Sir Henry has also conducted ethnologic and archaeologic research. He is a member of many scientific societies in England and in 1928 received the honorary degree of doctor of laws from the University of Edinburgh. He was knighted by King George V in 1932 and has recently received the Cross of the Legion of Honor of France.

Survey of Homes for Aged—The American Trade Council, U S Board of Trade, Washington, D C, has recently made public the results of a survey of noncharitable homes for elderly persons. Twenty-eight institutions are listed in which membership may be obtained by payment of entrance fees varying from \$1,000 to \$7,000. They are independent or semi-independent and practically self supporting. The capacity of these homes varies from twenty to two hundred rooms and they are operated like clubs or American plan hotels. Some are under church auspices but admit men and women of other creeds than that of the sponsor. Five homes are listed in California, three each in New York, Wisconsin and Minnesota, two each in Oregon, Michigan, Indiana and Iowa, and one each in Nebraska, Salt Lake City, North Dakota, Pennsylvania, Washington and Massachusetts. Most of these homes are said to have been founded by some individual or group of persons in the communities in which they function. The American Trade Council offers its services to persons interested in selecting a home for their declining years, whether or not they are members. Inquiries accompanied by a stamped envelop for reply will receive attention if the seekers advise their age, physical and financial condition, and whether entrance to a home is for one person or for husband and wife. The address is 744 Jackson Place, Washington, D C.

Medical Bills in Congress—Changes in Status S 2892 has been favorably reported to the Senate, proposing to amend existing laws prohibiting the introduction of intoxicating liquor within the Indian country to permit its use as a medicine by practicing physicians for patients of Indian blood. H R 3464 has been favorably reported to the House, proposing to reimburse the Muncy Valley Private Hospital for medical treatment and hospital care of a seaman, U S Navy, who was injured while on authorized leave. The services were rendered by authority of the Bureau of Medicine and Surgery of the Navy Department but the comptroller general ruled that the government was not responsible for expenses incurred for civilian medical treatment of enlisted men of the navy and marine corps while on leave of absence. H R 6379 has passed the House, authorizing, under the Federal Emergency Public Works program, federal grants "to nondenominational educational institutions not operating for profit, which have received or are receiving public aid, for the construction, repair or improvement of any such project, or to nondenominational educational institutions not operating for profit for purposes and projects designed to serve the interests of the general public, such as hospitals in connection with class A medical schools or hospitals under public control such as municipal hospitals, for the construction, repair or improvement of any such project, but no such grant shall be in excess of 30 per centum of the cost of the labor and materials employed upon such project." **Bills Introduced** S 3560, introduced by Senator Vandenberg, Michigan, proposes to amend an act entitled "An Act to recognize the high public service rendered by Major Walter Reed and those associated with him in the discovery of the cause and means of transmission of yellow fever" so as to provide monthly payments to the father and mother of William H Dean, deceased, who "submitted to the yellow fever tests in Cuba."

Society News—The seventh annual meeting of the American Association of School Physicians will be held in Saratoga Springs, N Y, June 25-28.—The annual Conference of State and Provincial Health Authorities of North America will take place, June 5-6, in Washington, D C, followed by the Surgeon General's Conference of State and Territorial Health Officers, June 7-8.—Dr Simeon Burt Wolbach, Boston, was elected president of the American Society for Experimental Pathology at its meeting March 29, and Dr Shields Warren, Boston, was reelected secretary.—William M Clark, Ph D,

Baltimore, was named president of the American Society of Biological Chemistry at its annual meeting, March 29, Howard B. Lewis, Ph.D., Ann Arbor, was elected vice president, and Henry A. Mattill, Ph.D., Iowa City, secretary. The next annual session will be held in Detroit.—Dr. James Alexander Miller, New York, was chosen president-elect of the American College of Physicians at its annual meeting in Chicago, April 19. Vice presidents are Drs. James H. Means, Boston, Randolph Lyons, New Orleans, and James F. Churchill, San Diego. Dr. William Gerry Morgan, Washington, D. C., was reelected secretary-general, and Dr. William D. Stroud, Philadelphia, reelected treasurer.—Dr. Perry G. Goldsmith, Toronto, was chosen president of the American Laryngological, Rhinological and Otological Society at its recent annual meeting, and Dr. Robert L. Loughran, Bridgewater, Conn., reelected secretary.—Dr. Eugene L. Opie, New York, was elected president of the Society for Experimental Biology and Medicine at the recent annual meeting. Philip E. Smith, Ph.D., is vice president, and Abraham J. Goldforb, Ph.D., New York, secretary.—Dr. B. B. Vincent Lyon, Philadelphia, was elected president of the American Gastro-Enterological Association at the annual meeting in Atlantic City, April 30-May 1. Dr. Russell S. Boles, Philadelphia, was reelected secretary. Robert W. Hegner, Ph.D., Baltimore, delivered the Alvarez Lecture on "Pathogenic Protozoa in the United States."

FOREIGN

Robert Jones Prize Awarded—The British Orthopedic Association has awarded the Robert Jones Prize jointly to Mr. R. W. Butler, honorary surgeon to Addenbrooke's Hospital, Cambridge, and Mr. H. J. Seddon, resident surgeon, Royal National Orthopedic Hospital, Stanmore, for their essays on Pott's paraplegia. The award was £50 and a gold medal to each.

Institute of Hygiene and Tropical Medicine—The new building of the Belgian Institute of Hygiene and Tropical Medicine in the rue Nationale, Antwerp, including a school, library, laboratory and a research hospital with forty-eight beds, was opened, Nov. 4, 1933. It is open to all research workers and medical students. Attending the ceremony were representatives from the U. S. Public Health Service, Washington, D. C., Harvard University, Boston, the London School of Tropical Medicine, the Wellcome Bureau of Scientific Research, the Pasteur Institutes of Paris, Algiers and Dakar, and other institutions.

Government Services

U S Army Reserve Corps Needs Physicians

The Surgeon General of the U. S. Army is asking the cooperation of all class A medical schools, superintendents of approved hospitals and medical societies in an endeavor to stimulate interest in the Medical Reserve in order to bring the corps up to authorized strength. The present strength of the Medical Reserve is less than 9,000, less than half the number that would be required in the event of a mobilization. An applicant for appointment must be a citizen of the United States or the Philippine Islands, between the ages of 21 and 35, graduate of a recognized medical college, must possess a license to practice in some state, territory or the District of Columbia, must be actually engaged in the practice of medicine and must meet the physical requirements of the army. If the applicant had commissioned service in the army between April 6, 1917, and June 30, 1919, he may be appointed in any section and to any grade not above the highest grade held by him at any time, provided a vacancy exists for his grade. Original appointments are made in the grade of first lieutenant and are for a period of five years at the end of which a physician may be reappointed in his former grade or in the next higher grade, provided he has established his eligibility for promotion and a vacancy exists. Assignments are based on the officer's qualifications for the particular duty he is to perform, although due weight will be given to his desires. For promotion, the officer must have 300 hours to his credit earned during the five year period immediately preceding the date of recommendation for promotion and previous to Oct. 1, 1930 or have a certificate of capacity for the higher grade, which may be earned by passing the prescribed examination. Physicians desiring appointment should make application to the commanding general of the corps area in which they reside. Further information may be obtained from the Surgeon General, U. S. Army, Washington, D. C.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 21, 1934

Asthma Research

The Asthma Research Council was formed in 1927 because the public, which subscribed money for investigation, was not satisfied with the fact that there was no "cure" for such a common disease. In answer to one broadcast appeal 4,000 donations, amounting to \$9,000, were received. The latest report of the council states that two factors must be borne in mind in estimating the measure of success achieved by the research workers. The ultimate problem—the discovery of a cure—must be regarded as merely the small final link in a long and intricate chain of evidence as to what are the causes of this distressing complaint. The results achieved are considered satisfactory, but funds are still needed to continue the valuable work, which moves steadily, though of necessity slowly, toward the final link in the chain. Asthma clinics are maintained at Guy's Hospital, the Hospital for Sick Children, Great Ormond Street Hospital, St. Mary's Hospital, King's College and University College, London, and the General Infirmary, Leeds. At Guy's Hospital the clinic is under the general supervision of Dr. A. F. Hurst, the senior physician who is an authority on asthma, and on its staff are a physician, two physiologists, a clinical pathologist, a biochemist and a radiologist, who work in cooperation. The physician, Dr. L. J. Witts, has published in *Guy's Hospital Gazette* an important paper on allergy and asthma, based largely on the work of the clinic. He points out that asthma is only one of a family of diseases, which includes eczema, urticaria, hay fever and certain forms of dyspepsia, dependent on sensitiveness to protein substances, such as milk, eggs and the various animal and vegetable dusts. In an analysis of 500 patients who passed through the clinic the most striking difference between the asthmatic and the normal persons were (1) the frequency of protein hypersensitiveness, as revealed by cutaneous reactions and in the personal and family history, and (2) the high incidence of morbid changes in the upper and lower respiratory tracts. Hence many hold that asthma is the result of a general factor, protein hypersensitiveness, and a local factor, damage to the respiratory tissues. But this is an incomplete explanation. As to the respiratory factor, it is generally agreed that operations on the nose produce little permanent benefit while treatment directed at the lower respiratory tract, whether inhalations, respiratory exercises or vaccines, has only a qualified success.

ALLERGY AND ASTHMA

But it is the question of allergy that Dr. Witts now discusses at length. The high incidence of other allergic diseases among asthmatic persons, the frequency of asthma or other allergic diseases in the family history, and the considerable percentage of cases of positive skin reactions have been proved beyond doubt, but little is known of the mode of development and effect of the morbid process in asthma, and in most cases corrective measures cannot be applied satisfactorily. Dr. Witts thinks that it is unfortunate that allergy should become a specialty, which in America has its exclusive practitioners and its separate journals and societies. The allergist seems to suggest that all is known about the pathogenesis and treatment of a disease when it can be shown to be associated with protein sensitivity, and he seems to regard the patient simply as an area of skin for cutaneous reactions and the injection of desensitizing agents. In no other allergic manifestation do the results of desensitization approach in success those of hay fever. Yet

with massive and expensive doses of pollen the symptoms can be ameliorated in only two thirds of the cases and complete relief given in about one third. Treatment must be repeated for several years before lasting relief is obtained. Dr Witts' experience with specific desensitization in asthma has not been encouraging.

OBSTACLES TO DESENSITIZATION

Dr Witts enumerates some of the obstacles to the view that the treatment of an allergic disease consists in discovering the substance to which the patient is sensitive and desensitizing him. 1 The multitude of potential allergens. There are innumerable proteins to which an asthmatic person may become sensitive and there is the problem of the 20 per cent of asthmatic persons in whom no skin reaction can be obtained. 2 Multiple sensitization. This was found at the Guy's Hospital asthma clinic in two thirds of the patients giving a positive skin reaction. 3 Difficulty in interpreting skin tests. The extreme variation in the percentage of asthmatic persons who give positive skin reactions by different technicians is only one difficulty. A patient may give positive reactions to substances that do not affect him clinically and negative reactions to substances that do. Pollen reactions have been observed in patients without hay fever, and negative skin reactions to pollen in patients with hay fever. Skin tests tend to persist after clinical hypersensitiveness has disappeared. Negative skin reactions are rather frequent in patients who are sensitive to food and have severe indigestion, Henoch's purpura or eczema whenever certain foods are eaten. 4 Difficulty of desensitization. Freeman and Bray attribute such failure to inadequate dosage of the offending protein but the fact remains that desensitization will always be a matter for the expert physician and the patient with plenty of time and money and will never be of much value for such a common disease as asthma. 5 Persistence of the morbid diathesis and development of new sensitizations. In asthma, single sensitization is unusual, specific desensitization is arduous, and the relief from it is rarely more than transitory. While the patient is being desensitized to one allergen, fresh sensitizations may develop. Children who are sensitive to food lose this disability and become sensitive to pollen or to dust. Cases beginning as hay fever and temporarily relieved by pollaccine develop asthma from other causes in the winter months. The final demonstration of the bankruptcy of the modern allergic hypothesis of asthma was left to van Leeuwen, who showed that asthmatic persons could live free from attacks in hermetically sealed rooms, fed with filtered air, but relapsed as soon as ordinary air was breathed. Burn has suggested that the allergic state is not due to the presence of unusual proteins in the blood but to deficiency in the amount of epinephrine circulating in the blood. Dr Witts thinks that the solution of the problem of asthma will come on biochemical lines. The similarity between the effects of histamine and the symptoms of the allergic diseases the resemblance of the action of epinephrine in asthma to proved substitution therapies, such as insulin in diabetes, and the new knowledge of the autonomic nervous system point to a promising line of attack.

A Safer Milk Supply

Sir Hilton Young, minister of health, received a deputation from the People's League of Health to urge the importance of securing a supply of clean and safe milk. Lord Moynihan said that milk was almost a perfect food but that the amount consumed in this country was much less than in many others and that there would be great advantages in increasing its consumption. Unfortunately the existing milk supply was not safe. From 3 to 15 per cent of samples were found contaminated with tubercle bacilli. Even certified milk had been found to contain them. Contaminated milk was also responsible

for the spread of other diseases, such as undulant and scarlet fever. The chief desire of the People's League of Health was to secure the eradication of tuberculosis from cattle and to obtain a supply of clean and safe milk. But the cleaning up of herds was a long process and, for the present, milk other than "certified milk" and "grade A" (tuberculin tested) milk should be pasteurized. Dr Lyle Cummins, professor of tuberculosis, Welsh National School of Medicine, said that much tuberculosis and a large proportion of tuberculous meningitis was due to milk-borne infection. It would be advantageous if the tuberculin testing of cattle could be carried out free of charge and if the several grades of milk could be replaced by one single grade of tuberculin tested milk. Dr R. C. Jewesbury, a pediatrician, said that the medical profession was no longer justified in advising the use of "raw" milk for children. It was important that pasteurization should be carefully controlled.

The minister of health, in reply, stated that he was deeply grateful to the People's League of Health for the information given by the deputation. He assured its members that they were preaching to the converted. He agreed with Lord Moynihan that it was necessary to proceed simultaneously along two lines of advance: (1) to do everything possible to remove infection from herds and (2) to take steps for the protection of milk. The government was prepared to provide a sum not exceeding \$3,750,000 in aid of a campaign for securing a purer milk supply. The importance of educating the public with regard to the milk supply was great and in this task the People's League of Health could be of the greatest assistance.

PARIS

(From Our Regular Correspondent)

March 28, 1934

Goiter in France

At its last trimonthly session, held in Paris, the *Assemblée de la médecine générale française* discussed the documents submitted by practitioners from all the departments of France, on the subject of goiter. This is what was found. There is a general retrogression of the epidemic related to the improvement in hygiene and in drinking water. There are still permanent regional foci in the Vosges, the Jura, Alsace, the Alps and the Pyrenees. In Auvergne the endemia has retrogressed to such an extent that it is confined to families with hereditary thyroid disease. Goiter is sporadic (the Loire basin) and rare in departments along the coast (including Corsica) and in the plains in general. It is almost unknown in the departments of Nord and Pas-de-Calais. Cretinism, which was frequently observed in association with goiter, receives today little attention. On the contrary, the rural physicians reported that one finds small nodular goiters almost everywhere (particularly in Sarthe, Eure-et-Loir and Var). In the large cities, most of the small goiters are imported. Inquiry reveals frankly the existence of unsuspected foci in villages in some departments regarded as goitrogenic or otherwise. Observation of the stable population of these goitrogenic burghs directs attention to various factors, particularly the drinking water under many different forms: iron-containing water (not only in Sarthe but also in Cher), copper-containing water (in Puy-de-Dôme), noncalcareous water (Lot, Charente, Corse), shallow water easily polluted (Haut-Rhin, Pyrenees-Orientales, Lot) and well water highly mineralized owing to passage through alluvial deposits—sometimes bacterial (Sarthe, Seine-et-Oise, Pyrenees-Orientales, Haut-Rhin). The endemia in these foci often ceases with the introduction of different drinking water (even though from goitrogenic regions: Alpes-Maritimes, Puy-de-Dôme, Hautes-Pyrenees). Retrogression of goiter has been shown to be in direct relation with the enrichment of the diet and the introduction of a greater variety of foods, notably with the use of

sea foods (Puy-de-Dome), the discarding of an almost exclusively vegetarian diet and the introduction of more meat (Dordogne, Alpes-Maritimes) and the addition of wine to the water (Basses-Pyrenees). The influence of heredity has often been noted—on the female side in 40 per cent of the cases. Exophthalmic goiter is, on the whole, more frequent in the cities than in the rural districts. There are also regional sectors (Eure-et-Loire, Sarthe, Bouches-du-Rhone). On the other hand, vast regions are spared. Exophthalmic goiter is exceptional in agricultural regions such as Loiret, Cotes du-Nord and Var, and in industrial regions such as Valenciennes, whereas the coast regions are more affected (Pas-de-Calais, Loire-Inferieure). Farmers have been more frequently attacked since the war (Doubs, Dordogne). In association with this condition, the practitioners often observe high emotions at various periods in the sex life of the woman. They point out also the determining role of infections: acute articular rheumatism, infections of adolescents, typhoid and, in general, intestinal infections of water origin. They emphasize the relations between the hyperthyreoses and tuberculosis and conclude that hyperthyroidism is not a factor of aggravation but, on the contrary, of resistance in the tuberculous person. The amelioration of exophthalmic goiter in a tuberculous person is sometimes followed by recrudescence of pulmonary tuberculosis. The treatment of hyperthyreoses, according to the general belief, should be chiefly medical. Combined with ordinary medical treatment, rest, possibly even isolation is useful and sometimes sufficient. Physical therapy, especially radiotherapy and electrotherapy, associated with medical treatment, is being used more and more. Owing to the refinements in the technic, thyroid surgery is becoming more common as a special type of surgery. But in many departments of France it is not readily accepted.

The Identity of Various Forms of Scarlet Fever

La Societe des medecins des hopitaux de Paris discussed recently, at length, the subject of "The Identity of Various Forms of Scarlet Fever," the unanimous conclusion being that medical, puerperal and surgical scarlet fever are produced by the same micro organism. A Lemierre and Jean Bernard adduced proof with respect to puerperal scarlet fever, with the aid of twenty-three observations collected from their department in the Hopital Claude-Bernard. The cutaneous exanthem was that of the typical case of scarlet fever, with a somewhat greater frequency than usual of miliary vesiculation. Three persons died, one with a syndrome of malignant scarlet fever and one with streptococcemia. Four infants hospitalized with their mother died: one from bronchopneumonia, one from streptococcal septicemia and two from erysipelas. Puerperal scarlet fever is therefore true scarlet fever, with a peculiar frequency of streptococcal manifestations. Robert Debre, G. Ramon, Maurice Lamy and Burnet found in the lochia hemolytic streptococci, with which they were easily able to produce a toxin similar to the Dick toxin, whereas the throat of the patient did not contain any hemolytic streptococci. In the ward in which the puerperal scarlet fever patients were located, an intern and a nurse contracted the disease, while a second intern developed erysipelas. They injected into the children a streptococcus toxin as a prophylactic measure, but it still had a pathologic potency, for a typical case of scarlet fever developed suddenly, with vomiting, swelling and redness of the throat and tongue just as in ordinary scarlet fever.

Concerning surgical scarlet fever, Lemierre and Flandrin reported two cases observed after appendicectomy. The Schultz-Charlton test was positive. The scarlet fever antitoxin does not appear to have convincing results. Mr. Halle, who had observed previously at the Hopital des enfants malades numerous cases of postoperative scarlet fever with frightful sequels (intestinal gangrene, gangrene of the penis after circumcision) confirmed

that the malignancy of this form of scarlet fever had certainly diminished. He obtained excellent results from the use of convalescent serum. It is not necessary to exceed doses of from 10 to 20 cc.

Disturbance at the University of Paris

A recent ministerial decree changed the makeup of the council on discipline at the university. These councils consist of members elected by the students, but foreign students are seldom chosen, unless some foreign student is involved. Some fifty foreign students recently staged a demonstration before the university as a protest against what they regarded as an injustice. The disturbance was carried to the court of the Faculte de medecine, where a serious row occurred. Four students were injured and had to be given first aid before they were taken home by the police. The Association general des etudiants, which was about to hold its annual election of members to serve on its committee, was unable to convene, owing to the general excitement that prevailed as a result of this incident. The election was postponed until a later date, the old committee continuing to serve ad interim.

BERLIN

(From Our Regular Correspondent)

March 26, 1934

Consultation Centers for Expectant Mothers

Centers for expectant mothers and for infants have existed for many years in nearly all the larger cities of Germany, but it is planned to make such aid more extensive than it has been. In 1933 in the seventy cities of more than 50,000 inhabitants there were sixty-three consultation centers for expectant mothers. In thirty-three of these cities there was only one consultation center which does not seem adequate. In two cities there were from six to ten centers, in five cities, from eleven to thirty, and in three cities, more than thirty. Berlin, with forty-six centers, had the largest number.

Thirty-two cities report on the number of examinations made in their consultation centers. In 1933, a total of 34,700 examinations were carried out, almost exclusively by physicians and 76 per cent of them were first examinations, that is, the majority of the women dispensed with a more frequent consultation and were content with the first definite diagnosis of pregnancy.

Welfare aid for expectant mothers and puerperants was granted in eighty-five cities. Forty-one cities grant maternity aid if the income of the family does not exceed from one to one and a half times the regular amount granted for general welfare aid. Five cities grant maternity aid even though the family income is equal to from two and a half to three times the usual amount allowed for welfare aid. Twenty-seven cities come to the aid of expectant mothers when the *krankenkasse* refuses aid. Other cities base maternity aid on still different criteria.

The period for which maternity aid is granted varies. In most cities (63 per cent) it is granted for ten weeks. Twenty-seven cities grant aid for an even longer time. In thirteen cities maternity aid is allowed up to twelve weeks. In fourteen cities for a period of sixteen weeks, and occasionally even longer. Only in thirty-nine out of eighty-two cities is mention made of a course of instruction for expectant mothers.

Infant welfare aid is organized on a much wider basis than maternity aid. Ninety cities have infant aid centers. The expense is borne in most cases by the city alone. In the cities covered by the report there were only 338 maternity consultation centers all told, whereas there were 922 infant consultation centers. The city of Berlin alone reports eighty-three. But not only the number of infant welfare centers is greater,

their facilities are used much more frequently and regularly. In the year under consideration, 104,550 consultations were given in the cities with more than 200,000, 48,230 consultations in the group of cities with from 100,000 to 200,000 population, and about 48,000 consultations in the cities with from 50,000 to 100,000 population. The total number of consultations was 197,660, or more than five times as many as in the maternity consultation centers. In contrast with the maternity centers, the infant welfare centers were visited usually more than once. In the latter, only 48 per cent (less than one half) of the consultations were first consultations, whereas in the maternity consultation centers 76 per cent of all cases were first consultations.

The wider utilization of the infant consultation centers is due mainly to the fact that securing the clientele is simple, as it is effected through the notification of births at the office of the registrar.

Reorganization of Scientific Societies

The *Versammlungen Deutscher Naturforscher und Aerzte*, as it has existed for more than a generation has adopted a new order of business and a new constitution. The object of the new organization is to oppose the splitting up of medicine and the natural sciences into various specialties. It is proposed to emphasize the problems in which all (or at least many) branches of natural science and medicine have a common interest. At the same time, the traditional task of the society must not be forgotten, namely, to give the public an insight into the growth of German science.

The general assembly will be held only once in two years, which will necessitate using great care in the choice of topics and in applying sharp criticism to the subject matter to be presented. The scientific section as such will cover three and one-half days at the most. The board of trustees will henceforth organize only general sessions, sessions of the main scientific and medical groups, and joint sessions of several branches but no sessions of single branches. In addition, there will be evening lectures on popular scientific subjects. The topics for all sessions will be decided on by the officers of the society after consultation with the "scientific committee" and, as far as possible, with the large scientific societies representing individual specialties. In the general sessions and the sessions of the main group, scientific questions will be discussed that have either reached a reasonably definite settlement or that present a high degree of general interest. As speakers, such investigators will be chosen as have shown special merit in the fields concerned. In the opinion of the officers of the society, a general discussion the course of which no one can foresee would weaken the force of these communications and lessen the effect on the world's scientific circles; hence all discussion will be reserved for the so-called joint sessions, which will deal with topics that are of interest to the representatives of at least several of the branches of natural science or medicine and that will be presented by several speakers in the form of concise papers, to be followed by a detailed thorough discussion. In these sessions particularly the principle of combining several problems of common interest will come to the fore.

The officers of the society will not organize any professional meetings for the discussion of topics pertaining to a single branch of science or medicine. It is expressly stated that there is no place in the *Versammlungen Deutscher Naturforscher und Aerzte* for those persons who have no interest in anything outside their own specialty. Furthermore, no "unofficial" sessions of representatives of specialties will be allowed to disturb or take time away from the regular program as announced. Affiliated societies representing specialties will however be permitted to hold sessions in the convention city immediately before or immediately after the regular sessions.

The endeavors of the aforementioned society to emphasize the solidarity of the natural sciences and the medical sciences will likewise be furthered by the *Zweckverband der Deutschen naturwissenschaftlichen und medizinischen Kongresse*. The declared objective of this league is to create sentiment that will make for a broader organization of congresses of specialists. The propaganda will be confined to a publicity campaign and will not include any attempts to exert an immediate influence on the several societies of specialists. It is hoped that, in this manner, greater coherence will be injected into the organization of German scientific congresses as a whole.

Research on Hemostasis Following Injuries

Professor Magnus, the new occupant of a chair of surgery at the University of Berlin addressed the Berlin Medical Society on "The Peripheral Vascular System." In his research he has been concerned with the questions: How does the peripheral vascular system react to local stimuli? and Can hemostasis be made accessible to direct observation? He found capillary microscopy applied to the nail groove the most useful available method. If one injured with a needle a capillary loop in the nail groove of the human hand, an intensive hemorrhage was always produced that flooded the whole area. By producing an ischemia with an Esmarch bandage one was able to observe that the arterial system emptied its whole contents into the venous system. Because of the comparatively rude setup of the experiment and the difficulty of maintaining a bloodless condition for any length of time, by reason of the severe pain, no great progress was made by this method. Not until Magnus used the Peterfisch micromanipulator, with which he was able to cut into a sharply circumscribed spot in a capillary loop under direct vision, was his research successful. The method followed was this. In an experiment on himself he produced an ischemia in the left hand, which was enclosed in a plaster cast. A certain spot in the capillary network was selected, which was then injured and observations were instituted over a considerable period.

Is hemostasis brought about after injuries effected by contraction of the arteries or by thrombosis? Clinical observations point rather to contraction, otherwise it would be difficult to understand, when whole extremities are shot or torn off, that not infrequently one finds the stump of a vessel that is not bleeding. This observation is old, and again and again in medical history there have been periods in which artificial ligation of injuries was strongly advised against. The bleeding vessel was closed a while with the finger until it contracted, then the bleeding stopped definitively. Magnus confirmed this experimentally, while his assistant was preparing the soft parts in a lower leg amputation, he exposed the whole popliteal artery, together with its branches, and ligated it at the terminals. At first the blood was propelled rapidly to the point of ligation, but a gradual contraction was plainly recognizable, and finally the contraction became so complete that transverse incisions of the vessel without lumen could be observed. Nowhere could an obstructing thrombus be found.

Experimental injuries of the capillary loop with the micromanipulator confirm these macroscopic observations. In the film it can be noted that the vascular loop, filled originally in a normal manner with blood, undergoes a maximal contraction after the injury, becomes bloodless and is then invisible. The injured capillary perishes, as later examination reveals, and is not reformed at the same site. Future vascularization is taken over by adjacent vessels or by vessels coming forward from the deeper tissues. It appears to be proved that hemostasis following an injury does not result, as was for a long time assumed through the formation of thrombi in the vessels, but that the vessels have the capacity to prevent bleeding by contraction of the walls.

BUENOS AIRES

(From Our Regular Correspondent)

March 15, 1934

Black Cardiacs

Ayerza described in a lecture delivered in 1901 the clinical picture of a condition known only through his school, since the original lecture was not published. Some patients having chronic bronchial diseases come to have an intense cyanosis followed by symptoms of cardiac insufficiency. The author called these patients "black cardiacs" because of the disproportion which exists between the comparatively mild cardiac symptoms and the intense cyanosis. Dr. M. R. Castex and his collaborators have lately studied this clinical picture. The disease, which develops in three stages, bronchial, pulmonary and cardiac, is most common in man. It starts with recurrent bronchitis, usually during winter. Then the pulmonary or bronchopulmonary stage appears, with emphysema, sclerosis of the pulmonary artery and cyanosis due to insufficient oxygenation in the alveoli. There is also an increase of the alkali reserve, polyglobulism, hyperviscosity, apathy, somnolence and capillary dilatation. Cardiac insufficiency appears in the third stage of the disease. The sclerotic lesions of the pulmonary artery are secondary to hypertension in the lesser circulation. These lesions may exist without the presence of cyanosis. Their coexistence accelerates the evolution of the third stage.

Rôle of Pancreas and Suprarenals in Formation of Muscular Glycogen

Foglia, Damborsi, Fernandez and Leloir recently reported before the Sociedad Argentina de Biología the results of studies of the rôle of the endocrine glands in the reconstitution of the muscular glycogen. After removal of the suprarenals, the hepatic glycogen rapidly decreases while the muscular glycogen is still normal within minimal limits forty-eight hours later. Following pancreatectomy the capacity both to resynthesize glycogen after fatigue and to form it after the intravenous injection of 2 Gm of dextrose per kilogram of body weight fails. The previous injection of suprarenal extract gives suprarenalectomized animals the capacity of forming muscular glycogen and generally they produce it in supernormal amounts. The pancreas has a similar action. The values for muscular glycogen are slightly reduced forty-eight hours after pancreatectomy, but the glycogen is not resynthesized after fatigue, as in normal animals, nor is it deposited in the muscles after the injection of dextrose in the veins. However if insulin is injected, the capacity to resynthesize and deposit glycogen in the muscles is newly developed. The same glycogenic functions are observed by uniting the carotid artery and jugular vein of a suprarenalectomized dog to the artery and veins of an isolated or grafted pancreas. This proves that insulin regulates the capacity of resynthetization and deposition of glycogen independent of the nervous system. After the vagus nerves of chloralized dogs and cats have been cut, both the resynthesis and the deposition of muscular glycogen remain normal. This is contrary to the opinions of Hoet, Ernould and Debois, who claimed that the resynthetization and fixation of muscular glycogen are functions of the vagus nerves and that if these nerves were cut there would not be any secretion of insulin. The liver has no specific hormonal rôle.

Fifth National Congress of Medicine

The fifth National Congress of Medicine will take place in the Faculty of Medicine and Hospital Centenario of the city of Rosario, September 4-11. Dr. C. Munagurria is president and Drs. M. Vignoles, P. R. Omnes and J. Recalde Cuestas secretaries. The official topic to be discussed is amebiasis with the following speakers: Drs. M. R. Castex and D. Greenwax

on parasitology and clinical medicine, D. Staffieri, on extra intestinal localizations, S. Mazza, on its epidemiology, and A. Marotta, on its surgical treatment. There will be eighteen sections, each with its own topics to be discussed.

ITALY

(From Our Regular Correspondent)

Feb. 28, 1934

Congress of Dermatology and Syphilology

At the twenty-eighth Congress of Dermatology and Syphilology, held in Pavia under the chairmanship of Professor Mantegazza, the first topic was physiopathology of the skin in relation to newer data of morphologic and physicochemical research. The subject was discussed by speakers from various Italian clinics.

Professor Tommasi of the Clinica di Palermo, who spoke on the physiology of the skin in relation to the neuroendocrine system, emphasized that the skin is under the special control of the sympathetic, but a parasympathetic innervation has been demonstrated. The skin is the site where the external stimuli have their greatest effect on the neurovegetative system which explains many physiopathologic happenings and is useful from the therapeutic point of view when one desires to influence the general vegetative tonus and the whole organism. The skin does not have a metasympathetic system (peripheral and autonomic ganglions) as do the viscera. The vegetative regulation of the skin of the face is independent of that of the remainder of the body but is more closely connected with the superior centers which coordinate the higher functions. The bulbar vasodilatory center of the face is close to that of the gastromotor which explains certain physiologic and clinical facts. Tommasi does not admit that the skin is a hormone producing organ. The skin, however, produces various ferments and immunizing substances. There is a hormone equilibrium peculiar to every person to which, if artificially disturbed, he tends to return. The neuroendocrine factor has great importance in dermatology and must always be regarded as present. It can not, however, be regarded as a direct cause of any isolated dermatologic disorder properly so called. The speaker brought out the importance of this method of considering the diagnosis and treatment of dermatologic problems. The correction of the terrain with reference to exogenous causes, reducing the local sensitivity, and the removal of the irritative causes through a knowledge of the various reflexes, even of distant organs.

The second topic concerned lesions of the joints and bones in syphilis. The speaker, Professor Casazza, brought out the following conclusions. Skeletal changes of syphilitic origin are still numerous and complex. Congenital syphilis of the bones is a clinical entity. In addition to many types caused directly by the spirochete there are skeletal changes in which the action of syphilis is indirect, constituting a dystrophic cause affecting the bones. In regard to clinical observations, various points merit attention. Many syphilitic bone lesions show few signs of their existence or are concealed under obscure symptoms.

Radiology is a useful means of diagnosis. Serologic tests have value, but in certain periods and types of skeletal lesions they may be negative. The therapy of today comprises many methods of treatment, by the proper use of which rapid results may be secured, save in exceptional cases such as tabetic arthropathies.

Several further communications were offered. Hoffmann of Bonn spoke on the rapid diagnosis of recent syphilis (also primary) by means of smears from the tonsils.

The congress awarded the de Amicis prize to Prof. Mario Artom of Verona for his work on "Blood Accidents Due to Arsphenamines."

The assembly passed a resolution, to be presented to the Direzione generale di sanità pubblica, concerning the prophylaxis against syphilis, and the various serologic methods recently proposed

Prof Ludovico Tommiasi, clinician of the University of Palermo, was chosen president of the Consiglio direttivo della Società italiana di dermatologia e sifilografia

Professor Tanzi

Prof Eugenio Tanzi, occupant of the chair of clinical psychiatry at the University of Florence, died recently at Salo. His first works on paranoia and delinquency opened the way to a university chair. After serving as assistant in the Clinica psichiatrica, he entered the Istituto di fisiologia in Florence. He obtained then the chair of psychiatry in the University of Florence, and his first task was to organize the clinic of San Salvi. He founded the *Rivista di patologia nervosa e mentale*, which is now in its thirty-eighth year. Of his numerous publications on psychiatry, those concerning a new theory on hallucination are frequently cited. In addition to *Psichiatria forense*, he published in collaboration with Lugaro, a treatise on mental diseases, which is now in its third edition. In Florence Tanzi founded his school, whose pupils are to be found in many universities and psychiatric hospitals of Italy.

The Experimental Radio-Electric Center

Under the supervision of the minister of public education, an experimental radio-electric center has been established in Rome for the purpose of carrying on research. The center will study also the transmission and reception of electromagnetic waves.

Anthropometric Research

Dr Scatameccia reported recently to the Società di medicina legale in Rome the anthropometric measurements he secured from examining ninety-one cadavers of young men in connection with the determination of the constitutional type of Viola and of Barbara. Forty-two were found to be longilineal and forty-nine were brevilineal. In previous research the speaker had found few relationships between the dimensions and form of the cranium, on the one hand and the "habitus," on the other hand. In his present research the speaker found no relation between the total size of the cranial region and the facial region, on the one hand, and that of other parts of the body. In the individual dimensions, the length of the cranial and facial regions agreed with the development of the limbs, and the width of the cranial and facial regions agreed with the width of the trunk and its segments. The form of both sections of the head with respect to various norms did not present any relation to that of the trunk and its parts. The speaker confirmed the views advanced by Professor Ottolenghi with respect to the accuracy of the alleged functional morphology on which Barbara based his classification of types of cranium, namely, that the cranial region follows the development of the limbs, and the facial region the development of the trunk.

Marriages

FRANCIS CURTIS DOHAN, Philadelphia, to Miss Marie Barbara Postenrieder of Mering, Germany, March 28

JAMES FRED TERRY, Cookeville, Tenn., to Miss Margaret Katherine Harris of Union City, recently

DUDLEY CURTIS ASHTON to Miss Myrtle Irene Cooper, both of Richmond Va., April 3

FLORANCE L. SULLIVAN, Freeport, Ill., to Miss Magdalen Heim of Chicago, April 5

ERNEST K. McCOWN, Stanfield, Ore., to Miss Beth McKay of Scappoose, April 19

Deaths

Benjamin Franklin Van Meter, Lexington, Ky., Bellevue Hospital Medical College, 1897, in 1910 member of the House of Delegates of the American Medical Association, member of the Kentucky State Medical Association, veteran of the Spanish-American and World wars, fellow of the American College of Surgeons, on the staffs of St. Joseph's and Good Samaritan hospitals, aged 60, died, March 8, in Rancho Santa Fe, Calif., of pulmonary tuberculosis.

Albert Ware Nash, Dallas, Texas, Vanderbilt University School of Medicine, Nashville, Tenn., 1906, member of the State Medical Association of Texas, fellow of the American College of Surgeons, formerly city health officer, served during the World War, member of the visiting surgical staff of the Parkland, Dallas Methodist and St. Paul's hospitals, on the courtesy staff of the Baylor Hospital, aged 50, died, March 11, of coronary thrombosis.

Harry Louis Abramson, St. John, N. B., Canada, Yale University School of Medicine, New Haven, Conn., 1911, chief of laboratories, New Brunswick Department of Health, member of the board of professional examiners of the Council of Physicians and Surgeons of New Brunswick, on the staff of St. John General Hospital, aged 48, died, April 17, in the Hospital of the Rockefeller Institute, New York.

Ernst Jonas St. Louis, Medizinische Fakultät der Friedrich-Wilhelms-Universität, Berlin, Prussia, 1895, member of the Southern Surgical Association and fellow of the American College of Surgeons, on the staffs of the Jewish Hospital, St. Louis City Hospital, Jewish Home for Chronic Invalids and St. John's Hospital, aged 61, died, March 2, when he jumped from a seventeen story window.

Chauncey Boyd Griffiths, Newark, N. J., Columbia University College of Physicians and Surgeons, New York, 1896, member of the Medical Society of New Jersey, fellow of the American College of Surgeons, aged 64, on the staff of the Hospital for Women and Children where he died, March 23, of carcinoma of the bladder and diabetes mellitus.

Roscoe Conkling Hubbard, Tampa, Fla., Mississippi Medical College, Meridian, 1912, past president of the Hillsborough County Medical Society, served during the World War, formerly mayor of Bushnell, aged 48, died, March 24, in the Veterans' Administration Facility, Seminole, of cerebral embolism and gangrene of the left leg.

Paul Lovejoy Holliday, Athens, Ga., University of Georgia Medical Department, Augusta, 1917, member of the Medical Association of Georgia, past president of the Clarke County Medical Society, served during the World War, on the staff of the Athens General Hospital, aged 41, died, April 22, of heart disease.

Oakey Stitt Gribble, Clarksburg, W. Va., University of Maryland School of Medicine, Baltimore, 1904, member of the West Virginia State Medical Association, served during the World War, formerly superintendent of the Mason Hospital, aged 57, died, April 3, of carcinoma of the prostate with metastasis.

Levi R. Wilhelm, Blanca, Colo., Eclectic Medical University, Kansas City, Mo., 1901, Hahnemann Medical College of the Kansas City University, 1902, county coroner, registrar of vital statistics, county physician and city health officer, aged 68, died March 25, in the Lutheran Hospital, Alamosa, of heart disease.

DeWitt Clinton Huntoon Waterloo, Iowa, Rush Medical College, Chicago, 1903, past president of the Black Hawk County Medical Society, formerly police commissioner and health officer, on the staffs of the Allen Memorial and St. Francis hospitals, aged 61, died, April 17, of cerebral hemorrhage.

Edward B. Wiley, Grinnell, Iowa, Hahnemann Medical College of Philadelphia, 1882, member of the Iowa State Medical Society, formerly member of the city council and mayor, on the staffs of the Grinnell Community Hospital and St. Francis Hospital, aged 76, died, March 5, of abdominal tumor.

Jacob W. Graybill Newton, Kan., College of Physicians and Surgeons, Medical Department, Kansas City University, 1898, formerly county health officer, lieutenant governor and state senator, aged 62, died, March 24, in the Junction City (Kan.) Municipal Hospital, of pneumonia.

Aden Clarence Gates Kingston, N. Y., Albany Medical College, 1893, on the staffs of the Kingston and Benedictine hospitals and formerly on the staff of the Ulster County

Tuberculosis Hospital, aged 72, died April 8, of coronary thrombosis and coronary sclerosis

Warren Buxton Stone ☉ Schenectady, N Y, Harvard University Medical School, Boston, 1899, fellow of the American College of Physicians, member of the American Society of Clinical Pathologists, aged 57, died, March 31, of cerebral hemorrhage and arteriosclerosis

Ernest Linwood Hill, Framingham, Mass, Dartmouth Medical School, Hanover, N H, 1902, member of the Massachusetts Medical Society, served during the World War, on the staff of the Framingham Union Hospital, aged 55, died, April 1, of heart disease

William Edward Hendry ☉ Willimantic, Conn, Albany (N Y) Medical College, 1898, past president of the Windham County Medical Society, on the staff of the Windham Community Memorial Hospital, aged 60, died, March 11, of coronary thrombosis

Charles Stewart Houghland, Milroy, Ind, Marion-Sims College of Medicine, St Louis, 1892, member of the Indiana State Medical Association, served during the World War, aged 62, died, April 15, in St Vincent's Hospital, Indianapolis, of heart disease

Joseph Peter Bouvier ☉ Whitinsville, Mass, School of Medicine and Surgery of Montreal, Faculty of Medicine of the University of Laval at Montreal, Que, Canada, 1905, aged 53, died, April 2, in the Woonsocket (R I) Hospital, of heart disease

David Roy Nelson, Moline, Ill, Northwestern University Medical School, Chicago, 1908, past president of the Rock Island County Medical Society, formerly coroner of Johnson County, Wyo, aged 55, died suddenly, April 2, of heart disease

Charles Alexander McLelland, Keyes, Okla, Eclectic Medical University, Kansas City, Mo, 1901, Barnes Medical College, St Louis, 1910, aged 57, died, January 26, of pulmonary tuberculosis, chronic nephritis and carcinoma of the stomach

Robert Connery O'Neil ☉ Providence, R I, Medical College of Virginia, Richmond, 1925, on the staffs of the Memorial Hospital, Pawtucket, and the Hope and Charles V Chapin hospitals, aged 34, died, March 21, of lobar pneumonia

Walter Milton Babb ☉ Keyser, W Va, University of Pennsylvania School of Medicine, Philadelphia, 1893, past president of the West Virginia Public Health Council on the staff of the Potomac Valley Hospital, aged 63, died, March 25

William Sprague Sherman, Newport, R I, Jefferson Medical College of Philadelphia, 1888, member of the Rhode Island Medical Society, past president of the Newport County Medical Society, aged 72, died, February 28, of heart disease

George Francisco Simpson, Louisville, Ky, University of Louisville School of Medicine 1881 member of the Kentucky State Medical Association, member of the board of education for twenty years, aged 74, died March 26, of bronchopneumonia

Jonas Lester Johnson, Eastland, Texas Tulane University of Louisiana Medical Department, New Orleans, 1897, formerly county health officer, aged 64, died, January 17, of peritonitis, following perforation of the urinary bladder

Joseph Frank Hackett, Detroit, University of Michigan Medical School, Ann Arbor, 1924, on the staff of the Herman Kiefer Hospital, aged 35, died, April 10, in the Harper Hospital, of hypertension chronic nephritis and uremia

James Maxwell Hobson, Belton, S C, Medical College of the State of South Carolina, Charleston, 1913, member of the South Carolina Medical Association, aged 53, died April 6, of a self inflicted bullet wound

James Noble Garber, Detroit, Detroit College of Medicine, 1907, member of the Michigan State Medical Society, aged 65, died, April 7, in the Grace Hospital, of uremia and hypertensive cardiorenal disease

John William Reynolds, Creston, Iowa, Kansas City (Mo) Medical College 1898, chairman of the state board of assessment and review, formerly mayor, aged 59, died, March 14, at Detroit, of myocarditis

Richard L Barrington, Washington D C, Georgetown University School of Medicine, Washington, 1889, aged 69, died suddenly April 3 in the Missouri Baptist Hospital, St Louis of heart disease

George Edward Albon, Groton, N Y, Niagara University Medical Department, Buffalo 1894, member of the Medical Society of the State of New York, aged 69, died, January 25 of hypernephroma

Charles Lafayette Williams ☉ Greensburg, Ind, College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903, aged 70, died, March 10, of coronary thrombosis

Olin A Williams ☉ Butler, Pa, Hahnemann Medical College and Hospital, Chicago, 1890, past president of the Butler County Medical Society, aged 75, died, March 29, of coronary thrombosis

Clarence E Huston ☉ Paulding, Ohio, Medical College of Ohio, Cincinnati, 1893, president of the Paulding County Medical Society, county health officer, aged 65, died, April 14, of heart disease

Thomas Francis Burnett, Ridgewood, N J, Bellevue Hospital Medical College, New York, 1893, member of the Medical Society of New Jersey, aged 64, died, April 2, of bronchopneumonia

James E Cooper ☉ Cameron, W Va, Starling Medical College, Columbus, 1897, aged 59, died, April 15, of injuries received when the automobile in which he was driving was struck by a train

Peter E Wilkin, Colquitt, Ga, College of Physicians and Surgeons, Baltimore, 1890, formerly mayor of Colquitt, and member of the state legislature, aged 67, died, February 27, of endocarditis

Walter Charles Brady, Slatetale, Pa, Jefferson Medical College of Philadelphia, 1912, member of the Medical Society of the State of Pennsylvania, aged 52, died, April 11, of myocarditis

John Adams Barnette ☉ Watertown, N Y, University of Michigan Medical School, Ann Arbor, 1890, on the staff of the Mercy Hospital, aged 65, died, April 4, of cerebral hemorrhage

Edwin B Ellis, Streetman, Texas, Gate City Medical College, Dallas, 1907, aged 62, died, January 19, in a hospital at Corsicana, as the result of injuries received in an automobile accident

Wilson Alpheus Smart, Clayton, Ala, Louisville (Ky) Medical College, 1884, member of the Medical Association of the State of Alabama, aged 72, died, April 1, of heart disease

James Edgar Studebaker, Urbana, Ohio, Pulte Medical College, Cincinnati, 1879, aged 77, died, March 7, in a hospital at Dayton, of diabetes mellitus and abscess of the lung

Edward Maximilian Weiss, San Francisco, University of California Medical Department, 1877, aged 78, died, March 23, of a cardiac wound self inflicted with a surgical instrument

Charles J Barrett, Pittston, Pa, Columbian University Medical Department, Washington, D C, 1887, aged 71, died April 1, in the Pittston Hospital, of injuries received in a fall

Horace Ward Sheldon, Berkeley, Calif, Rush Medical College Chicago, 1885, aged 79, died, March 12, in the Alta Bates Hospital, of cerebral hemorrhage and arteriosclerosis

Louis Gustav Wille, New Braunfels, Texas, Tulane University of Louisiana Medical Department, New Orleans, 1892, aged 70, died, February 4, of cerebral hemorrhage

William W Buck, Rural Retreat, Va, College of Physicians and Surgeons, Baltimore, 1885, aged 77, died, March 25, of heart disease and nephritis

Marion P Willis, Commerce, Okla, Kentucky University Medical Department, Louisville, 1903, aged 64, died, February 1, of uremia and nephritis

Mervin Rives, Houston, Texas, University of Nashville (Tenn) Medical Department, 1898, aged 58, died, March 27, of acute dilatation of the heart

William Francis Hoeler ☉ Newark, N J, Maryland Medical College, Baltimore, 1908, aged 53, died suddenly April 8, of heart disease

George Herman Jennings ☉ Jewett City, Conn, Long Island College Hospital, Brooklyn, 1875, aged 83, died, March 4, of lobar pneumonia

Clark Mathew Proctor, Ames Iowa, Rush Medical College, Chicago, 1897, aged 61, died, February 3, of angina pectoris

Vincent Burgess, Greene, N Y, Kentucky School of Medicine, Louisville, 1876, aged 83, died March 24, of senile debility

Edwin O Hyde, Prineville Ore, American Health College, Cincinnati, 1880, aged 84, died, March 19, of heart disease

Samuel Aydelotte Billing, New Orleans, Bellevue Hospital Medical College, New York, 1897, aged 57, died March 2

Bureau of Investigation

IRONIZED YEAST

A "Patent Medicine" of the Get-Plump-Quick Type

The public has been made what the advertising men would call "yeast conscious" by the extensive and intensive advertising of the Fleischmann product. The food faddists have harped for years on the theme that most of us are suffering from an iron deficiency. The facts are, of course, that as a medicine yeast has no important place except as a means of furnishing vitamin B, which ordinarily should be and would better be obtained from one's food. As for a deficiency of iron, the average American dietary, rich as it is in meat, should make such a deficiency unnecessary if not improbable. But the public is not aware of these facts so that it is not surprising that, by plausible advertising, a "patent medicine" called Ironized Yeast has been built up into one of the best sellers in the nostrum field.

Ironized Yeast advertising is typical of the times. It plays on, and tends to create, an inferiority complex. The young woman with angular lines is led to believe that what she needs in order to obtain or retain the admiration of the opposite sex is to take Ironized Yeast. The concern that puts out Ironized Yeast has issued an advertising broadside of the tabloid newspaper type called *News Pictorial*, it is a sixteen-page affair profusely illustrated. In this we find articles bearing such captions as "What Kind of Women Do Men Stay in Love With?", "Husband-Stealer Beaten at Her Own Game—Wife Gets Wise to Herself in the Nick of Time—How She Won Her Man Back for Keeps", "Skinny Spouse Told Must Figure Out Love Tangle—Court OK's Hubby's Eyes for Curves", "Real He-Men Pick 'em Plump."

The *News Pictorial* also features a "short short story" One, entitled "Was It Love or Sex?" dealt with the sad case of skinny Lina, who, on the day before she was to marry Roy, found him making love to her room-mate, Norma. The reason, of course, was that Norma had curves and Lina hadn't. Following the taking of Ironized Yeast, however, Lina developed the Mae West figure and everything was lovely. Another *News Pictorial* story of the same type was entitled "Was Her One Mistake A Sin?" Here the angular young wife finds her husband making love to her more buxom sister, so she goes home to mother, who naturally advises her to take Ironized Yeast! The skinniness disappears, "And now—thanks to Ironized Yeast—Fred and I are the happiest couple in the world."

It is a rather tragic commentary on our boasted civilization that this sort of stuff can sell anything, but it evidently does. In the newspaper advertising of Ironized Yeast, skinny versus well developed men and angular versus well-curved women are brought into juxtaposition with the object of showing how necessary a rounded figure—and therefore Ironized Yeast—is to achieve economic or social success or marital happiness. In connection with some of the earlier illustrated advertisements, the Federal Trade Commission has expressed its opinion. In 1931 the Commission filed a complaint against J G Dodson of Atlanta, trading under the name of the Ironized Yeast Company. After calling attention to the fact that the Ironized Yeast advertisements claim that the product will clear the complexion, purify the blood, increase the weight and aid in digestion, constipation, rheumatism and nervousness, that there were no qualifications in these claims and the public was assured that if afflicted with the physical deficiencies mentioned, they would be cured by the use of Ironized Yeast, the Commission then cited the use of "before-and-after" pictures of persons described as having used the yeast product with beneficial results, and declared that they were not *bona fide* pictures of the same persons. The final disposition of the Commission's case has not yet (May 1934) been reported.

No 'patent medicine' could be successfully advertised without the use of testimonials, and anyone familiar with the "patent medicine" industry knows how easy it is to get testimonials. In 1930 it was brought out in this department of THE JOURNAL that the Ironized Yeast Company was circulating physicians. The letter that physicians received on the

stationary of the Ironized Yeast Company was headed in capital letters "A Gift Worth \$10 for You for Just a Little Information." Then the physician was asked to answer the following questions:

If you have ever prescribed yeast in your practice, for what disorders have you used it? What are your results in prescribing yeast for nervousness due to rundown condition for constipation? Have you ever taken it yourself?

Have you ever prescribed yeast plus iron (to be used together), and for what symptoms? What is your opinion of this combination for increasing the appetite, weight and as a general tonic?

The physician was to write his experience on his own stationery and send it to the Ironized Yeast Company. In return, the company promised to send him a bottle of perfume, or, as the Ironized Yeast letter more sonorously put it, "a luxurious flacon of exquisite French perfume—*Tout Paris de Gummel* regularly sold at \$10." To the layman the appeal is different. Purchasers of Ironized Yeast find in the circular that comes in the trade package an offer of a "Beautiful Picture For Framing—Free." The picture in question is of the Stone Mountain Memorial. In order to get this "free" picture, this is what the layman must do:

'Just write and tell us in your own words simply and naturally, like the friendly stories on the next page just what Ironized Yeast did for you. Tell us all the interesting details—how much weight you gained—what your friends think of your improvement—the activities you had to give up because of your poor health—any advancement either socially or in a business way your new health has brought you—how poor health, thinness or poor complexion once kept you back. These are the things we like to hear about. Then at the bottom tell us 'You may use this letter in any way you like to let others know what wonderful benefits Ironized Yeast will bring to them.'

Ironized Yeast comes in a bottle of fifty tablets costing \$1—that is, the tablets cost 2 cents apiece. The public is urged to take from eight to twelve tablets a day for from two to three months. At twelve tablets daily, a dollar package will last a little more than four days. The purchaser is urged to take Ironized Yeast for three months, which would cost \$21.60. The newspaper advertisements state that the company putting out the "patent medicine" guarantees results. Under the heading 'Results Guaranteed,' this paragraph appears:

'No matter how skinny and weak you may be this marvelous new Ironized Yeast should build you up in a few short weeks as it has thousands. If not delighted with the results of the very first package money back instantly.'

It takes careful reading of this alleged "guarantee" to show what it means. It will be noted that the company does not state that Ironized Yeast *will* "build you up in a few short weeks," but that it *should*. Furthermore, while the careless reader might get the impression that he could take Ironized Yeast for the three months that are recommended (at a cost of \$21.60) and at the end of that time, if he is not satisfied, could get his "money back instantly," this is not what the "guarantee" says. What it does say is that he must be dissatisfied with the results of the "very first package" (one dollar's worth). As one could hardly expect a transformation from emaciation to plumpness in the four days that a package lasts, the value of the "guarantee" is obvious.

According to the Ironized Yeast advertising, the product is "made from specially cultured *brewers ale yeast* imported from Europe"—claimed in earlier advertising to be from Bass' Ale brewery—which, it is alleged, "by a new process is concentrated 7 times." Further, this yeast "is then ironized with 3 kinds of strengthening iron." In some older advertising the president of the Ironized Yeast Company declared under oath that each Ironized Yeast tablet contained "the equivalent in vitamin strength of nine average yeast cakes a day." On a basis of twelve Ironized Yeast tablets a day, this would be equivalent to the vitamin value of 108 yeast cakes daily!

In the report of the Connecticut Agricultural Experiment Station issued in 1922, there was published an excellent piece of work by E M Bailey in collaboration with H C Cannon and H J Fisher on "The Potency of Some Commercial Vitamin Preparations as Compared With That of Dry Brewers' Yeast." Ironized Yeast was one of the preparations investigated. The various proprietary brands were not only analyzed chemically, but tested biologically. Young rats were placed on a diet lacking vitamin B. When the animal had shown a

can be accounted for by the most unusual finding of diffuse amyloid infiltration of the bone marrow. While it was not possible to demonstrate the presence of double refractile bodies or fat in the lymph nodes removed at biopsy, the presence of foam cells together with the clinical features of nephrosis and hypercholesterolemia warranted the diagnosis of lipid histiocytosis.

The present case serves to demonstrate the difficulty in the diagnosis of idiopathic amyloidosis, particularly since this condition presents a variety of clinical syndromes in which the disturbance in lipid metabolism may be prominent.

MAN RACHMILEWITZ, M.D.
Rothschild (Hadassah) Hospital,
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STAPHYLOCOCCUS TOXOID IN THE TREATMENT OF PUSTULAR DERMATOSES

To the Editor—The article by Kindel and Costello under this title in *THE JOURNAL*, April 21, is open to several criticisms.

The authors apparently set out to make a purely clinical assay of the efficacy of a particular commercial preparation of staphylococcus toxoid in the treatment of pustular dermatoses. Among a group of forty-two patients, including twenty-eight with acne vulgaris, eight with sycosis vulgaris and only six with furunculosis, a slight improvement was noted in eight while thirty-four were unimproved or worse after several injections of staphylococcus toxoid.

The authors concluded that these were unsatisfactory results and one does not cavil at their conclusion. But their further observation that "caution should be exercised in becoming over-enthusiastic about the value of staphylococcus toxoid until further reports confirm or deny our observations" seems entirely superfluous and unwarranted. Admittedly excessive enthusiasm of the type the authors probably had in mind exerts a baneful influence on the proper evaluation of any new biologic product. Since my paper in *THE JOURNAL* April 1, 1933 on the treatment of localized staphylococcal infections with staphylococcus toxoid is the only report of favorable results to which Drs Kindel and Costello directly refer, I beg leave to point out that a careful perusal of it will reveal no signs or symptoms of excessive enthusiasm on the part of its author. Moreover, it seems proper to state here that since the Connaught Laboratories began to manufacture staphylococcus toxoid for distribution to the medical profession in the Dominion of Canada, nearly twelve months ago, one has been far more concerned with endeavoring to dampen the excessive enthusiasm of certain clinicians who would use the product for almost any ailment than with challenging the skepticism of those who had not yet tested its efficacy in the treatment of localized staphylococcal infections.

But the results reported in my preliminary paper still stand and such favorable results are not 'denied' by any subsequent report of unfavorable results in which a different preparation is used. Though not "denying" the unfavorable results reported by Drs Kindel and Costello with their toxoid, further experience of the use of the Connaught Laboratories preparation of staphylococcus toxoid on a far greater number and variety of cases than were treated by these authors has indubitably confirmed my previous views as to its value in the treatment of localized staphylococcal infections. A paper summarizing my experience of the clinical use of this antigen for the past two years is in course of preparation.

To make my criticisms more particular the following points may be mentioned. First with regard to the patients selected for the investigation described in this paper not less than twenty-eight of the forty-two had acne vulgaris, a complex disease whose failure to respond to injections of staphylococcus

toxoid hardly constitutes a fair basis for disputing the efficacy of this product, when properly made, in the treatment of staphylococcal infections. Although in my hands remarkable degrees of improvement have often occurred from the use of toxoid in acne vulgaris when there has been bacteriologic evidence of superimposed infection with toxigenic staphylococci, there can be few dermatologists, and still fewer with a training in bacteriology who may have chanced to submit a comedone to anaerobic culture, who would maintain that the acne bacillus does not play a significant part in the etiology of this disease.

Second, with regard to the preparation of the toxoid, a single strain of staphylococcus was used in the manufacture of the original toxin, although there are many reasons for believing that several strains should be used and their toxins pooled. Again, the methods of preparation and assay of the toxin and its subsequent conversion into toxoid are of crucial importance. But such meager details as are given of their methods by these authors seem largely irrelevant, while no indication whatever is given of observations that may have been made regarding the antigenicity of the final product. Toxin filtrates were apparently assayed in terms of their necrotizing effect on the skin of rabbits, although the values so obtained are not given. But the three toxoids used in this study were accredited with "values of 200, 400 and 800 units per cubic centimeter respectively." Is it to be presumed from this statement that the toxoids retain a considerable degree of necrotizing effect on a rabbit's skin? If, as is more probable, the authors really meant that the original toxins showed strengths of 200, 400 and 800 rabbit dermonecrotic units per cubic centimeter before detoxication, one valid explanation of their failure to obtain favorable results at once presents itself. As was pointed out in my paper, the minimal dermonecrotic dose of toxins representative of those used in the preparation of the toxoids I used was 0.00014 cc. That is, the original toxins have often contained 70,000 rabbit dermonecrotic units per cubic centimeter. Furthermore, all my preparations of staphylococcus toxoid are carefully tested for antigenicity and innocuity, by assaying their power to provoke active antitoxic immunity in laboratory animals, before they are liberated for use in the treatment of human beings.

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University of Toronto

BRONCHIAL ASTHMA IN PREGNANCY

To the Editor—I read the paper entitled "Bronchial Asthma as a Complication of Pregnancy" by Dr Bradford Green (*THE JOURNAL*, February, 3, p 360) and also the communication in Correspondence (April 14, p 1248) from Dr R. H. Kampmeier, and would like to comment on Dr Kampmeier's letter. His contention that allergic manifestations disappear during pregnancy in contradiction to Dr Green's experience that there is aggravation of asthma during pregnancy, is also borne out by my experience of an interesting case.

A woman, aged 28, had had severe attacks of bronchial asthma for the past eight years. During pregnancy she was free of all symptoms of asthma and this absence of symptoms continued till three weeks post partum. When she was 30, I delivered her of her eighth child. All lived. The pregnancies occurred about one year apart to relieve her of her asthma. All the customary skin testing and injections of antigens and vaccines failed to prevent her asthmatic attacks when not pregnant.

I agree with Dr R. H. Kampmeier that a seasonal manifestation of allergy or bronchial asthma may be absent entirely if pregnancy includes the months of hay fever incidence. It must also be realized that though pregnancy, according to Dr Green, aggravates bronchial asthma, there is also ample evidence to prove that pregnancy relieves asthma and prevents attacks in some cases.

SAMUEL W. VERNICK, M.D., New York

THE MEDICAL PROFESSION AND PRISONS

To the Editor—There are 251 federal and state prisons in the United States, as well as 3,096 city and county prisons and jails. All the former institutions have one or more medical officers, and these institutions admitted last year more than 120,000 prisoners. Prisoners in all cases were committed to serve over a year, so that it is evident that there is a definite health problem in our prisons.

Of the 251 federal and state prisons there are at least 119 that have very inadequate medical service and show a gross neglect of the physical and mental care of their wards. These 119 institutions take care of about 30,000 individuals each year and turn them back into the population without consideration as to the individual's health. They pay no attention to the hazard to public health that these 30,000 individuals obviously create. Many of the other institutions are extremely lax in the medical care of their prisoners, and it is an unfortunate situation that in less than a dozen state prisons is adequate medical and surgical care being given to the inmates. Fortunately, the federal prisons are supplied full time physicians from the U S Public Health Service.

The widespread recognition which medicine has come to gain as an agency of social hygiene and social amelioration carries with it new opportunities and new responsibilities for the medical profession. It renders imperative the physician's emancipation from the individualistic tradition of aloofness which has gained control of the profession with the passing of the family doctor and of the innate personal relationships that could not survive under modern conditions of specialization. Unfortunately our prisons have enlisted to their service medical men who in many cases are castoffs of the profession—physicians who are failures and, consequently, obtainable at a beggar's fee. The administrators have been too prone to make the statement that even these derelicts of medicine are too good for the "gutter rats" confined to their cells. Scidom, if ever, does a warden or superintendent of a prison call on his institutional physician for professional care.

A detailed study of more than 2,000 prisoners in a large institution showed that only about 33 per cent of the prisoners were really normal individuals intellectually and emotionally, 24 per cent were definitely feeble-minded, and 75 per cent were mentally so unbalanced as to be diagnosed psychotic or potentially psychotic, 82 per cent of the inmates suffered from poor eyesight, and 1 per cent more had some definite eye infection, 19 per cent had obstruction in the nose, while 0.9 per cent had ear trouble. At least 6 per cent suffered from correctable defects, such as hernia and flatfoot. Slightly over 5 per cent showed definite indications of tuberculosis and at least 0.2 per cent had active signs of tuberculosis, 12.5 per cent had active gonorrhea and 85 per cent syphilis in some form, while 50 per cent had poor teeth, 25 per cent heart trouble, and at least 55 per cent had tonsils or adenoids that needed to be removed. At least 3 per cent were undernourished when they came into the institution, and a majority suffered from disorders of the digestive system.

It is a tragic commentary on the American system that our prisons are filled with poor people, those who in a majority of cases cannot afford to employ legal aid and who also probably did not employ medical aid previous to their commitment. Most prisoners come from wholly inadequate homes and society seems to hold to the belief that the home can do no wrong and that antisocial behavior is the individual's responsibility. However, there is no doubt that, once the prisoner has been deprived of his legal rights as a citizen and become a ward of the state, it is the state's responsibility to furnish that individual the highest type of medical and surgical care. And certainly since far the majority of these prisoners will again be released into the community, they should be given the necessary treatment

while under confinement to refit them into society as normal individuals, if possible, without handicaps.

The medical profession should take an interest in this matter and lend its support to raising the standard of the profession in these important institutions. Much can be done by the profession to remedy this situation. If the standard of medical care in our prisons could be raised to the standard it should be, undoubtedly it would act as a prevention of crime. If the prisoners were released better than when they were committed, there would not be the resentment against society for depriving them of their liberty. But it is extremely unfortunate that, in most cases, prisoners today stand a chance of release from prison in a more deplorable state than when they were committed to incarceration.

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Reformatory, Secretary, Medical
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Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

BARBERS' ITCH

To the Editor—What would you suggest for barbers' itch? Please do not publish my name.
M. D. Oklahoma

ANSWER—Barbers' itch is a popular name for any infectious disease of the skin of the bearded region. Impetigo contagiosa, including sycosis vulgaris, the form named after Bockhardt, caused by bacteria, the tinea form of sycosis, and the rare disease called lupoid sycosis are most properly designated barbers' itch, but syphilis, lupus vulgaris, lupus erythematosus, actinomycosis or blastomycosis, occurring in the bearded area, might be so named by the public. Only the former group will be considered in this discussion.

Impetigo contagiosa is characterized by initial vesicles arising from apparently normal skin, the vesicles quickly becoming pustular and bursting, leaving an erosion, which is soon covered by a thin crust, typically covering the whole erosion so that it seems stuck on with edges slightly upturned. Not seldom the pustule does not burst but the contents are absorbed and the roof sinks down and becomes part of the crust. When the crust falls, a red macule is left, which slowly fades to the normal skin color. There is no scar. In the meantime other lesions have appeared wherever the infection has been carried by the fingers or other means, often by the razor or shaving brush, in the bearded region. Sometimes circinate figures are formed by peripheral extension of the bulla with central healing. In other cases the bullae may become quite large.

Bockhardt's impetigo is a very superficial folliculitis, the lesions small. It is more often confined to the bearded region than the common form of impetigo, which tends to involve other parts of the face, scalp, hands and other parts of the body.

Both forms of impetigo are superficial processes, usually yielding readily to simple antiseptics, as ointments of ammoniated mercury in a strength of from 2 to 10 per cent. In stubborn cases, painting the erosion with a solution of silver nitrate, from 2 to 5 per cent, may hasten cure. The ointment being used on the skin between. In those sensitive to the mercurial gentian violet, in 5 per cent aqueous solution, may be painted on once a day. The secret of success in treatment is to watch for new lesions to treat them promptly, and to warn the patient of the danger of spreading the infection by means of the fingers, towels or razor. Shaving should be omitted during the course of disease, the beard being clipped instead. All cleansing operation should be first carried out on the noninfected part of the face, the infected part treated last, and the hands, towels and scissors carefully cleansed afterward.

Sycosis vulgaris infection of the hair follicles by pus organisms, is often confused with Bockhardt's impetigo, but sycosis is much deeper, causes swelling of the skin and loosening of the hairs and does not heal on simple treatment though it may clear up temporarily. Any part of the beard may be involved but the upper lip is a favorite site infected by nasal

discharges. Frequently this is the only part infected at first. The characteristic lesion is the follicular pustule on a base of swollen, reddened skin. From day to day the infection varies in severity, at times almost clearing up, leaving only a few papules to mark the site, then suddenly becoming severe again.

In contrast, tinea sycosis is more apt to involve the neck below the angle of the jaw and seldom is seen on the upper lip only, though a few such cases are on record. Instead of the ill defined patches of erythema studded by pustules, ringworm sycosis usually forms sharply defined patches round oval or polycyclic sometimes becoming circinate by central clearing, but more often forming patches composed of granulomatous tumors from which pus oozes in many places corresponding to the kerion Celsi seen in the scalps of children with ringworm infection. These violently inflamed patches are due to infection with large spored ringworm, often *Trichophyton gypsum* to which the skin reacts vigorously and establishes a considerable immunity, killing a large part of the organisms. For diagnostic purposes the hairs from the edge of the patch should be examined, for those in the center frequently do not show organisms. Because of the violent reaction these cases yield to treatment more readily than bacterial sycosis. Discovery of the organisms about the root of the hair after soaking the specimen in 10 per cent potassium hydroxide for from a few hours to three days is usually possible. The tumor-like character of the infected areas and the unilateral or at least asymmetrical distribution are important differences from the bacterial form of sycosis. Ringworm of the beard is comparatively rare.

Lupoid sycosis is a rare disease in which large circinate lesions, sometimes occupying the whole cheek, are seen. The center is formed in part at least by atrophic or deep scars, the active border only a few millimeters in width, formed of papules, vesicles and pustules. It is highly resistant to treatment.

Treatment is much the same for all forms of sycosis. Wet dressing of solution of aluminum acetate 1 part to 15 parts of water, or saturated solution of boric acid or surgical solution of chlorinated soda are indicated for the pustular conditions, these being alternated with ointments of ammoniated mercury, sulphur or resorcinol for the bacterial disease, salicylic and benzoic acid for the tinea infection. Tincture of iodine is one of the most useful applications but it should be weakened to 50 per cent strength with alcohol for most cases and should not be alternated with mercurials for fear of producing dermatitis venenata. In some cases this may be done intentionally on a small area, the violent inflammation aiding in recovery.

Shaving must be prohibited, the beard being clipped instead. All infected hairs must be epilated each day. In some cases such treatment, if kept up for several months after apparent cure, may be successful. Too often, however, the condition recurs as soon as the treatment stops.

Mild treatment with x-rays in divided dosage one-fourth erythema dose once a week, may clear up sycosis vulgaris. With it only the milder forms of antiseptic treatment should be used, as 5 per cent ointment of ammoniated mercury alternating with cool wet dressings of solution of aluminum acetate. If twelve weeks of such treatment fails to cure, more vigorous measures must be taken, complete epilation of the affected parts. This may be accomplished by radium or x-rays. Thallium acetate, even in half dose as suggested by some, is too dangerous to be given to adults. In cases in which x-rays in divided dose are given, a month or more without treatment should be insisted on before attempting epilation. The patient must understand that there is some danger of later atrophy of the skin, and his signature to a release may be of value.

Two methods are recommended by G. C. Andrews (Diseases of the Skin, Philadelphia, W. B. Saunders Company 1930, p. 516), the divided dose method, one-fourth erythema dose through 3 mm. of aluminum every third day for four doses, then a fifth irradiation of the same strength a week after the fourth. The massive dose, seven eighths erythema dose in one application, through 3 mm. of aluminum may be preferred. The hair comes out in about three weeks. Remaining hairs must be epilated mechanically and then the use of antiseptics begun for the epilation is only preparation for the real treatment intended to protect the new hairs from becoming infected.

Tincture of iodine at first diluted to half strength later in full strength, may be applied daily until the skin becomes dry with a tendency to fissure. Then an ointment is used. Whitfield ointment, 2 per cent salicylic acid and 4 per cent benzoic acid in ointment of rose water, for the tinea sycosis or sulphur and resorcinol of each 3 per cent in the same base for the bacterial form of the disease. Some such application must be kept up until the new hair is well grown. If small focal recurrences show themselves mechanical epilation and stronger antiseptics must be used. Treatment should be kept up for at

least a month after all signs of the disease have disappeared. Then the patient should report regularly for several months for inspection.

No possible means of increasing the good health and resistance of the patient should be neglected. A generous well chosen diet, containing plenty of vitamins, regular exercise outdoors, sunlight or ultraviolet radiation regular hours of sleep and an effort to get rid of any focal infection other than that in the beard are essential. Even the most thorough and painstaking treatment often fails to cure these cases.

EFEMIST (HART) AND EFEDRON (HART)

To the Editor—Are there any therapeutic advantages of Efemist and Efedron (Hart) over similar nonproprietary preparations? Recent circulars of the Hart Drug Corporation of Miami, Fla. claim verification editorially, in recent issues of THE JOURNAL of this attitude.

M. D. Palo Alto California

ANSWER—In Queries and Minor Notes in THE JOURNAL, Feb. 8, 1930, page 430, the formula for Efedron was stated as:

Ephedrine hydrochloride	Gr 1
Chlorbutanol	Gr 2½
Sodium chloride	Gr 2½
Menthol	Gr 3
Phenol	Gr 2
Oil of cinnamon	Gr 0.08
Jelly base	q s ad drachms 5

It was stated at that time that, although liberal samples were being distributed among the profession, nevertheless the carton was seemingly, addressed to the public as well.

Efemist, according to the advertising of the manufacturer, contains 1 per cent ephedrine hydrochloride and ¾ per cent chlorbutanol, in addition to undeclared amounts of menthol, eucalyptol, phenol and sodium chloride in a "special water and tissue fluid soluble base."

Of course, neither Efedron or Efemist has been accepted by the Council on Pharmacy and Chemistry, nor has the manufacturer requested Council consideration of the products.

Under date of March 2, 1934, a circular letter to the profession from the Hart Drug Corporation stated as follows:

'Would you knowingly care to prescribe any preparation that was injurious to the physiological function of the tissues to which it is to be applied? Undoubtedly not! Yet in the selection of preparations intended for localized nasal mucous membrane application it is amazing how frequently certain fundamentals in this respect are being overlooked.

'For a number of years we have been consistently endeavoring to point out to physicians why water soluble preparations are for superior to oily preparations in this form of therapy. In this connection it may be interesting to note that editorially, THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION Vol 101 No 19 directs attention to the fact that on oily base in ephedrine containing preparations is deleterious to the cilia of the nasal mucosa.

Also, in Vol 102 No 1, of the same publication while the harmlessness of the long continued use of ephedrine nose drops is shown attention to the dangers of oil containing solutions are pointed out.

EFEMIST (Hart) contains not a single drop of oil to interfere with ciliary activity. Indeed in this preparation the vehicle holding the active ingredients is both water and tissue fluid soluble thus making ephedrine available to the tissues rapidly and in maximal quantities.

Therapeutic success largely depends upon the details of the therapeutic fine points and while there exist many ephedrine containing solutions at your disposal we believe that NONE have been evolved which take into consideration as many points of therapeutic nicety as EFEMIST.

The reference to THE JOURNAL (italics ours) represents either misunderstanding or deliberate misinterpretation. The sources referred to appear among Queries and Minor Notes, they were not editorials. In the first note (THE JOURNAL, Nov. 4, 1933, p. 1503) it was stated:

It has been stated by some research workers that the oil has a deleterious effect on the cilia but bad results have not been observed from the use of liquid petrolatum to which a small amount of ephedrine has been added.

In the second reference (THE JOURNAL, Jan. 6, 1934 p. 67) it is reported, in part that:

One must guard against the use of too much ephedrine at a time with a resultant swallowing of the drug with its constitutional reactions. In very young children nose drops of oily character have been known to enter the lung producing undesirable reactions.

One fact is obvious that oily solutions of ephedrine when used properly are not injurious to the nasal mucous membrane. That is the fact which it was the intention of each article to point out. No comparison was made of watery with oily solutions and it was certainly furthest from all intent in either Query and Minor Note even to suggest that the unacceptable proprietary mixtures Efedron and Efemist, are to be commended or that they are superior to oily solutions of ephedrine.

STENCIL INK POISONING

To the Editor—I have a patient who is suffering with a peculiar edematous condition. He is inclined to think that his illness is due to a chronic poisoning with stencil ink. Could this be possible? If so, where could I find literature on stencil ink poisoning?

EDWARD TRIFFEL M.D. O'Fallon, Ill

ANSWER—From the description it is difficult to tell whether a dermatitis is present or some other type of generalized edema. The majority of poisonings described as due to ink have been forms of dermatitis or eczema. Several types of materials may be responsible for the inflammation. The ordinary inks may cause irritation either because of their irritating nature or because of the dryness of particular skins. There have been reported also instances of rotogravure ink dermatitis. In other instances it has been found that the cleaning materials used to remove ink stains have been the causative agents for the dermatitis. A fairly thorough search of the literature does not disclose a separation of stencil ink dermatitis from other forms of irritation due to ink. The following references may be found useful:

- White R. P. The Dermatogoses or Occupational Affections of the Skin. New York: Paul B. Hoeber, 1929.
McConnell. *Pub Health Rep* 36: 979 (May 6) 1921.
Abelsohn H. Eczema of Printers and Their Graphic Assistants. *Med Welt* 5: 407 (March 21) 1931.
Oliver E. A. Rotogravure Ink Dermatitis. *THE JOURNAL* Sept 23 1928, p. 870.
Seitz A. Printers Eczema from Washing Fluids. *Zentralbl f Gewerbehyg* 4: 433 (Dec) 1927.

POLYCYSTIC KIDNEYS—KETOGENIC DIET IN UROLOGY

To the Editor—1 Please give the latest accepted theory on the causation of polycystic kidneys and the percentage of occurrence with prognosis and treatment. I would appreciate an elaboration in detail on treatment. It has been my opinion that once these cases were diagnosed the patient should be treated by an internist rather than by a urologist. Am I right or wrong? 2 Would you mention the value of the ketogenic diet as applied to urology? Please omit name.

M.D. District of Columbia

ANSWER—1 Polycystic kidneys are recognized clinically in an incidence of only about 1 in 3,500 patients, but are found at postmortem examination in about 1 in 1,000 persons. The cystic condition of the kidneys may be associated with cystic disease of the liver, but the cysts of the liver are usually confined to limited portions and seldom produce symptoms of hepatic disease. Polycystic kidneys are always bilateral, although, for a time at least, one kidney may be much smaller than the other and its condition may escape recognition or palpation. The condition must be distinguished pathologically from solitary cyst of the kidney, in which, although the cysts occasionally are multiple, they seldom are so numerous or of such a character that the condition of solitary cyst can be confused with that of polycystic kidney.

The cause of polycystic kidneys is not known, but they are believed to be due to a developmental defect and to be related to inadequate fusion of constituent parts of the renal units. A tendency for the condition to be hereditary has been noted by many observers and constitutes one of the chief proofs of its congenital nature. It has been suggested that it would be logical to consider limitation of progeny by the afflicted, in view of the pronounced hereditary tendency, but as patients are generally beyond the usual child-bearing age when the diagnosis is made, the suggestion seems more academic than practical.

The symptoms of the condition are usually not noted until the patient is between 40 and 50 years of age. A dull pain over either kidney may be the only early symptom. Frequency and dysuria may be noted. In about a third of cases, gross hematuria may occur at intervals. A sudden hemorrhage into a large cyst or a ureteral obstruction due to blood clots may produce acute renal pain simulating colic. Symptoms and signs of renal insufficiency eventually ensue, and these include hypertension in the majority of cases, contrary to the opinion of some. Death may result from uremia or vascular accidents.

In polycystic renal disease when hematuria and an abdominal tumor, mistakenly considered to be unilateral, are noted an erroneous diagnosis of renal neoplasm may be made and operation performed, leading to serious consequences. Intravenous urography may be necessary to complete the diagnosis of polycystic kidneys, for urographic signs are generally characteristic. Bilateral simultaneous pyelography in this condition may be dangerous.

The prognosis depends largely on the degree of renal insufficiency resulting from the varying rates of formation of cysts and consequent excretory embarrassment. The prognosis is good as long as renal function remains normal or nearly so.

Even with moderate renal insufficiency, patients may live comfortably for ten or fifteen years, and concentrations of urea of more than 100 mg per hundred cubic centimeters of blood may be remarkably well borne for several years. In fact expectancy of life in this condition averages about fifty years and patients occasionally have lived to be more than 60 years of age if they have exerted reasonable care. Data on 193 cases have been recently reported by Braasch and Schacht (*Surg, Gynec & Obst* 57: 467 [Oct] 1933). Of forty-two patients known to be alive, twenty-five were living at least ten years and nine more than twenty years after the onset of symptoms. One patient lived twenty-three years, another, thirty-six years after the first symptoms. Of seventy-four patients reported dead, twenty-two died within two years and eleven within four years of the first symptoms.

Medical treatment alone is generally indicated, although surgical treatment may be required when severe secondary infection involves one kidney, or when very large cysts cause considerable discomfort, producing in some cases mechanical obstruction to excretion of urine. Surgical evacuation and destruction of large or hemorrhagic cysts may then give relief. It must always be remembered that the condition is bilateral. Medical care is concerned with the usual measures for chronic renal insufficiency and is directed toward restrictions in diet and in exercise, supervision of hours of rest, and prevention of intercurrent infections. All strenuous exercises and labor should be avoided, but less vigorous types of physical recreation, such as short walks, are permissible. The patient should have ten hours' rest in bed at night and if at all possible a rest at noon of one hour. If renal function is still normal, rigid dietary restrictions are probably not indicated. Such measures are saved for future requirements. If the value for urea is more than 40 mg per hundred cubic centimeters of blood, the daily diet should contain only about 40 to 60 gm of protein. Carbohydrates may be taken as they are necessary for adequate caloric intake. Restrictions in intake of salt are necessary if edema impends, otherwise just enough salt to season food palatably should be allowed. A daily intake of fluid of about 2,000 cc should be insured unless significant edema appears, when moderate restriction of fluid may be necessary, edema, however, rarely occurs. A daily warm bath, mild laxatives or warm enemas may increase adventitious elimination of metabolites. Ample clothing, prevention of undue exposure to cold, and when possible, a sojourn in a warm, dry climate are desirable. If the patient is in middle age and little or no renal insufficiency is present any chronic source of infection should be removed, but the time for its removal must be carefully chosen.

2 The use of the ketogenic diet in the treatment of bacilluria, if there are no anomalies of the urinary tract, is steadily gaining favor. Even when anomalies are present, Helmholtz has noted successful results, but Rennie's results (*Arch Dis Childhood* 8: 47 [Feb] 1933) in four cases of pyuria associated with abnormalities of the urinary tract were disappointing. In uncomplicated cases Rennie reported satisfactory sterilization of the urinary tract. The rational method of treatment and results of this diet have recently been briefly reviewed in *Queries and Minor Notes* (*THE JOURNAL*, Oct 28, 1933, p. 1413).

It must be stated that the ketogenic dietary treatment of bacilluria of the *Escherichia* type thus far has been more successful than that of the aerogenes type of infection. Successful treatment in any case requires hospitalization under the care of a dietitian and with the cooperation of a laboratory expert as Wilson (*Post-Grad M J* 9: 96 [March] 1933) has emphasized. The correspondent also could well refer to Crance (*Urol & Cutan Rev* 37: 528 [Aug] 1933).

DERMATITIS FROM CRUDE OIL

To the Editor—I would like information concerning dermatitis (industrial) from contact with crude oil or crude petroleum.

JOSEPH M. ADAMS M.D. New Orleans

ANSWER—Crude mineral oil like other oils, causes an acne-like eruption on the skin coming into constant contact with it. The bare forearms and the covered parts in contact with oil-soaked clothing are most often affected. First are seen comedones, plugs of thick oil or paraffin, which fill the follicle mouths and collect dirt. They cause an inflammation about the follicle with pus formation in nature's effort to get rid of them. A deep pustule results which often heals with a scar. Except for the distribution, which affects the parts exposed to oil instead of the face, neck, upper part of the chest and upper part of the back, and for the accompanying hyperkeratosis, this eruption is like that of acne vulgaris. Later the skin becomes thickened and pigmented, the keratotic papules persist and a certain proportion of them become epitheliomas.

Of English workmen of long service in work that exposes them to constant contact with oil and who are over 40 years of age 01 per cent develop epithelioma each year. Fifty per cent of them have some skin trouble. Even though they quit the oily job, they may develop epithelioma years afterward. Mule spinners—men whose work consists of reaching over a spinning machine while it is in motion, in order to mend broken threads, with consequent drenching of their clothes with the lubricating oil—are frequent sufferers from epithelioma of the scrotum. Sequeira reports the occurrence of epithelioma in thirteen such workers from one to fourteen years after quitting the job (Cancer and Other Diseases of the Skin Caused by Mineral Oils, *Kenya & East African M J* 6 18 [April] 1929).

Oils from Borneo, Assam, Egypt, Burma and Badapur are most irritating and most likely to cause dermatitis and epithelioma. Those from Galicia, Russia, California and Persia are less irritating. Shale oil is also classed among the irritating oils. Purification with sulphuric acid renders the oil harmless, as does oxidation or reduction. Oil tumors are reportable in Great Britain. During 1926 there were 187 such cases reported, of which 47 were fatal. French law allows compensation for such injuries.

Twort and Fulton found that most American oils are only slightly carcinogenic. Experiments on the Nature of the Carcinogenic Agents in Mineral Oils, *J Path & Bact* 32 149 (1929). The active carcinogenic agent is concentrated in extracts made with methyl sulphate or methyl sulphate and trinitrophenol and this process is useful in testing oils intended for industrial use.

Because of the fear that medicinal mineral oils might also be harmful, F C Wood (The Noncarcinogenic Nature of Purified Mineral Oils, *THE JOURNAL*, May 24 1930, p 1641) tried them out on the skin of albino mice, known to be particularly susceptible. Mineral oil for therapeutic use was found harmless, whether painted on the skin or administered internally. Heavy lubricating oil, painted on the skin three times a week for one year, caused a few "warts" (keratotic papules), while painting the skin in the same way for the same length of time with tar caused many keratoses and a considerable percentage of epitheliomas.

Treatment of the dermatitis and prevention of the epitheliomas are both accomplished by cleanliness, thorough scrubbing of the skin with soap and hot water each day after quitting work, and protection from oil-soaked clothing. An oil-proof outer garment should be provided and the workmen inspected carefully, with particular attention to the groins and scrotum, every month or so. The tumors when present must be widely excised or thoroughly treated with x-rays or radium, for they are squamous cell epitheliomas, more malignant than the usual basal cell type.

POLYCYTHEMIA

To the Editor—A woman aged 64 the mother of six children until the last three or four years strong and industrious now has lack of strength and wearies easily. I sent her to a hospital recently and the red blood cells are reported as numbering 8 000 000 together with a slight trace of albumin and indican. The lungs are clear. There is slight cardiac enlargement. The complaints are weakness and anorexia. Is not phenylhydrazine hydrochloride recommended in cases of this nature? Where can it be obtained and what is the dosage? I have her on a fruit juice diet largely. She has always been temperate except perhaps as to work and eating. She weighs 140 pounds (63.5 Kg.) What is supposed to be the etiology of polycythemia? Please omit name.

M D Texas

ANSWER—Before any therapeutic measures are employed, it should be determined that polycythemia rubra vera is the condition responsible for the patient's complaints. This may be accomplished by careful confirmatory blood studies, the presence of an enlarged spleen, a peculiar red cyanosis, a definite although slight elevation in the basal metabolic rate, and the absence of any other condition that might give rise to a secondary polycythemia (especially chronic cardiac and pulmonary disease). If polycythemia vera is present at least two conservative forms of treatment may be given: a trial repeated venesection and irradiation of the long bones. It is generally agreed however, that the results following the use of phenylhydrazine are more satisfactory than with the two previously mentioned forms of treatment despite the fact that the drug may cause undesirable toxic effects.

Phenylhydrazine hydrochloride should be given in capsules by mouth in doses of from 0.1 Gm (1½ grains) to 0.2 Gm (3 grains). A patient receiving such treatment should be under close observation and the result of the therapy gaged by frequent blood examinations. If there is a fall in the red blood cell count and hemoglobin to approximately normal after from 1 Gm (15 grains) to 3 Gm (45 grains) has been taken,

the therapy should be discontinued to observe whether a cumulative effect occurs. An increasing number of immature red blood cells or an increase in the number of white blood cells is an indication to discontinue the treatment temporarily. If there is no cumulative effect, and the red blood cell count remains significantly elevated, another gram (15 grains) of the drug may be given in daily doses of from 0.1 to 0.2 Gm. After the blood has reached normal limits, smaller doses should be given to maintain it at this level. The dosage required varies with each individual patient but usually averages between 0.06 Gm (1 grain) and 0.3 Gm (5 grains) weekly. As this drug is a protoplasmic poison, it should be given only to patients who can be observed at frequent intervals and to those in whom the therapy can be guided by frequent and careful blood studies. More recently Stone, Harris and Bodansky (*The Treatment of Polycythemia Vera*, *THE JOURNAL*, Aug 12, 1933, p 495) have advocated the use of acetylphenylhydrazine, as they consider that it is therapeutically effective and is less toxic than phenylhydrazine hydrochloride. It is impossible to appraise its value definitely until a larger group of patients has been treated, although it appears to have considerable promise.

The etiology of polycythemia is unknown but the disease is considered by some to be due to a neoplastic change in the bone marrow which in some respects resembles leukemia. Others consider that it may be due to some disturbance of hormone control of bone marrow activity.

Phenylhydrazine preparations may be obtained through one's druggist from any large manufacturing firm.

INHALATION OF WATERMELON SEED

To the Editor—In August 1933 I was called to see a year old child with a watermelon seed in its lung. The seed had been inhaled a few minutes previous to my call and the child was exhibiting a noisy and difficult respiration and a hoarse cough. Cyanosis was not present. The child was hospitalized and roentgenograms were taken of the chest, but these failed to show the location of the seed or evidence of air trapping. Because the foreign body could not be located bronchoscopy seemed contraindicated and I waited in the hope that the seed might be coughed up. This happened three weeks later, and a swollen somewhat eroded seed was coughed up. During its stay in the hospital the baby had a low grade temperature and continued to cough and wheeze. After the seed was coughed up the temperature returned to normal but the coughing and wheezing continued and is still present. The wheezing seems to originate in the larynx or upper part of the trachea and with the exception of the transmitted wheezing sounds the lungs seem clear. The baby has no fever at present and with the exception of the labored breathing seems to be in good health. I wish you would outline any further treatment you feel might help the cough and wheezing to disappear and the child's breathing return to normal. Please omit name.

M D Wisconsin

ANSWER—The history is quite the usual one for cases of inspired watermelon seed. The wheezing with absence of roentgenographic signs of emphysema or atelectasis is diagnostic of foreign body in the trachea. In this position, one lung is not affected any more than the other, consequently there is no difference of aeration as between the two lungs by either physical or roentgen signs. The persistence of the wheeze after the spontaneous expulsion of the foreign body indicates some narrowing of the airway by another foreign body (exogenous or endogenous) or pathologic condition. Only a diagnostic bronchoscopy would determine which of these possibilities is present. Treatment would depend on conditions found at bronchoscopy.

SENSITIVITY TO MERCURY

To the Editor—A man aged 37, when first seen was suffering from an acute nonpurulent conjunctivitis. Topical applications of 2 per cent zinc sulphate were made to the lids; they were washed with physiologic solution of sodium chloride and an ointment containing the following formula was given to instill between the eyelids at night: yellow mercuric oxide 10 parts, solution of epinephrine hydrochloride 40 pts, zinc sulphate, 1 part, horic acid solution 150 parts, wool fat 190 parts, petrolatum 609 parts. When seen three days later the eyelids were markedly swollen and red and the patient complained of the severe itching. This subsided within three days when he no longer used the ointment. He tells me that he lost a finger some years back and his hand was soaked in a blue solution (mercuric chloride solution, I thought). His hand swelled up to twice its normal size. Is it logical to assume that this man reacted to the mercury in the ointment? He has a + Wassermann and 3+ Kahn test. Will antisyphilitic treatment without mercury be adequate? I have never seen such a reaction in the eyes or recall reading about it. Is it rare? Please omit name.

M D Ohio

ANSWER—It is possible that the patient developed a sensitivity to mercury (almost an allergic phenomenon). Antisyphilitic treatment without mercury, a bismuth compound being substituted, would be adequate. Such reactions are uncommon.

CAVITIES IN DECIDUOUS TEETH

To the Editor—What is the consensus among the best dentists about filling cavities in deciduous teeth? If this is not the accepted procedure, what is? Please omit name and address

M D North Carolina

ANSWER—The constantly increasing demand for education on the part both of the public and of the dental profession has brought the problem of prevention of decay and all the ills that follow in its wake to a point at which the leaders in education agree that the whole solution centers on its early prevention.

Evidence is at hand that school children develop more rapidly both mentally and physically if their mouths and teeth are regularly under the care of the dentist.

The deciduous teeth should be retained until the permanent ones are ready to erupt, their roots being absorbed to accommodate them. If the deciduous teeth are taken out or are lost by decay before the permanent ones are ready to take their places, the arch becomes too narrow and irregularity follows. This can be corrected only by the orthodontist. The deciduous teeth should be filled as soon as decay appears. They should be kept clean by the systematic use of the toothbrush. If cavities in deciduous teeth are not filled, the child loses the use of the teeth, their pulps die, and abscess and destruction of the jaw bone follow. Adentitis results, even tuberculous germs may enter glands through cavities in the teeth. Digestion is impaired, the child suffers pain, and impairment of the health and of development follows. There is no sane argument for allowing deciduous teeth to decay. Cavities should be filled as soon as they occur. Children should visit their dentist at least every six months and oftener if necessary.

The consensus among the best dentists is that all deciduous teeth, when carious, should be filled and retained until the permanent ones are ready to take their places.

SODIUM MORRHUATE IN INJECTION TREATMENT OF HEMORRHOIDS

To the Editor—Kindly advise whether sodium morrhuate is commonly used in the injection treatment of hemorrhoids and what advantages if any, it has over quinine and urea hydrochloride. Please omit name.

M D New York

ANSWER—Sodium morrhuate may be used in the injection treatment of hemorrhoids but is not considered as efficient as quinine and urea hydrochloride or the phenol and oil solution.

SIMULTANEOUS IMMUNIZATIONS

To the Editor—In Queries and Minor Notes in THE JOURNAL April 14 page 1251 was an inquiry as to simultaneous immunizations. In the answer the statement is made that it is not known for instance whether successful vaccination against smallpox would interfere in any way with the immune reactions against scarlet fever toxin diphtheria toxoid or pertussis vaccine. In the State Public School at Owatonna Minn. where children from a few days old to the age of 16 are received from all parts of the state cared for and later placed in homes if possible, it is our routine to vaccinate against smallpox and give toxoid or other vaccines the same day. In the last ten years we have followed this method in more than 2,000 children with no complications and have the usual number of successful vaccinations and the usual number of negative Schick or other tests when given at the proper time following.

A B STEWART M D Owatonna Minn

To the Editor—A query from Dr. Stern of Chicago in Queries and Minor Notes (THE JOURNAL April 14 p 1251) relative to simultaneous immunizations prompts me to report my experience.

In 1932 350 school children were given simultaneous immunizing injections of diphtheria toxoid and typhoid vaccines each child receiving two doses of diphtheria toxoid and being given a dose of typhoid vaccine with the toxoids.

I made Schick tests on these children in March 1934 and found exactly five Schick positive children in the entire group. The same thing occurred in Miami Ariz. where 180 children were given simultaneous immunizations against typhoid and diphtheria also in 1932. In this group there were three Schick positive children in February 1934.

Children in both groups gave histories of considerable reaction during the immunizing period and while I would not suggest the undertaking of simultaneous inoculations owing to such reactions occurring in these groups yet I quote the low percentage of Schick positive children resulting when concurrent immunizations were given.

ALSON B INGELS M D Globe Ariz

Director Gila County Health Unit

EDEMA OF THE EYELIDS

To the Editor—In Queries and Minor Notes in THE JOURNAL April 14 page 1249 M D Massachusetts inquires about edema of the eyelids. Your reply is complete with the exception of one condition not mentioned though it is the cause of most puffy but nonedematous eyelids. This condition is an accumulation of fat in the loose periorbital tissue. Resection of an ellipse of skin will eliminate redundancy but will not correct puffiness; this can be accomplished only by resection of infiltrated fat.

H O BATES M D, Los Angeles

Council on Medical Education and Hospitals

COMING EXAMINATIONS

- AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY Oral Cleveland June 11 12 Sec Dr C Guy Lane 416 Marlboro St Boston
- AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY Oral (all candidates) Cleveland June 12 Sec Dr Paul Titus, 1015 Highland Bldg, Pittsburgh
- AMERICAN BOARD OF OPHTHALMOLOGY Cleveland June 17 and Butte Mont July 16 Application must be filed at least 60 days prior to date of examination Sec Dr William H Wilder 122 S Michigan Blvd, Chicago
- AMERICAN BOARD OF OTOLARYNGOLOGY Cleveland June 11 Sec, Dr W P Wherry, 1500 Medical Arts Bldg Omaha
- ARIZONA Basic Science Tucson, June 19 Sec Board of Basic Examiners Dr Robert L Nugent University of Arizona Tucson
- MEDICAL PHOENIX July 3 Sec, Dr J H Patterson 320 Security Bldg Phoenix
- COLORADO Denver, July 3 6 Sec Dr Wm Whitridge Williams, 422 State Office Bldg Denver
- CONNECTICUT Basic Science New Haven, June 9 Prerequisite to license examination Address State Board of Healing Arts 189 Yale Station New Haven
- DELAWARE Wilmington June 12 14 Sec Medical Council of Delaware Dr Harold L Springer, 1013 Washington St Wilmington
- DISTRICT OF COLUMBIA Basic Science Washington June 25 26 Sec Commission on Licensure Dr W C Fowler 203 District Bldg Washington
- FLORIDA Jacksonville June 11 12 Sec Dr William M Rowlett Box 786 Tampa
- ILLINOIS Chicago June 26 29 Supt of Regis Dept of Regis and Edu Mr Eugene R Schwartz Springfield
- INDIANA Indianapolis June 19 21 Sec Board of Medical Registration and Examination Dr William R Davidson Room 5 State House Annex Indianapolis
- IOWA Iowa City, June 5 7 Dir Division of Licensure and Registration Mr H W Grefe Capitol Bldg Des Moines
- KANSAS Topeka June 19 20 Sec Board of Medical Registration and Examination Dr C H Ewing Larned
- KENTUCKY Louisville June 6 8 Sec State Board of Health, Dr A T McCormack 532 W Main St Louisville
- MAINE Augusta July 5 6 Sec Board of Regis of Medicine Dr Adam P Leighton Jr 192 State St, Portland
- MARYLAND Homeopathic Baltimore June 12 13 Sec Dr John A Evans 612 W 40th St Baltimore Regular Baltimore June 19 22 Sec Dr Henry M Fitzburgh 1211 Cathedral St Baltimore
- MICHIGAN Ann Arbor June 5 7 and Detroit June 12 14 Sec Board of Regis in Medicine Dr J Earl McIntyre 202 3/4 Hollister Bldg Lansing
- MINNESOTA Basic Science Minneapolis June 5 6 Sec Dr J Charnley McKinley 126 Millard Hall University of Minnesota Minneapolis Medical Minneapolis June 19 21 Sec Dr E J Engberg 350 St Peter St St Paul
- MISSISSIPPI Jackson June 26 27 Sec State Board of Health Dr Felix J Underwood Jackson
- MISSOURI St Louis June 14 16 State Health Commissioner Dr E T McLaugh State Capitol Bldg Jefferson City
- NATIONAL BOARD OF MEDICAL EXAMINERS The examinations in Parts I and II will be held at centers in the United States where there are five or more candidates June 25 27 and Sept 12 14 Ex Sec Mr Everett S Elwood 225 S 15th St Philadelphia
- NEBRASKA Omaha, June 8 9 Application must be filed at least fifteen days prior to date of examination Dir Bureau of Examining Boards Mrs Clark Perkins State House Lincoln
- NEW JERSEY Trenton June 19 20 Sec Dr James J McGuire 28 W State St Trenton
- NEW YORK Albany Buffalo New York and Syracuse, June 25 28 Chief Professional Examinations Bureau Mr Herbert J Hamilton Room 315 Education Bldg Albany
- NORTH CAROLINA Raleigh June 18 Sec Dr B J Lawrence 503 Professional Bldg Raleigh
- NORTH DAKOTA Grand Forks, July 3 6 Sec, Dr G M Williamson 4 1/2 S 3d St Grand Forks
- OHIO Columbus June 5 8 Sec Dr H M Platter 21 W Broad St Columbus
- OKLAHOMA Oklahoma City June 6 7 Sec Dr J M Byrum Mammoth Bldg Shawnee
- RHODE ISLAND Providence July 5 6 Dir Public Health Commission Dr Lester A Round 319 State Office Bldg Providence
- SOUTH CAROLINA Columbia June 26 Sec Dr A Earle Boorer 505 Saluda Ave Columbia
- TENNESSEE Knoxville Memphis and Nashville June 14 15 Sec, Dr H W Qualls 130 Madison Ave Memphis
- TEXAS Fort Worth, June 21 23 Sec Dr T J Crowe 918 19 20 Mercantile Bank Bldg Dallas
- UTAH Salt Lake City June 27 29 Dir Department of Registration Mr S W Golding 326 State Capitol Bldg Salt Lake City
- VERMONT Burlington June 20 22 Sec Board of Medical Registration Dr W Scott Nay Underhill
- VIRGINIA Richmond June 20 22 Sec Dr J W Preston 28 1/2 Franklin Road Roanoke
- WISCONSIN Milwaukee June 26 29 Sec Dr Robert E Flynn 401 Main St LaCrosse
- WYOMING Cheyenne June 4 Sec Dr W H Hassel Capitol Bldg Cheyenne

Colorado January Report

Dr William Whitridge Williams, secretary, Colorado State Board of Medical Examiners, reports the written examination held in Denver, Jan 3-5, 1934. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. Four candidates were examined, all of whom passed. Three physicians were licensed by endorsement. The following schools were represented:

School	PASSED	Year Grad	Per Cent
University of Colorado School of Medicine		(1933)	88
Washington University School of Medicine		(1933)	85 1
McGill University Faculty of Medicine		(1933)	89 1
Osteopath*			79 3

School	LICENSED BY ENDORSEMENT	Year Grad	Per Cent
Rush Medical College		(1930)	Illinois
University of Nebraska College of Medicine		(1911)	Nebraska
University of Oregon Medical School		(1932)	Oregon

* Licensed to practice medicine and surgery

Hawaii January Examination

Dr James A. Morgan, secretary, Board of Medical Examiners, reports the oral and written examination held in Honolulu, Jan 8-11, 1934. The examination covered 10 subjects and included 55 questions. An average of 75 per cent was required to pass. Three candidates were examined, 2 of whom passed and 1 failed. Two physicians were licensed by endorsement. The following schools were represented:

School	PASSED	Year Grad	Per Cent
Loyola University School of Medicine		(1933)	81 7
St. Louis University School of Medicine		(1932)	80 2

School	FAILED	Year Grad	Per Cent
Chicago Medical School		(1920)	70 4

School	LICENSED BY ENDORSEMENT	Year Grad	Per Cent
University of Colorado School of Medicine		(1912)	N B M Ex
State University of Iowa College of Medicine		(1932)	N B M Ex

Book Notices

Blindness and the Blind in the United States. By Harry Best. Cloth Price \$6.50. Pp 714. New York: The Macmillan Company, 1934.

The seven parts of this book deal, respectively, with blindness and possibilities for its prevention; general condition of the blind; provision for education of blind children; intellectual provision for the adult blind; material provision for the blind; organization, interested in the blind; and conclusions with respect to work for the blind. It is a comprehensive and painstaking compendium of information gathered from so many sources that it would seem scarcely possible that any have been overlooked. It is full of statistical studies made with admirable restraint in interpretation of figures. It is documented with exceptional completeness. Without shrinking from facts or in any way minimizing the problem, it presents an encouraging picture of possibilities for the alleviation of the condition of the blind in the United States. It emphasizes that the present movement in medical research and social investigation is one of prophylaxis. It emphasizes the preventable nature of such common causes of blindness as trachoma, ophthalmia neonatorum and accidental injuries. Except for hereditary blindness, which is characterized as a small part of the total problem though sufficiently conspicuous and tragic in individual families the outlook is favorable. The keynote of the investigation is to be found in these sentences in the introduction: "Concern in the blind that is based upon their actual position in society and the treatment which they have received from it, purely as a matter of scientific inquiry—though in no wise removed from a profound human love, and indeed wrapped about therewith—has been of secondary moment. In other words an examination of the blind and of their estate from the point of view of the social economist—the presentation of something of what has come to be known as a social survey—respecting them—has as a comprehensive study been wanting. The object of the present work is to consider the

blind as respects the United States, with this latter conception in mind." The book is not one for reading in idle moments. It is a condensed work of reference which ought to be of interest to students, sociologists, legislators, educators and physicians.

Alcohol: Its Effects on Man. By Huxley Emerson, M.D. Professor of Public Health Practice, Columbia University. Cloth Price \$1. Pp 114. New York & London: D. Appleton Century Company, Inc. 1934.

This book is no doubt an outgrowth of a larger work edited by Dr. Emerson and published during the past year. The purpose of the little volume is to provide school teachers and students with the facts regarding the actions and effects of alcohol on man as they are now known to the medical sciences.

Dr. Emerson lists fifteen well established facts regarding alcohol in relation to illness with which no doubt the vast majority of physicians will agree:

1. Alcohol is a narcotic which, by depressing the higher centers removes inhibitions.
2. Outside of the nervous system and the digestive tract, alcohol used as a beverage has little demonstrable effect.
3. It is a food utilizable as a source of energy and a sparer of protein but it is such only to a very limited extent.
4. It is improbable that the quality of human stock has been at all injured or adversely modified by the long use of alcohol, although the effects on the individual are often devastating.
5. The therapeutic usefulness and value of alcohol are slight.
6. It may be a comfort and a psychological aid to the aged.
7. It does not increase and it sometimes decreases the body's resistance to infection.
8. By releasing inhibitions it makes for social ease and pleasure and herein lies one of its great dangers.
9. Its effects are best studied by changes of conduct.
10. It impairs reason, will, self control, judgment, physical skill and endurance.
11. It may produce situations from which crime and social lapses result.
12. It is a frequent destroyer of health, happiness and mental stability.
13. Its use commonly lowers longevity and increases mortality.
14. It is used primarily for its psychological effect as a means of escape from unpleasant reality.
15. It constitutes an important community health problem.

He correctly states the chief problem confronting the world today in relation to the use of alcohol as the necessity for each individual to "decide for himself whether his own personal satisfaction in the escape from physical and mental unpleasantnesses, which alcohol in moderation may bring him at the cost of appreciable hazards to his own health and to his livelihood, warrants his exposing others, less capable of moderation, to opportunities of becoming users of alcohol to their and society's damage and cost."

Enfance et hérédité. Par A. Lesage, médecin honoraire des hôpitaux. Paper Price 20 francs. Pp 104 with illustrations. Paris: Masson & Co. 1933.

This is a spontaneous outpouring of observations in two parts and nine chapters to demonstrate that "the living are governed by the dead." The first portion considers in five chapters the subject of heredity in general. The author points out the limitations of tubularly viewing bacteriology and chemistry. He insists that the view must be broader to include the forebears or source of the child who is sick. In other words it is important to know that a given child has pneumonia but equally important to know what kind of child it is who has the pneumonia. The second chapter of three paragraphs and nine lines concisely states that syphilis tends to be latent. The rest of the first part considers stigmas of malnutrition along the lines of loss of weight in the new-born, growth of cranial bones, and weight-height relationship and debility. He describes the hereditary factor in organ and tissue pathologic trends. Then he mentions the inheritance of infections and intoxications. He devotes a small paragraph to the hereditary manifestations that break out suddenly, often at a certain age. Finally, he describes the inheritance of the arthritic diatheses which Comby has described. He includes in this: seborrhea, eczema, asthma, obesity, gout, kidney and liver colic, hemorrhoids, migraine, rhinorrhea and bronchorrhea. He points to the fact that these various conditions seem to unwind like a ribbon from infancy with its eczema to old age with its arthritis deformans. The greater part of the book is devoted to the arthritic conception. This small volume gives some suggestion of the French point of view.

A Health Workbook for College Freshmen. An Orientation Course in Personal Home and Community Hygiene. By Kathleen Wilkinson Wootten M.A. (Mrs. H. Stewart Wootten) Professor of Health Head of Department of Health and Physical Education Georgia State College for Women Milledgeville Georgia Second edition Paper Pp 214 with Illustrations Milledgeville Ga. The Author 1934

This is an excellent and comprehensive college workbook on health, as its title indicates. Its forty-seven chapters proceed from a definition of health and an evaluation, through health status and health maintenance of the individual, and preventive medicine versus superstitions, to a study of the structure and functions of the human body, which begins in chapter 6 and goes through chapter 27, chapters on hygiene, beginning with 28 and going through 37, chapters on public health, beginning with 38 through 44, and then chapters on rest, leisure, and the achievement of individual health. The book is well documented and based on thoroughly authentic sources. The lesson helps in the way of activities and questions are excellent. One might be disposed to question the wisdom of such detailed health records as are presented in the self-rating health inventory, or score, except perhaps as a teaching instrument. Certainly no student should be advised to make any attempt at keeping the health rating in such detail after graduation. The exceptional completeness of the workbook makes it an excellent textbook on hygiene for college students.

Bright's Disease. A Clinical Handbook for Practitioners and Senior Students. By J. Norman Cruickshank M.C. M.D. D.Sc. Senior Assistant to the Muirhead Professor of Medicine University of Glasgow. Cloth Price \$3.75 Pp 208 Baltimore: William Wood & Company 1933.

The confused nomenclature and overelaborate classifications that are found on the subject of nephritis have created a field for simple and lucid textbooks on the subject. Larger treatises have recently been published that leave little to be desired in the way of clarity, but handbooks such as this have merit. They meet a practical need for practitioners in supplying a short account of the clinical application of modern views of the nature of Bright's disease. This book is in the nature of an outline of recent work on the subject. The clinical aspects are always featured and much of the detailed biochemical and experimental data has been purposely omitted. This book is not intended and should not replace some of the more comprehensive works on the subject but is a valuable adjunct to such books in providing a concise outline of the subject. The data in the book are clearly presented and well organized. The bibliographic references are well selected and are adequate for elaboration of the text. The book is well balanced in fundamental information and in clinical and pathologic description. Treatment receives adequate consideration and is logically presented. It is recommended to the practitioner who desires a concise, authoritative outline of modern information on Bright's disease.

Die Haut und Geschlechtskrankheiten. Eine zusammenfassende Darstellung für die Praxis. Herausgegeben von Prof. Dr. Leopold Arzt und Karl Zieler. Lieferung 8. Band IV. Syphilis der inneren Organe. Von Prof. Dr. Heinrich v. Hoesslin. Syphilis des Nervensystems. Von Prof. Dr. Heinrich Pette. Syphilis des Bewegungsapparates. Von Prof. Dr. Hermann Schlesinger. Syphilis des Auges. Von Prof. Dr. Georg Lenz. Paper Price 8 marks Pp 349-502 with 49 illustrations Berlin & Vienna: Urban & Schwarzenberg 1933.

Die Haut und Geschlechtskrankheiten. Eine zusammenfassende Darstellung für die Praxis. Herausgegeben von Prof. Dr. Leopold Arzt und Prof. Dr. Karl Zieler. Doppel-Lieferung 9/10. Band IV. Syphilis der inneren Nase des Kehlkopfes der Luftröhre und des Ohres. Von Prof. Dr. Heinrich Neumann. Syphilis der männlichen Geschlechtsorgane und Syphilis der inneren weiblichen Geschlechtsorgane mit Brustdrüsen. Von Prof. Dr. Moritz Oppenheim. Die angeborene Syphilis. Von Prof. Dr. Wilhelm Kertl. Die Bedingungen des verschiedenen Verlaufes der Syphilis. Von Prof. Dr. Alfred Stühmer. Erkennung und Untersuchung der Syphilis. Von Prof. Dr. Walther Schonfeld. Voraussage und Heilung der Syphilis. Von Prof. Dr. Karl Zieler. Die Behandlung der Syphilis. Von Prof. Dr. Paul Linser und Priv. Doz. Dr. Karl H. Vohwinkel. Die Behandlung der Syphilis mit unspezifischen Mitteln (Malaria-Rekurrens, Saprovia, Pyraler, Zittmann-Bekokt). Von Prof. Dr. Friedrich Berling. Durchführung der Allgemeinbehandlung im einzelnen bei den verschiedenen Formen der Syphilis. Von Prof. Dr. Paul Linser. Paper Price 14.40 marks Pp 593-804 with 59 illustrations Berlin & Vienna: Urban & Schwarzenberg 1933.

These volumes maintain the general trend of excellence of the previous contributions. The fundamental facts on visceral syphilis are presented by experts in the various departments of medicine. It is difficult to single out any one contribution for

special mention. The general principles of modern syphilotherapy are well discussed. A conservative estimate of the newer antisyphilitic remedies is given. The point of view of the student and the general practitioner is maintained.

Poetry of the Insane. Compiled by Dr. Charles E. Mayes. Fabrikhold. Price \$1.50 Pp 112 Baltimore: Waverly Press Inc. 1933.

The author, a physician with poetry as a hobby, has here collected some contributions by persons said to be insane, who handed him their poems while he was attending physician in the Illinois State Hospital and in various other institutions. The poems seem to establish his belief that the psychotic mind has all the hopes and aspirations common to the normal mind. These poems help the physician to an insight into the mental processes of those whom he attempts to heal. Certainly by any definition of poetry many of the items here included rank high. On the other hand, some of the rhymes rank with the output of children 12 years of age. For all interested in either psychiatry or poetry this collection will have a special appeal.

A German Doctor at the Front (Die Front der Ärzte). By Professor Dr. Wilhelm His. Translated from the original German by Colonel Gustav M. Blech. Medical Corps Reserve and Brigadier General Jefferson R. Kean. Cloth Price \$2.50 Pp 230 Washington D.C.: The Military Surgeon Army Medical Museum 1933.

The war experience of an illustrious German scientist and clinician is delightfully told in this book. It is not a pedantic narrative objectively committed to print but a human exposition of the author's experiences as medical inspector in Russia and Asia Minor. The facts as the writer observed them are presented without partisan bitterness but with a sympathetic understanding of loyalty and patriotism on both sides. Only a man with such a charming philosophy could have written such a book. Pursuing his medical labors in all possible situations, the author never lost his sense of humor. The story he tells will interest both the layman and the medical man. It is the physician, however, who will glean most from its pages. Mixed with the author's literary charm are medical gems on clinical medicine, epidemiology and sanitation. The settings for his narratives are unique and he has exhausted all their possibilities.

Tabulae biologicae periodicae. Herausgegeben von C. Oppenheimer und L. Plüncussen. Band II Nr. 3 (Tabulae biologicae Band VIII Nr. 3). Paper Price 55 marks complete volume Pp 241-320 Berlin W. Junk 1932.

Tabulae biologicae periodicae. Herausgegeben von C. Oppenheimer und L. Plüncussen. Band II Nr. 4 (Tabulae biologicae Band VIII Nr. 4). Paper Price 55 marks for 4 parts of Band II Pp 321-416 Berlin W. Junk 1933.

Tabulae biologicae periodicae. Herausgegeben von C. Oppenheimer und L. Plüncussen. Band III Nr. 1 (Tabulae biologicae Band IX Nr. 1). Paper Price 55 marks for 4 parts of Band III Pp 134 Berlin W. Junk 1933.

This compilation issued periodically in journal form, should be of value to research workers in experimental biology. It consists of brief reviews and tabulations presenting data on such subjects as muscle physiology, carotinoids, the photoperiodicity of plants, constants of arabacia eggs, derivatives of bile acids, saponins and proteases. These are chiefly in German, with an occasional section in English.

Behind the Screen. By Maurice Chidekel. M.D. Cloth Price \$2.75 New York: American Medical Publishing Company Inc. 1933.

Here in diary form is the record of the daily practice and interests of a physician. The book is much more likely to be enjoyed by medical readers than by the public for whom it is more likely to have a morbid interest than any other. The author has a sense of the dramatic as well as a sense of humor. The introspective character of his observations will make the book especially interesting to psychologists.

Medical Women of America. A Short History of the Pioneer Medical Women of America and of a Few of Their Colleagues in England. By Kate Campbell Hurd Mead. M.D. Cloth Price \$1 Pp 112 with illustrations New York: Froben Press 1933.

This is a painstaking study of the entrance of women into the broad fields of medicine. The book deserves to be more attractively presented as to both literary style and physical format.

Miscellany

MEDICAL EXHIBITS

At a Century of Progress International Exposition
Chicago, May 26-Nov 1, 1934

EDEN J. CAREY, M.D.
MILWAUKEE

The Chicago world's fair opens at 6 o'clock Saturday evening, May 26. The Hall of Science, dedicated last June, has nine acres of space in which exhibits of physics, chemistry, biology, mathematics, geology and medicine—both scientific and industrial—are displayed. The medical sciences occupy 40,600 square feet of floor space net (and the industrial section occupies 25,000 square feet). The exhibits of medical science will occupy a space 50 per cent greater than last year.

This is the second time in the history of international expositions in America that organized medicine, dentistry and pharmacy have presented to the public the story of their contributions to the progress of civilization.

The Medical Advisory Committee includes Drs. William Allen Pusey, chairman, Frank Billings (deceased), Ludvig Hektoen, Herman L. Kretschmer, Paul Nicholas Leech, Morris Fishbein, Arthur D. Black, Bert W. Caldwell, Julius Stieglitz, Benjamin H. Orndoff, A. S. Burdick (deceased), C. H. Searle, Lloyd Arnold and Franklin Martin and Messrs. Thomas McMahon, R. A. Whidden, Edwin R. Embree, Julius Riemen-schneider, H. C. Christensen, Will J. Cameron, Harry C. Phibbs, S. DeWitt Clough and George H. Merck.

The objectives of the exhibits on health education by the visual and auditory methods are: (1) to compare health conditions of a hundred years ago with those of today, (2) to instruct the public in the intricacy of the living human machine and to give warning not to meddle with it by dangerous self-medication, (3) to interest the layman in the scientific story behind the physician's services and opinions regarding health and sickness, (4) to show that compassion for suffering humanity and not commercialism ruled the lives of the great discoverers and practitioners of medicine, (5) to prove to the public that many chronic diseases such as cancer, tuberculosis, heart and kidney disorders, and diabetes, are preventable and, if detected early by a periodic health examination, are curable, (6) to show the layman the value of discrimination in selecting one to evaluate health and detect the presence of disease and that the knowledge and developed skill of the duly qualified doctor is the patient's only safeguard and bulwark in the prevention and cure of disease.

THE MEDICAL EXHIBITS LAST YEAR

The exhibit, to be effective, must first attract attention. Subjects of common interest, such as the development, structure and function of the human body, tuberculosis, infantile paralysis, heart disease, cancer, gonorrhea, pneumonia, Bright's disease and appendicitis, aid in drawing the public to a display. The method of presentation is vital, because an unfamiliar exhibit may have popular appeal if the unknown is presented in easily grasped stages of the known. This is exemplified by the urologic exhibit in which the significance of blood and pus in the urine is revealed by a series of panels showing the anatomy of the urinary organs.

An exhibit should be definitely arranged so that a personal demonstrator may not be required. On the other hand it is abundantly proved that a personal demonstrator giving short talks adds greatly to the attendance. The transparent man is a more popular object when the guides are delivering their three minute description than when no demonstrator is present. This likewise proves the value of movement when it may be accomplished, in drawing the attention of the public. When the transparent man is uniformly lighted, it does not have the appeal that it has when the organs from head to pelvis are

illuminated in rotation. The movement in the cancer exhibit, by the familiar growing flame of fire, has a value that is absent when the movement is stopped. The dynamic Dresden models and the teletractor for the blind are highly popular when the public can push a lever or press a button or can feel the vibration of the spoken voice on a diaphragm. The mechanism of the models must be substantial when dealing with large crowds such as those in the Hall of Science, or the models will become ineffective through being out of order half of the time. The personal demonstrator and the six foot book of maternal hygiene are attractive to the public. The combination of demonstrator, careful arrangement, adequate light, harmonious color and rhythmic movement in relation to a familiar subject are the qualities that attract attention.

After the attention has been arrested by a display, it is necessary to hold or retain the interest of the visitor. This is accomplished by simplicity of presentation. If the exhibit is easily seen and understood by a definite form, logical sequence and labels, short and clear, the observer usually lingers. If the exhibit is poorly lighted, cluttered hard to follow, and has lengthy labels finely written, the people pass it by.

The public is interested in reality. Actual specimens of human embryos and sections of the human body have more appeal than pictures. This is no more morbid curiosity on the part of the public than it is on the part of medical students. This holds true for the interest that diseased organs, such as cavitation of the lungs in tuberculosis, have for the lay observer. The public is interested in disease and the changes from health manifested by a diseased organ. The public is vitally interested in anything that may affect the human body in disease. The average man is no different than the doctor in this respect of interest, except in degree.

Next to the actual specimens, lifelike models, such as those showing the stages in the surgical removal of an appendix, hold the interest of the public. Dioramas of historic milestones in medicine are nearer to reality than pictures and therefore draw public notice. This is likewise proved by the sculpticolor, which has an effective emotional appeal in showing the physician's service to the sick child in the booth of 'The Family Doctor'. The musical accompaniment for 'The Family Doctor' at the bedside is well chosen and arouses the desired emotions of past sad memories in the mind of the visitor when the plaintive melody and minor chords of the adagio movement of Beethoven's Moonlight Sonata are vibrating. The sympathetic services of 'The Family Doctor' will linger long in the minds of grateful people, because adequate visual and auditory memories are established by this exhibit. I am not ashamed to say that each time in more than two dozen visits to this masterpiece a lump arose in my throat because the artistic combination of color, form and minor harmonic sound in a dignified environment appeared so perfect in conveying the meaning of the story of sadness of apprehensive parents and of the doctor's unselfish services at the bedside of a sick loved one. This exhibit appeals to the heart as well as to the mind. This may be beyond the pale of the so-called strict scientist, but there are many things in medical practice that are still beyond the analysis of science. The exhibit attracts the public, and that is proof enough of its success. The methods used are deserving of close study on the part of any scientist who attempts to tell his story to the layman. I am reminded in this connection of Leonardo da Vinci's statement that "the higher science develops, the nearer it approaches art, the greater the perfection in art, the nearer it approaches science."

The moving picture is used effectively in showing the operation where ether is first used as an anesthetic. This modality may be overused when the pictures are too long and inadequately labeled. This also holds for sound pictures. On the other hand, 'The Talking Tooth' in the dental exhibit uses sound in an effective manner.

When an exhibit may be prepared in order that a 12 year old child is able to grasp and study the demonstration, it is evidence that the exhibitor has a clear, firm and simple hold on the subject presented. If such a child is not attracted to the exhibit and his interest is not retained, it is usually a sign of inadequate thought and preparation on the part of the demonstrator or inadequate knowledge of the subject presented.

From the Medical Section, Department of Exhibits, A Century of Progress International Exposition.

Owing to lack of space, several illustrations have been omitted. The complete article appears in the author's reprints.

I know of nothing in which the gaps that still exist in medical knowledge, in spite of the brilliant advances made in the last hundred years, stand out so glaringly as in an exhibit on a subject on which medical science has not as yet shed its light.

In this second attempt in America to present medical science to the public, it is a conceded fact that the ones who benefit the most are the medical scientists who plan and prepare the exhibits. A good demonstration is an index that the teacher has a simple and true understanding of the relationships of the subject presented. When scientific objective knowledge cannot be conveyed in a clear-cut exhibit without complex terminology, it is a sign that knowledge is lacking.

An effective pedagogue in science is one who is a good demonstrator and allows ample means for the observer to exercise his faculties of sight, touch and hearing by actual participation in the demonstration. An effective exhibit is an index of a good teacher who knows his subject. The content of the exhibit may have a natural attraction. The observer tests his present knowledge in a satisfying way by recognizing and recalling it to memory. The exhibit may arouse curiosity by comparison and contrast.

If an exhibit is arranged in an effective manner it manifests the application of the laws of teaching. The student or observer must have the attention focused. It is up to the exhibitor to gain the attention in order to retain or focus it. If the content of the exhibit does not have natural appeal it must have a stimulated one in order to arouse the curiosity of the passer by. The exhibit must be definitely arranged and labeled in order to obtain the desired response on the part of the public. All annoyance and inconvenience such as poorly understood long technical words and inadequate light should be eliminated.

Everything exhibited should be a component part of a well coordinated whole in order that the layman may easily organize and integrate the meaning of the exhibit in his mind. The resultant clear-cut picture or story of the object of the exhibit is more valuable than a dictionary of words and proves that the exhibitor knows what he is trying to demonstrate. The greater the number of simple associations related to the main theme of the exhibit that are conveyed to the mind of the observer, the longer and more easily will the exhibit be remembered by those for whom it is prepared. An attractive exhibit that invites repeated visits has intrinsically the quality to be remembered because of the periodic review by the observer.

FUTURE OF MEDICAL EXHIBITS IN THE UNITED STATES

The medical exhibits in the Hall of Science at A Century of Progress exposition of 1934 represent three years of planning, assembling and constructing work on the part of the majority of the exhibitors. The expenses of preparing each exhibit and transporting it to Chicago are defrayed by the university, foundation or association sponsoring the display. A Century of Progress gives the space free of charge where an exhibit fits into the general plan and policy of development laid down by the Medical Advisory Committee.

The doctor needs public cooperation in conducting periodic health examinations in order to detect the early stages of tuberculosis, cancer, diabetes, goiter, heart vascular, kidney and certain mental diseases and physical deformities. Mass education of the public of what the doctor now has to offer may be effectively done by the exhibit method. The layman has proved that he is as interested in exhibits of health and disease as he is in museums of art and natural sciences.

The exposition of 1893 in Chicago left a heritage in the Field Museum of Natural History. Will A Century of Progress expositions of 1933 and 1934 point the way to the value and the establishment of a museum or hall of health? This is a question that organized medicine, dentistry and pharmacy should seriously consider. If the duly qualified physician, dentist and pharmacist, through their respective legitimate organizations, do not assume the role of teachers and interpreters in the mass education of an interested and eager public in matters of health and disease, who will?

POPULAR LECTURES ON MEDICINE IN HALL OF SCIENCE

Members of the Chicago Medical Society and the American College of Surgeons will give lectures each afternoon in the Hall of Science for the public on some popular subject on medicine and surgery.

THE FOREIGN EXHIBITS OF MEDICAL SCIENCE

The names of the contact officials or chairmen are mentioned after each institution or association. More than 500 medical scientists and physicians planned or executed certain parts of the exhibits. Grateful acknowledgment is here expressed to every one who aided to make the displays of the medical section a success.

England—The Wellcome Research Institution of London (Sir Henry Wellcome). The Wellcome Historical Museum has dioramas that illustrate epoch-making events in British medicine and surgery. The Wellcome Museum of Medical Science demonstrates by models, charts, diagrams and the like the causes, methods of infection, symptoms, prevention and treatment of malaria, trypanosomiasis, kala-azar, leprosy, plague and bilharziasis. The Wellcome Bureau of Scientific Research has contributions from the departments of protozoology, helminthology, bacteriology and experimental pathology. *Trypanosoma grayi* in the tsetse fly, series of worms parasitic to man and animals and Rift Valley fever—a newly discovered disease in British East Africa—constitute part of the exhibit. The Wellcome Entomological Field Laboratories and Physiological Research Laboratories have exhibits that deal respectively with the mosquito and with the physiologic, pharmacologic and serologic problems on the production of diphtheria, tetanus and other antitoxins. Diseases in animals such as lamb dysentery, dog distemper, braxy in sheep, canine jaundice, bacillary white diarrhea in poultry, tetanus in horses and fowl pox are presented by appropriate exhibits. A model of the Wellcome Research Institution in London, a model of the floating laboratory presented by Sir Henry Wellcome to the Sudan government on the Nile, and a model of the mobile field laboratory given to the British war office during the Great War are exhibited.

France—The Institut Pasteur (P. Lecomte du Nouy and W. Roux, deceased). An illuminated map of the world, 12 by 20 feet, shows the distribution of Pasteur institutes. By means of photographs in a space 12 by 20 feet, are effectively presented the life of Louis Pasteur, his work on crystals, the silkworm, fermentation in beer, wine and milk, and the relation of microbes in human and animal diseases, and the life and work of the pupils of Pasteur and their influence on human welfare.

Germany—The Robert Koch Institute (F. Neufeld). By means of models, photographs, portraits, drawings and charts are displayed the life and work of Robert Koch, who discovered the tubercle bacillus in 1882.

Public Health Exhibit of Berlin (von Drigalski). By means of models, charts and diagrams the recent advances of public health in Berlin are portrayed.

The Deutsches Hygiene Museum, Dresden, Saxony (exhibits purchased by A Century of Progress). The Transparent Man lent by the Mayo Foundation, is a life-size model made out of cello, a transparent material, to show all interior organs, illuminated in rotation, in their relation to the skin surface. Other dynamic models manifesting human structure and function, which may be motivated by the observer, are as follows: the different kinds of joints, nodding and rotating movements of the head, circulation of one blood corpuscle, cooperation of the diaphragm and lungs in respiration, abdominal breathing, showing the movement of the chest and diaphragm, movement of the rima glottidis, the larynx in a laryngopharyngeal mirror, formation of sounds, example of reflexion—knee jerk, torso of wooden man—sagittal section in eight parts, horizontal sections of wooden man, in fifteen parts.

Italy—Medical exhibits from the Italian government (E. Bompiani). By means of models, charts, photographs, appliances and the like are indicated the contributions of the fathers of medical science, such as those of Galvani, Malpighi, Morgagni, Spallanzani, Leonardo da Vinci and Vesalius.

Holland—Central Institute for Brain Research, Amsterdam (C. U. A. Kappers). With the aid of specimens, models, casts, charts and drawings the structure and function of the nervous system are demonstrated.

UNITED STATES EXHIBITS OF MEDICAL SCIENCE

AMERICAN COLLEGE OF SURGEONS (Franklin Martin)—By means of transparencies, models, dioramas, illustrated map

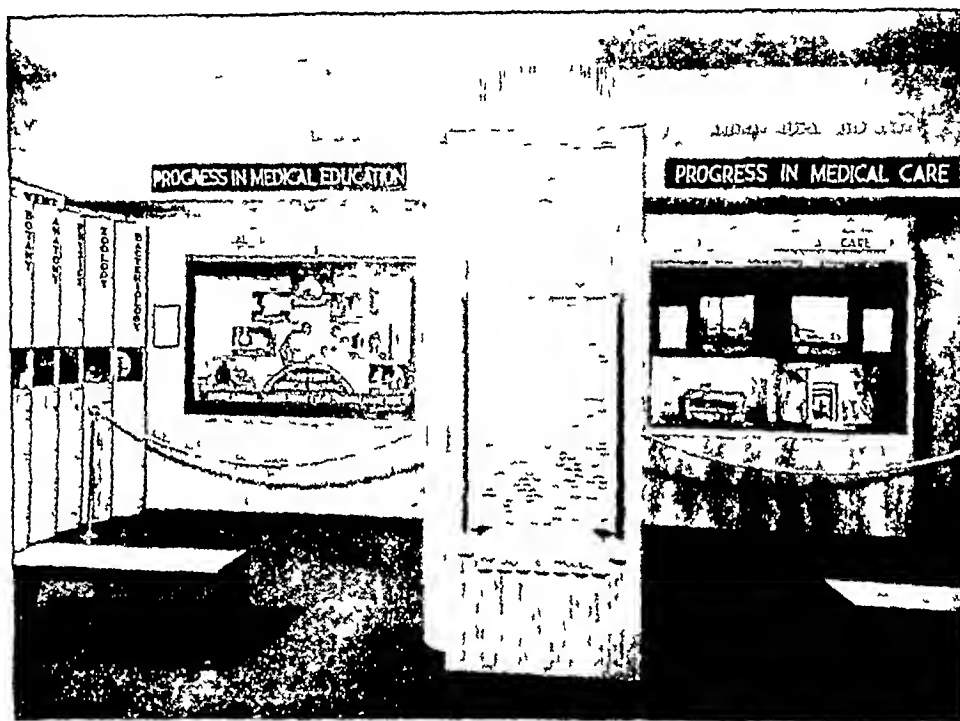
photographs and replicas, the progress of hospitals and surgery in America during the past century are depicted. A replica of the Lister exhibit in the Wellcome Historical Medical Museum is displayed. This consists of a diorama of the Lister Ward at the Glasgow Infirmary, photographs of Lister, his family, his degrees, letters patent, records, and the like, in show cases are displayed his pioneer experimental work on antiseptics and appliances used by him, and also replicas of furniture used by him.

AMERICAN HOSPITAL ASSOCIATION AND CHICAGO HOSPITAL ASSOCIATION (Bert W. Caldwell and Paul H. Fesler) — Photographs and charts showing a century of progress in hospitalization.

THE AMERICAN INSTITUTE FOR THE DEAF-BLIND (Robert H. Gault) — This exhibit relates to the development of methods of teaching the deaf and to the evolution of braille for the blind. A display of the Gault teletactor shows a method of enlarging the use of the senses of touch and vibration in connection with the education of the deaf. The apparatus consists of a microphone, a specially constructed amplifier and a vibrator or receiver. The visitor, resting his fingers on the receiver and speaking into the microphone, may feel his own voice. Similarly he may feel his companion's voice. Moreover, through a duplicate apparatus he may feel whatever programs are being broadcast from a given radio station. Charts and diagrams explain the fundamental scientific questions that are involved. There is emphasis on the essential similarity stimuli on the one hand by ear and learning their meaning, and receiving and interpreting the same stimuli, greatly amplified, by way of the organs of touch and vibration on the other hand. Photographs and occasional demonstrations illustrate the method by which the apparatus is being used toward promoting the interpretation of speech and improving the production of spoken language on the part of the deaf. Photographs and other forms of illustration show some features of various stages in the development of means of education of the deaf and the blind. Models and maps constructed manually by deaf pupils in the laboratory of the institute are used to suggest to the visitor the makers' scope of reading ability and skill in computation.

AMERICAN MEDICAL ASSOCIATION (T. G. Hull) — Dioramas, mechanical displays and transparencies are used to demonstrate progress in (1) medical practice, (2) medical care, (3) medical education and (4) health education. Bas-relief statuary portrays Aesculapius, the god of medicine, Hygieia the goddess of health, and Hippocrates, often called the father of medicine. There are contrasted the difficulties of the saddle-bag doctor with those of the physician of today with his numerous facilities. The many medical discoveries of the past century shown in brief review emphasize this point. It is also portrayed how a frequent physical examination tends toward good medical care and how self diagnosis and self medication result in poor medical care. A relief map of the United States has actual reproductions in miniature of the medical schools of the country. The role of the modern hospital as a place to which people now go to get well or to maintain their health is contrasted with that of a century ago. The correlation of community health and personal health is depicted by two new displays, and a question and answer service on health topics, so popular last year is continued and amplified this year.

AMERICAN PHARMACEUTICAL ASSOCIATION (H. C. Christensen) — As before, the exhibit will depict and dramatize the historical, educational and professional (scientific) phases of pharmacy. New features will emphasize the progress of American pharmacy during the past century, directly bearing on the service to the medical profession and the public at large. Visitors will be told of the development and standardization of drugs and drug preparations during the past hundred years, contrasting the old with the new, thus giving them a new conception of "the man behind the prescription case." One who enters the exhibit from the corridor will find at the left the Historical Rotunda with a series of seven brilliantly lighted recesses showing outstanding pharmacists and their contributions to pharmacy and medicine. In the center of the rotunda will be a reproduction of the famous Ebers papyrus, the earliest known book of remedies, which dates back to about 1500 B. C. Immediately behind the Historical Rotunda will be the exhibit of the United States Pharmacopoeia and the National Formulary. Here the story of these books of standards for drugs and medicines will be told both by displays and by an automatic pictorial



Part of the exhibit of the American Medical Association

machine. In the log cabin replica of the first apothecary established in Chicago in 1832 by Philo Carpenter, reproduced against the back wall of the exhibit space, will be housed an actual reproduction of an apothecary shop of a hundred years ago. Just to the right of the old apothecary shop and in striking contrast is located a modern pharmaceutical and chemical laboratory, in which will be conducted a program of demonstrations in prescription compounding, testing drugs for purity, examples of accuracy in weighing and measuring, and the like. In the next two recesses, the story of digitalis and ergot will be portrayed in dioramic views. The next recess will contrast the art in pharmacy a century ago with today by showing apparatus and utensils used during these periods. The growth and development of pharmaceutical education, legislation and service to the public will be depicted in the next group of exhibits. In the foreground will be a model of the American Institute of Pharmacy (pharmacy headquarters building). To the right of these will be a materia medica exhibit showing the evolution of medicinals. There will also be two displays in the corridor walls of the exhibit which will show drugs of the Bible, animal drugs, and the like.

AMERICAN SOCIETY FOR THE CONTROL OF CANCER (James Persons Simonds and A. H. Estabrook) — The purpose of this

exhibit is to demonstrate the fact that cancer, if discovered and treated in the early stages of the disease, is to a great extent curable. In a mechanical unit, cancer is compared to a fire. In its earlier stages cancer, like a small fire, can be controlled, but in its late stages, as in a huge conflagration, there is little hope for control. Material on the nature, incidence, prevention and treatment of cancer is presented in four dioramas. Models, drawings and charts are used to present the need of attention to all the early symptoms of cancer. The history of the treatment from ancient times and the present methods of treatment by surgery, x-rays and radium are depicted.

AMERICAN UROLOGICAL ASSOCIATION (Herman L. Kretschmer and George C. Smith) — With the assistance of drawings, charts and models is emphasized the need of consulting a physician when blood and pus are in the urine. Tuberculosis, tumors, stones of the urinary tract and disease of the prostate gland are developed in a general way with a panel devoted to each disorder. The development of urologic instruments is presented with the aid of Mueller of Chicago.

AMERICAN VETERINARY MEDICAL ASSOCIATION (H. Tren-ton Hoskins) — The theme of the exhibit will be expressed in a series of eight dioramas each one depicting an important activity of the modern veterinarian. The area of each diorama will be approximately 3 by 3 feet, with a height of about 2½ feet. These will be arranged in a straight row against the back wall of the booth. The front of each diorama will be glazed and each one will be dust proof and properly illuminated. Above each diorama will be a sign carrying a brief legend, such as Small-Animal Practice, Country Practice, Military Medicine, Laboratory Research, Field Investigations, Education, Public Health, Biological Manufacturing. In addition each diorama will include a small card carrying a legend, such as "Intelligent treatment is based on correct diagnosis—not guesswork." "A prosperous agriculture is dependent on a productive animal industry, which in turn is dependent on a competent veterinary service." "The up-to-date veterinarian practices prevention rather than cure." "Veterinary inspection makes your meat and milk safe."

The wall space not occupied by the dioramas will be utilized to display appropriate photographs, statistical charts and other material of a purely educational character. There will be a model of a cow, showing what takes place when the animal swallows a foreign body, such as a nail resulting in the condition known as traumatic pericarditis. A small exhibit of animal parasites will be shown.

CLEVELAND CLINIC FOUNDATION (George W. Crile) — Motion pictures present the discovery of the circulation of the blood by Harvey in 1628, the development of modern methods of transfusion and the formation of autogenous cells. The history of blood transfusion is shown by the use of actual instruments with the aid of Mueller of Chicago and Kimpton of Boston. The physiologic interrelations of the thyroid, suprarenal, pituitary and sex glands are illustrated by specimens, charts, models and drawings. The history of the roentgen ray consists of an x-ray apparatus and tube used in 1896 and a number of roentgenograms, books and tubes made within a few weeks after the discovery of the x-rays in 1895. On a mechanical device a number of pictures are shown in succession which will contrast early and present-day x-ray tubes apparatus and pictures.

COMMITTEE ON DIABETES (Rollin T. Woodratt and Morris Fishbein) — An exhibit on diabetes will show the public what the disease is, its causes and its curability with diet and insulin. In spite of the fact that now, since insulin has become available, no one with diabetes need die of the disease, the mortality rate in this country has been climbing rapidly. Many do not know about insulin, many do not know how to use it, some refuse to try it and some cannot afford it. The exhibit will show the principles of dietetic care and will give some idea of the use of insulin and of the prevention of those injuries to the feet and legs which often have tragic consequences to the diabetic patient. The exhibit will carry a message of hope and encouragement to the patient with diabetes. There will be pictures of patients strong and well after years of treatment. There will be representative diets shown in wax and also samples of insulin in the several dosages.

CHICAGO BOARD OF HEALTH (H. N. Bundesen) — With apparatus, stereopticon lantern slides, charts and diagrams, the history of the control of preventable diseases in Chicago during the last hundred years is disclosed. Health educational work along various lines is indicated.

DENTAL HEALTH EXHIBIT (Arthur Black) — The dental health exhibit of 1934 points the way to the prevention of dental ills and to better health through the simple means of proper care of the teeth from early childhood. The major exhibits are:

1 **Nature, Builder of Teeth** A twelve minute talking motion picture shows the development of the teeth, jaws and face from birth to the age of 18 years. This is a striking illustration of the relation of the teeth to facial symmetry and beauty. Instructions regarding the development of the teeth through proper diet and their care during childhood are presented in a twelve minute discussion by phonograph transcription immediately following each showing of the film.

2 **The Talking Tooth** A framed ground glass, 10 feet high by 4 feet wide, behind which there are 1,164 small electric lamps arranged in an elaborate system of shadow boxes, portrays in brilliant colors the beginning and progress of a cavity in a molar. The tooth tells its own story by a phonograph which operates 175 lighting changes. Directions for preventing serious decay are given.

3 **Tooth Brushing** A motor-driven, revolving, hexagonal exhibit with six aluminum heads and hands continuously demonstrates proper methods of brushing the teeth.

4 **Mastication** This motor driven exhibit shows the jaw movements of a tiger, representative of meat-eating animals, of a mountain sheep, representative of plant feeders, and of man illustrating the combined motions of the other two. There is also a dentist's instrument used in arranging artificial sets of teeth so that they are exactly adaptable to the jaw movements of each person.

5 **George Washington's Artificial Teeth** These are exhibited in a steel pedestal with a nonshatterable glass top and are accompanied by photographs taken before and after the natural teeth were extracted, which show the marked change in facial contour and expression.

6 **Pylorrhea** A framed ground glass 10 feet high by 4 feet wide illustrates by the reflection of 1,178 small electric lamps the gradual destruction of the gum and other tissues in case of pylorrhea. The process is described by a phonograph, which also operates the lighting circuits.

7 **Professional Dental Education** A beautiful model of the building occupied by the first dental school founded in Baltimore in 1840, is shown alongside a section cut through a modern dental college building, which shows a separately equipped and illuminated miniature room for each course of study. Accompanying this is an exhibit of early dental books from 1530. Description is given by phonographic transcription.

8 **A Century of Progress in Dental Service** A revolving stage shows dental office equipment of 100 years ago, fifty years ago and today, also an office equipped especially for children. The various periods have been worked out to the most minute details. Description is given by phonographic transcription.

9 **Facial Beauty** The effect of dental conditions on facial beauty and expression is shown by about 100 plaster models of faces made before and after various methods of treatment, consisting principally of the correction of irregularities of children's teeth, of the use of properly designed sets of artificial teeth and plastic operations to remove facial scars and other defects for adults.

10 **Balanced Diet** The importance of proper diet in building and maintaining sound teeth throughout life is demonstrated in a large alcove window.

11 **Paintings, Prints and Cartoons** Sixteen oil paintings and drawings by famous artists from 1610 to 1879 are shown.

12 **Bronze Tablets** Twenty-one bronze tablets recite noteworthy achievements of famous dentists from 1520 to 1933. There are about 100 other exhibits in show cases, consisting of many curious old instruments used during the past 200 years, good and bad forms of tooth brushes, the first demonstrations of 'laughing gas' and ether for surgical operations.

by two dentists, and cuneiform tablets from ancient Assyria describing dental treatment 2,600 years ago, facial models of cancer and syphilis of the mouth and face

CHICAGO GOODWILL INDUSTRIES (W C League)—The equipment consists of a large floor loom, table loom, bicycle saw, work bench and table. These pieces are arranged in a semicircle and will constitute the major part of the display to demonstrate treatment. Patients from the Goodwill Workshop receive this treatment under supervision two hours daily.

CHICAGO MEDICAL, DENTAL AND ALLIED SCIENCE WOMEN'S ASSOCIATION (Katherine K True, Lena K Sadler and Bertha Van Hoosen)—By means of an automatically operated book 6 feet high and 4 feet wide, there are questions and answers on maternal hygiene. With the aid of artistic paintings and models, the relation of food, clothing and appropriate environment for the expectant mother is shown.

CHICAGO MUNICIPAL TUBERCULOSIS SANITARIUM (Allan J Hruby)—The central object in this exhibit will be a mural in oils measuring 8 by 5 feet. In this painting the central figure in the middle foreground is the "Sower of the Seed." The figure of the sower is taken from an actual portrait of an advanced tuberculosis patient at the Sanitarium. It shows the typical configuration of the advanced consumptive and is represented as advancing toward the foreground somewhat in the manner of Millet's sower with hand extended broadcasting the seed. Behind him is the desert trail over which he came, bones and skeletons representing the tragedy of tuberculosis. In the right foreground is a female figure representing humanity prostrate and passive typifying the passive attitude of public health authorities in general toward tuberculosis. In the left foreground is the figure of the mother surrounded by her children, her arm extended in a protective and defensive attitude. Framing the painting is an encircling branch of weeping willow, typifying again the tragedy of tuberculosis. In the left background represented in the clouds is Father Time sharpening his scythe against the harvest which he knows will come. The theme of the whole picture portrays tuberculosis as an infectious and contagious disease. The picture will in turn represent the central motif of the entire exhibit. The purpose is to give the thousands of visitors at the Century of Progress the concept that tuberculosis is actually and beyond doubt a contagious disease in the same sense that smallpox, leprosy, scarlet fever and other diseases are. To emphasize further the infectious nature of tuberculosis, several microscopes will be on hand under the supervision of a laboratory attendant. Slides will be prepared showing the tubercle bacilli in various concentrations, and the people as they pass will have an opportunity to see for themselves the causative organism of tuberculosis. Leading on from etiology to pathology, a dozen or two pathologic specimens suitably prepared will be on exhibit. These specimens will show changes in the lung structure due to tuberculosis and will be sufficiently distinctive to be readily intelligible to the lay audience. Furthermore, a large double rack, showing a series of x-ray plates, will be on exhibit. These plates, of interest both to the profession and to the public, will show in series the gradual development in the lung of the tuberculous lesion. In this section also will be several plates showing vividly the effect of pneumothorax on the lung and showing the various degrees of collapse. As explanatory of the tuberculosis problem and its seriousness and magnitude, even at the present time, a series of charts will be on hand, showing the morbidity and mortality of tuberculosis even today in this city and throughout the country. Other charts will be prepared showing the cyclic decrease in tuberculosis mortality down through the years. As a final measure of education it is proposed to have hundreds of instructive bulletins to be distributed free of charge to such as may be interested. A nurse or physician or both will be in continuous attendance to answer questions and to give detailed information concerning work of the Municipal Tuberculosis Sanitarium. The exhibit will emphasize the contagious nature of tuberculosis and lays stress on the public health measures necessary to prevent it.

CHICAGO RAPID TRANSIT COMPANY (Hart E Fisher)—An exhibit will be presented on the evolution of resuscitation showing the methods both manual and mechanical from the early

ages down to the present through the medium of charts, transparencies, drawings and photographs. These are to be placed on one of the end walls in the exhibit space. On the opposite end wall will be displayed by charts, photographs and working models the scientific exhibit of Dr Albert S Hyman of the Witham Foundation of New York, showing the artificial pacemaker for electrical stimulation of the heart in artificial respiration. At the back wall of the exhibit is to be placed a woodland scene through the use of art paper and painting. This wall will also carry the charts on electrical accidents and resuscitation with photographs showing the activities of the medical department in its research on electrical shock, burns, and its twenty years of periodic medical examination. In addition will be charts showing the research work on reaction time and mental testing of employees. On the floor, half of the space will be devoted to the showing of two working models of the adult and infant Drinker respirator, with manikins lent by Warren E Collins, Inc., of Boston. There will also be two Emerson respirators, adult and infant, with working manikins lent by J H Emerson of Cambridge, Mass. The medical department of the Chicago Rapid Transit Company will exhibit one portable hand operated respirator and one adult respirator, a Panis respirator, the inversion method, the hanging tree method, the barrel method, the lungmotor, both adult and infant, the pulmotor, and the Lyon breathing apparatus. Also on exhibition will be an animated life size working model of the Schaefer prone pressure method, which is lent by the United Power and Light Corporation. The story will portray research in resuscitation, electrical accidents, periodic medical examinations, and mental and reaction time testing in the form of an educational feature for the general public.

CHICAGO MEDICAL SOCIETY AND WOMAN'S AUXILIARY (H N MacKechnie, C H Phifer and Sophia Brumbach)—The history of the Chicago Medical Society and related medical progress in Chicago are presented. Desks for registration of visiting physicians and medical auxiliary are provided.

CHICAGO ROENTGEN SOCIETY (Hollis E Potter and Benjamin H Orndorf)—The plan of the Chicago Roentgen Society exhibit is to show the average visitor the wide scope of usefulness of x-rays in diagnosis, together with something of the methods employed. The basic exhibit will be films showing twenty-five diseases selected because of their pathologic importance and because of x-ray value in their diagnosis. Each disease will have twenty-five 8 by 10 inch film copies showing the typical and variables. Each disease unit will be introduced, explained and oriented on a few panels adapted to the average lay intelligence. For showing something of the methods of roentgen diagnosis, a running series of slides will be projected from a Ballopticon on a transparent screen. For especial interest there will be a full sized man shown by reflected light on semitransparent paper behind and through which by pressing a button there will show at will ten roentgenograms of ten different parts of the same man. A second figure is planned on the same principle except that the light alternation is automatic and the whole figure will show by transmitted light through a full length x-ray film behind. All films used for the exhibit will be on acetocellulose (safety) base to avoid fire hazard.

HENRY FORD HOSPITAL (Frank W Hartman and Roy D McClure)—The exhibit of the Henry Ford Hospital, Detroit, will have models, appliances, transparencies, photographs and photomicrographs showing the tannic acid treatment of burns and oxygen therapy in pneumonia.

HOT SPRINGS NATIONAL PARK (Thomas J Allen Jr)—The exhibit of Hot Springs National Park is planned to show what the United States government is doing at that location to develop and operate an area for the use of the public in either regaining lost health or retaining and lengthening the period of good health. This being the only government-controlled area of its kind it is an individual feature of government operations. The exhibit in addition to its health features, is designed to show the history connected with the 102 years of government control of the resort, this period in itself being a century of progress in the use and application of natural hot mineral waters. The presentation is built around the large diorama feature at

the end of the space, in which a natural hot mineral spring arises from tufa rock that actually had been formed around one of the real springs in the park. The diorama shows a model of a portion of the famous Bath House Row in Hot Springs National Park, with a background of one of the wooded mountains of the park. In one upper corner of the background is a symbolic picture representative of an old Indian camp recalling the use of the spring water by the wandering Indian tribes in early days. The side walls of the exhibit are to be covered with photographic transparencies, on one side to be historical presentations from 1832 to more recent times and on the opposite side to be photographic transparencies of the modern use of hot water in the different bath halls and photographs of bath house exteriors. Descriptive matter, concise but interesting and explanatory, will be interspersed.

INSTITUTE OF MEDICINE OF CHICAGO (medicolegal, Oscar T. Schultz)—It is the aim of the medicolegal exhibit of the Institute of Medicine of Chicago to portray that (1) under the present organization of society it is necessary for the government to make official investigation of certain deaths and that such deaths constitute a not inconsiderable proportion (18.8 per cent) of all deaths that occur in a populous community, (2) the deaths that must be officially investigated fall into the four main classes of homicide, suicide, accident and sudden death, (3) the government has set up two different types of agency for such investigation, the coroner's office and the office of medical examiner, (4) impartial and thoroughly scientific investigation is important to society in the administration of justice and in the adjudication of claims for insurance and workmen's compensation. In a 20 by 40 foot space it is proposed to carry out this aim as follows. At the center of the forty foot wall space will be a diorama which will symbolize the tragedy and enigma of death. This will be flanked on each side by two smaller dioramas portraying graphically the four classes into which the death may fall: homicide, suicide, accident and sudden death. On each side of the diorama unit will be a painted panel. On one side this will be symbolic of the medical examiner system, showing a modern autopsy room, with a shrouded body and a gowned figure of a physician ready to begin his examination, in the background will be sketches indicative of the scientific procedures that a proper examination must make use of: pathology, bacteriology and serology, chemistry and toxicology, and microscopy. The panel of the opposite side will be symbolic of the coroner system. It will depict the usual type of coroner's jury being sworn in for the inquest in the presence of the dead body as the law requires. In the background, corresponding to the scientific procedures in the other panel, will be sketches portraying coroners' juries at different periods in history, the object being to illustrate that the office has not changed much since its earliest days. This graphic material will in turn be flanked on each side by a lettered panel giving succinctly the essential features of the two systems in use in this country. This will include such data as origin, mode of selection, tenure of office, qualifications, duplication of other agencies of government and cost. On the side walls will be diagrams showing the organization and relationships within the judicial administrative system of the continental medicolegal system with its institute of legal medicine. A similar diagram will show the same features of the two American systems. On each wall there will be a case containing a few well selected specimens to illustrate without unnecessary gruesomeness, some of the features of the different kinds of death that must be officially investigated. With the specimen will be a sketched-in background to illustrate either some feature of the mode of death or the scientific procedure necessary to detect the cause of death.

LOYOLA UNIVERSITY OF CHICAGO (J. M. Essenberg)—The exhibit is designed to show the contribution of Loyola University to modern methods of teaching the structure of the human body, anatomy, and its development: embryology to medical students. It consists of a large collection of human embryos and of several series of sections of the adult human body. The embryology collection is composed of carefully selected embryos and fetuses varying in age from a few weeks after conception

to the time of birth. Transparent or "x-ray" preparations of actual babies are included to show the development of internal organs. Special attention is called to the envelopes or membranes that surround the growing embryo. The origin, development and structure of the afterbirth is made clear by the use of different colors. Explanatory notes are attached to each preparation. The structure of the adult body is illustrated by sections or sectional anatomy, as it is called in medicine. Sections through all parts are displayed, and there are three series of these representing planes at right angles to each other. Every organ of considerable size is shown, and colors have been added to make structures easier to distinguish. Each section is mounted in a specially designed aluminum case with glass on both sides. This exhibit aims to give to visitors first hand information as to the complexity, delicacy, dignity and beauty of our own body. It tries to supply the physical basis for the command "know thyself."

MARQUETTE UNIVERSITY AND THE MILWAUKEE COUNTY HOSPITAL (Francis D. Murphy and Joseph Grill)—The display consists of about 200 specimens illustrating the various types of Bright's disease. Each specimen is accompanied by photomicrograph pointing out the important lesion to be demonstrated. In addition, the case report is attached to each specimen. The histologic aspect of the subject will be illustrated by numerous photographs and life histories of the important contributors to the entire subject of Bright's disease. Original manuscripts of the earlier writers will be arranged in the booths. The object of this display is to emphasize the importance of Bright's disease as a cause of morbidity and mortality and to point out methods that are to be used in the prevention of chronic nephritis. At the same time there are many self-explanatory charts, which point out the most important features of the early stages of the various forms of Bright's disease. In the charts, which are framed and placed above the specimens, are given the chief causes and means of prevention of Bright's disease. It is generally accepted that chronic nephritis is a disorder that arises from attacks of acute nephritis which have occurred many years before and have gone unhealed. When chronic nephritis or Bright's disease develops, but little can be done for the patient, on the other hand, if the disease is recognized and vigorously treated in the acute or transitional stage following the acute, much can be done to prevent the development of the chronic phase.

MAYO FOUNDATION (Walter Alvarez)—This institution is developing three themes, namely, diseases of the digestive tract, the thyroid gland and the sympathetic nervous system. The information is presented with the help of transparent photographs, wax models, charts, motion pictures and lantern slides. A model of an x-ray laboratory and of Dr. Cannon of Harvard, in 1896, making the first roentgen studies of the stomach are shown. A collection of roentgenograms, wax models and actual gallstones illustrates the commoner lesions of the digestive tract, and a diagrammatic model of the stomach and the intestine indicates the situation of these lesions in the body. A large model of the thyroid gland in wax and seven lifelike wax masks display the appearance of patients with the different types of goiter and thyroid gland deficiency. The successive stages are shown in the extraction of a few grains of thyroxine, the active constituent of the thyroid gland, from 25 pounds of raw material. Large transparent photographs of dissections of the sympathetic nervous system are presented so as to orient the lay visitor. A large electrical thermometer enables visitors to measure the temperature of their hands and an electrical thermometer enables them to see how steady their nerves are.

NORTHWESTERN UNIVERSITY MEDICAL SCHOOL (James P. Simonds, Leslie B. Arey and Andrew C. Ivy)—The exhibit will consist of 1. Charts, photographs, drawings and actual specimens illustrating the routine uses of animals in laboratories and the discoveries that have been made from experiments on them. Under the general title "Contributions of Animals to Medical Science and Human Health" each species of animal will be given credit for its contribution. 2. A series of photographs illustrating changes in methods of illustration in teaching anatomy under the general title "Forty Centuries of Anatomical Illustration." 3. A series of photographs and drawings illustrating progress in neurologic technique and in

neurologic surgery, dermatology and ophthalmology 4 A series of charts, photographs, drawings and specimens illustrating infections of the hand, use of mucin in the treatment of gastric ulcer, distended dried stomach and intestine to show the structure of the gastro intestinal tracts of different animals, pathologic specimens with explanatory notes illustrating some of the more common diseases 5 Anatomic models 6 The history of Northwestern University Medical School 7 A display of charts showing the disease transmitted from animals to man

OVARIAN HORMONES AND HUMAN EGGS (Edgar Allen and G W Corner)—Eggs of Man and Monkey This exhibit will display photographs of human and monkey eggs as shed from the ovaries and recovered from the tubes at operation, human and monkey eggs in large follicles in the ovary, and the time of ovulation in the menstrual cycle

Ovarian Hormones Hormones of the ovary—theelin, corporin or progesterin, and relaxin—the first from the follicles, the others from the corpora lutea The reactions that these hormones have on the genital organs in rats, rabbits and monkeys, and a brief indication of their clinical possibilities Samples of chemical fractions during the process of their extraction and crystalline preparations where available

Panels 1 Method of recovery of ova from the tubes and test for patency of the tubes in patients at operation 2 Appearance of the living egg and its finer structure in section correlated with corpora lutea from which they have been extruded 3 Additional photographs of eggs and a chart showing the time of ovulation in the menstrual cycle in women 4 Human eggs from large follicles in the ovary in various stages of growth and degeneration 5 Sections of ovaries and eggs of the monkey 6 A chart of ovulation time and cycle length in the monkey 7 Growth of follicles and other transformations in the ovaries of the pig during the estrous cycle 8 Selective elimination of eggs during the course of their development in the pig ovary, and the premature induction of puberty in young rats by injections of hormones 9 The formation of new eggs in the ovaries during adult life 10 Animal reactions to the ovarian hormone theelin, especially the growth reaction in the genital tract, and mating instincts produced by substitution of theelin for the endocrine function of the ovaries 11 The effects of theelin on the "sexual skin," vagina and cervix, in the monkey 12 Reactions of the genital organs of immature monkeys to theelin 13 Effects of ovarian hormones on the wall of the uterus where the embryo implants, the experimental production of menstruation 14 Effects on the mammary glands, including the skin of the nipples 15 A few major steps in the purification and crystallization of theelin, showing samples of the extract at different stages 16 The hormone of the corpus luteum and experiments showing its effect on the uterus and the first successful replacement therapy which permitted a mother without ovaries to bear young successfully through a gestation period of normal length 17 and 18 The development of the mammary gland and its dependence on hormone stimulation for growth and function 19 Biochemistry and animal reactions of corpus luteum hormones in rabbits, guinea-pigs and monkeys

THOMAS HENRY SIMPSON MEMORIAL INSTITUTE FOR MEDICAL RESEARCH (University of Michigan, Cyrus C Sturgis, Raphael Isaacs)—The exhibit will consist of a series of charts and models arranged along the walls of the exhibit booth to illustrate (1) what blood is, (2) its amount and components, (3) how and where it is made, (4) its various functions, (5) its variations in simple disease processes, (6) its relation to food, (7) instruments used for the study of blood, (8) blood transfusion The exhibits are so arranged that a person wishing to gain an elementary knowledge of blood can start at chart 1 and advance through the others The technic of blood transfusion as well as some other details will be shown by wax or other models representing an actual hospital scene It is possible that a rotating device to illustrate transportation of oxygen by red corpuscles from the lungs to the organs may be shown

U S PUBLIC HEALTH SERVICE, Federal Building (J G Townsend)—This extensive exhibit occupying more than 2 500 square feet, shows the progress made in public health and

sanitation since the establishment of the service and is presented in divisions as follows Marine Hospital Division, Division of Scientific Research, Division of Interstate Quarantine, Foreign and Insular Quarantine, Mental Hygiene, Venereal Diseases, Charts and Graphs, Miscellaneous There is exhibited an old style medical kit and a modern ship's medicine chest There are models of a modern milk plant and of an approved schoolroom with all modern facilities The recent work on pellagra, tularemia, undulant fever, typhus fever, spotted fever and psittacosis (parrot's disease) are clearly presented The brilliant control of smallpox by vaccination since the time of Jenner, 1796, typhoid by inoculation and diphtheria by toxin-antitoxin are shown by charts, models and posters There will be models of the septic tank and water purification plant, and of evolution of water containers on common carriers made by Dr Crowder of the Pullman Company By wax models, charts and photographs, the recent work on trachoma is presented There are models of a disinfecting plant, a rat-proof wharf, a rat-proof warehouse, a rat-proof vessel, and a large map of the Western Hemisphere showing airplane routes to the United States, time of flight, and infected yellow fever areas There is a large illuminated world map showing the incidence and death rate of smallpox and the practical obliteration of this disease by vaccination

UNIVERSITY OF CHICAGO (E L Compere)—This exhibit has been prepared for the purpose of educating the lay public in the need for providing adequate care for the more than 300,000 crippled children in the United States It is further hoped that the exhibit may emphasize, both to the lay public and to the physician, the fact that many of these crippled children can be rehabilitated to a degree of functional usefulness and self support who in the past may have been considered hopeless The scientific part of the exhibit emphasizes the development, structure, function and derangement of the human spine, with particular emphasis on the disks found between the vertebrae With the aid of models, photographs, roentgenograms and photomicrographs, the scientific evidence is presented In a diorama are shown the surgical procedures that were practiced by the southwest Indians of the United States before the time of Columbus In another diorama, a modern orthopedic ward of six beds is presented By motion pictures, the results of treatment of acute anterior poliomyelitis are projected for the observer The treatment of other diseases of the bones and joints is illustrated with transparent and colored photographs on transilluminated panels

UNIVERSITY OF GEORGIA SCHOOL OF MEDICINE (George L Kelly, M D, and Eugenia Long Harper)—Memorial exhibit to Crawford Long, the discoverer of ether anesthesia, in Jefferson, Ga, March 30, 1842 Statue, office desk used by Crawford Long, photographs and photostatic copies of letters and evidence of Crawford Long's priority in the discovery of ether anesthesia

UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE, COLLEGE OF DENTISTRY, DEPARTMENT OF ANIMAL HUSBANDRY, and the ILLINOIS DEPARTMENT OF PUBLIC HEALTH (D J Davis and Tom Jones)—This exhibit constitutes 2,200 square feet and is composed of dioramas, models, transparencies, charts, drawings and specimens showing the relation of focal infections to systemic diseases hay fever, tuberculosis, pneumonia, hemophilia and rabies The Illinois Department of Public Health has dioramas on milk production and distribution, contrasting insanitary methods with modern sanitary ones Health conditions of 100 years ago are shown in contrast with those of today, bringing out the effective means employed of purifying the water supply and of the disposal of waste material There are included exhibits on the heart, epidemic encephalitis and amebic dysentery

UNIVERSITY OF WISCONSIN (C R Bardeen)—Beaumont exhibit of books, photostats, photographs and charts of the epoch-making work on gastric digestion published in 1833 This is the centennial of the publication of the work of the first American physiologist, conducted on the French voyageur Alexis St Martin, who had a permanent gastric fistula, the result of an accidental gunshot wound This investigation was conducted in the territory of Wisconsin and Michigan

561 North Fifteenth Street

Medicolegal

Practice of Medicine by Layman Through Licensed Physician Unlawful, Urinalyses and Blood Pressure Tests as the Practice of Medicine—Granger, a layman, conducted a so-called health audit service. For a fee he undertook to make for individual subscribers urinalyses and blood pressure tests and to report the results. He employed a licensed physician Dr. Grave, to make the urinalyses and to report to him, with such recommendations as Dr. Grave thought proper as to the subscribers' health habits. Granger passed on to the subscriber the information he received from Dr. Grave. Apparently, Granger himself made the blood pressure tests. Under orders of the Minnesota board of medical examiners Dr. Grave refused to continue the making of urinalyses under his contract, and Granger sought by injunction to restrain such interference by the members of the board. They entered a demurrer, contending that Granger's activities constituted the practice of medicine, that his contract with Dr. Grave was therefore illegal, and that consequently it was not entitled to protection by a court of equity. The trial court sustained the demurrer and Granger appealed to the Supreme Court of Minnesota.

Granger denied that his activities constituted the practice of medicine, laying emphasis on the fact that he never recommended the taking of medicine or any treatment, but only suggested to subscribers whose reports were repeatedly abnormal that they consult their physicians. But regardless of whether or not medicine was prescribed the court was of the opinion that Granger was practicing medicine. Diet, exercise and mode of living were prescribed and they are agencies for the relief of disease. The science of diagnosing human diseases and ailments has come to be a distinct branch of the medical profession. The diagnostician limits his efforts to the discovery of the disease or ailment, leaving treatment to some other physician or surgeon. A physician who thus applies his learning and energies in the diagnosis of disease is engaged in the practice of medicine even though he prescribes no drug and administers no specific treatment. *State v. Rolph*, 140 Minn. 190, 167 N. W. 553, L. R. A. 1918D, 1096.

If Dr. Grave was practicing medicine in what he did and in determining for Granger whether the subscribers' urine was normal or abnormal, then, in the opinion of the court, Granger was practicing medicine when he passed on to the subscriber the result of the analyses and Dr. Grave's advice. Granger was as much practicing medicine in employing Dr. Grave to do this work for him as he would have been if he himself had attempted to make the urinalysis, as he in fact did make the blood pressure tests. To pass on to the subscriber advice as to whether or not the tests indicated a normal or abnormal condition and whether or not the subscriber should consult his physician or be content with the advice which Granger himself might give in regard to diet, exercise and mode of living was practicing medicine.

The Supreme Court pointed out that a corporation or a layman could not practice law by employing a licensed attorney, for the profit of the corporation or layman employing him to act as attorney or counsel for others. *In re Disbarment of Otterness*, 181 Minn. 254, 232 N. W. 318, 73 A. L. R. 1319. The court was convinced that it was improper and contrary to statute and public policy for a corporation or layman to practice medicine in a similar way. Dr. Grave's obligation under his contract was to Granger, not to the subscribers to the health audit service. The law intends that the patient shall be the patient of a licensed physician, not the patient of a corporation or layman. The obligations and duties of a physician demand no less. There is no place for a middleman. In this rule the court could see nothing to prevent life insurance companies from furnishing free examinations to their policyholders, since insurance companies charge no fee and make the examinations in promoting the reduction of insurance hazards. The court could not see any objection to the employment by physicians of technicians and other experts, leaving the results of the work of the

technician or expert to be interpreted by a physician as a help to diagnosis.

Since the contract between Granger and Dr. Grave was in furtherance of Granger's violation of law, it was illegal, against public policy and void, and no injunction could be issued to prevent interference with it.—*Granger v. Adson et al* (Minn.), 250 N. W. 722.

Society Proceedings

COMING MEETINGS

- American Medical Association, Cleveland, June 11-15. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.
- American Academy of Pediatrics, Cleveland, June 11-12. Dr. Clifford G. Grulee, 636 Church Street, Evanston, Ill., Secretary.
- American Association for the Study of Gonorrhea, Cleveland, June 9. Dr. J. R. Yung, 670 Cherry Street, Terre Haute, Ind., Secretary.
- American Association for the Study of Neoplastic Diseases, Baltimore, June 21-23. Dr. Eugene R. Whitmore, 2139 Wyoming Avenue, N. W., Washington, D. C., Secretary.
- American Association of Industrial Physicians and Surgeons, Cleveland, June 11-12. Dr. Volney S. Cheney, Armour and Company Union Stock Yards, Chicago, Secretary.
- American Association of Medical Milk Commissions, Cleveland, June 11-12. Dr. Harris Moak, 360 Park Place, Brooklyn, Secretary.
- American Association on Mental Deficiency, New York, May 26-29. Dr. Groves B. Smith, Beverly Farms, Godfrey, Ill., Secretary.
- American Bronchoscopic Society, Cleveland, June 11. Dr. Louis H. Clerf, 110 South 10th Street, Philadelphia, Acting Secretary.
- American Clinical and Climatological Association, Toronto, Canada, May 21-23. Dr. Francis M. Rackemann, 263 Beacon Street, Boston, Secretary.
- American Dermatological Association, New York, June 7-9. Dr. William H. Cuy, 500 Penn. Avenue, Pittsburgh, Secretary.
- American Gynecological Society, White Sulphur Springs, W. Va., May 21-23. Dr. Otto H. Schwarz, 630 South Kingshighway, St. Louis, Secretary.
- American Heart Association, Cleveland, June 12. Dr. Irl C. Rigg, 50 West 50th Street, New York, Executive Secretary.
- American Laryngological Association, Cleveland, June 7-9. Dr. William V. Mullin, 9204 Euclid Avenue, Cleveland, Secretary.
- American Neurological Association, Atlantic City, June 4-6. Dr. Henry Alsop Riley, 117 East 72d Street, New York, Secretary.
- American Ophthalmological Society, Lucerne, in Quebec, Canada, July 9-11. Dr. J. Milton Griscom, 2213 Walnut Street, Philadelphia, Secretary.
- American Orthopedic Association, Rochester, Minn., June 6-9. Dr. Ralph K. Ghormley, Mayo Clinic, Rochester, Minn., Secretary.
- American Physiotherapy Association, Cleveland, June 13-16. Mrs. Bess Scarls, 1430 West 77th Place, Chicago, Secretary.
- American Proctologic Society, Cleveland, June 11-12. Dr. Frank G. Runyon, 1361 Perkiomen Avenue, Reading, Pa., Secretary.
- American Psychiatric Association, New York, May 28-June 2. Dr. William C. Sandy, State Education Building, Harrisburg, Pa., Secretary.
- American Society of Clinical Pathologists, Cleveland, June 8-11. Dr. A. S. Giordano, 531 North Main Street, South Bend, Ind., Secretary.
- American Surgical Association, Toronto, Canada, June 4-6. Dr. Vernon C. David, 59 East Madison Street, Chicago, Secretary.
- American Therapeutic Society, Cleveland, June 8-9. Dr. Oscar B. Hunter, 1835 Eye Street, N. W., Washington, D. C., Secretary.
- American Urological Association, Atlantic City, May 22-24. Dr. Gilbert J. Thomas, 1009 Nicollet Avenue, Minneapolis, Secretary.
- Arizona State Medical Association, Prescott, June 7-9. Dr. D. F. Harbridge, 822 Professional Building, Phoenix, Secretary.
- Association for the Study of Allergy, Cleveland, June 11-12. Dr. Warren T. Vaughan, 808 Professional Building, Richmond, Va., Secretary.
- Association for the Study of Internal Secretions, Cleveland, June 11-13. Dr. F. M. Pottenger, Pottenger Sanatorium, Monrovia, Calif., Secretary.
- Connecticut State Medical Society, Bridgeport, May 23-24. Dr. Charles W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
- Maine Medical Association, Bangor, May 28-29. Miss Rebekah Gardner, 22 Arsenal Street, Portland, Secretary.
- Massachusetts Medical Society, Worcester, June 4-6. Dr. Walter I. Burrage, 182 Walnut Street, Brookline, Secretary.
- Medical Library Association, Baltimore, May 21-23. Miss Marjorie J. Darrach, 645 Mullett Street, Detroit, Secretary.
- Medical Women's National Association, Cleveland, June 10-12. Dr. Elizabeth Kittredge, 3906 McKinley Street, Washington, D. C., Secretary.
- Montana Medical Association of Helena, July 11-12. Dr. E. G. Balsam, Box 88, Billings, Secretary.
- Nebraska State Medical Association, Lincoln, May 22-24. Dr. R. B. Adams, Center McKinley Building, Lincoln, Secretary.
- New Jersey Medical Society of Atlantic City, June 5-8. Dr. J. B. Morrison, 66 Milford Avenue, Newark, Secretary.
- North Dakota State Medical Association, Fargo, May 28-29. Dr. Albert W. Skelsey, 20½ Broadway, Fargo, Secretary.
- North Pacific Pediatric Society, Vancouver, B. C., June 18. Dr. R. H. Somers, 1305 Fourth Avenue, Seattle, Secretary.
- Oklahoma State Medical Association, Tulsa, May 21-23. Dr. L. S. Willour, Ainsworth Building, McAlester, Secretary.
- Pacific Northwest Medical Association, Salt Lake City, June 21-23. Dr. C. W. Countryman, 407 Riverside Avenue, Spokane, Wash., Secretary.
- Rhode Island Medical Society, Providence, June 7. Dr. J. W. Leech, 167 Angell Street, Providence, Secretary.
- Utah State Medical Association, Salt Lake City, June 21-23. Dr. Leland R. Cowan, 305 Medical Arts Building, Salt Lake City, Secretary.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

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- Bundle Branch Block. Case Analysis with Especial Reference to Incidence and Prognosis. J. T. King. Baltimore —p. 149
- Pathologic Changes in Heart in Auricular Fibrillation. H. A. Nohler and B. L. Crawford. Philadelphia —p. 171
- *Heart Disease in Pregnancy. Preliminary Report. A. E. Lamb. Brooklyn —p. 177
- Anemia as Cause of Angina Pectoris in Presence of Healthy Coronary Arteries and Aorta. Report of Case. A. H. Elliot. Santa Barbara, Calif. —p. 185
- Chronic Hereditary Hemolytic Jaundice. Report of Eight Cases and Notes on Measurement of Size of Erythrocytes. W. F. Cheney and G. Cheney. San Francisco —p. 191
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Heart Disease in Pregnancy—The incidence of cardiac murmurs in pregnant women in Lamb's series was 61 per cent. Of these 27 per cent had organic heart disease, while 34 per cent had only functional murmurs and no detectable lesion. None of these patients showed the slightest evidence of cardiac strain during pregnancy and follow-up studies show that nearly all of these functional murmurs disappeared after pregnancy. Rheumatic heart disease causes about 90 per cent of the heart lesions in pregnant women. The most frequently observed lesion is mitral stenosis with or without insufficiency. A third of the cases of mitral stenosis decompensated while no case of uncomplicated mitral insufficiency decompensated demonstrating the importance of differentiating between these two lesions. The functional classification of pregnant cardiac patients has been considered and it was noted that five patients out of those with and without organic heart disease who were able and unable to carry on ordinary physical activity without discomfort decompensated which is at variance with the work of Pardee, who asserts that these patients have an excellent prognosis. Other factors, in the author's opinion must be considered in addition to the functional classification such as the age of the patient, the family environment, the duration of the heart disease and the extent of valvular damage. Most of the patients who decompensated did so before the onset of labor and there was no relationship demonstrated between the month of pregnancy and the onset of decompensation. The mortality was 75 per cent, which falls within the mortality range of from 5 to 10 per cent as reported by reliable observers. Two of these deaths were probably preventable. Consideration of the mortality of the patients having prenatal care and those who did not shows a death rate of 22 per cent in the former and 20 per cent in the latter. The limited follow up showed that 56 per cent were not worse following pregnancy while 43 per cent were. The need for further follow-up study to determine what happens to the cardiac mother and her child after the lying in period is obvious.

Sedimentation Tests—Greisheimer and her associates studied the blood sedimentation in ninety-nine men and 102 women, selected without regard to age or health from university students and ambulatory patients to establish the interrelationships between the Linzenmeier, Cutler and Westergren sedimentation methods. The average sedimentation in one hour for normal subjects appears to be reasonably concordant for the three methods despite the wide differences in the width of the tube, anticoagulant concentration and length of the fluid column, although the differences between the means for the three methods are significant statistically. The average sedimentation at one hour for women is approximately double that for men. The concordance between the results by each pair of methods for the individual patients has been subjected to analysis by preparing the correlation tables. The regression lines for predicting the most likely value to be expected by any one test when that by another is known, proved to be of three distinct types. There is a rectilinear relationship between the Cutler index and the Linzenmeier index. The regressions between the Westergren index and the Cutler or the Linzenmeier index appear to be somewhat like saturation curves. However they had to be fitted by a systematic scheme of free-hand graduations for lack of a suitable type of mathematical equation. The relationships between the various indexes and Linzenmeier time values may be suitably portrayed by section of hyperbolas. The dispersals of individual cases about the lines of average relationship although not studied in detail, are clearly greater than those ascribable to errors inherent in the techniques. The conclusion is clear that sedimentation measures for human blood are, in part, specific for the technique employed. Standardization of a generally acceptable method for blood sedimentation would prove most advantageous for clinical work.

Tularemia Treated by a Specific Antiserum—Foshay states that an initial trial has shown that the goat can be made to yield a potent antitularenses serum, which is effective in treating tularemia in man. The intravenous administration of this serum produced a marked and prompt amelioration of symptoms in fourteen out of fifteen tularemia patients and caused a shortening of the duration of adenopathy, the period of disability and the total duration of disease. One patient, who was received in a dying condition with extensive involvement of the lungs, liver and spleen was not improved. The antiserum has a specific desensitizing action. There is evidence to show that its beneficial effects in man are intimately associated with this property and perhaps dependent on it. The maximal amount of serum given to any one patient was 26 cc. Within twenty-four hours after the administration of the serum there is usually complete relief from headache and a marked diminution in intensity of general malaise, arthralgias and myalgias. The author states that the method of production of the serum and the results of its experimental use in laboratory animals will be reported elsewhere.

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- Tonometry in Pernicious Anemia. Study of Twenty-Five Cases. G. F. Suher. Chicago —p. 125
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Tonometry in Pernicious Anemia—Suher observed that intra-ocular tension is markedly lowered in nearly every case of primary anemia, but particularly in agranulocytosis and pernicious anemias. Apparently in aplastic anemia and leukemia the intra-ocular tension is also reduced. Only with the return of a nearly normal or definitely improved blood picture does the intra-ocular tension return to nearly normal or normal. The decreased intra-ocular tension in the anemias seemingly does not predispose the eye to any intra-ocular complications though the anemia may be of a severe character or of long

duration Prolonged decreased intra-ocular tension alone does not cause any marked functional complications. If any ocular lesion accompanies the anemia, the former assumes greater seriousness and proves rather obstinate. The decreased intra-ocular tension seems to bear a closer relationship to the hemoglobin and the erythrocyte count than to the color index and the leukocyte count. A marked drop in the hemoglobin and in the number of erythrocytes and leukocytes is accompanied by a drop in the intra-ocular tension. A rise in these humal constituents is accompanied by a rise in tension. Not so infrequently does a reverse occur. A variation in the blood picture during the course of the anemia is likely to be accompanied by a variation in the intra-ocular tension. In the author's twenty-five cases there was no case of hyperpiesis associated with the anemia. No intra-ocular lesion was engendered during the course of the anemia. No marked fundus vessel alteration was noticed in any case. In all cases the fundus had a more or less waxy hue.

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New Pyelographic Technic—Wesson has the patient enter the hospital the night before examination. Water is forced during his waking hours and he must have at least one liter before going to sleep and another in the morning before cystoscopy. Barbitol, 0.3 Gm., is given on retiring and again at 7 a. m. At 7:30 the patient is catheterized and a sterile specimen sent to the laboratory for culture, and through the catheter an ounce of a local anesthetic (4 per cent procaine hydrochloride, 1,000 nupercaine or 2 per cent metycaïne) is injected. At 8 o'clock the patient is given one-fourth gram (0.016 Gm.) of morphine, hypodermically. Cystoscopy is then done with little disturbance to the dozing patient. Specimens are collected for microscopic examination and cultures and then phenolsulphonphthalein is injected intravenously; the appearance time noted and collections made over two fifteen minute periods. An ampule of neo-iopax is injected intravenously and a flat plate measuring 14 by 17 inches is made immediately. The table is then placed in the Trendelenburg position and the catheters are plugged and five minutes later a second picture (stereoscopic) is made and the plate developed. If there is a satisfactory filling, the other stereoscopic picture is taken. When the pelvic outline is not sharp, 135 per cent sodium iodide is injected through the catheters by means of two 25 cc. burets attached to a ring stand so that there cannot be more than 18 inches of pressure. The fourth picture is a vertical one with the catheters removed at the instant the picture is taken. The patient is then sent to his room, placed in a hot bath for fifteen or twenty minutes to relieve or prevent kidney colic, and usually goes home in the afternoon. In both the intravenous injection with the catheters plugged and the combination of intravenous and retrograde pyelograms, the author has obtained well marked kidney outlines and pelvic filling on each side.

Bardenheuer-Picque Resection in Osteomyelitis of Sacro-Iliac Joint—Kulowski reports four cases of osteomyelitis that were treated by the Bardenheuer-Picque technic as it was developed in his clinic. No other instances of pyogenic osteomyelitis of the sacro-iliac joints so treated have been mentioned in the literature. The procedure lends itself admirably to the principles systematized by Orr in the treatment of osteomyelitis: adequate drainage of the bony focus, adequate rest and protection of the parts until healing has taken place, and the prevention of secondary infection by the elimination of frequent meddlesome dressings, which such enforced plaster cast immobilization minimizes. The latter will bear special emphasis. The prevention of secondary infection is an axiom in surgical tuberculosis. Picque was adamant in its observation. It is no less important in the treatment of osteomyelitis.

Acromioclavicular Dislocation—Roberts describes an approach to the outer end of the clavicle and the coracoid process that gives full exposure to all the essential regions and respects anatomic structures, thus minimizing bleeding and facilitating wound closure. The incision is a modification of the upper angle of the approach of Henry to the humerus and shoulder joint. 1 A curved skin incision is made starting at the acromioclavicular joint and running medially along the outer curve of the clavicle and then turning down to pass just inside the tip of the coracoid process. The downward arm of the incision follows the sulcus between the deltoid and the pectoralis major. The total incision describes a little less than a semicircle. 2 The skin flap is retracted back, exposing the deltoid muscle. The acromioclavicular joint can then be exposed by a short incision through the upper part of its capsule. The deltoid is separated from the clavicle by detaching a small strip of bone containing the muscle insertion or by dividing its semitendinous insertion near the clavicle, leaving enough tissue attached to the bone to which to resuture the muscle. 3 The

inner border of the deltoid is separated from the fatty tissue that lies between it and the pectoralis and then the muscle is retracted outward and downward, exposing the coracoid process. The blood vessels entering the muscle from beneath must be cut and sutured, but this is the only point at which any bleeding is encountered. The acromioclavicular joint, the outer portion of the clavicle and the coracoid process are thus made accessible for any repair indicated. After repair of the injured ligaments is completed, the deltoid is reattached to the clavicle by passing two or three sutures through the muscle and round the clavicle. These should be placed before the ruptured ligaments are repaired and while the end of the clavicle is still loose and may be lifted up to allow the suture needle to pass close to the under surface of the bone without endangering any blood vessels. When these sutures are tightened, the slip of bone containing the deltoid attachment is lashed back into place, where it unites firmly.

American Review of Tuberculosis, New York

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- Further Study of Tuberculosis in Public School Children H. W. Hetherington F. M. McPhedran H. R. M. Landis and E. L. Opie Philadelphia—p. 142
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- *Simplified Technic for Blood Sedimentation Indexes L. D. Van Antwerp—p. 214
- Linzenmeier Blood Sedimentation Time in Tuberculous Children W. A. Reilly San Francisco—p. 220
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Tuberculosis Among Children of Tuberculous Parents

—The 592 children of parents with open pulmonary tuberculosis in 128 white and eight Negro families in the industrial population of Cambridge, Mass. have been followed by Everts and her associates into adult life and a study has been made through questionnaires checked by official records of the tuberculosis rate among them. Attention is given chiefly to the 554 children who were born before or while the parent's case was known to be active and were therefore thoroughly exposed to the disease. Tuberculosis mortality, from 15 to 39 years was at least between two and three times as high among offspring of white tuberculous parents as in the general white industrial population. The maximal number of cases among men occurred ten years earlier than in the general industrial population, while for women this maximum is approximately at the same age in the two groups. The age group from 5 to 14 years was as free from tuberculosis in one group as in the other. Children in families of English and American stock were found to be slightly less subject to tuberculosis than those of Irish or Nova Scotian stock. Bad homes and double parental exposure seemed to be important in causing tuberculosis among these children. Removal of the ill parent from the home carelessness in sputum disposal and whether exposure was to father or mother seemed to be of no importance. Many of the children who developed tuberculosis in adult life were first exposed in late childhood. Often many years elapsed between the time of known exposure and the development of disease. About two thirds of the families of white tuberculous parentage have grown up without, so far any known case of tuberculosis among the children.

Simplified Technic for Blood Sedimentation Indexes

—The modification of Van Antwerp is as follows. Of a sterile 3 per cent solution of sodium citrate 0.2 cc is drawn from a serum bottle and the syringe is filled to the 2 cc mark with blood removed from a vein. A bubble of air is then drawn through the needle into the syringe and the blood and citrate

are mixed. The bubble is expelled, the needle is removed and replaced by a cap and the capped syringe is placed in a test tube rack for observation. The caps were made by breaking the needle from a discarded hypodermic needle and filling the perforation with paraffin. A 24 gage, 1 inch needle seems best suited for use in the test. Readings are limited to a single one taken at the end of one hour. The advantages of this simplified technic are the following. The elimination of one or more steps in the determination of the index materially reduces the time necessary for the procedure. The small amount of blood necessary (18 cc) allows the use of a small hypodermic needle, which causes a minimum of discomfort to the patient and facilitates entrance to the small veins of children. A minimum of equipment is necessary and, once the syringe (which can be put to other uses in the private office) is acquired, the apparatus can be found in any physician's office, with the exception of the sterile citrate solution. The sterilization necessarily preparatory to the test is no more than is required for ordinary venipuncture. The index is determined by a single reading at the end of an hour and the apparatus requires no attention during this time.

Annals of Internal Medicine, Lancaster, Pa

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- *Use of Glycine in Treatment of Myasthenia Gravis E. O. G. Schmitt, San Jose Calif.—p. 948
- Pernicious Type of Nervous Dyspepsia E. C. Klein Jr. Newark N. J.—p. 960
- Hepatic Complications in Treatment of Syphilis the Rose Bengal Test as a Means of Detecting Disturbances of Liver Function and Its Use as a Guide in the Therapy of Syphilis G. R. Biskind N. N. Epstein and W. J. Kerr San Francisco—p. 966
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- Relationship of Sex to Disease E. V. Allen Rochester Minn.—p. 1000
- Hypoglycemia and Hyperinsulinism M. A. Tedstrom Santa Ana Calif.—p. 1013
- *Pneumococcal Meningitis Recovery with Felton's Serum W. S. Reveno and N. McLaughlin Detroit—p. 1026

Use of Glycine in Treatment of Myasthenia Gravis—

Schmitt presents two cases of myasthenia gravis which showed definite clinical improvement on a combination treatment of ephedrine sulphate and glycine. The administration of glycine was accompanied by an increase in the elimination of creatinine and preformed creatinine nitrogen. The maximum output of creatinine nitrogen occurred on the twelfth day in one case and on the twenty-second day in the other one. The average excretion during the test period was 0.628 and 0.74 Gm, respectively. There was a definite drop in the excretion of the urinary creatine nitrogen from a value in one case of 0.312 Gm (before the test) to a daily average excretion of 0.066 Gm for the test period of thirteen days. In the other case this decrease was from 0.123 Gm before the test period to a daily average excretion of 0.045 Gm a day (period of twenty-three days). The ratio of the creatine nitrogen to preformed creatinine nitrogen in both cases fell under glycine administration from a ratio of 1.07:1 to an average ratio of 0.106:1, and from one of 0.2:1 to one of 0.06:1, respectively. A dosage of 15 Gm twice daily of glycine is an effective and probably the optimal dosage. Ephedrine sulphate seems to augment the efficacy of the glycine. In the author's experience a dosage of three-eighths grain (0.024 Gm) twice daily given about twenty minutes after the dose of glycine is the optimal dosage. This dosage seems superior to a small one of three-sixteenths grain (0.012 Gm).

Pneumococcal Meningitis Recovery with Felton's

Serum—Reveno and McLaughlin successfully treated a patient having pneumococcal meningitis (probable portal of entry the paranasal sinuses) with the infecting organism pneumococcus type I and II by intravenous intraspinal and intracisternal instillations of 120,000 units of Felton's antipneumococcus serum. Recovery set in after seven days of treatment and was evidenced not only by clinical improvement but by a reappearance of sugar in the cerebrospinal fluid a lowering of its cell count and a drop in the proportion of nonfilament cells in the

blood smear The nonfilament decrease was relied on as a gage of the activity of the infection As long as this figure remained between 8 and 16 it was felt that the infectious process was under adequate control As a residue of the disease, the patient had a right facial and a right abducens paralysis The former developed on the fourth day and the latter on the day after admission to the hospital The facial involvement cleared rapidly but the sixth nerve paralysis took fully two months for recovery

Archives of Dermatology and Syphilology, Chicago

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- *Treatment of Postarsphenamine Dermatitis L W Shaffer Detroit—p 173
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Treatment of Postarsphenamine Dermatitis—Shaffer points out that the staff of the City Hospital in Detroit has employed dextrose occasionally in the treatment of postarsphenamine dermatitis for the last five years It is difficult to evaluate the results, because the number of patients treated was not large and because cases of arsenical dermatitis vary greatly in the severity of manifestations and in the length of hospitalization Results from the use of dextrose were encouraging and at times almost miraculous so that such treatment has been continued The use of dextrose in dilute solutions (from 2 to 10 per cent) as a diluent for arsphenamine has been recommended by several investigators to prevent arsphenamine reaction, as well as its use by mouth preceding the injection Arsenic combines with dextrose to form glucosides which are less toxic, which have a tendency to remain in the blood stream over a longer period and which are excreted more rapidly The author proposes to treat any new patient (nondiabetic) having accessible veins with 1 Gm of sodium thiosulphate and 50 cc of a 50 per cent solution of dextrose injected intravenously daily for from three to five days The administration of the dextrose should be followed in one-half hour by 5 units of insulin Patients in whom venipuncture is difficult or impossible should be treated with liver extract by intramuscular injection or with calcium gluconate according to the saturation technic of Karrenberg The usual supportive and local measures of treatment were employed

Epithelioma of the Ear—Lehmann emphasizes the fact that radiation in the treatment of epithelioma of the cartilage of the ear cannot be standardized to fit every case A small basal cell epithelioma on the skin, not attached to the cartilage, can be satisfactorily treated with beta rays shielded close round the epithelioma If infection complicates the epithelioma the success is rendered more uncertain nevertheless it would be best to use gamma radiation (whether the lesion is of basal cell type or not) If the cartilage is already invaded irradiation is futile If the epithelioma is not a basal cell but a prickle cell type, it will require a heavy dose of radiation Beta rays should not be selected for it because of the danger of irreparably damaging the perichondrium and therefore gamma rays should be used The effect of previous treatment has to be taken into consideration For instance in a recurrence of an epithelioma that has been treated before with soft radiation (roentgen rays or beta rays of radium) one would consider how much the perichondrium is damaged If there is no marked atrophy of the skin, one could well apply further radiation with gamma rays If there is evidence that the perichondrium is broken, the efficacy of further radium treatment is doubtful

Archives of Surgery, Chicago

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- *Hyperinsulinemia Secondary to an Adenoma of the Pancreas Report of a Case with Operative Cure L I Ross and J M Tomach Cleveland—p 223
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 *Cranial Osteomas and Hyperostoses Produced by Meningeal Fibroblastomas Clinical Pathologic Study F Echlin New York—p 357
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 Fifty Second Report of Progress in Orthopedic Surgery J G Kuhns, E F Cave S M Roberts and J S Barr Boston J A Freiberg Cincinnati J E Milgram New York R I Stirling Edinburgh Scotland and P D Wilson, Boston—p 417

Hyperinsulinemia Secondary to Adenoma of Pancreas—Ross and Tomach present the history and course of a case of hyperinsulinemia with hypoglycemia secondary to a tumor involving the islands of Langerhans The case differs from the cases reported previously in that the onset was apparently abrupt with complete loss of consciousness and evidence of external injury that caused the symptoms to be attributed to cerebral edema or concussion During each of his seizures of hypoglycemia, the patient presented the semi Babinski or extensor response described by Hart and Bond as a diagnostic aid in differentiating between insulin shock and diabetic coma The complete absence of hypoglycemic seizures together with the clinical and laboratory evidence of the establishment of a normal carbohydrate metabolism immediately after the excision of the small pancreatic nodule is, the authors believe, adequate proof that this man's symptoms were due to the excessive production of insulin by the tissue of the tumor The data presented, together with the clinical and experimental evidence cited in the cases reported previously, suggest again that tumors arising from glandular tissue may in some instances retain the function of the organ or tissue from which they arose At the present time, exploration with removal of the adenoma, if demonstrable offers the best chance of clinical cure

Chromatophore Tumors of Mammary Gland—Hertzler has observed that the malignant tumors of the mammary gland which possess a pseudocapsule, in whole or in part, always terminate fatally within a year or two, no matter how soon after the discovery of the tumor operation is performed, or what the extent of the operation is or whether or not there are palpable metastases These tumors occur in women at the menopause or beyond that period There is a group of tumors which begin within the acini and in which the cells are loosely joined and diffusely scattered Some of these appear as though they might have arisen from the subepithelial cells, but instead of growing away from the lumen of the acini they grow into it At any rate many of these tumors are globular, though they do not develop a pseudocapsule, and their course is usually malignant Intracanalicular fibro-adenomas may give rise to malignant tumors which spring from the subepithelial layer They run a course parallel with that of the chromatophore tumors in the skin

Cranial Osteomas Produced by Meningeal Fibroblastomas—Echlin attempts to explain the nature of osteomas of the external surface of the cranium The material on which the study is based was collected from 2,000 cases of tumors of the bone and 1,000 cases listed under tumors of the head and skull, which included 350 cases of tumor of the brain All the osteomas of the external surface of the cranium or hyperostoses caused by meningeal fibroblastomas were verified by microscopic examination Osteomas may be either spongy or eburnated and they arise from preosseous tissue on the cranial surface, as a rule, early in life They grow slowly and most frequently take origin from the frontal bones They usually arise in the growing bone The spongy type of osteoma

usually causes an absorption or spongy transformation of the outer table of the cranium and becomes continuous with the diploe. As a result of this process, the inner table of the skull in the region of the tumor may become slightly depressed and thickened. A layer of bone is sometimes laid down on the surface of the tumor. Microscopically, this bone is young in type and is being actively formed from preosseous tissue. This type of osteoma has often been described as arising from the diploe. The fundamental pattern of ossification for osteomas of the cranium, characterized by subperiosteal growth with accompanying spongy transformation of underlying bone and the frequent deposit of a subperiosteal shell of new bone, is also typical for similar new growths arising in other membranous bones. Osteomas of the cranial surface rarely arise in adults. Osteomas of membranous bones are a distinct entity from exostoses (osteochondromas) in cartilaginous bones. Osteomas usually arise in youth and hyperostoses in the fourth decade of life. Compression of the brain a common feature of hyperostoses, is rarely caused by osteomas unless some complicating factor is present. Hyperostoses are more frequently tender than osteomas and unlike osteomas are sometimes compressible. The roentgenographic differences between these two bony growths are distinctive. In hyperostosis ossification adjacent to the tables of the skull occurs in parallel strips under the periosteum and endosteum when these tissues are minutely elevated by the meningeal tumor in its growth. When these tissues become more completely stripped from their attachments new bony trabeculae are laid down at right angles to the cranium. In the region of a meningeal fibrosarcoma a small amount of thickening of the skull may result purely from hypervascularization, but the production of a hyperostosis of any appreciable size is apparently always due to the infiltration of the skull by the cells of the meningeal tumor. Osteomas that cause severe pressure on the brain usually arise either about the paranasal sinuses or the orbit or from the inner surface of the skull and not in the periosteal region on the cranial surface.

Arkansas Medical Society Journal, Fort Smith

30 187 202 (Feb.) 1934

- End Results in Some Unusual Fractures W F Smith Little Rock —p 187
Whither Are We Drifting? S W Douglas Eudora —p 189
Lymphogranuloma Inguinale Preliminary Report of Two Cases from Arkansas D W Goldstein and L T Bjars Fort Smith —p 192

Canadian Medical Association Journal, Montreal

30 119 236 (Feb.) 1934

- Surgical Therapy in Gallbladder Disease R R Giallumi Toronto —p 119
Discussion of Factors Concerned in Intra Ocular Absorption H C Connell Kingston Ont —p 124
Dinitrophenol I M Rabinowitch and A F Fowler Montreal —p 128
Remarks on Intestinal Parasites in Montreal and the Relation of Entamoeba Histolytica to Colitis Annie Porter Johannesburg Africa —p 134
Entamoeba Histolytica and Colitis in Montreal R H M Hardisty Montreal —p 136
Practical Application and Interpretation of the Schick Test Diphtheria Antitoxin Content of the Blood of the Schick Negative Reactor D L Klein Montreal —p 138
Clinical Review of Two Hundred and Forty One Cases of Obstruction of the Small Bowel E W Workman and G C Miller Montreal —p 141
Clinical Aspects of Histology and Pathology of the Pancreas G K Wharton London Ont —p 148
Genito Urinary Tuberculosis D W MacKenzie Montreal —p 153
Choline as Related to Labor F Walker and D A Henderson Toronto —p 158
Relief of Pain in Labor with Nembutal F G McGuinness Winnipeg Manit —p 162
Some Aspects of Psoriasis J F Burgess Montreal —p 165
The Cancer Problem and Publicity W H McGuffin Calgary Alta —p 168
Diagnosis of Cancer of Stomach F A G Starr Toronto —p 171
The X-Ray Treatment of Carcinoma of the Breast L J Carter Brandon Manit —p 173
Silicosis J G Cunningham Toronto —p 176

Colorado Medicine, Denver

31 41 80 (Feb.) 1934

- Anatomic and Functional Damage to Adrenal Glands in General Visceritis, Especially in Renopositis O S Fowler Denver —p 45
Therapeutic Use of Urinary Proteose R W Whitehead W Darley and P A Dickman Denver —p 56
Clinical Application of Ketogenic Diet R K Dixon Denver —p 61

Johns Hopkins Hospital Bulletin, Baltimore

54 79 144 (Feb.) 1934

- Control of Carbohydrate Metabolism J J R Macleod Aberdeen, Scotland —p 79

Journal of Experimental Medicine, New York

59 115 250 (Feb.) 1934

- Acute Ascending Myelitis Following a Monkey Bite with Isolation of a Virus Capable of Reproducing the Disease A B Sabin and A M Wright New York —p 115
Experiments on Conversion of Typhus Strains H Mooser G Varela and H Pilz Popotla Mexico —p 137
Comparative Studies on Viruses of Vesicular Stomatitis and Equine Encephalomyelitis P K Olitsky, H R Cox and J T Siverton New York —p 159
Pulmonary Arterial Pressure in Normal Albino Rats and Effect Thereon of Epinephrine T J C Smith and G A Bennett Boston —p 173
Pulmonary Hypertension in Rats Living Under Compressed Air Conditions G A Bennett and F J C Smith Boston —p 181
Energy Metabolism of Failing Heart G Decherd and M B Visscher Chicago —p 195
Swine Influenza V Studies on Contagion R E Shope Princeton N J —p 201
*Specific Inhibition of Bacteriophage Action by Bacterial Extracts P Levine and A W Frisch Madison, Wis —p 213
Relation of Coat Color to Spontaneous Incidence of Mammary Tumors in Mice C C Little Bar Harbor Maine —p 229

Inhibition of Bacteriophage Action by Bacterial Extracts—Levine and Frisch present experiments that demonstrate specific inhibition of bacteriophage by soluble products of bacteria. The inhibition proceeds more rapidly when the bacteriophage and bacterial extracts are incubated at 37 C than at icebox temperature. The specificity of the reaction in the instances studied is probably connected with the presence of specific soluble carbohydrates. A reaction is available for the study of the chemistry of bacillary antigens in terms of bacteriophage.

Journal of Lab and Clinical Medicine, St Louis

19 453 566 (Feb.) 1934

- The Macropolyocyte W E Cooke Wigan England —p 453
Sodium Ricinoleate I Attempt to Determine Its Action in the Alimentary Tract J T Myers E L MacQuiddy and C P Baker Omaha —p 462
Id II Study of Intestinal Flora During Oral Administration J T Myers E L MacQuiddy and C P Baker Omaha —p 468
*Variations of Urea Total Nonprotein Nitrogen and Chloride Concentration in Blood Following Glucose Ingestion M Bruger and I A Mirsky New York with technical assistance of S Member —p 474
Perennial Treatment of Hay Fever Comparative Study A Colmes Boston —p 481
Reflex Eosinophilia F P Chillingworth J C Healy and T L Haskins Boston —p 486
*Further Studies on Cultivation of Endamoeba Histolytica and a Complement Fixation Test for Amebiasis H Tsuchiya St Louis —p 495
Study of Salivary Amylase in Patients with Pernicious Anemia C P Emerson Jr and O M Helmer Indianapolis —p 504
Sickle Cell Anemia Case Report R H McClellan and R M Entwistle Pittsburgh —p 507
Mechanics of Spleen Visualization by Means of Metallic Compounds in Particular Thorium H Rudisill Jr Charleston S C and E Shute Chicago —p 511
Study of Punctate Stippling as Found in the Lead Poisoning of Wild Ducks F M Johns New Orleans —p 514
New Syphilis Reaction the M K R II in Cerebrospinal Fluids E Meimcke Hagen Ambrück I W Germany —p 518
New Colorimetric Method for Determination of Biliary Acids in Body Fluids Note on Their Alleged Presence in Normal Blood L D Scott London, England —p 523
Simple and Inexpensive Apparatus for Determination of Metabolic Rate in Guinea Pigs W H Cole and N A Womack St Louis —p 540
*Comparison of Wassermann and Kahn Reactions on Spinal Fluid in Treated and Untreated Cases of Paresis De L Sackett and E Eselius Elgin Ill —p 546
Special Rack for Smith Fermentation Tubes and U Tubes Pauline Epstein New York —p 553

Variations in Blood Following Dextrose Ingestion—Bruger and Mirsky point out that the ingestion of 100 Gm of dextrose by fasting subjects produced the following effects:
1 The urea nitrogen content of the blood may rise or (and) fall or remain unchanged. A gradual fall in the urea nitrogen (from 1 to 7 mg per hundred cubic centimeters) was observed in twenty-two out of forty-five cases. A definite decrease (3 mg or more per hundred cubic centimeters) occurred more often in subjects with diminished carbohydrate tolerance than

in those with normal tolerance 2 The total nonprotein nitrogen of the blood may rise or (and) fall or show no marked change In many cases the variations in the total nonprotein nitrogen were due mainly to changes in the urea nitrogen fraction Irregular changes were noted in some instances in the sum total of the nonprotein nitrogenous substances in the blood other than urea 3 There was a distinct reciprocal relationship between the whole blood and plasma chlorides and the dextrose concentration in the blood in many instances, though this was not observed in all the cases studied There was no apparent relationship between the degree of diuretic response to dextrose and the variations in the constituents investigated Diuresis following dextrose ingestion occurred more frequently and was more marked in subjects with normal carbohydrate tolerance than in those exhibiting a diminished tolerance for sugar The hypothesis is suggested that these fluctuations represent an effort by the body to maintain a constant osmotic pressure of the blood The compensatory response of urea, total nonprotein nitrogen and chloride to a rise of dextrose in the blood is not a uniform reciprocal relation The varied increase or decrease of these substances suggests that the total osmotic pressure is adjusted according to the physiologic reserve prevailing in the body at a given moment

Complement Fixation Test for Amebiasis—Tsuchiya offers a new culture medium (S C medium) for *Endamoeba histolytica* which consists of 10 Gm of peptone 3 Gm of meat extract, and 5 Gm of sodium chloride in 1 liter of distilled water adjusted to pH 7 and autoclaved at 15 pounds pressure for thirty minutes The pH of the medium within the range of 6.8 and 7.4 also answers the purpose, though the optimum is found to be 7 When complement fixation tests were carried out with an antigen prepared from cultures of amebas grown in the foregoing medium the following results were obtained Of 153 persons examined, 135 known to be free of amebic infection were found to give a negative serologic test Of the remaining eighteen, eight were known carriers of *Endamoeba histolytica* and gave positive serologic reactions Six were diagnosed as having clinical amebic dysentery and exhibited positive serologic reactions except in one case in which repeated trials failed to show any capacity to fix complement There were four cases of ulcerative colitis that showed positive serologic tests but no amebas were detected in the examinations of the stools Thus, a negative serologic test appears to be quite significant and valuable for eliminating the possibility of amebiasis in a given person A positive serologic test also seems to be quite specific in demonstrating the presence of *Endamoeba histolytica*

Wassermann and Kahn Reactions on Spinal Fluid in Dementia Paralytica—Sackett and Eselius observed that the Wassermann reaction (Craig) on spinal fluid gives a higher proportion of positive reactions in treated and untreated cases of dementia paralytica than the standard Kahn or the modified Kahn employing the serum antigen titer The agreement between the three reactions is relatively high in nondementia paralytica and untreated cases, but falls off rather sharply in treated cases The modified Kahn reaction employing the serum antigen titer gave a higher proportion of positive reactions in treated and untreated cases of dementia paralytica than the standard Kahn test One false positive reaction was observed among forty-eight nondementia paralytica patients with the modified Kahn reaction, indicating a possibility of error if this test is used exclusively The authors method for removing the excess ammonium sulphate from the precipitated globulin differs from the method of Kurtz and Larkum in that, after the globulin has been thrown down by centrifugating, the supernatant fluid is carefully pipetted off and the tube is placed in an inverted position on some filter paper and allowed to drain for half an hour Then the inner sides of the tube are carefully dried by means of a cotton applicator, great care being taken not to disturb the precipitated globulin The globulin is then ready to be redissolved and the regular Kahn technic continued except that the antigen serum titer can be used In their study they did not concentrate the globulin dilution but followed the routine Kahn procedure for spinal fluid In removing the supernatant fluid they found that if great care was used it could be poured instead of pipetted off without affecting the end-result of the test

Journal of Pharmacology & Exper Therap, Baltimore

50 131 240 (Feb) 1934

- Some Observations on Relationship Between Chemical Constitution and Physiologic Action Comparative Effects of Benzyl β Phenylethyl Amines and Di (β Phenylethyl) Amines and Some of Their Derivatives A M Hjort Tuckahoe N Y—p 131
- Influence of Insulin Free Pancreatic Extract on Gaseous Exchange of the White Rat C J Carr, J E Schmidt and W Harne with J C Krantz Jr Baltimore—p 151
- Action of Certain Nucleic Acid Derivatives on the Coronary Flow in the Dog A M Wedd and A N Drury, Cambridge England—p 157
- Actions of Pituitary Preparations (Posterior Lobe) on Intestines of the Dog K I Melville and R L Stehle Montreal—p 165
- Actions of Pituitary Preparations (Posterior Lobe) on Intestines of the Rabbit K I Melville and R L Stehle Montreal—p 174
- Further Experimental Observations on Combined Effects of Digitalis and Quinidine on the Heart N T Kwik and H Gold New York—p 180
- *Experimental Study of Mapharsen (Meta Amino Parahydroxy Phenyl Arsenic Oxide) as an Antisymphilitic Agent A L Tatum and G A Cooper with assistance of H M Kelly V A Benn and C C Pfeiffer Madison Wis—p 198
- Action of Drugs on Isolated Intestine of Certain Teleost Fish F Bernheim Durham N C—p 216
- Comparative Effect of Various Diuretics in Dogs with Especial Reference to Excretion of Urine Chloride and Urea M N Fulton H A Van Aiken R J Parsons and L F Davenport Boston—p 223

Experimental Study of Mapharsen as an Antisymphilitic Agent—Tatum and Cooper point out that mapharsen (meta amino parahydroxy phenyl arsenic oxide) is a pure chemical preparation, the purity of which can be determined The arsphenamines on the other hand, are chemical mixtures, and consequently the toxicity and therapeutic values may vary with each lot Mapharsen becomes slowly less toxic on oxidation whereas the arsphenamines become quickly much more toxic Nitritoid reactions should be entirely absent with mapharsen For therapeutic uses in experimental rabbit syphilis, mapharsen is required in quantities representing only one-fifth to one-thirtieth the amount of arsenical drug that is required with neoarsphenamine The therapeutic index, i. e., the ratio of the maximal tolerated dose to the curative dose, is distinctly greater for mapharsen than for neoarsphenamine in experimental syphilis The administration of mapharsen twice a week in amounts of one-fifth to one-half the maximal tolerated dose, for ten weeks, does not cause any evident intoxication in the animals It does not seem likely that the repeated use of this compound in the clinic should cause any cumulative effects From the practical standpoint, mapharsen can be safely ampuled with sufficient dry sodium carbonate to neutralize the acid and enough sodium chloride to make an isotonic solution when the drug mixture is dissolved in the specified quantity of sterile distilled water The authors are convinced that mapharsen has such advantages over the arsphenamines as to justify its clinical investigation

Kansas Medical Society Journal, Topeka

35 41 80 (Feb) 1934

- Is Chronic Appendicitis a Myth? L L Woodfin Osawatomie—p 41
- Analgesics D C Peete Kansas City Mo—p 46

Military Surgeon, Washington, D C

74 57 112 (Feb) 1934

- Care of Injuries of Brain in War and Value of Early Costochondral Grafts in Skull Defects A M Hanson—p 61
- Out of the Grand Canyon on a Litter R P Williams—p 70
- Chemical Warfare Treatment Unit in Operation F A Wells—p 76

Nebraska State Medical Journal, Lincoln

19 41 80 (Feb) 1934

- Diagnosis and Treatment of Renal Infection J C Bird all Philadelpha—p 41
- Pneumonia Etiology of Pneumonia F Conlin Omaha—p 43
- Id Unrecognized Pneumonia J P Tollman Omaha—p 53
- Id Laboratory Aids in Diagnosis and Treatment of Pneumonia A S Rubnitz Omaha—p 54
- Id Serology of Pneumonia W B Moody Omaha—p 55
- Id Surgical Complications of Pneumonia J Weinberg Omaha—p 58
- Progress of Surgery Review of Literature of the Second Half of 1933 H H Davis Omaha—p 60
- The Medical Profession B F Bailey Lincoln—p 63
- Enuresis W O Colburn Lincoln—p 67
- After Care of Infantile Paralysis Mary Potts Omaha—p 69

New England Journal of Medicine, Boston

210 287 344 (Feb 8) 1934

- Diagnosis Treatment and Immediate Prognosis of Cerebral Trauma
Introductory Study of One Thousand Four Hundred and Ninety Four
Cases D Munro Boston —p 287
- Amebiasis in Connecticut J H Foster Waterbury Conn —p 294
- Papillary Carcinoma of the Renal Pelvis Report of Case H A
Chamberlin and H E McMahon Boston —p 299
- Uterus Didelphys Report of Case R H Sweet Boston —p 303
- Recurrent Trichobezoar Report of Case D E Bennett Brooklyn
—p 307
- Symptoms of Hidden Ocular Muscle Imbalance F W Marlow
Syracuse N Y —p 309
- Progress in Neurology 1932 A Myerson and J Loman Boston
—p 314

210 345 402 (Feb 15) 1934

- Castro Intestinal Symptoms from Left Renal Tumor Demonstration of
Metastases Around Sympathetic Nerves Having Renal and Gastric
Associations C S Swan Boston —p 345
- Fatal Case of Septicemia Due to Pneumobacillus of Friedlander, Fol-
lowing Transurethral Prostatectomy M L Brodny Boston —p 346
- Experiences with Prostatic Resection J D Barney Boston —p 349
- Transurethral Resection of Prostate R C Graves Boston —p 351
- Observations in Transurethral Prostatic Resections E J O'Brien
Boston —p 354
- Prostatic Resection at the Lahey Clinic J B Hicks Boston —p 358
- Management of Gonorrhea I Laboratory in Diagnosis of Gonorrhea
The Neisserian Medical Society of Massachusetts —p 362
- Bronchopulmonary Suppuration E B Emerson Rutland, Mass
—p 365
- Enterobius Vermicularis of the Appendix R H Goodale Worcester
Mass —p 372
- General Aspects of Chronic Arthritis F R Ober Boston —p 374

210 403 456 (Feb 22) 1934

- Operative Management of Cancer of the Rectum R B Cattell and
F H Lahey Boston —p 403
- Sickle Cell Anemia Report of Eight Cases One with Necropsy
J C Corrigan and I W Schuller Boston —p 410
- Incidence of Syphilis in the General Population and a Comparison of
the Kahn and Wassermann Tests J J Short and Margaret I
Kelley New York —p 417
- Relative Value of Symptoms Versus the X Ray and Esophagoscope in
Early Diagnosis of Carcinoma of the Esophagus E S Emery Jr
Boston —p 420
- *A New Method for the Prediction of the Sex of the Fetus M Davis
Boston —p 421
- Device for Fixation of Hands and Arms for Certain Operative Cases
B D Adams Burlington Vt —p 423
- Lest We Forget J A Rockwell Cambridge Mass —p 424

Prediction of Sex of Fetus—Davis in his attempt to determine the sex of the fetus injected intradermally from 0.2 to 0.3 cc of stock testicular extract. The reactions were labeled as negative (no reaction), one plus (a red area 12 mm in diameter), two plus (red area from 12 to 20 mm in diameter), and three plus (a red area more than 20 mm in diameter). The readings were made in from four to ten minutes after the injection. The reactions disappeared, as a rule, within a few hours. The injections were slightly painful from the stretching of the skin but the patients did not usually object to them. Practically none of the patients reported any residual soreness. A negative reaction indicated a female fetus, the two and three plus reactions showed male children. The records of the one plus reactions were almost equally divided between the males and the females. The 136 cases tested with the stock testicular extract gave poor results therefore more of the extraneous protein was removed from the solution. With the new ampules 534 more cases were tested with moderately good results. There was an accuracy of 82.3 per cent in the 294 male fetuses and 89.6 per cent in the 174 female fetuses. Of the one plus reactions, twenty-nine were male and thirty-seven were female fetuses.

New Jersey Medical Society Journal, Orange

31 63 124 (Feb) 1934

- Gastro Intestinal Camouflage of Organic Disease J Gerendasy Eliza-
beth —p 69
- Coronary Thrombosis with Especial Reference to Its Differentiation
from Abdominal Surgical Conditions R V Patterson, Philadelphia
—p 75
- Opportunities for Cooperation Between the School Physicians and the
State Institutions for Mental Defectives D S Renner Skillman
—p 82
- Hyperplastic Ethmoiditis D M O'Brien Passaic —p 87
- Etiology and Treatment of Acne Vulgaris S J Fanburg Newark
—p 91
- Treatment of Parotid Tumors with Roentgen Rays and Radium B P
Widmann Philadelphia —p 95
- Aphyria Neonatorum A Heyman Newark —p 98

New York State Journal of Medicine, New York

34 129 174 (Feb 15) 1934

- Diagnosis and Management of Carcinoma of Colon and Rectum F H
Lahey Boston —p 129
- Some Practical Considerations in Proctology F C Yeomans, New
York —p 138
- Tuberculous Pulmonary Cavities E Mayer, Saranac Lake —p 143
- Soft Tissue Radiography J R Carty New York —p 144
- Relation of Upper Respiratory Infection to Nutrition in Infants and
Children M C Pease New York —p 146
- Acute Appendicitis D M Vickers Cambridge —p 150
- Exploitation of Vitamin A S W Clausen, Rochester —p 154

Northwest Medicine, Seattle

33 37 72 (Feb) 1934

- Lesions of Oral Cavity Practical Points in Diagnosis J A Pettit
Portland Ore —p 37
- Amebic Dysentery G W Millett Portland Ore —p 40
- Endamebiasis in Seattle K Winslow, Seattle and W E Gibb Belling-
ham, Wash —p 45
- New Apparatus for Stool Collection G R Marshall Seattle —p 49
- Rupture of Thoracic Duct J F Scott Yakima, Wash —p 50
- Leathin Egg Yolk Emulsion A Substitute for the Fat Meal in Gall-
bladder Study D L Palmer, Portland Ore —p 51
- Bronchial Asthma E A Montague Livermore Calif —p 51
- Schilling Differential Count Aid in Diagnosis of Tuberculosis F I
Terrill, Deer Lodge, Mont —p 53
- Tuberculosis Among School Children H E Kleinschmidt New York
—p 56
- Paravertebral Extrapleural Thoracoplasty Indications and Contraindica-
tions J M Nelson Spokane Wash —p 58

Oklahoma State Medical Assn Journal, Muskogee

27 37 72 (Feb) 1934

- *New Method of Protein Fever Treatment in Resistant Syphilis M O
Nelson Tulsa —p 37
- Incidence of Syphilis J F Campbell Muskogee —p 41
- Ocular Syphilis W A Huber Tulsa —p 42
- Prognosis of Syphilis C P Bondurant Oklahoma City —p 45
- Clinical Allergy Some Factors Governing Diagnostic and Therapeutic
Procedures H J Rinkel Kansas City Mo —p 49
- Case Reports Illustrating Seven Manifestations of Allergy in Children
R M Balyeat, Oklahoma City —p 56

Protein Fever Treatment in Resistant Syphilis—As Nelson reported previously, the technic consists in giving two intravenous injections of combined typhoid vaccine for each fever paroxysm, instead of one. The injections are made from two to three hours apart, and the second dose is given at the height of the fever induced by the first. The doses used are smaller than those that must be given ordinarily. By observing reactions the dosage necessary to produce the desired degree of fever in any case can be estimated accurately. In order to arrive at an idea of the patient's reactivity, for the first few days treatment is given by the single injection method, beginning with a dose of about 50 or 100 million dead typhoid bacilli and doubling the dose each day, depending on the severity of the reaction induced. After a few days of trial in this way the double injections are started, beginning doses of about one-tenth as large as the last single dose being used. The first dose each day should be just large enough to produce a fever of about 99 or 100 F. The second dose should be about the same size as the first, but, if by experience it is found necessary to make it larger, it should be correspondingly increased. This second dose has a peculiar "explosive" effect—it seems to ignite a charge created in the body by the first dose causing the patient's temperature to mount to 107 F or more. As with usual methods, it is necessary to increase the amount of the dosage each day because of the immunity to the vaccine that develops in the body. The author emphasizes the fact that the method is convenient and readily available and can be put to general use early in the course of resistant syphilis, while it is still possible to prevent organic damage to the body from taking place. It has brought about improvement equal to that observed in similar cases treated by malaria.

Southwestern Medicine, Phoenix, Ariz

18 43 76 (Feb) 1934

- Methods of Allergic Study C S Kihler Tucson Ariz —p 43
- Some Hay Fever Problems in the Southwest R A Wilson Tucson
Ariz —p 46
- Reactions in Blood Transfusions J B Littlefield Tucson Ariz —p 52
- Physiology and Pathology of Thyroid J W Huffman Tucson Ariz —
—p 57
- Surgery in Tuberculosis of the Thyroid M B Tinker Ithaca N Y
—p 62
- The Common Cold C H Gellenthien Valpara N M —p 63

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Disease in Childhood, London

9 164 (Feb.) 1934

- Late Infantile Amaurotic Idiocy with Pathologic Report Case B Schlesinger J G Greenfield and R O Stern—p 7
Investigations on Glycogen Disease S Van Creveld—p 9
*Patent Interventricular Septum (Maladie de Roger) D C Muir and J W Brown—p 27
Familial Sex Limited Ectodermal Dysplasia with Incomplete Forms R E Clarke and R A McCance—p 39
Arterial Pressure in Normal Serbian Children V Bogdanovitch—p 45
Chondrodysplasia in Twins A V Neale and R H Hucknall—p 51
Duodenal Ulcers in the New Born W S Craig—p 57

Patent Interventricular Septum—Of 100 cases of congenital heart disease in elementary school children Muir and Brown observed forty to have a patent interventricular septum as their sole abnormality. A harsh, prolonged, mesocardial systolic murmur of maximal intensity in the third and fourth left interspaces close to the left sternal margin was the principal physical sign. The first intimation of the presence of a cardiac lesion was at the routine school entrance examination in twenty-eight cases. Of the remainder, in only one case was the lesion recognized at birth. In eleven cases the abnormality was discovered during some illness (influenza, measles or pneumonia). The authors' study of these patients seems to indicate that this condition is commoner than is generally recognized. A proper appreciation of the physical signs as described by Roger would lead to the more frequent identification of this defect. In the present series there was no case of heart block or of infective endocarditis. They suggest that a lesion of the interventricular septum alone is not the whole cause of congenital heart block. Permanent cyanosis is not a part of the clinical picture of the malady of Roger. When cyanosis is permanently present it is due to some accompanying structural abnormality. There is no characteristic roentgenologic picture of this defect.

British Medical Journal, London

1 225 268 (Feb 10) 1934

- Spontaneous Hypoglycemia Associated with Hepatitis H Moore W R O Farrell and M T Headon—p 225
Ultimate History of a Previously Reported Case of Acute Spontaneous Hypoglycemia H Moore W R O Farrell M A Moriarty and W Cremin—p 227
Ovarian Pregnancy Case W C Spackman—p 229
*Diabetes Mellitus in Association with Degeneration of Suprarenal Glands R W Brookfield and H V Corbett—p 231
*Reduction of Fractures of Surgical Neck of the Humerus H M Anderson—p 232
Carcinoma of Esophagus Method of Treatment by Means of Radon Seeds T B Johnson and G H Steele—p 233
Von Recklinghausen's Disease Case W Marshall psychologic note by A W Watt—p 234
Hypodermolitis J P Ross—p 235

1 269 318 (Feb 17) 1934

- Hunterian Oration C Wallace—p 269
Influenza Its Sequelae and Treatment J Torrens—p 274
Epidemiology of Scarlet Fever in a Landward Area J Riddell—p 276
Etiology of Heart Disease C B Perry—p 278
Bacillus Pyocyaneus Meningitis with Recovery J F D Shrewsbury—p 280
Further Investigation on Excretory Tubercle Bacilluria J Menton—p 281

1 319 364 (Feb 24) 1934

- Proprietary Remedies with Especial Reference to Hypnotics N Mutch—p 319
Basal Anesthetics and Allied Substances Their Use and Misuse H W Featherstone—p 322
A Warning Regarding Basal Narcotics R J M Love—p 327
Hereditary Scoliosis H G Garland—p 328
Orthoptic Treatment of Squint M L Hine—p 329
Epidemic Jaundice in North Leicestershire T M Montford—p 330

Diabetes Mellitus Associated with Degeneration of Suprarenals—Brookfield and Corbett state that the association of diabetes mellitus with gross pathologic changes in the suprarenals is uncommon. The case of diabetes that they report is of interest because of its unusually high blood sugar values and the enormous doses of insulin required during the course of treatment. There seems to be no explanation for the exceptionally high blood sugar level (1,040 mg per hundred cubic centimeters) before treatment was instituted. Still higher values, amounting to 1,400 and 1,490 mg per hundred cubic

centimeters, respectively, have been reported by Joslin in two fatal cases. The massive doses of insulin required to bring the blood sugar back to the normal level are almost certainly related to the high initial blood sugar value. In the first twenty-four hours of treatment 460 units of insulin was given, for the next three days 240 units daily, and thereafter approximately 160 units daily. On one day, when the dose was reduced to 120 units, the blood sugar again rose to 296 mg per hundred cubic centimeters, indicating that the doses previously given were not unnecessarily large. As there was no rise of temperature until the third day after admission to the hospital, by which time the blood sugar had been reduced to 200 mg per hundred cubic centimeters, neither the high blood sugar nor the necessity for the large doses of insulin can be ascribed with certainty to the presence of infection. At necropsy an advanced degenerative lesion of the suprarenals was discovered.

Reduction of Fractures of Neck of Humerus—Anderson describes a method for the reduction of fractures of the surgical neck of the humerus in which the ordinary methods of reduction have proved unsuccessful, which consists of partial transfixion of the head of the bone by a bone awl passed through a stab incision on the outer aspect of the shoulder. The procedure is carried out under the screen in the roentgen department. It consists of traction of the limb in the adducted position in order to pull the lower fragment down to the level of the upper end, while maintaining this pull adducting the arm across the chest. The adducted or upper fragment is now adducted by depressing the handle of the bone awl. It is then easy to engage the upper end of the lower fragment in the fractured surface of the upper. The arm is slowly brought back to a slightly abducted position, where it is maintained by splints. Once accurate approximation of the two surfaces is obtained there is little tendency for the fragments to slip.

East African Medical Journal, Nairobi

10 317 348 (Feb.) 1934

- Diet as the Cause and Prevention of Dental Caries W Hops—p 318
Heredity and Disease Story of Abbe Gillet's Rabbits J H Sequeira—p 321
Investigation of Etiology of Subacute Nephritis as Seen Among the Children of North Kavirondo J C Carothers—p 335

Glasgow Medical Journal

3 41 88 (Feb.) 1934

- *Certain Aspects of Metabolic Response to Injury D P Cuthbertson—p 41

Metabolic Response to Injury—Cuthbertson describes the series of metabolic changes that take place on receipt of a wound in two successive phases—the initial phase of depressed vitality or shock and the phase of renewed functional activity and healing. During the phase of depressed vitality that generally results from physical injuries there occurs within the first twenty-four hours a period of relative or absolute anuria of varying duration. Following this early period of diminished urinary secretion the volume of urine and the output of nitrogen rise reaching in the latter a maximal daily loss during the fourth to the eighth days which may even exceed 23 Gm. The maximal secretion of urine generally occurs two days after the maximal output of nitrogen. The reduction in the nitrogen content of the organism may exceed 7 per cent in the first ten to twelve days following a serious injury. The excretion of sulphur and phosphorus rises parallel to that of nitrogen. There is still a slight but continuous loss even after the lapse of one or two months. The sulphur, nitrogen and phosphoric oxide, nitrogen ratios suggest that the material catabolized was probably mainly muscle. During the initial period of depressed function the patient's heat production and body temperature are diminished but during the subsequent phase of enhanced vitality there is an increase in heat production and body temperature. With but few exceptions does the rise in temperature exceed 2 degrees C (3.6 degrees F). The increase in the basal consumption of oxygen is generally from 20 to 25 per cent. Coincident generally with the rise in temperature is a rise in the pulse rate the rate of increment being ten beats to each degree Fahrenheit. The curves of the urinary excretion of nitrogen and the basal consumption of oxygen are generally parallel. There appears to be some relationship between the

extent of the injury and the degree of reaction but there is great variation in individual cases. Observations on the metabolic disturbance in pneumonia indicates that the changes are somewhat similar in kind to those which result from trauma, but less marked. It has been shown that atrophy due to nonuse of the injured limbs is only a minor factor in the production of this great disturbance of metabolism, which is almost certainly of a more general rather than local nature.

Guy's Hospital Reports, London

34 1126 (Jan) 1934

- Three Eighteenth Century Guy's Physicians William Saunders Thomas Skeete and John Relph W Hale White —p 1
Hypochromic Anemia in Men G N Burger and L J Wits —p 14
Addison's (Pernicious) Anemia and Graves's Disease E Meulengracht and S J Hartfall —p 25
Toxic (Neoparsphenamine) Aplastic Anemia Case Death from Pneumonia When Recovering After Fifty Two Blood Transfusions F A Knott —p 32
Familial Alcoholic Jaundice Family with Four Members Affected H Barber —p 37
Sudden Death Due to a Fibrous Polyp of Aortic Valve M Campbell and W R Catling —p 41
Recurrent Hernia of Stomach Through the Hiatus Esophageus of the Diaphragm A F Hurst —p 43
Diaphragmatic Hernia with Symptoms Following Development of an Ovarian Cyst Case B McArdle —p 51

Death in Aplastic Anemia After Fifty-Two Blood Transfusions—Knott gives the results of treatment by repeated blood transfusions (fifty-two) of a patient suffering from aplastic anemia following prolonged administration of arsenicals. The results indicate that by this means not only may the patient's blood be sufficiently improved to allow him to resume a fully active life but also the functional activity of the blood-forming tissues may steadily improve so that less frequent transfusions become necessary. The records clearly illustrate the low resistance to infection that these patients possess as long as leukopenia is present and their inability to produce a satisfactory protective leukocytosis. In spite of the general physical improvement, the risk of infection is a constant menace to them. From the observations made in this case it would seem justifiable to hope that if infection can be avoided, maintenance of the hemoglobin and red cell figures at a high level by means of repeated blood transfusions may ultimately result in full restoration of the activity of the blood-forming tissue.

Irish Journal of Medical Science, Dublin

No 97 148 (Jan) 1934

- Recent Advances in Medicine and Therapeutics L Abrahamson —p 1
Differentiation of Bacillus Diphtheriae G C Dockeray —p 12
Lunacy Certification in Ireland P J Cassin —p 22
Malignant Stricture of the Uterus R Woods —p 28
Evisceration in Rhinology P J Keogh —p 32

No 98 4996 (Feb) 1934

- Primary Carcinoma of the Lung C Bowesman —p 49
Spontaneous Hypoglycemia Associated with Hepatitis H Moore W R O Farrell and M F Headon —p 72
Ultimate History of Case of Acute Spontaneous Hypoglycemia Previously Reported H Moore W R O Farrell M A Moriarty and W Cremin —p 77
Tenotomy of Scalenus Anticus a Substitute for Resection of a Cervical Rib Report of Case E N MacDermott —p 81

Differentiation of Bacillus Diphtheriae—Dockeray offers a modification of the special tellurite medium described by the Leeds workers which has been found to give equally satisfactory results. Its preparation necessitates no special apparatus filters or suction pumps. Two Erlenmeyer flasks of about 500 cc capacity are taken and 150 cc of 5 per cent agar is put in one. This is sterilized in the autoclave and while still liquid is used to prepare the medium. In the other flask is 150 cc of tryptic digest broth. To the broth from 20 to 30 cc of sterile citrated human blood is added followed by 120 mg of potassium tellurite dissolved in a few cubic centimeters of sterile saline solution. The tellurite-blood-broth mixture is warmed to about 40 C and is then poured into the melted agar which has been allowed to cool to about 70 C. The mixture is heated in a water bath at 75 C for ten minutes and when cooled to from 50 to 55 C, is poured as plates. In testing thirty-five apparently healthy residents (nine adults) of an orphanage eight carriers of typical morphologic diphtheria bacilli were observed who gave the characteristic fermentation reactions six being virulent and two nonvirulent. The six carriers of virulent grave strains would

not have been detected if the special tellurite medium had not been used. All the carriers were negative when Schick tested, and in all the tonsils and adenoids were subsequently removed. With the exception of one, they all gave negative cultures on three occasions after this treatment. The author believes that the detection of six virulent carriers out of thirty-five apparently healthy people demonstrates the usefulness of the special medium for the detection of carriers. The special medium has in some cases proved useful in the diagnosis of cases but it suffers from the disadvantage that growth on it is slow. It makes the isolation of Bacillus diphtheriae from mixed cultures an easy matter.

Journal of Hygiene, London

34 1144 (Feb) 1934

- Droplet Infection Some Theoretical Considerations Greenwood —p 1
Epidemic Curve of Smallpox W J Martin —p 10
Anomalous Features of the Dick Reaction J P McGibbon —p 30
Distribution and Sanitary Significance of Bacillus Coli Bacillus Lactis Aerogenes and Intermediate Types of Coliform Bacilli in Water Soil Feces and Ice Cream Doris A Bardsley —p 38
An Enquiry into the Coli Aerogenes Bacteria J Bamforth —p 69
Methods of Measuring Skin Temperature T Bedford and C G Warner —p 81
Digestive Action of Leukocytes, Pus and Body Exudates L S Dudgeon and L T Bond —p 99
Precipitation Reaction Optimal Proportions, Neutrality and Maximal Precipitation in Mixtures of Albumin and Antiserum G L Taylor, G S Adair and Muriel E Adair —p 118
Weight Height and Nutrition Observations from the Isle of Ely T C Lonic —p 131
Tuberculosis in Hebrides Rarity of Tubercle Bacilli in the Milk of Cows Note on Vitality of Tubercle Bacilli Preserved in Frozen Milk G B McCallum and J Kirkpatrick —p 141

Anomalous Features of the Dick Reaction—McGibbon observed that about one fourth of the cases in a series of 160 patients suffering from scarlet fever appeared to be Dick negative in the acute stage of the disease. Throughout the illness there was a progressive decrease in the number of positives and in the intensity of the reactions, till in the second week two thirds and in the fourth week nine tenths of the total cases were negative. Almost 90 per cent of the original positives showed this characteristic loss of the Dick-positive state. It would appear that this change occurs less readily in young children. Fluctuations in the reaction during the course of the illness are uncommon if indeed they occur at all. Of eleven cases that failed to show the foregoing change, two relapsed. In the other 149 cases no relapses occurred. Pseudoreactions are uncommon. The author suggests that the use of heated filtrate may be unsatisfactory and that the mechanism of these reactions requires further study. He discusses some of the anomalous features of the Dick reaction and believes that these difficulties have been exaggerated and that they do not in themselves form sufficient grounds for concluding that the test is fallacious. On the evidence at present available, one must continue to regard scarlet fever as a specific toxemia. The allergic conception of the disease is less convincing.

Journal of Laryngology and Otology, Edinburgh

49 73152 (Feb) 1934

- Diathermy in Ear Nose and Throat Notes F H B Norrie —p 73
Erysipelas and Hemolytic Streptococcus in Relation to Otolaryngology D McKenzie —p 105

Journal of Tropical Medicine and Hygiene, London

37 4964 (Feb 15) 1934

- Locust Oil as a Therapeutic Agency F G Lawton —p 49
Possibility of Preventing Transmission of Malaria by Blood Transfusion
Experimental Study of Bactericidal of Cured Blood with Respect to Plasmodium Malariae V Ackerman and A Filatov —p 49

Medical Journal of Australia, Sydney

1 147174 (Feb 3) 1934

- 1803 1876 The Passing of the Tasmanian Race W E L H Crowther —p 147
Primary Papilloma of Ureter Complicated by Pyonephrosis of the Same Kidney R Bridge and K Kirkland —p 160
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- Surgical Treatment of Empyema R B Wade —p 175
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Observations on Nature Rate of Growth and Operability of Intracranial Tumors Derived from One Hundred and Thirty Five Patients L R Cox —p 182

Paris Médical

1 185 216 (March 3) 1934

- Syphilis During the Year 1934 G. Milhan and L. Brodier —p 185
 Enuresis Its Etiology M. Pinard —p 195
 Pyretotherapy of Syphilis C. Richet Jr. and J. Dublneau —p 197
 Abortive Treatment of Gonorrhea J. Janet —p 205
 Intellectual Level of Prostitutes R. Rabut —p 207
 Anatomoclinical Study of Some Types of Muscular Syphilis Early Contractions and Late Retractions Favre, Noel and P. Michel —p 210
 Syphilitic Bronchitis Trial Treatment Cure E. Lortat Jacob —p 214

Abortive Treatment of Gonorrhea—For each treatment Janet prepares a fresh solution of 1 Gm. of mild silver protein (argyrol) in 5 cc. of cold distilled water, which is completed in fifteen minutes. With a sterilized urethral syringe, from 2 to 5 cc. of the solution is slowly injected into the urethra. The solution is kept in the urethra for five minutes and the patient should not urinate for a number of hours after treatment. The patient should drink very little during meals but may drink in the evening after having urinated and early in the morning after having been at stool. Six injections of the 20 per cent solution of mild silver protein are given to the patient at the rate of two a day. In successfully treated cases no gonococci are observed in the morning secretion by the second day. If any are found the abortive treatment has no value. After three days of treatment the patient is allowed to rest for forty-eight hours and then another injection is given. Before pronouncing the patient cured it is advisable to give him three glasses of beer before retiring. If after two days there is no discharge of gonococci the patient may be pronounced cured.

Muscular Syphilis—Favre and his associates studied two patients affected by syphilis resulting in multiple muscular manifestations and an identical clinical syndrome. The lower extremities became fixed in a malposition as a result of changes in the soft parts, no other explanation being possible. In the first case neither clinical examination nor an incomplete necropsy revealed any lesions of the nervous system. In the other case the necropsy revealed distinct muscular lesions which on histologic study were found to be of syphilitic origin. The author points out as histologic evidence of myositis the extensive muscular involvement, the generalization of vascular lesions and the development of adipose tissue. These lesions have all the characteristics which the author has often observed in syphilitic interstitial myositis. Syphilis is capable of creating complex interstitial alterations in the muscles, which end in the disappearance of the contractile element and in the production of substitutive sclerosis which, in these cases as in others, cause retraction.

Presse Medicale, Paris

42 393 408 (March 10) 1934

- Variations of Cholesteroemia in Acute Infections V. de Lavergne and P. Kissel —p 393
 Gold Salts in Oil Suspension in Treatment of Pulmonary Tuberculosis H. Mollard —p 395

Gold Salts in Treatment of Pulmonary Tuberculosis—Mollard states that results obtained with gold salts in oil suspension are more durable than those obtained with gold salts in aqueous solution. In twenty-three out of a hundred cases he obtained satisfactory immediate results, practical clinical cures with roentgenologic disappearance of lesions, suppression of bacilli and secretory symptoms and general improvement of the patients' condition. Late results of treatment with suspension of gold salts in oil showed that eight out of ten evinced an improvement at the end of two years and the author believes that this kind of treatment gives better assurance against recurrences. The most lasting ameliorations have been shown by patients suffering from syphilis, psoriasis or tuberculosis. In patients in whom the immediate action of the gold salts is not striking the number of late improvements is larger than in patients treated by aqueous solutions of gold salts. Twelve out of thirty-eight tuberculous patients showed remarkable late improvements. The oil suspension is slowly eliminated; it thus permits continued improvement after a partial success at the end of treatment or if the early results have not been encouraging. The only inconvenience of the oil suspension treatment is the necessity of long intervals between the series. The patient is exposed to sensitization symptoms if treatment is begun too suddenly, but the accidents of late solubility do not

seem to exist when there are sufficient intervals between treatments. None of the author's patients have presented any serious symptoms.

Revue Belge des Sciences Medicales, Louvain

6 196 (Jan.) 1934

- *Experimental Study of Action of 3.5 Diiodotyrosine in Treatment of Hyperthyroidism E. Delcourt Bernard —p 1
 Cultures in Vitro of *Spirochaeta Pallida* in Symbiosis with Testicular Tissue of Rabbit A. Bessemans and B. de Geest —p 28
 Exanthematic Fevers Attributed to Rickettsia Group A. van Meerhaeghe —p 37
 Syphilitic Aortitis and Its Treatment D. Routier —p 69

Action of 3.5 Diiodotyrosine on Hyperthyroidism—Delcourt-Bernard found that from the physiopathologic point of view diiodotyrosine exerts a beneficial effect on the increased respiratory exchange in the course of hyperthyroidism, whatever the clinical form of the disease may be. Of twelve cases observed by the author, eight presented a lowering and four an elevation of metabolism. The mechanism of the action of compound solution of iodine differs from that of 3.5 diiodotyrosine in that, when the former lowers the metabolism, it seems to act more on aeration than on the consumption of oxygen. When it determines an elevation of the rate of exchange it acts more on the consumption of oxygen than on aeration. Diiodotyrosine, on the other hand, has more of a tendency to lower the consumption of oxygen when it lowers the exchange and to act equally on the two factors when it raises the metabolism. The most important and most frequent increases in the weight of the subjects treated are to the credit of compound solution of iodine. No differences were observed in the action of these two substances on the pulse or on other symptoms of hyperthyroidism. Except for the equivalence of doses the author does not grant to diiodotyrosine the peculiar value that certain German authors have attributed to it and cannot compare it, as many Americans do, to a solution of inorganic iodine acting only on account of the iodine that it contains. From the therapeutic point of view, diiodotyrosine is easily absorbed and well tolerated in the prescribed doses of 0.1, 0.2 and 0.3 Gm. daily. Without possessing the efficacy or the ease of administration of compound solution of iodine, diiodotyrosine may nevertheless be of service in replacing compound solution of iodine or in obtaining a gastric tolerance momentarily diminished with regard to the latter or in being associated with compound solution of iodine after having acted previously by itself. The fact that in certain cases it may determine an elevation of the respiratory exchange with acceleration of the pulse demands a close supervision of cases treated with it.

Beitrage zur klinischen Chirurgie, Berlin

159 223 334 (March 14) 1934

- Operative Treatment of Habitual Dislocation of Patella R. Sommer —p 223
 Treatment of Seminoma P. Blümel —p 227
 Spinal Anesthesia with Nupercaine H. Kraske —p 243
 Method of Roentgen Irradiation of Cancer Controlled by Blood Picture O. Kingreen —p 262
 Diagnosis and Treatment of Intrathoracic Tumors of Neurogenous Origin M. Makkas —p 276
 Free Perforation of Postoperative Jejunal Ulcer and Its Treatment G. E. Konjetzny —p 297
 Artificial Nutrition E. Briss —p 302
 Traumatic Diseases of Vertebrae P. Rostock —p 313

Treatment of Seminoma—Blümel states that tumors of the testicle are extremely rare. Of 40,000 admissions of male patients to the surgical clinic of the University of Göttingen in twenty years, only 32 presented tumors of the testicle. Seminoma is the most frequent of the testicular tumors. More than two thirds of the thirty-two mentioned belonged to this type. Of twenty-two patients, nine came to the clinic in the state of metastases. Testicular tumors metastasize usually by way of lymphatics to iliac lymph nodes and later to those about the abdominal aorta but seldom involve the inguinal nodes. About the same time metastases can be found in the mediastinum along the thoracic duct. In advanced stages metastases are present in the supraclavicular and axillary fossae. Metastases penetrate the blood vessels relatively early and give rise to liver and lung metastases more rarely to skin metastases. According to Zondek the urine of patients with testicular tumors frequently contains an increased amount

of prolan A, and in some of prolan B as well. It is not of a specific diagnostic value, since it may be present in other testicular diseases, as well as in certain tumors of the brain and the hypophysis. The finding of increased excretion of prolan A is suggestive but not diagnostic of a seminoma; the presence of prolan B is suggestive of the presence of a seminoma or a teratoma. In the author's three cases the metastases were effective in maintaining the increased excretion in the urine of prolan B after the removal of the primary tumor. The primary tumor because of easy approach is always to be removed. The removal of the regional lymph nodes is not advised because of the high mortality attending it. It is, however, important to irradiate the iliac and aortic lymph nodes on the side of the primary tumor even when clinically demonstrable metastases are not present. The irradiation should be repeated if the urine shows an increased excretion of prolan. The author warns against relying too much on the particular roentgen sensitivity of seminoma cells commented on by many authors as this may lead to insufficient dosage and recurrence. From 10 to 15 roentgens a minute is considered the proper dose by the author. Because of more general reactions, fractional doses are advised for extensive metastases.

Deutsche medizinische Wochenschrift, Leipzig

60 309 344 (March 2) 1934 Partial Index

Occurrence of Tubercle Bacilli in Circulating Blood W. Kollé and E. Küster—p. 309

*Clinical Aspects and Pathogenesis of Subarachnoid Hemorrhages Krohn—p. 314

Gold Therapy of Infectious Arthritis and of Lingering Infections F. Umber and A. Rüther—p. 317

Speech Without Larynx H. Gutzmann—p. 319

*Mechanism of Reorption of Percutaneously Administered Esters of Salicylic Acid H. Gehlen and A. Blankenstein—p. 320

Tubercle Bacilli in Circulating Blood—Kollé and Küster show that many leading investigators have failed to corroborate Loewenstein's assertion that tubercle bacilli occur in the circulating blood of from 30 to 40 per cent of patients with various forms of tuberculosis, including lupus. The assertions that in a high percentage of cases of schizophrénia chorea, multiple sclerosis and rheumatic diseases the blood contains tubercle bacilli and that these have an etiologic relation to the diseases have likewise not been corroborated. At any rate, of the many investigators who duplicated Loewenstein's test, none obtained the high percentages reported by him. Particularly in cases of rheumatic polyarthritis the demonstration of tubercle bacilli has been successful in so few cases that at the most it could be considered accidental. The same can be said about schizophrénia and multiple sclerosis. Loewenstein's objection that the technic and the culture mediums have not been perfect and that this explains the negative results of other bacteriologists is untenable in view of the fact that some of those who employed this method studied it in his own laboratory. The author deplors the confusion that has been brought into medical circles by Loewenstein's reports. He points out that it was known long before Loewenstein that tubercle bacilli occur in the blood (which, however, is not a multiplying but only a transporting medium) and that they are demonstrable by the culture method or the animal experiment, for tuberculosis even if localized in a tissue is not a purely local disorder. On the other hand, the assertion that tuberculosis begins with a bacteremia that is with a primary multiplication of tubercle bacilli in the blood stream, is unfounded.

Subarachnoid Hemorrhages—Krohn reports two cases of subarachnoid hemorrhages resulting from aneurysmal cerebral vessels. The symptomatology was characterized by manifestations of central and sympathetic regulatory disturbances. One case simulated an infectious disease (typhoid). As the cause of the formation of the aneurysm, the author assumes a weakness of the vascular wall, which in turn is due to embryonal malformations of the arteries at the base of the brain. The rupture was probably caused by fluctuations in the blood pressure. The simultaneous existence of a coronary infarct in one of the cases makes it appear probable that a generalized vascular disorder, perhaps of a functional nature may exist in cases of subarachnoid hemorrhage. The author's observations are a warning that a therapeutic spinal (lumbar) puncture

should be strictly limited to the cases in which it seems absolutely necessary, for instance, if a considerable central increase in the blood pressure exists.

Salicylic Acid Administered Percutaneously—Gehlen and Blankenstein demonstrate that the action of percutaneously administered salicylic acid preparations is limited to from two and a half to three hours, which time is equivalent to the duration of the skin-tissue passage of the preparations and it also corresponds to the results of the biologic investigations by Brandt, who showed in stained skin sections that the same time was required for an accumulation of the salicylic acid in the canal system of the corium and of the epidermis. After that the salicylic acid was absorbed by the dilated blood capillaries and was eliminated by way of the kidneys. Moreover, the time corresponds to the period of alleviation of pain reported by the patients with various rheumatic disorders. Therefore, in order to obtain permanent results, the percutaneous application of salicylic acid preparations must be repeated at intervals of from two to three hours, for in this manner an interruption of the analgesic action is prevented.

Deutsche Zeitschrift für Chirurgie, Berlin

242 377 520 (March 10) 1934

*Thyroid and the Nervous System. Experimental Study of Etiology of Hyperthyroidism H. Eitel—p. 377

*Injuries of Knee. Injuries of Lateral Ligaments and Joint Capsule A. Jirásek—p. 415

Further Reports on Making a Window in Joint Capsule in Order to Prevent Postoperative Effusion in Operations on Knee Joint F. Mandl—p. 440

Studies of Lesser Circulation. Method of Determination of Circulating Blood in Lungs H. Kilian, G. Schwoerer and H. Voelker—p. 447

Blood Calcium Content in Experimental Biliary Fistula G. Jesu—p. 488

Spontaneous Internal Biliary Fistulas and Their Operative Treatment F. Bernhard—p. 493

Effect of Ligation of Ureter on an Infected Kidney S. Torii—p. 507

Results with Sulphurous Acid Treatment of Wounds C. von Seanzoni and W. Kufferath—p. 511

Treatment of Burns with Carbonized Felt B. Laqueur—p. 516

Study of Etiology of Hyperthyroidism—Eitel attempted to investigate the relation between the thyroid and the nervous system and to determine the role of the latter in the genesis of hyperthyroidism. Studies by others have revealed the presence in the anterior lobe of the pituitary of a substance capable of inducing in an animal a state of hyperthyroidism. Administration of this substance induces typical anatomic alterations in the thyroid, increased basal metabolic rate, diminution of liver glycogen, diminution of iodine content of the thyroid and increase in the iodine content of the blood. The author took advantage of this thyreotropic effect in evaluation of the influence of the nervous system in the production of certain diseases of the thyroid. The following observations were made: (1) the effect of the anterior pituitary on the thyroid when the cervical sympathetics were removed, (2) the effect of the anterior pituitary on the surviving gland, and (3) the effect of the anterior pituitary on transplanted thyroid. The results obtained were as follows: 1. When the cervical sympathetics were extirpated, the thyroid exhibited on administration of large doses of the anterior pituitary the characteristic alterations of hyperthyroidism. Its reactivity to small doses was somewhat lowered. 2. The surviving thyroid reacted in the same manner to the administration of the thyreotropic substance. 3. The autoplasmic and homoplasmic thyroid transplants reacted in the same manner to the thyreotropic substance. Signs of hyperthyroidism were well developed in three and four week transplants. From these experiments it is apparent that the stimulus for the pathologic increase of thyroid function is to a great extent independent of the nervous system. The possibility of influencing at will the functional activity of a transplanted organ was demonstrated in these experiments. The possibility of treating athyreosis by transplantation of the thyroid is suggested.

Injuries of Knee—According to Jirásek, injuries of the lateral ligaments and capsule of the knee joint result from a great force applied either in abduction or in adduction, or from twisting of the one joint while the other is fixed. The alterations produced by trauma consist of stretching, splitting of the fibers and tearing away from the insertion with or without a piece of bone. The joint capsule tears in an irregular

manner and the edges of the torn surface are usually compressed. Isolated lesions of the lateral ligaments are rare and, as a rule, they are associated with injuries of the joint, the crucial ligaments and the menisci. The bone, as a rule is not involved. Among the objective signs characteristic of the condition are looseness of the joint, increased lateral passive mobility of the leg and tenderness or a palpable depression at the point of injury to the lateral ligament. The roentgenogram in early cases frequently shows particles of bone torn off with the ligamentous attachment and in older cases a paracondylar osteoma. The prognosis in milder cases is good without operative intervention, but in extensive and complicated lesions an early operative intervention becomes necessary. Its aim is the repair of all injured parts, suture of the lateral ligaments, plication suture or a plastic procedure on the crucial ligaments and removal of a torn meniscus. The author advises a longitudinal incision curved below, careful opening of the joint and a tight closure of all layers. The average duration of disability was from two to three months. Of thirteen patients operated on, eleven had excellent results.

Klinische Wochenschrift, Berlin

13 321 360 (March 3) 1934

- Constitution and Biologic Properties of Blood Pigment and Its Derivatives T. Haurowitz —p 321
 Pathologic Pigmentation of Skin and Pigment Vitamins P. Morawitz —p 324
 *Influence of Anesthesia on Reflex Autoregulation of Circulation in Thyrotoxicosis E. Neter —p 327
 Clinical Examination for Suitability for Sport W. Borgard and J. Hermannsen —p 329
 *Agglutination of Staphylococci by Constituents of Plasma of Mammals Luise Birch-Hirschfeld —p 331
 Micromethod for Titrimetric Determination of Total Cholesterol Content of Blood T. Rappaport and R. Knapholz —p 333
 Clinical Experiments with Carbohydrate Free Flour in Diabetic Patients E. Egedy —p 334
 Results and Problems of Research on Porphyrin H. T. Schreus —p 334
 Criticism of Erythrocytometer According to Dock H. E. Dock —p 335
 Differences in Reaction Capacity of B Factor Between Blood Group A₁ B and A B T. Hahn —p 336
 Further Refining of Wassermann Antigen by Means of Dialysis Through Rubber Membrane O. Fischer and J. Steinert —p 337
 Meningococcal Sepsis and Endocarditis R. Weindel —p 338

Influence of Anesthesia on Circulation in Thyrotoxicosis—Neter shows that rabbits with severe thyrotoxicosis which have been anesthetized in a degree adequate for normal animals, show spontaneous and reflex movements, increased blood pressure and fluctuations in the blood pressure. There also exists a disturbance in the reflex autoregulation of the circulation, for increase of the blood pressure in case of exclusion of the pressoreceptor nerves and decrease of the blood pressure in case of their stimulation are inadequate. The author wanted to determine whether this failure of the reflex autoregulation is due to a change in the reflex arc itself or to a disturbance in the sympathetic nervous system resulting from an abnormal irritability. It was found that additional anesthesia counteracts the spontaneous and reflex movements and brings the increased blood pressure down to normal, and that the reflex autoregulation takes the normal course. This indicates that the additional anesthesia abolishes a disturbance that inhibits the reflex autoregulation of the circulation that is, the abnormal irritability. Since human thyrotoxicosis also is accompanied by a disturbance in the reflex autoregulation of the circulation, which most likely is due to a pathologic irritability, the treatment of exophthalmic goiter with anesthetics and hypnotics gains importance for the removal of sympathetic functional disturbances.

Agglutination of Staphylococci by Blood Plasma—The studies reported by Birch-Hirschfeld concern the following problems: (1) parallelism between the coagulation of plasma and the agglutination reaction of staphylococci; (2) the agglutinating constituents of the plasma and (3) the relationship between agglutination and coagulation activation. She found that staphylococcus strains which coagulate citrated plasma, become agglutinated by this plasma. Thus the agglutination test presents a simple method for the differentiation of staphylococcus strains. The agglutinating action of the plasma is due to its content in prothrombin. For this reason it is absent in 'pure' fibrinogen solutions or serums, but it is present in

fibrinogen solutions and in serums that contain prothrombin. The reaction may be abolished by the influence of calcium chloride. Agglutination and coagulation activation are, to a certain degree, independent of each other, for instance, the agglutination may be inhibited without abolishment of the coagulation, and vice versa. The author discusses the biologic significance of the reaction. She points out that agglutination reveals clearly the affinity existing between prothrombin and parasitic cocci. This phenomenon is a manifestation of the adaptation between the parasite and the mammalian organism. It is probable that this affinity plays an essential part also in coagulation, even if agglutination as such is inhibited. Thus the process of plasma coagulation is brought into relationship to biologic processes already known.

Medizinische Klinik, Berlin

30 289 320 (March 2) 1934

- Significance of Internal Speaking for Normal and Abnormal Development of Speech R. Schilling —p 289
 Pathogenesis and Therapy of Hay Fever (Rhinopathia Pollinosa Asthma Pollinosum) E. Ullrich —p 290
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 Culture of Tubercle Bacilli from Blood by Means of Loewenstein's Method A. Frederiksen —p 306
 Antineuralgic with Sedative and Spasmodic Action P. Ervenich —p 307

Aphthoid—The child observed by Kumer had severe burns in the region of the buttocks and died on the fifteenth day after the accident. On the second day after the burns had been sustained, a severe toxic exanthem developed on the trunk and the extremities and on the twelfth day the symptoms designated as aphthoid became manifest. Thick-walled vesicles on a slightly infiltrated and reddish ground appeared on the nasal openings and on the mouth. The oral mucous membrane in other cases often involved remained free in this instance. The literature on the etiology of the aphthoid indicates that the condition is probably caused by a virus and that a relationship exists between herpes simplex stomatitis aphthosa and aphthoid. Animal experiments conducted by the author with aphthoid material from the patient observed by him indicate that the material contained herpes virus. He thinks that if it should be proved that the herpes virus is actually the cause, the aphthoid would present so to speak, the ecthyma form of the otherwise harmless herpes simplex.

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- Treatment of Carcinoma of Larynx and of Hypopharynx K. Amersbach and L. Kraus —p 321
 Significance of Heredity for Development and Course of Tuberculosis H. Ullrich —p 324
 Diagnosis of Atherosclerosis E. Magnus Alsleben —p 326
 *Bovine Tubercle Bacilli as Cause of Lupus Vulgaris and of a Simultaneously Existing Pulmonary Tuberculosis T. Hamel —p 328
 *Occupational Skin Diseases of Milkers with Especial Consideration of Granulation Nodules Caused by Penetration of Cows Hair H. Gottron —p 330
 Diphtheria and Scarlet Fever K. Smetz —p 331
 Special Form of Elicitability of Babinski's Great Toe Reflex S. Wolff —p 334
 Utilization of Determination of Lipase for Diagnosis of Pancreatitis H. L. Popper and R. Scholl —p 335

Bovine Tubercle Bacilli, Lupus Vulgaris and Pulmonary Tuberculosis—Hamel relates the history of a girl with lupus foci on the face neck and extremities. Material from a lupus focus was injected into guinea pigs and the animals developed a generalized tuberculosis which proves that the tubercle bacillus was of the bovine type. Two years later the patient was again admitted to the hospital because of recurrence of lupus foci and roentgenoscopy of the lungs revealed a bilateral cirrhotic pulmonary tuberculosis. Examination of the sputum by the animal test indicated that it contained bovine tubercle bacilli. The author says that in Germany about 10 per cent of the patients with lupus are infected with the bovine type of the tubercle bacillus. In patients with pulmonary tuberculosis however the bovine type is found much less often, namely in only 0.5 per cent of the cases.

Skin Diseases of Milkers—Gotttron calls attention to "milkers' nodules," which were better known before the eradication of smallpox and are probably caused by a vaccine virus. From this type of nodules he differentiates telangiectatic granulomas, which are not pediculated on the fingers of milkers as they are in other persons. The absence of the pedicle may be due to the frequent compressions to which these formations are exposed on the hands of milkers. The author calls particular attention to nodular formations that are caused by the penetration of cow's hairs. These nodules vary in size between a grain of rice and a pea. They are bluish red and at the top may have a small scab or a necrotic layer. Occasionally hairs stick out from these nodules. Another disorder caused by the penetration of cow's hairs is a spindle shaped thickening of the entire phalanx, and then there are the granulomas that develop in rhagades that have become irritated by the penetration of cow's hairs. The author describes the histologic aspects of the granulomas caused by cow's hairs, and he suggests that in order to differentiate this type from milkers' nodules, the term milkers' granulation nodules should be applied to them. He considers surgical measures the best treatment for these nodules.

Wiener klinische Wochenschrift, Vienna

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- Alcaligenes Abortus Infection in Human Beings Bacteriology, Serology, Epidemiology and Prophylaxis V. Russ—p. 289
Alcaligenes Abortus Infection in Human Beings and in Animals Present Status and Treatment in Animals J. Schnurer—p. 293
*Pathogenesis of Acute Diseases of Pancreas H. L. Popper—p. 295
Problem of So Called Pleural Shock A. Arnstein and L. Wischno-witzer—p. 300
*Possibility of Influencing Angiotrophoneurotic Symptoms by Short Waves E. Weissenberg—p. 302
Lymphogranulomatosis H. Kahler—p. 304
*Calcium Methenamine Compound in Diseases of Upper Air Passages K. Kofler—p. 307
Diagnosis and Therapy of Pulmonary Abscess and Gangrene M. Weinberger—p. 398

Pathogenesis of Acute Diseases of Pancreas—Popper shows that an inflow of pancreatic secretion into the bile passages can be observed in nearly all acute disorders of the pancreas. If there are disturbances in the discharge at the papilla, a trypsin activation takes place in the biliary passages, and it spreads from the distal intrapancreatic portion of the choledochus to the pancreas. This tallies with the pressure of the secretion in the pancreatic duct and in the bile duct and makes it understandable why in most cases of pancreatic diseases that come up for necropsy the pancreatic duct shows no changes. It harmonizes also with the close relations between gallstone disease and pancreatic disorders, since the disturbances in the discharge are caused generally by papillary concretions or by spastic conditions at Oddi's sphincter, which in turn are the result of disorders of the gallbladder or of the bile passages. The author rejects an etiologic separation between pancreatitis and necrosis of the pancreas. He maintains that they are only different stages and different reactions of the same disease process, and the secretory phase of the pancreas that is, the presence in the cells of larger or smaller amounts of trypsinogen at the onset of the pancreatic disorder, plays an important part in this process. Biliary peritonitis without perforation involves the same pathogenic factors as does acute pancreatitis, however it can develop only if acute pancreatitis does not, for the two diseases exclude each other to a certain extent. The author thinks that his explanations apply to the majority of acute diseases of the pancreas but admits that a relatively small number of acute pancreatic disturbances must be ascribed to other pathogenic factors.

Short Waves in Treatment of Angiotrophoneurotic Symptoms—In employing short waves in treating patients with angiotrophoneurotic symptoms Weissenberg observed that, when large amounts of energy were applied painful conditions often became acutely exacerbated, while the use of small amounts of energy often effected a noticeable and sometimes instantaneous improvement. The various wavelengths between 4 and 17 meters occasionally produced different effects but the differences were not constant. Patients with acroparesthesia and Raynaud's disease felt considerable relief already during

the treatment, while in endarteritis obliterans and in severe forms of gangrene the pains were often greater than before. The effects of the short wave treatment were particularly favorable during the cold months. In a patient with Raynaud's syndrome, short wave treatments of the hands had practically no effect but irradiation of the midbrain produced considerable improvement. The author found that diabetes mellitus is not necessarily a contraindication to short wave therapy. In endarteritis obliterans and in gangrene, only prolonged treatment with large amounts of energy was successful, and occasionally even this method failed. The short waves were successful in a large percentage of cases showing angiospastic disorders such as migraine, angina pectoris, dysmenorrhea, asthmatic conditions and colics. The number of irradiations that were required until results could be seen varied between eight and sixty. The author concludes that short wave therapy of angiotrophoneurotic symptoms is highly promising, is without danger and gives the patient great relief.

Calcium-Methenamine Compound in Influenza—Kofler states that in the course of the last ten years he treated influenza of the upper respiratory tract with a double compound of calcium and methenamine. When the patients applied for treatment, the influenza had generally entered the chronic stage, for most of them had tried self treatment during the acute stage. As a rule the compound of calcium and methenamine was given internally in the form of tablets or of a solution and it was given by injection only in cases in which it caused gastro-intestinal disorders. The daily dose as well as the total dose is determined on the basis of age, sex and general condition. Children are given about half of the amount taken by adults and women, who apparently do not tolerate methenamine as well as men do, are given somewhat smaller daily doses than those given men. During the chronic stage, adults are given from four to six tablets daily, but in the incipient stage, when there is still a prospect of checking the process, twice as much may be given. The preparation may be used also for prophylactic purposes at the time of an influenza epidemic, when about three tablets may be given daily. The author thinks that the calcium content of the compound aids the action of the methenamine and largely prevents the complications that may be produced by the methenamine.

Zeitschrift für klinische Medizin, Berlin

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- *Clinical and Experimental Aspects of Salt Water Therapy of Chronic Uremia G. von Farkas—p. 373
Technic of Measuring Depth of Sleep and of Testing Soporifics H. Regelsberger—p. 395
*Relations of Blood Cholesterol to Carbohydrate Metabolism with Especial Consideration of Diabetes Mellitus H. Grieshaber—p. 405
Occurrence of Latent Hemophilic Hereditary Factor in Clinically Not Hemophilic Sons of a Hemophilic Family Biologic Tests on Coagulation A. Fonio—p. 424
Investigations on Mechanism of Pale Hypertension Disturbances in Metabolism of Muscle in Pale Hypertension H. Bohn and A. Friedsam—p. 433
Biochemical Changes in Organism in Acute Infectious Diseases M. Tesdal—p. 442
Klippel Feil's Syndrome Basilar Impression and Endocrine Disturbances P. Merio and E. Risak—p. 455
Increased Efficacy of Liver Following Treatment with Gastric Juice Liver Action in Pernicious Anemia I. Reimann and I. Fritsch—p. 469
Behavior of Skin Capillaries Under Influence of Carbon Dioxide Gas Baths A. Benatt—p. 485
Oxygen Saturation of Arterial Blood in Polycythemia K. Hitznberger—p. 495
Case of Cerebral Emaciation F. Bodart—p. 499

Salt Water Therapy of Chronic Uremia—Von Farkas says that for this treatment to be successful in chronic uremic renal diseases the kidneys must still be capable of a daily diuresis of 2000 cc., a certain functional capacity of the heart is likewise required. The salt water therapy is particularly promising in cases in which the heart has not been impaired by a prolonged hypertension. Since it is of vital importance that the quantity of urine be kept high for a large part of the day, it is not sufficient to let the patient merely take large amounts of water, either the water intake should be well distributed (about 50 cc. every half hour) or care should be taken that the water is slowly eliminated by the addition of small amounts of sodium chloride. Ringer's solution or physiologic solution of sodium chloride is suitable for the latter purpose. Soups

having the usual salty taste likewise contain approximately 0.5 to 1 per cent of sodium chloride. In cases of uremia in which the sodium chloride content of the blood is abnormally high it is advisable to give pure water, if the sodium chloride content is normal or reduced, salt solutions are advisable. Occasionally the administration of the salt solutions may result in edema, but this does not necessitate an interruption of the treatment, for if ordinary water is given in such cases an excessive diuresis is generally the result and it is often accompanied by the elimination of large amounts of nitrogen. It was also observed that the patients frequently feel better when, by the administration of large amounts of water, edemas are produced and the retained nitrogen substances are thinned out. The salt water therapy does not make superfluous the other therapeutic measures that have proved valuable in uremic conditions. Sugar infusions, calcium injections, venesection, intestinal irrigations and limitation of the nitrogen intake are by no means to be abandoned. The sodium chloride content should be kept under constant control in the course of the treatment. The author illustrates the favorable effects of his treatment with a number of case histories.

Blood Cholesterol in Diabetes Mellitus—Grieshaber found that there exists a hypercholesterolemia in progressive cases of diabetes mellitus showing severe metabolic disturbances. With the improvement of the metabolic condition the hypercholesterolemia improves particularly under the influence of insulin therapy. Modification of the carbohydrate metabolism by the administration of dextrose, insulin or epinephrine causes the total cholesterol content of the blood to show fluctuations of a certain regularity, but insulin and epinephrine do not seem to influence the cholesterol content of the blood directly. In severe cases of diabetes mellitus the degree of hypercholesterolemia seems to furnish a suitable indicator for the metabolic disturbance and for the efficacy of the insulin therapy, but in mild cases the cholesterol content of the blood does not permit conclusions.

Zentralblatt für Chirurgie, Leipzig

61 481 544 (March 3) 1934

Wide Extension at Elbow for Fractures of the Arm H. Boenigkhaus —p 482

*Gastrojejunocolic Fistula After Stomach Resection L. Koch and Belozerkovsky —p 486

*Results of Splenectomy H. Tammann and K. Deutelmöser —p 492

Treatment of Mediastinal Flutter After Thoracoplasty E. Domanig —p 496

Obliteration of Varicose Veins H. Bock —p 498

Apparatus for Reinfusion of Blood H. Henneberg —p 500

New Sewing Apparatus for Stomach and Intestine H. Friedrich —p 504

Gastrojejunocolic Fistula After Stomach Resection—The most frequent complication of the peptic jejunal ulcer according to Koch and Belozerkovsky is penetration into the neighboring viscera, most frequently the mesocolon and the transverse colon. This complication has received but little attention. Kotzoglou collected, up to 1929, 117 cases. The operation indicated for this condition is a formidable one especially when resection of the transverse colon becomes necessary. If left to itself, however, the condition invariably is fatal. The authors report 427 resections of the stomach for ulcer, with a mortality of 63 per cent and a peptic jejunal ulcer in 3. Of the latter, two developed a gastrojejunocolic fistula. They conclude that even an extensive resection does not always exclude the development of a peptic jejunal ulcer. In the first case the total acidity was 62 and free hydrochloric acid 56, and in the second they were 70 and 50, respectively. The mechanical trauma to the jejunum from the use of clamps is an important factor in the genesis of the peptic jejunal ulcer. The authors, therefore, in operating apply a clamp to the stomach but not to the jejunum. The gastroduodenal fistula unless operated on, invariably is fatal.

Results of Splenectomy—Tammann and Deutelmöser report the late results of twenty-seven splenectomies from the surgical clinic of the University of Göttingen. Attention is called to the presence of Jolly bodies in the red cells after a splenectomy in otherwise healthy persons. The erythrocyte count and the hemoglobin remained in their late cases well within the normal limits. There was no increase in the resis-

tance of the erythrocytes to salt solution. The platelet count and the coagulation time were normal. Disregarding traumatic injuries to the spleen, in which splenectomy constitutes a vital indication, the best results, approximating a permanent cure were obtained in hemolytic icterus and, next, in Gaucher's disease and in essential thrombopenia in which the main clinical symptoms were absent years after the splenectomy. The same can be said of splenic tumors resulting from hepatosplenic disease (Banti). The question of splenectomy for splenic tumors of leukemic origin presents itself only in exceptional cases while its removal in pernicious anemia has been generally abandoned.

61 609 672 (March 17) 1934

*Results with Operative Treatment of Pylorospasm in Nurslings J. Ochler —p 611

Use of Pencil as Substitute for Catheter in Urinary Retention K. Kamnicker —p 613

Resection of Vas Deferens H. T. O. Haberland —p 616

Perforation of Small Intestine in Tuberculosis of Mesenteric Lymph Nodes K. Ebhardt —p 618

Abdominal Pregnancy P. Esau —p 620

Disappearance of Tumor Metastases in Uremia I. Philipowicz —p 626

Osteosynthesis of Fracture of Neck of Femur Garcia Diaz —p 627

Joint Damage Resulting from Chronic Vibration P. Rostock —p 630

Operative Treatment of Pylorospasm in Nurslings—Ochler reports forty-two cases of pylorospasm in nurslings on whom operation was performed in the last fifteen years. The patients ranged in age from 26 days to 5 months. The average age was 2 months. Four fifths were boys and one fifth girls. There were six fatalities, a mortality of 14 per cent. Three of the patients were in a much debilitated state when operated on. Of the thirty-six surviving patients, thirty-four were followed up. The immediate result of the operation was always a prompt cessation of vomiting. The late results were excellent so far as gastric function was concerned. The general health of these children was satisfactory and there were no developmental disturbances of any kind. The author believes that the results of the operation may be further improved by attention to complete division of the entire involved circular muscular tumor and by what is even more important, the timely operation.

Uppsala Lakareförenings Förhandlingar, Uppsala

39 151 306 (Feb 28) 1934

Changes in Eyes in Juvenile Amaurotic Idiocy B. Rosengren —p 151

Relations of Fixation of Formaldehyde Together with Sublimite Solution and Its Stabilization for Longer Preservation A. Ingelman Sundberg —p 181

*Unexpected and Sudden Death in Childhood in Clinical Light S. A. Siwe —p 203

Determination of Threshold of Taste with Nipacombin and Sodium Benzoate in Order to Establish Comparatively the Fitness of These Substances as Agents for Preservation of Raw Foods T. Arneus —p 257

Course and Certain Consequences of Changes in Volume of Forearm on Application of Pressures of Different Degrees and Durations on Upper Arm B. O. Carlberg —p 261

Investigation on Keeping Qualities of Vitamin D Obtained by Prof. A. Windaus by Ultraviolet Irradiation of Viosterol Gosta Englund —p 293

Unexpected and Sudden Death in Childhood—The material reported by Siwe comprises 212 cases of sudden death, exclusive of deaths due to accidents or injuries connected with delivery, from 1916 to 1932, in children up to 15 years of age, 143 occurring during the first four months of life. Neither sex predominated. The seasonal incidence showed about the same course as the disturbances of the respiratory organs, and the majority of positive pathologic results were established in these organs. He emphasized that such disorders do not always give local symptoms and are consequently easily overlooked. A simple cold or slight intestinal disturbance may lead to vomiting with aspiration, quickly causing death. During the first three months of life there is greater possibility of disease of the brain through most varied infections and intoxications. Even in breast-fed infants, inanition may occur and doubtlessly contribute to death. Enlargement of the thymus could not be established as the cause of death. In cases presenting such enlargement the symptoms before death and the results after death were the same as in children with a thymus of normal weight. In rare cases, however, the author says considerable enlargement of the thymus may lead to symptom from the respiratory passages. Thirty cases are reported.

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CONVULSIONS IN CHILDHOOD

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In May 1932 I¹ reported the results of a study of convulsions in children. A new classification was presented with the hope of offering some assistance in the understanding and in the diagnosis of the convulsive states. At the suggestion of Lennox, a further study was made of the case histories reported particularly in regard to the age at the time of the first convulsion. The information obtained together with the data on eighty-one additional cases necessitates a revision of my classification.

This revised classification is presented on the basis of 500 cases in children who were brought to the hospital or to the office in the past nine and one-half years because of convulsive seizures. As stated in the previous report only those cases are included in which a complete study was made. This includes a careful physical examination usually a period of observation, a neurologic examination a complete blood count, such blood chemistry (determinations of the calcium phosphorus, nitrogen, sugar and dextrose tolerance, and the like) as is deemed necessary, urinalyses examinations of spinal fluid, encephalograms when indicated examinations of the fundi roentgen examinations, stool examinations and the like. Many cases were studied for months before a diagnosis was made. In some cases (thirty-two) I was unable to make a definite diagnosis after I had exhausted the facilities at my disposal. These cases are listed as "cause unknown." In thirty-four cases the age at the time of the first convulsion could not be obtained. These are listed in the entire series (table 1) and again separately in table 2.

Under "cause unknown" are possibly included some unrecognized cases due to sinus thrombosis, allergic reactions, hypoglycemia and hyperinsulinism. The absence of these diagnoses does not indicate errors of omission. No such diagnosis could be established in the thirty-two cases in which the condition was in doubt.

Sinus thrombosis was a likely cause in some of the cases associated with or following gastro-enteritis but it was not possible to be definite. Byers and Hass² made a study of fifty cases of thrombosis of the intracranial venous sinuses in infancy and childhood. The infants with primary thrombosis did not present a typical clinical picture but were usually diagnosed as

having an acute nutritional disturbance. The physical examination was often negative except for severe dehydration. Convulsions were common in the second week and were usually sudden in onset and jacksonian in type. The diagnosis was seldom made ante mortem.

It is probable that some allergic conditions may cause edema of the brain and thus produce a convulsion.³ I was not able to recognize the presence of such a condition in any case.

Cases of convulsions due to hypoglycemia and hyperinsulinism have been cited in the literature.⁴ Whenever the history was at all suggestive in my cases, i. e., when the seizures occurred early in the morning, particularly after a twelve-hour fast or longer, or when they occurred consistently before or at meals, special examinations such as blood sugar determinations and dextrose tolerance tests were made. Several children have been referred to me with the diagnosis in point but the observations have not been conclusive. The following is an illustrative case.

CASE 1—A girl, aged 9 years, complained of short spells of unconsciousness (petit mal) occurring about once a month for the past one and one-half years. These seizures have been increasing in frequency and severity, until three weeks before admission there was a grand mal attack. The attacks are often (not always) associated with exhaustion, they occur more often before meals. Following the attacks there is fatigue and usually a frontal headache. The father and the father's father, mother and sister have or have had migraine. The patient's sister, aged 7 years, also has had migraine for one year and often has attacks of headache and vomiting following her sister's attack of petit mal.

Physical examination by a number of pediatricians, an endocrinologist several internists a neurologist and an ophthalmologist revealed no abnormalities of any significance. A proctologist was called in because of some blood in the stool, and a papilloma was removed from the rectum.

The child weighed 65 pounds (30 Kg) and was 52¼ inches (131.6 cm) in height. Her nutrition was good, her mentality was normal and her progress in school was normal.

Laboratory examinations showed urinalyses, normal, blood counts, normal. The basal metabolic rates were within normal limits. Roentgenograms of the skull were negative.

May 27 1933 a dextrose tolerance test was made elsewhere with the following report:

8 30 a m fasting, 53.3 mg
8 50 a m dextrose 50 Gm
9 35 a m blood sugar 57.8 mg
10 20 a m, blood sugar 63.2 mg
11 05 a m blood sugar, 67.9 mg
11 50 a m. blood sugar, 48.5 mg

From the same clinic it was reported that 'an allergic review showed a sensitivity to various foods and following their removal there has been no improvement.'

From the Milwaukee Children's Hospital and the Department of Pediatrics Marquette University Medical School.

¹ Peterman M. G. Convulsions in Childhood. J. A. M. A. 99:546 (Aug. 13) 1932.

² Byers R. K. and Hass G. M. Thrombosis of the Dural Venous Sinuses in Infancy and in Childhood. Am. J. Dis. Child. 45:1161 (June) 1933.

³ Rowe A. H. Food Allergy. Philadelphia: Lea & Febiger 1931. pp. 257, 291.

⁴ Harris Seale. Epilepsy and Narcolepsy Associated with Hyperinsulinism. J. A. M. A. 100:321 (Feb. 4) 1933. Josephs H. W. Fasting as a Cause of Convulsions. Am. J. Dis. Child. 31:169 (Feb.) 1926.

Examinations in my service at the Milwaukee Children's Hospital, June 12, showed skin tests negative to all food extracts

June 14, roentgen examination of the stomach and small bowel (Columbia Hospital, Dr S A Morton) gave the following results. The esophagus was normal. The stomach was normal in size and position. Peristalsis was normal. The duodenal cap filled well and there was no radiographic evi-

June 22, the spinal fluid was clear and under no increased pressure. It contained 2 cells, no globulin, and 53 mg of sugar. A test for colloidal gold was negative. A blood sugar count taken at the same time was 113 mg (capillary blood—Gibson method).

June 24, blood taken immediately after a seizure showed a sugar value of 74 mg (micro Gibson method on capillary blood).

July 4 blood taken immediately after a seizure showed a sugar value of 66 mg (macro-Folin-Wu).

June 21, the child was put on a fasting diet.

July 3, she was put on the ketogenic diet.

July 6, she was given 10 units of insulin at 8:45 a.m. after a breakfast at 7:30 a.m. There was no reaction. At 4:30

TABLE 1—*Entire Series*

Diagnosis	Number	Per Cent
Epilepsy (idiopathic)	16	33.0
Acute infection	11	22.8
Cerebral birth injury or residue	7	14.4
Spasmophilia or tetany	6	13.6
Miscellaneous	4	8.8
Cause unknown	2	6.4
Total	56	100.0

TABLE 2—*Age of Onset Unknown*

Diagnosis	Number	Age When Seen
Epilepsy	12	2 yrs, 3 yrs, 4 yrs, 4 yrs 6 yrs, 6 yrs, 6½ yrs, 7½ yrs 8 yrs, 10½ yrs, 12 yrs, 14½ yrs
Acute infection	6	3 mos, 6 mos, 8 mos, 9 mos 2 yrs, 7 yrs
Unknown	6	7½ yrs, 8 yrs, 9 yrs, 9 yrs 9 yrs, 12 yrs
Tetany	3	6 mos, 1 yr, 1½ mos
Cerebral birth injury residue	2	1 yr, 7 mos, 7 yrs
Spasmophilia	1	4 mos
Tetanus	1	3 yrs
Skull fracture	1	2½ yrs
Pollencephalitis (Strümpell Marie)	1	6 yrs
Jacksonian epilepsy	1	10 yrs
Total	34	(68 per cent of the total cases)

TABLE 3—*Dextrose Tolerance Test June 12*

Time	Time After Ingestion of Dextrose	Blood Sugar Mg per 100 Cc		Urine	
		Gibson Micro capillary	Folin Macro	Cc	Sugar
Before		102.0	90.9	120	0
9:15	30 Gm dextrose				
9:30	15 minutes	141.5		83	0
9:45	30 minutes	222.2	143.8	110	0
10:00	45 minutes	Tube broken		110	0
10:15	1 hour	140.1		20	0
10:30	1 hr 15 min	135.1		60	0
10:45	1 hr 30 min	123.4	90.0	110	0
11:15	2 hours	78.5		10	0

dence of lesion in the stomach or duodenal bulb. The duodenum was well outlined under the fluoroscope and by plates, and at no time was anything seen suggesting any pathologic condition in the region of the duodenum. The stomach emptied normally, as a plate taken after one and one-half hours showed that the stomach was practically empty and the barium was distributed throughout the small bowel as far as the cecum. A plate taken after five hours showed all the barium in the colon.

There was no roentgenographic evidence of lesion in the stomach or small bowel. The shadow of the kidney on the right side was larger than that on the left and seemed a little larger than was usually seen in a child of this age.

The results of dextrose tolerance tests are given in tables 3, 4 and 5.

June 15, the blood calcium was 14 mg per hundred cubic centimeter, the phosphorus 51 mg.

June 19 the blood calcium was 13.3 mg the phosphorus, 45 mg.

TABLE 4—*Dextrose Tolerance Test June 15*

Time	Time After Ingestion of Dextrose	Blood Sugar Mg per 100 Cc		Urine	
		Gibson Micro capillary	Folin Macro	Cc	Sugar
Before		127.1	99.0		0
8:40	60 Gm dextrose				
8:55	15 minutes	194.8			0
9:10	30 minutes	174.4	118.2		0
9:25	45 minutes	198.6			0
9:40	1 hour	167.0	106.7		0
10:10	1 hr 30 min	198.6	118.2		Specimen not obtained
10:40	2 hours	180.7	98.0		0
11:10	2 hr 30 min	96.7			0

* There was a proctoscopic examination between 9:40 and 10:10.

TABLE 5—*Dextrose Tolerance Test, June 23**

Time	Time After Ingestion of Dextrose	Blood Sugar Mg per 100 Cc		Urine		
		Gibson Micro capillary	Folin Macro	Time	Sugar	Acetone Diacetic
Before		61.4	46.2	24 hr specimen	0	+
8:30	60 Gm dextrose					
8:45	15 minutes	110.2		8:40	0	+
9:00	30 minutes	162.1	150.0	9:05	0	+
9:15	45 minutes	294.1				
9:30	1 hour	306.1	199.0	9:40	0	+
10:00	1 hr 30 min	280.3	236.6	10:00	0	+
10:30	2 hours	315.7	286.4	10:45	h tr	+
11:00	2 hr 30 min	294.1				
11:30	3 hours	300.0	291.9			
12:30	4 hours	333.3		12:30	Specimen lost	
1:45	5 hr 15 min	243.9				
2:30	6 hours	123.9				
3:30	7 hours	64.7		3:15	0	0

* The patient has been on fast since June 21. The results are not unusual in fast.

TABLE 6—*Treatment*

1. Protect against injury
2. Chloroform anesthesia
- Magnesium sulphate
 - 5 to 20 cc of 25% sterile solution intramuscularly
 - or
 - 5 to 10 cc of 20 to 10% sterile solution intravenously slowly
 - or
 - 60 to 180 cc of 50 to 25% solution by mouth or rectum repeated if necessary
4. Spinal drainage if no brain tumor
5. Phenobarbital sodium subcutaneously
6. Sodium amytal intravenously or intramuscularly
7. Chloral by rectum
8. Treat basic cause

p.m. she was given 20 units of insulin without a seizure. At 5 p.m. the child had her evening meal and at 5:20 there was a reaction of nervousness, tremor and weakness but no seizure.

The diagnosis that I made in this case was idiopathic epilepsy based on the family history, the character of

the seizures and the temporary exclusion of an organic lesion

It is not my contention that cerebral sinus thrombosis, allergic reactions, hypoglycemia and hyperinsulinism do not cause convulsions in children. I wish merely to state that I have been unable to establish such a diagnosis in my series of cases.

TABLE 7—New-Born (to 1 Month) (Age of Onset)

Diagnosis	Number	Per Cent
Cerebral birth injury	18	51.7
Acute infection	4	12.3
Epilepsy	3	9.0
Hydrocephalus	2	6.0
Spasmophilia	2	6.0
Meningovascular syphilis congenital	1	3.0
Gastroenteritis	1	3.0
Meningitis streptococcal	1	3.0
Unknown	1	3.0
Total (66 per cent of the total cases)	33	100.0

Criticism has been made that I have placed the entire blame of seizures on a single cause.⁶ This is a misunderstanding. In a previous communication I stated "The infant and the child are subject to certain diseases, which in themselves are the exciting factors or indirect causes of convulsions. When the period of incidence of these diseases is passed, and thus the exciting causes are removed, the incidence of convulsions is greatly lowered."¹

It is obvious that a convulsion is only a symptom, the final explosion of a complex reaction, the trigger mechanism of which may be a number of factors. However, the same stimulus applied to a group of children will elicit no consequential reaction in the normal subject but a characteristic type of convulsion in the patient with tetanus, another type in the epileptic, and still another in the infant with spasmophilia. I wish simply to point out that there are certain disease entities which create in the patient a susceptibility to the convulsive state. The banging of a door may set off the seizure, but when the tetanus infection is gone, when the spasmophilic patient's blood calcium and phosphorus are normal, the same stimulus will not produce a convulsion. Lennox has nicely detailed the multiple causes of a seizure, which I believe applies to most con-

TABLE 8—From 1 to 6 Months (Age of Onset)

Diagnosis	Number	Per Cent
Acute infection	20	29.4
Cerebral birth injury	16	23.5
Spasmophilia	11	16.1
Epilepsy	6	7.4
Gastroenteritis	3	4.6
Meningitis, meningococcal	1	1.5
Unknown	12	17.6
Total (13.6 per cent of the total cases)	65	100.0

vulsive disorders.⁵ His report of psychic or emotional causes of a convulsive disorder gives me courage to report the following case.

CASE 2—A girl, aged 4 years, was admitted, May 27, 1929, shortly after she had had her right forearm and hand caught in an electrical clothes wringer. There was an abrasion of the skin on the forearm, edema and marks of contusion but no fracture. The injury was treated and the child sent home May 28, the child had a convulsive seizure which began with

pain in the right forearm, the face was "drawn to one side," the eyes rolled, and the right arm twitched. Two and one-half weeks later there was a second, similar seizure. In July there were two and in August three seizures. September 1 there was another seizure, which lasted five minutes, after which the child was brought into the hospital. Examination revealed scars on the right elbow. The urine and blood count were normal. The Mantoux tuberculin test (with 0.001 mg of old tuberculin) was negative. The Wassermann and microprecipitation tests were negative on blood serum and spinal fluid. The spinal fluid was clear and under no increased pressure, globulin was normal, the sugar value was 63 mg and culture was negative. The neurologist found nothing abnormal. A lateral roentgenogram of the skull showed no abnormalities.

The family history in this case was not positive. She was a full term child, of the second pregnancy, weighing 9 pounds (4,082 Gm), born after a long labor, with forceps. She sat at 5 months, talked at 11 months and walked at 12 months. She had had a mild case of measles with no complications or sequelae.

My diagnosis in this case was jacksonian convulsions due to brain injury (?). The psychic trauma seems responsible for the injury (?), which might be called by Krasnogorski a "functional ulcer of the brain."⁶



Opening in left parietal region of skull in case 3

The following case will be of medicolegal as well as of scientific interest.

CASE 3—A girl, aged 2½ years, admitted, June 25, 1927, had fallen from a second story window onto a sidewalk, June 15. She was unconscious when picked up and was taken to the Emergency Hospital. Examination there revealed a hematoma of the left parietal region and bleeding from the nose and mouth. Three hours after admission, spinal puncture yielded a bloody fluid under great pressure. Convulsions of the right side of the body developed. Operation revealed a linear fracture in the left parietal region with gaping of the edges. A fragment of the skull 1 inch (2.5 cm) in diameter was separated and removed. After operation she regained consciousness and showed a marked improvement. Six hours later she had a sharp rise in temperature and a return of convulsions on the right side. June 25, she was transferred to the Milwaukee Children's Hospital. July 1 there was an occasional tonic spasm and partial paralysis of the right arm and leg and a partial central paralysis of the right side of the face. The right pupil was larger than the left. There was a bilateral ankle clonus and a positive Babinski reflex on the right. The fundi were normal. The urine and blood count were normal and the Wassermann reaction was negative.

April 5, 1928, the child was readmitted for an acute infection of the upper respiratory tract. At that time there was

⁵ Lennox, W. G. New England J. Med. 209:386 (Aug. 24) 1933.

⁶ Krasnogorski, N. I. Psychology and Psychopathology in Childhood as a Branch of Pediatric Investigation. Acta Paediatr. 11:499 1932.

noted a bulging, pulsating hernia through the opening in the left parietal region of the skull, as shown in the accompanying illustration. There had been no seizures and there was no paralysis. Dec 7, 1931, the child was brought back with the complaint that for two months she had had spells when the right leg would give way, causing her to fall. In these attacks the right arm twitched and the eyes and mouth were drawn to the right. She was unable to talk during the seizure and there was loss of sphincter control. After the attack she would sleep for half an hour. These attacks occurred three

TABLE 9—From 6 to 36 Months (Age of Onset)

Diagnosis	Number	Per Cent
Acute infection	59	29.3
Spasmophilia	4	2.4
Epilepsy (Idiopathic)	39	19.4
Cerebral birth injury	20	12.4
Meningitis (meningococci 3, Influenzal 3, streptococci 2, tuberculous 1, staphylococci 1)	10	5.0
Encephalitis residue	3	1.5
Hydrocephalus	2	1.0
Brain injury (traumatic)	2	1.0
Intracranial vascular lesion	2	1.0
Poliomyelitis	2	1.0
Gastro enteritis	1	0.5
Congenital syphilis	1	0.5
Pertussis (sequel (Intracranial hemorrhage))	1	0.5
Encephalitis chronic	1	0.5
Unknown	8	4.0
Total (40.2 per cent of the total cases)	201	100.0

TABLE 10—From 3 to 10 Years (Age of Onset)

Diagnosis	Number	Per Cent
Epilepsy (Idiopathic)	77	59.0
Acute infection	17	13.0
Cerebral birth injury	14	10.0
Tetanus	4	3.0
Jacksonian epilepsy	3	2.0
Congenital brain defect	2	1.5
Brain tumor	2	1.5
Encephalitis residue	2	1.5
Residue brain injury (traumatic)	2	1.5
Hydrocephalus congenital	1	0.8
Meningitis streptococci	1	0.8
Congenital syphilis	1	0.8
Gastro enteritis	1	0.8
Tertian malaria	1	0.8
Unknown	4	3.0
Total (26.4 per cent of the total cases)	132	100.0

TABLE 11—From 10 to 15 Years (Age of Onset)

Diagnosis	Number	Per Cent
Epilepsy (Idiopathic)	26	81.2
Tetanus	2	6.3
Congenital malformation of brain	2	6.3
Encephalitis residue	1	3.1
Cerebral birth injury residue	1	3.1
Total (6.4 per cent of the total cases)	32	100.0

or four times a week without an aura. Occasionally there was sudden projectile vomiting half an hour after the seizure. Examination revealed the cerebral hernia previously described. The gait was normal. There was marked exaggeration of the patellar reflexes and some ataxia of the right arm in the finger to nose test. Blood pressure was 110 systolic, 74 diastolic. The spinal fluid was normal.

Thus there was an interval of four and one-third years between an injury to the brain and the resultant jacksonian convulsions. While I have observed intervals of three years between a difficult birth and the resultant convulsions, case 3 presents the longest interval between the injury and the resultant convulsive seizures in this series. In all three of the foregoing cases a multiplicity of factors may have contributed to

set off the mechanism of the convulsive seizure, but the pathologic basis that was responsible for the liability to convulsions is clear.

Finally, there are certain families in which the incidence of convulsions in childhood is particularly high. Case 4 is one of such a group.

CASE 4—A boy, aged $3\frac{1}{2}$ years, of the second pregnancy, had a normal birth after five hours of labor. There had been normal development. At 17 months the patient had one seizure with tonsillitis, at 20 months there was a recurrence of tonsillitis but no seizure. At 21 months there was severe grand mal when he fell to the floor, he became cyanotic and frothed at the mouth and subsequently had a deep sleep. A third convulsion occurred two weeks later and a fourth after eight weeks. There was a free interval of seven months, after which four convulsions developed at intervals of from two to three weeks. Urinalysis was negative and blood counts were normal. The blood calcium was 12 mg and phosphorus 7.2 mg. Blood sugar after a twelve hour fast was 93 mg. The fundi were normal. Roentgenograms of the head and chest were negative. Skin tests were negative to all common foods.

The family history is important. The child's mother's third cousin was diagnosed as epileptic. The child's father had nine convulsions in early childhood, but none since. His father's mother's family included fourteen members who had had convulsive seizures in early childhood, one cousin had had about 100 seizures before she was 8 years old, at which time they stopped. She is now 33 and has a child who had convulsions in early childhood. One of the father's brothers had migraine.

In this case the heredity provides an excellent basis for the diagnosis of epilepsy. However it is questionable whether the same diagnosis would apply to all the members subject to convulsions. It is only when the convulsions recur and after various unrelated (?) stimuli and when all organic lesions are excluded that the diagnosis of idiopathic epilepsy may be made.

The treatment of convulsions remains the same as reported¹ (table 6).

SUMMARY

A revised classification of convulsions in 500 children demonstrates the basic diagnosis as epilepsy in 33 per cent of the cases, onset of acute infection in 22.8 per cent, cerebral birth injury or residue in 15.4 per cent, spasmophilia in 13.6 per cent, miscellaneous causes in 8.8 per cent, and cause unknown in 6.4 per cent (table 1). There was no recognized case of cerebral sinus thrombosis, allergic basis, hypoglycemia or hyperinsulinism in this series. Six and six-tenths per cent of the convulsions occurred in the first month of life (table 7), 13.6 per cent in the second five months of life (table 8), 40.2 per cent, the largest number, between 6 and 36 months of age (table 9), 26.4 per cent between 3 and 10 years of age (table 10), and 6.4 per cent between 10 and 15 years of age (table 11). In 6.8 per cent of the cases the age of the child at the time of the first convulsion could not be obtained (table 2).

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Cause and Effect—It may seem to be beyond doubt that every effect must have a cause, and it is upon this assumption that we seek to cure a disease by the tracing of it to its cause, whether in the field of physical medicine or in that of the disorders of mind. It is suggested, however, that the hypothesis of cause and effect is not always valid in the way in which it is used and that in spite of its undoubted usefulness to scientific progress in the past it has by our wrong use of it involved us in a series of corrective fallacies also doing duty as hypotheses, which have obscured the true progress both of the science and the art of medicine.—Howe E. G. The Causal Fallacy, *Lancet* 1 611 (March 24) 1934.

ACUTE POSTOPERATIVE OBSTRUCTION
OF THE LOWER SMALL
INTESTINECARL B. SCHUTZ, M.D.
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In the wide publicity that has been accorded the subject of intestinal obstruction, little attempt has been made to separate high obstruction from low obstruction. In the average discussion of either type both the symptoms and the treatment are based on a summation of observations made on the two types of obstruction. This has, I think, resulted in failure to appreciate several very important peculiarities in the symptoms and the general clinical picture of low obstruction. Indeed, I believe it largely accounts for the very unsatisfactory results that follow the occurrence of low obstruction as a postoperative complication.

If reliable statistics were obtainable I believe it would be discovered that the mortality of low obstruction is greater than that of high obstruction. Statistics on the subject of low obstruction are not accurate because the final diagnoses on hospital charts, from which data are obtained, are not confirmed by visual evidence (operation or necropsy) in a sufficiently large percentage to justify confidence in statistics so compiled. This statement is based on the fact that at St. Luke's Hospital, where this study was conducted it was only after the percentage of necropsies had reached the high figure of 94.2 (the second largest in the United States) that any suspicion of the frequency of low obstruction or the inaccuracy of its pre-mortem diagnosis was entertained. There is little doubt that the same discovery awaits other investigators whose studies are based on necropsy examinations of practically every case diagnosed as "peritonitis," "paralytic ileus," or the like.

The persistent appearance of these cases of low obstruction at necropsy prompted me to study a series of twenty-five in an attempt to discover some explanation for the failure to diagnose and to treat successfully this type of obstruction. I regarded it important to confine the study to those cases which had been examined at necropsy, because by such examination I could positively exclude the possibility of some condition other than obstruction as being a factor in the production of symptoms. Four of the patients in this series had been operated on to relieve the obstruction, five had had enterostomies performed, and ten had been treated expectantly by either constant or intermittent decompression with the nasal or stomach tube. The remaining six cases had been wrongly diagnosed and treated as peritonitis or paralytic ileus. Of most significance however, is the fact that, with the exception of two in which enterostomies had been performed, none of the cases had been diagnosed or treated early enough to hope for success. The results of the study that seemed important in the diagnosis of the condition are summarized in the accompanying table and will be discussed in some detail.

ANALYSIS OF LOW OBSTRUCTION

In considering the problems of the diagnosis and the treatment of low obstruction it is of value, I think, to divide low obstruction into two stages. Justification for such a division becomes obvious if it is recognized that low obstruction is a disease that follows a rather definite progression from a primary mechanical inter-

ference with the normal flow of intestinal fluid to a secondary series of pathologic, nonmechanical changes occurring in the walls of the obstructed loops which apparently produce and are followed by a fatal toxemia.

The normal intestinal tract may be compared to an elastic tube in which peristaltic movements maintain a constant flow of fluid in a caudal direction. When simple obstruction stops the flow of this fluid the only change that occurs is a mechanical damming back of the fluid above the point of obstruction. Since there is no interference with the production of the fluid in the obstructed loops, the volume of the fluid steadily increases above the obstruction. This increased volume mechanically dilates the intestinal walls and as a result sets up the mechanism of hyperperistalsis so characteristic of this stage of obstruction. The patient at this time complains of pain, distention, and sometimes regurgitation of greenish brown, practically odorless fluid but is otherwise in as good general condition as before the obstruction occurred. The innocuous character of the changes is further shown by the fact that there is no appreciable change in temperature, pulse, leukocyte count, urine or blood chemistry. On examination of the obstructed loops one notes that they are dilated and contain an excess of fluid but retain much of their normal firmness and elasticity and that the walls are translucent and of about normal color.

Within a variable time, however, the entire clinical picture changes. The patient, whose general condition such a short time before was comparatively good, shows unmistakable evidence of toxemia, characterized by listlessness, muttering delirium and fibrillary twitchings of the muscles of the face and the extremities. The abdominal distention increases and is associated with an almost constant regurgitation of brownish, foul smelling fluid. In contrast to the practically normal laboratory observations in the earlier period the temperature, pulse and leukocytes rise, the urine frequently contains albumin, and the blood chlorides rapidly decrease.

Examination of the obstructed loops at this time shows them to be greatly dilated and to have lost their previous elasticity and firmness. Indeed, they are so friable that frequently the slightest trauma will cause their rupture. From the stomach to the obstruction they have an opaque grayish or purplish appearance quite different from that observed in the earlier period.

In analyzing these two stages, or periods, of low obstruction it seems clear that in the early period the intestinal changes are essentially mechanical. All clinical symptoms as well as all pathologic manifestations seem due only to the fact that an obstruction to the normal, constant flow of intestinal fluid has occurred. With the exception of the hyperperistalsis, the intestinal changes could be duplicated by tying off a thin elastic tube through which a constant stream of fluid was caused to flow. Evidence of the innocuous nature of the changes is furnished by the good general condition of the patient. In the latter period, however, it seems equally obvious that the secondary changes in the obstructed loops have become of primary significance to the organism. Not only does the intestinal fluid change to a foul smelling, brownish substance, but the walls of the obstructed loops have a gross appearance suggestive of advancing degeneration. Indeed, from their color, their extreme friability and their opacity one gets the impression of an incipient necrosis. Paralleling the latter changes there develops a marked and progressive toxemia.

STAGES OF LOW OBSTRUCTION

Based on this conception of low obstruction, it would seem logical to divide the condition into two definite stages and to designate them as (1) the stage of obstruction, which begins with the occurrence of the obstruction, includes only mechanical changes, and ends with the supervention of the degenerative cellular changes in the obstructed loops and the appearance of toxæmia, and (2) the stage of degeneration which immediately follows the stage of obstruction, includes mainly cellular, nonmechanical changes and continues until the concomitant toxæmia causes death of the patient. Though the transition from the stage of obstruction to the stage of degeneration is often insidious, each stage is sufficiently characteristic from both a clinical and a gross pathologic standpoint to be readily differentiated. Indeed, I believe that division of low

obstruction into these two stages forms the only basis on which one can properly evaluate the symptoms of the disease and rationally institute its treatment.

ous to assume that the incision for operative surgery should be made, as is stated in many textbooks, at the point of maximum pain. In all the cases studied the obstruction was in the terminal ileum and yet, as shown in the table, the pain was almost as often in the upper part of the abdomen as in the lower part.

A most important characteristic of the pain of low obstruction is its persistence and its severity. In every one of the twenty-five cases reviewed it was necessary to give repeated doses of morphine to relieve the pain of which the patient persistently complained. In some instances this almost constant use of morphine was necessary for as long as five or six days. So constant was this observation that, even in a small series of cases, the conclusion seems justified that postoperative abdominal pain that is so persistent and severe as to require the repeated use of morphine should bring to

Summary of Results

Type of Operation	Pain					Distention				Flatus		Stools		Vomiting		Day Noted Before Death	Duration of Obstruction from Be- ginning of Symptoms to Death								
	Location		Type			Uneven				Pres- ent	Ab- sent	Pres- ent	Ab- sent	Pres- ent	Ab- sent										
	High	Low	Gen- eral	Cramp- ing	Con- stant	High	Low	Lateral	Even																
1 Appendectomy			+	+					+	+		+		+		3	8								
2 Colostomy		+		+						+		+		+		4	11								
3 Hysterectomy		+		+						+		+		+		2	1								
4 Hysterectomy	+									+		+		+		18	2								
5 Salpingectomy		+			+						+		+	+		1	3								
6 Inguinal hernia	+				+	+	+			+			+		+	4	5								
7 Salpingectomy	+			+			+			+		+		+		10	2								
8 Appendectomy		+		+		+				+		+		+		1	5								
9 Hysterectomy	+				+			+		+			+	+		2	11								
10 Appendectomy		+		+					+	+		+		+		5	10								
11 Colostomy	+			+					+	+		+		+		6	10								
12 Appendectomy		+		+	+	+	+			+		+		+		2	8								
13 Appendectomy	+			+		+		+		+		+		+		2	3								
14 Salpingectomy			+	+			+			+		+	+		+	2	8								
15 Inguinal hernia		+		+		+					+	+		+		2	2								
16 Appendectomy		+		+		+				+		+	+	+		5	19								
17 Hysterectomy		+		+		+				+		+		+		5	6								
18 Appendectomy	+			+			+			+		+			+		4								
19 Colostomy	+				+				+	+			+	+		3	4								
20 Appendectomy		+		+			+			+		+	+	+			8								
21 Appendectomy	+			+			+			+		+		+	+	2	6								
22 Appendectomy	+			+					+	+		+	+	+		1	9								
23 Hysterectomy		+		+				+		+		+		+			6								
24 Salpingectomy		+		+		+				+		+			+	2	5								
25 Appendectomy		+		+		+				+		+		+											
Totals	10	13	2	19	6	7	9	5	4	23	2	17	8	19	6	42	9.5								
Averages																									

obstruction into these two stages forms the only basis on which one can properly evaluate the symptoms of the disease and rationally institute its treatment.

SYMPTOMS OF STAGE OF OBSTRUCTION

As shown in the accompanying table, there are two symptoms that are always present in the stage of obstruction. These are pain and abdominal distention. In addition to these two, but not occurring in all cases, is vomiting. Several observations made on each of these will be discussed in some detail.

Pain—The pain of low obstruction apparently begins with the occurrence of the obstruction. It is almost always of the familiar cramplike variety but occasionally according to the interpretation of six patients in this series, may be constant from the beginning. What has appeared to be a significant observation in this series is that the pain of obstruction has a tendency to become established in one portion of the abdomen. Whatever the explanation of this may be, it is important that its position bears not the slightest relation to the position of the obstruction. It is therefore errone-

mind the possibility of obstruction, despite the absence of other symptoms of the disease.

Hyperperistalsis—Hyperperistalsis accompanies the pain, of course, in the early stages of obstruction. Sometimes it is visible and almost always it is audible if investigated early enough. Once the stage of obstruction has passed, the typical rushing peristalsis disappears and is replaced by the "tinkling" type so frequently associated with peritonitis.

Uneven Distention—Abdominal distention always accompanies low obstruction. Indeed, it is the only symptom that is always present. Furthermore, it has one characteristic that is almost pathognomonic, viz., its unevenness. There are many who will doubt this and perhaps some who have never seen it. It is, nevertheless, present in practically every case of low obstruction and is without doubt the most valuable single clinical sign that the disease presents.

In the average case the unevenness of the distention is missed either because the attending surgeon does not take the precaution to remove the bandages from the

abdomen and look for the inequality of the distention in a strong cross light or because he takes this precaution too late. It may last a few hours or for a day or more but it must be emphasized that it is essentially an early symptom confined entirely to the stage of obstruction. Once it disappears it never returns. I am not aware of any other type of distention that so consistently bears this characteristic.

Vomiting—The third most frequent symptom of the stage of obstruction is vomiting. In the twenty-five cases studied, vomiting occurred in nineteen at some time during the course of the disease. In the remaining six cases, vomiting did not occur at any time. There is no particular significance in the fact that approximately 75 per cent of the patients vomited—that is well known—but it is significant that 25 per cent of the patients did not vomit, in fact, did not even have an excess of fluid in the stomach at any time during the course of the disease. In high obstruction, vomiting is almost always if not always present early in the disease and most certainly occurs at some stage. The fact that it may be absent throughout the entire course of low obstruction shows the fallacy of basing the diagnosis of low obstruction on observations made on high obstruction. Of particular significance in this regard is the fact that, with an average duration of the obstruction of 9.5 days, vomiting did not occur until an average of 4.2 days before the death of the patient. Thus it is seen that even in those cases in which vomiting did occur it often either appeared very late in the stage of obstruction or not until the stage of degeneration had probably become established. While conclusions based on statistics obtained from such a small series of cases may be misleading the implication loses none of its importance in emphasizing the danger of using the symptom of vomiting as a criterion for the diagnosis of low obstruction.

In textbooks, one of the most frequent symptoms given is "obstipation with no passage of gas by rectum." Nothing could be further from the truth. In the twenty-five cases studied, gas was passed by rectum in all but two up to the day of death. In some instances the passage of gas occurred only after the insertion of a colon tube, but in most instances it was passed without its aid. Whether this observation is a peculiarity to this particular series, only more experience will show. It is difficult to believe, however, that such would be the case. Seventeen of these twenty-five patients had bowel movements up to the day of death and in five of these diarrhea was a persistent and troublesome symptom. Since in many instances the so-called bowel movements were liquid stools consisting of material similar to that removed from the stomach, it may be assumed that the obstruction was not complete. It is, of course, highly improbable that post-operative obstruction is ever complete in its inception. However if one explains the passage of gas and fecal matter in these cases by the assumption that the obstruction was incomplete, one must also recall that all these patients died of their obstruction. Such an assumption is disproved, however, by the fact that, at necropsy, complete obstruction was found in all these cases.

It cannot be too often emphasized that one must not be misled by the relatively good condition of the patient during the stage of obstruction. It is a highly deceptive state that is of absolutely no prognostic value nor is it in any way reliable as a basis on which to judge the degree of the obstruction.

LABORATORY OBSERVATIONS

With the exception of the well known changes visible in the roentgenogram there are no reliable laboratory evidences of low obstruction that are characteristic of the stage of obstruction. The great value of the x-rays is generally realized but it is obvious that one must at least tentatively diagnose obstruction before the advisability of roentgen examination is apparent. It therefore should not be considered a substitute for careful, vigilant clinical observation. In this connection it may be parenthetically stated that the value of the x-rays in the diagnosis of low obstruction in any of its stages parallels the perfection of the picture.

STAGE OF DEGENERATION

The stage of degeneration is characterized by the appearance of a progressive type of toxemia. Usually the cramplike pain of the stage of obstruction is replaced by a pain more constant and less cramping. Often it is described as a full feeling and it is usually relieved by vomiting or the removal of gastric or duodenal fluid by the stomach tube. The distention is generalized and peristalsis is not visible, and if audible is "tinkling" in character. Sometimes in the very late period of the stage of degeneration the distention apparently decreases. It usually denotes a complete flaccidity and irreparable degenerative changes in the intestinal walls. The typical fluid of obstruction increases in almost direct proportion to the amount of salt solution administered. The progressive toxicity accompanying the stage of degeneration is evidenced at first by periods of delirium, tremor or stupor and often slight cyanosis, all of which temporarily disappear after the administration of salt solution. Later, however, salt solution has no effect on these symptoms.

It is in the stage of degeneration that the laboratory observations assume the characteristics so often quoted as typical of obstruction. The fever rises and the pulse increases. Usually there is an accompanying increase in leukocytes but in some instances a marked leukopenia develops, explanation of which is not clear. The well known decrease in the blood chlorides occurs in the stage of degeneration and is seldom, if ever, present in the stage of obstruction.

TREATMENT

As already mentioned, both the clinical and the pathologic changes that occur in the course of low obstruction suggest the occurrence of two stages in the progression of the disease. Whatever name one may choose to designate these stages is unimportant so long as it is recognized that in one (the stage of obstruction) there is nothing but a local change while in the other (stage of degeneration) the change involves the entire intestinal tract proximal to the obstruction and is accompanied by serious systemic toxicity. Recognition of this fact is essential to the rational and successful treatment of low obstruction, indeed, it is the very essence of its therapy.

Assuming the correctness of this conception of low obstruction, it becomes obvious that once the stage of degeneration is established the chances for successful results from any type of therapy decrease as the stage of degeneration progresses. It is because most of the surgery for low obstruction has been performed in this stage that in the minds and in the experience of many it is not only ineffectual but actually dangerous. Release of the obstruction in this stage is not only performed on a patient severely poisoned by the toxins accom-

panying the intestinal changes, is not only attempted on intestinal loops that are friable, tremendously dilated and atonic, but ceases to be a method of relieving the existing pathologic condition. The primary obstruction has been superseded by the secondary intestinal change and as a result has become a secondary item in the general therapeutic problem. Instead of treatment being directed to the comparatively simple mechanical problem of relieving the obstruction, one has in addition the almost insurmountable problem of restoring to physiologic function cells that have apparently begun to degenerate.

Therapeutic attention must therefore be mainly directed to the stage of obstruction, for it is here that the greatest chance for success lies. In this stage there are two methods of treatment that have various advocates, viz., (1) decompression of the dilated loops either by the Witzel tube (enterostomy) or continuous suction drainage through a duodenal tube and (2) relief of the obstruction by surgical means.

It has been repeatedly shown that the Witzel tube will drain but a small area of the intestine unless active peristalsis is present. It is evident that it is, however, usually employed in the stage of degeneration, for it is only in this stage that great amounts of fluid are formed and it is to remove the fluid that the tube is used. Furthermore at this time the intestine is dilated, filled with fluid and the patient too sick to withstand more surgery—a stage in which peristalsis, if present at all, becomes rapidly less active and soon disappears altogether. The suction duodenal drainage while more efficacious than the Witzel tube, obviously cannot possibly cure a complete obstruction. As both a preoperative and a postoperative measure or as a last hope measure in late cases, both procedures are of value in one way or another but neither is a substitute for surgery.

In low obstruction both methods have apparently saved certain patients and most patients have been benefited by their use. I think, however, that study will show that neither ever cured a persistent obstruction and I have no doubt that persistence in their use has often resulted in the attending surgeon waiting so long as to preclude success in subsequent surgical treatment.

Wangensteen and Paine¹ in their description of the treatment of obstruction by continuous duodenal drainage recognize its limitations. They clearly intimate that it is not a substitute for surgery and emphasize that it must be accompanied by careful observation to determine how long it may justify a delay for surgery. The method, so long as it is used with full realization of its purposes and its limitations, is a valuable aid in the treatment of low obstruction. The surgeon who persists in its use should realize that he is assuming that the existing obstruction is of the type that will spontaneously disappear and in so doing assumes greater responsibility than the surgeon who subjects his patients to early operation for relief of the obstruction.

In the experience of many, the treatment of low obstruction by surgery has produced disappointing results. This is due in the majority of cases, to the fact that surgery has been too long delayed. It is a safe assumption that the average patient with low obstruction is operated on several days after the stage of degeneration has become established. This state-

ment is based not only on personal observation and personal experience but on the fact that in the literature on the subject one finds frequent comments concerning "the desperately ill condition of the patient" and "the extreme friability of the obstructed intestinal loops," both of which are characteristic of the stage of degeneration but do not occur in the stage of obstruction. In the surgical treatment of low obstruction there are, however, certain details in technic which should be assiduously followed. The incision should be amply large and should be so placed as to give adequate exposure to all parts of the abdomen. In post-operative cases it is usually best to go through the former incision, since in all likelihood the obstruction has occurred at the site of operation. In order to get adequate exposure, complete relaxation, such as that obtained by spinal anesthesia, is essential. The continuous pulling and fumbling of the obstructed loops that occur when the incision is too small or the abdominal muscles are not fully relaxed is of serious moment and may, as the result of the shock it produces, be the direct cause of death.

CONCLUSION AND SUMMARY

If the observations in this series of cases are substantiated by those in similar studies the fact seems evident that improvement in the treatment of low obstruction depends primarily on improvement in its early diagnosis. As far as it is possible at present to tell, improvement in the diagnosis must come from a detailed study of the symptoms and clinical behavior of a large series of uncomplicated cases of low obstruction rather than from the development of some more or less specific laboratory device. It is clear, I think, that such studies of low obstruction must be predicated on the assumption that the onset, the progression and the symptoms of low obstruction differ in an important degree from those of high obstruction and that, therefore the two types of obstruction must be considered separately.

In the separate consideration of low obstruction it seems clear that it is both possible and logical to divide the disease into two stages. Since the first stage seems to be limited to only the mechanics of obstruction and to be accompanied by few evidences of any particular harm to the patient, it seems logical to designate it as the stage of obstruction. It also seems reasonable to designate the second stage as the stage of degeneration, since the gross pathologic changes in the obstructed intestinal loops seem to be of a degenerative nature and to be accompanied by toxic symptoms more or less characteristic of degeneration. The fact that the clinical manifestations of obstruction consistently parallel the pathologic changes in the obstructed loops suggests their close relationship and justifies estimation of the pathologic changes by the clinical observations.

In view of the comparative condition of the obstructed loops in the two stages of low obstruction, it is apparent that therapeutic endeavor should be largely directed to the stage of obstruction. In this period one has only to deal with a mechanical blocking of the normal flow of intestinal fluid, and there seems to be no serious change in the physiology of the cells comprising these obstructed loops. In the stage of degeneration however the comparatively simple problem of the relief of the obstruction is complicated by the supervention of serious and often advanced changes in the walls of the major portion of the small intestine. Indeed by initiating treatment in this stage one may be

¹ Wangenstein, O. H. and Paine, J. R. Treatment of Acute Intestinal Obstruction by Suction with the Duodenal Tube. J. A. M. A. 101: 1532-1538 (Nov. 11) 1933.

attempting to restore to physiologic function cells that are already necrobiotic

One of the earliest and perhaps the only specific symptom of the stage of obstruction is uneven distention. There are, no doubt, many who do not agree that uneven distention is an almost constant accompaniment of low obstruction. Though further observations are needed to demonstrate the correctness of this assumption, it is necessary to emphasize the fact that uneven distention occurs very soon after the onset of low obstruction that it is present for a short time only, and that it must be searched for to be found. The average surgeon looks on postoperative pain and distention as an expected consequence of abdominal surgery and as a rule, therefore, pays it little attention. It is useless to expect uneven distention after the stage of degeneration has begun for by that time the distention has become and will remain generalized, it is also useless to expect to discover the unevenness of the distention at any time unless all postoperative dressings are removed and a clear, unobstructed survey of the abdomen is made in a good cross light.

The symptoms of vomiting and "obstipation with no passage of gas by rectum," as frequently quoted in textbooks, are unreliable criteria on which to base the early diagnosis of low obstruction. While vomiting usually occurs at some time during the course of the obstruction, it is often absent in the stage of obstruction and, in fact, may not even occur in the stage of degeneration. It is unfortunate that because it is a constant accompaniment of high obstruction it should be thought necessary for the diagnosis of low obstruction.

However detailed one's analysis of the symptoms may be, the first essential in the diagnosis of low obstruction is that the possibility of its presence be kept in mind. It is perhaps the failure to do this that allows many of the diagnostic signs and symptoms to slip by without eliciting the careful consideration on which their proper evaluation depends. When the stage of degeneration has become established and the suggestive, if not characteristic, symptoms have passed unnoticed, one encounters the most difficult task of deciding whether or not the now generalized distention, the fever, the increased leukocytosis and the decreased or absent peristalsis are the result of peritonitis or obstruction. Certainly the high mortality attending low obstruction should dispel any ideas as to its being easy to manage and should stimulate a constant, informed and alert vigilance.

Any attempt to differentiate between partial and complete obstruction carries with it a grave responsibility. Unfortunately, it is not as simple as it may seem. The clinical criterion on which the diagnosis of partial obstruction is based is the passage of gas and fecal matter by rectum. Wangersteen and Paine contend that it can also be made by the roentgenographic detection of gas in the large bowel below the site of obstruction. The danger, if not the fallacy, of this criterion is shown by the fact that all but two of the patients included in this study passed gas up to the day of death. The obstruction was proved to be complete in all these cases by necropsy.

The conclusion seems logical that in most instances the treatment for low intestinal obstruction is essentially the surgical release of the obstructing lesion. Continuous suction drainage and enterostomy should be considered adjuncts to surgery rather than its sub-

stitute. The persistent use of continuous duodenal drainage or the prolonged confidence in the efficiency of drainage by enterostomy is necessarily accompanied by the responsibility for the assumption that the obstruction will spontaneously disappear. Only those whose experience with low obstruction has been very limited fail to recognize the magnitude of this responsibility. The dictum of early operation has been established by the experience of a great number of competent surgeons, but to this must be added the necessity for constant study and vigilance directed to the early diagnosis of low obstruction. Operation in the stage of obstruction should be followed by a definite decrease in the mortality of low intestinal obstruction.

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QUININE AND ERGOT ALLERGY AND THROMBOCYTOPENIC PURPURA

REPORT OF A CASE

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The clinical entity essential thrombocytopenic purpura (idiopathic or primary purpura haemorrhagica) is a condition of unknown etiology. A similar condition of known etiology is referred to as secondary or symptomatic thrombocytopenic purpura. Both these forms of purpura manifest a general hemorrhagic tendency, and the conspicuous feature is a definite diminution of the blood platelets. From the standpoint of treatment it is important therefore to determine if possible, by careful investigation the exciting causative factor of thrombocytopenia.

It is well to recall that there is also a number of conditions in which purpura occurs in the absence of a general hemorrhagic tendency and diminution of platelets. These purpuras according to Christian,¹ can be classified into essential (idiopathic) and secondary (symptomatic) nonthrombocytopenic purpura. The term purpura implies cutaneous hemorrhage. One of the important and clinically interesting subgroups of essential nonthrombocytopenic purpura is the so-called anaphylactoid purpura,² which includes the Schonlein-Henoch group and the Osler erythema group of skin lesions with visceral manifestations. Osler³ and Johannessen,⁴ among others, have commented that it seemed logical that an anaphylactic (allergic) reaction is responsible for the symptoms of essential purpura and serum sickness. Recent studies indicate that in this form of purpura there is a true allergy. Landsberger⁵ reported a case of purpura in an infant in whom cow's milk was the allergic offender. Alexander and Eyermann⁶ cited nine cases of Henoch's purpura due to food allergy. Barthelme⁷ and Kahn,⁸ among

1 Christian H. A. Oxford Loose Leaf Medicine New York Oxford University Press 2 233 1921

2 Frank E. Berl klin Wchnschr 52 454 1915

3 Osler William Brit M J 1 517, 1914

4 Johannessen C. Purpura Norsk mag f lægevidensk 79 1209 (Nov.) 1336 (Dec.) 1918

5 Landsberger M. Allergy to Cow's Milk in Infant with Purpura Ztschr f Kinderh 39 569 1925

6 Alexander H. L. and Eyermann C. H. Food Allergy in Henoch's Purpura Arch Dermat & Syph 16 332 (Sept.) 1927

7 Barthelme F. L. Allergic Purpura (Henoch's) J Allergy 1 170 (Jan.) 1930

8 Kahn I. S. Henoch's Purpura Due to Food Allergy J Lab & Clin Med 14 835 (June) 1929

others, also reported cases of Henoch's purpura due to food allergy. In each instance it was demonstrated that hemorrhage into the skin and other associated symptoms of Henoch's purpura were caused by the ingestion of particular foodstuffs.

Cases of purpura have been reported following a variety of drugs. Most commonly mentioned are aniline, iodine, pyridine, mercury, quinine, belladonna, ergot, acetphenetidin, salicylic acid and arsphenamine preparations. Probably most of these are nonthrombocytopenic purpura, but in some cases hemorrhagic purpura developed with a low platelet count following use of an arsphenamine preparation as in the cases reported by Thill,⁹ among others. Rosenthal,¹⁰ however, stated that besides arsphenamine such substances as benzene, aniline and quinine may poison the bone marrow in such a manner as to produce thrombocytopenia. It is evident from a survey of the literature that the vast majority of the cases of purpura due to drugs were considered from the point of view of a poison, and correctly so, because of the lack of evidences of their allergic nature.

The striking improvement that follows splenectomy especially in cases of the chronic form of essential thrombocytopenia first reported by Kaznelson,¹¹ is not obtained with any like degree in the cases of symptomatic thrombocytopenia. This improvement takes place even in the presence of a platelet count as low as before the operation. Hence the proper grouping of all types of purpura particularly thrombocytopenia, is extremely important and necessary for correct treatment.

The following report of a case is warranted not only because of its clinical interest but also because a definite causal allergic relationship between such drugs as ergot and quinine and thrombocytopenic purpura has been established.

REPORT OF CASE

H. R., a mulatto woman, aged 29, a waitress, unmarried, a native of the British West Indies, seen by one of us (M. M. P.) for allergic study, Feb. 27, 1933, had a history of bleeding from the gums and vagina along with large blotches under the skin, which occurred for the first time at the age of 14 years following the oral administration of some "drugs." She suspected pregnancy at that time.

Infancy and childhood had been normal except for some of the childhood diseases and "malaria, which everybody is supposed to have had." Quinine had been liberally administered with apparent tolerance.

The family history was negative to allergy.

At the age of 20 years the patient had taken only four doses of fluidextract of ergot each dose containing 4 Gm of the extract, at intervals of four hours, because of suspected pregnancy. The following day hemorrhage into the skin and mucous membranes occurred and persisted for nine days. In 1927 she complained for seven months of being "run down" with symptoms of numbness and tingling of the lower extremities, abdominal pains and backache. Her physician decided to administer a course of "tonic injections." The day following the first and only injection, profuse bleeding began from the gums and mucous membranes of the mouth and purpuric spots appeared on both legs. Although she had just completed a menstrual period bleeding began anew. Several days later blood appeared in the stools and urine. Sept. 9, 1927, one week after the onset of symptoms she was admitted to Fordham Hospital. The report of the positive observations at examination then showed bleeding from the mouth, with congestion of the pharyngeal and buccal mucosa, and on the left side near

Stenson's duct there were two ulcerations surrounded by a blood clot. On palpation the abdomen was tender throughout, with some localization in the region of the left lower quadrant. The stools on gross examination were tarry, while the microscopic examination revealed numerous red blood cells and no ova or parasites.

November 14, examination of the blood showed the bleeding time to be three minutes and coagulation time four minutes, along with an absence of clot retraction and a platelet count of 130,000. November 22 the bleeding and coagulation times were three and one-half and four minutes, respectively, and the platelet count was 142,000. On admission to the hospital the white blood cell count was 5,600 and the red cells numbered 1,800,000. Subsequent examinations of the blood showed gradual improvement and on November 26 the red cell count was 3,000,000 and hemoglobin of 70 per cent. Chemical examination of the blood showed nonprotein nitrogen, 42 mg., creatinine, 14 mg., and sugar, 105 mg. per hundred cubic centimeters. Roentgen examination of the bones of the lower extremities revealed no abnormalities. The blood pressure remained around 115 systolic and 60 diastolic. The medication consisted of the oral administration of calcium lactate and the hypodermic injection of iron cacodylate.

Discharged from the hospital, December 6, the patient was seen for the first time by one of us (J. A. M.) on December 13 suffering from bloody vaginal discharge and bleeding gums. Treatment was symptomatic and all bleeding ceased, December 18. She was again seen, Jan. 13, 1928, when she manifested all the signs of a hemorrhagic purpura. The treatment consisted of calcium lactate medication, local iodine application and ultraviolet irradiation. Bleeding ceased, January 18, but the treatment was continued for one month, the patient being discharged as cured February 18.

The patient seemed well from 1928 until Feb. 8, 1933, when she took of her own volition in the course of one day, 0.65 Gm (10 grains) of quinine sulphate with eight capsules of ergot (the dosage being unknown) for "delayed menstruation." That night bleeding from the gums and vagina with purpura ensued. She passed many blood clots from the vagina for two days. February 10 she was seen by one of us (J. A. M.), who sent the patient to Sydenham Hospital¹² for study. On admission the temperature was 101.4 F and the pulse rate 110. Physical examination revealed numerous ecchymotic areas and petechiae over the body involving particularly the skin on the chest and axillae. Both eyes showed a few patches of subconjunctival hemorrhages. There were dried clots of blood and free bleeding from the gums and mucous membranes of the lips and vagina.

On the morning of February 10 the blood picture showed a hemoglobin of 60 per cent, red blood cells 2,810,000, white blood cells 10,450, segment forms 65 per cent, band forms 26 per cent, small lymphocytes 7 per cent, monocytes and eosinophils each 1 per cent, platelets 130,000, coagulation time four minutes, bleeding time, eight minutes. There were present some toxic granules, achromia and microcytosis. In the evening the red blood cells were 3,180,000, white blood cells, 8,100 and platelets 100,000. February 14, the hemoglobin was 65 per cent, red blood cells 3,180,000, white blood cells 11,000, segment forms 45 per cent, band forms, 4 per cent, small lymphocytes, 37 per cent, monocytes, 7 per cent, eosinophils, 6 per cent. The microscopic appearances of the cells remained unchanged.

Examination of the urine February 13 showed only a faint trace of albumin and from 10 to 15 red blood cells per low power field and on February 14 the red blood cells ranged from 25 to 80 per low power field.

February 16 the patient was discharged from the hospital as "cured." Her condition was diagnosed as purpura haemorrhagica and intra-uterine gestation.

February 20 the patient had taken only three doses of 4 cc. (1 fluidrachm) each of elixir of iron, quinine and strychnine (N. F.) (each dose containing about 0.03 Gm [0.5 grains] of quinine hydrochloride). Bleeding commenced that night and lasted for two days. The patient was readmitted to Sydenham Hospital and on March 2 a therapeutic abortion was performed.

9 Thill, O. Akuter Morbus Werlhof nach Myosalvarsanbehandlung. Ztschr. f. klin. Med. 109: 285, 1928.

10 Rosenthal, N. quoted by Musser, J. H. and Wintrobe, M. M. in Tice, Frederick. Practice of Medicine. Hagerstown, Md. W. F. Prior Company, 6: 887, 1933.

11 Kaznelson, P. Wien klin. Wchnschr. 24: 1451, 1916.

12 Gynecologic service of Dr. Alfred M. Hellman.

March 7, examination of the blood showed a hemoglobin of 69 per cent, red cells, 3 500 000, white cells, 6,050 segmented forms, 40 per cent, band forms 2 per cent, small lymphocytes, 48 per cent, monocytes, 8 per cent, eosinophils, 2 per cent, coagulation time four and one-half minutes and bleeding time, two and one-half minutes. August 1, when the patient was feeling well and was employed in her usual occupation, the blood picture showed a hemoglobin (Sahli) of 75 per cent, red cells, 4,400,000, white cells, 6,800, segmented forms, 46 per cent, lymphocytes, 46 per cent, monocytes 6 per cent, eosinophils, 2 per cent, platelets, 240 000, bleeding time two and one-half minutes, coagulation time, five minutes, and slight hypochromia.

Allergy Studies The cutaneous tests with ergot quinine alkaloid and quinine salts were performed and repeated at varying intervals with the following results:

Powdered ergot alkaloid and fluid extract of ergot showed negative reactions with the scratch test. A 1:50 solution of powdered ergot alkaloid extracted in buffered solution also showed negative reactions with the intradermal and passive transfer tests. (It is common knowledge that a person can be definitely allergic and yet be negative to cutaneous tests.)

The scratch test¹³ with quinine alkaloid 10 per cent hydrochloric acid and alcohol being employed as diluents, showed positive reactions ranging from one-plus to two-plus.¹⁴ Quinine sulphate (1 Gm of the salt is soluble in 30 cc of glycerin) showed a plus-minus reaction and quinine salicylate (1 Gm of the salt is soluble in 14 cc of alcohol) showed a one plus reaction. The water soluble quinine salts, such as the hydrochloride, dihydrochloride and bisulphate, all gave three-plus reactions. The intradermal test with a 1:50 extract of quinine alkaloid (10 per cent hydrochloric acid being used as the extracting fluid) showed a three-plus reaction the body of the wheal measuring 1.5 cm in diameter from which pseudopodia spread in all directions. The control with the extracting fluid was negative. When buffered solution was used as an extracting fluid, only a one-plus reaction was obtained. The quinine alkaloid and quinine salts are levorotatory. The dextrorotatory quinine derivatives, quinidine alkaloid and quinidine sulphate (soluble in alcohol) showed negative cutaneous (scratch and intradermal techniques) reactions. Passive transfer tests with a 1:50 extract of quinine alkaloid by the intradermal technique and with quinine dihydrochloride by the scratch test, each showed a one plus reaction.

March 29, 0.65 Gm (10 grains) of quinidine sulphate along with 0.001 Gm ($\frac{1}{100}$ grain) of strychnine sulphate and 1 cc (15 minims) of tincture of ferric chloride were orally administered without inducing any untoward symptoms.

Feb 10 1934, the patient was entirely well and the examination of the blood showed a hemoglobin of 83 per cent, red cells, 4,320 000 white cells, 6 000 segmented forms, 54 per cent, band forms 2 per cent, small lymphocytes 36 per cent, monocytes 4 per cent eosinophils, 4 per cent, platelets 210,000, bleeding time, three and one-half minutes, coagulation time, seven and one-half minutes.

GENERAL CONSIDERATIONS

The characteristics of the acute and chronic forms of thrombocytopenic purpura are hemorrhages from the mucous membranes, petechiae or ecchymoses of the skin, a prolonged bleeding time a normal or slightly retarded coagulation a nonretractile clot and a reduced platelet count which seems to be the most important feature of the condition. The nonthrombocytopenic purpura group is manifested by disturbances in the skin, joints and internal viscera, especially the gastrointestinal tract. Morphologically the blood is unchanged from normal, the blood platelets are unchanged.

13 Fred Boerner Jr (A Skin Reaction to Quinine J A M A 68 90, [March 24] 1917) first described the scratch test with quinine sulphate. This author and one of his colleagues showed intolerance to quinine administered orally, manifested by symptoms of erythema and intense itching of the skin. Skin reactions on control individuals were negative. At that time Boerner maintained the positive skin reaction to quinine to be specific and of an allergic nature.

14 Peshkin M M and Fineman A H Asthma in Children VI A Comparative Study of the Scratch and Intradermal Methods of Skin Testing Am J Dis Child 34 815 (Nov.) 1927.

Platelet deficiency in thrombocytopenia was described in 1881 by Brahm,¹⁵ in 1887 by Denys,¹⁶ and in 1895 by Hayem.¹⁷ Similar studies with additional features of the condition have been made by Bensaude and Rivet,¹⁸ Duke,¹⁹ Pratt²⁰ and Minot,²¹ among others. Von Behring²² and Lee and Vincent²³ have observed in thrombocytopenia experimentally produced in animals that the platelets disappeared from the peripheral circulation and tended to clump in the internal organs during anaphylactic shock. It has also been shown that the coagulation time in anaphylactic shock is delayed. Whether this process is comparable to the allergic phenomenon observed in cases of allergic thrombocyto-

Some Alkaloids of the Cinchona Group with Their Corresponding Dextrorotatory Isomers

Levo Isomer	Corresponding Dextro Isomer
Quinine	Quinidine
Cinchonidine	Cinchonine
Hydroquinidine	Hydroquinine
Hydrocinchonidine	Hydrocinchonine
Ethyldihydrocupreine	Ethyldihydrocupreidine
Hydrocupreine	Hydrocupreidine
Ethylquinate	Ethylquinidine

penia is not known. Musser and Wintrobe²⁴ state that thrombocytopenic purpura may very rarely occur as part of an anaphylactic reaction. Christian includes anaphylaxis in his classification of purpura as one of the causes of secondary thrombocytopenic purpura.

Sergeant and his associates²⁵ reported a case of proved thrombocytopenia in a young girl in whom blood transfusions, irradiation of the spleen and the administration of various drugs and solution of pituitary brought no improvement. However, the injection of 0.001 Gm of epinephrine hydrochloride daily resulted in a "cure." After the administration of epinephrine hydrochloride the spleen contracted for from six to seven minutes which expresses its blood content, leading to definite hyperglobulia lasting for from twenty to twenty-five minutes. The authors then suggested from these observations that there may possibly be some failure of the suprarenals, forgetting, however that the exciting etiologic factor may have been allergic in nature.

Brinnitzer²⁶ believes that certain relations between anaphylaxis and thrombopenia show that a differentiation of hemorrhagic purpura from the anaphylactoid purpura group is not possible and that probably

15 Brahm and Krauss Inaug Diss Heidelberg 1883 cited by Leschke and Wittkower.

16 Denys J Etudes sur la coagulation du sang, Cellule 3 445 1887.

17 Hayem, G. Du purpura Presse med 3 233 1895.

18 Bensaude R, and Rivet L Les formes chroniques du purpura hemorrhagique poussees indefinies et reveils a longs intervalles rapports de certains cas avec la tuberculose Arch gen de med 1 193 272 1905.

19 Duke W W The Pathogenesis of Purpura Haemorrhagica with Especial Reference to the Part Played by Blood Platelets Arch Int Med 10 445 (Nov.) 1912 The Relation of Blood Platelets to Hemorrhagic Disease J A M A 55 1185 (Oct 1) 1910.

20 Pratt J H in Osler, William and McCrae Thomas Modern Medicine Philadelphia Lea & Febiger 4 687 1915 A Critical Study of the Various Methods Employed for Enumerating Blood Platelets J A M A 45 1999 (Dec 30) 1905.

21 Minot G R Studies on a Case of Idiopathic Purpura Haemorrhagica Am J M Sc 152 48 (July) 1916 Lee R I and Minot C R The Significance of Blood Platelets Cleveland M J 16 65 (Feb) 1917.

22 von Behring E Experimentelle Analyse und Theorie der anaphylaktischen und apoplektischen Vergiftung Deutsche med Wchnschr 40 1857 1914.

23 Lee R I and Vincent B A Study of the Effect of Anaphylaxis and Leech Extract on the Coagulation of the Blood J M Research (N. S.) 27 445 1915.

24 Musser H and Wintrobe M M in Tice Frederick Practice of Medicine Hagerstown Md W F Prior Company 6 887 1933.

25 Sergeant Durand, Grellety Bosviel and Benda Purpura hemorrhagica et adrenalectomie Progres med 55 1917 (Nov 30) 1927.

26 Brinnitzer H Purpura Haemorrhagica with Allergic Reaction to Maternal Blood of the Same Blood Group Ztschr f Kinderh 51 566 1931.

anaphylaxis is one of the many factors that etiologically are responsible for the thrombopenic purpura. He reports the case of thrombopenia in a boy, aged 4 years, with blood platelets of 20,000 who developed angioneurotic edema and generalized urticaria ten minutes after receiving a blood transfusion from the mother, whose blood grouping was the same as her child. One month later the blood transfusion was repeated with similar results. This case appears to indicate that the strong anaphylactic reaction to the maternal blood belonging to the same group was due to the anaphylactic feature of the thrombopenic purpura in the child.

COMMENT

Sensitization to drugs inducing various manifestations of allergy has been shown to occur in cases in which such small doses were used as to preclude the possibility of any toxic or even discernible pharmacologic action. Asthma and vasomotor rhinitis have been induced by the inhalation of ipecac,²⁷ rhubarb, lycopodium²⁸ and castor bean,²⁹ and by the ingestion of any of a large list of drugs, including even the synthetic chemicals such as acetylsalicylic acid, phenobarbital, amidopyrine and antipyrine. The other allergic conditions caused by the ingestion of drugs are generalized erythema, urticaria, angioneurotic edema, abdominal colic and eczema.³⁰

It has been generally known that various drugs can cause nonthrombocytopenic purpura and even thrombocytopenic purpura. The patients were regarded as suffering either from an overdose or from the poisonous effect of the drug. It is not generally known that purpura in some of these cases is really due to drug allergy. A case of quinine hypersensitivity causing thrombocytopenia was recently reported by Maritschek and Markowicz.³¹ The patient was a man, aged 35, who had suffered from "quinine intoxication" during treatment for malaria, fifteen years prior to coming under observation. The intoxication at that time manifested itself in purpura and hemorrhages from the mucosae. There remained a persistent hypersensitivity to quinine, so that even small doses (0.3 Gm.) produced severe thrombocytopenia. Sensitization tests were not performed.

Quinine is one of the important and useful drugs employed in therapy. Quinine alkaloid is present in various quinine salts, ranging from 20 per cent in quinine tannate to 81.8 per cent in quinine hydrochloride.³² In the treatment of malaria, Fletcher³³ found that quinidine and cinchonine are quite comparable to quinine in their effects on malarial parasites. If a patient cannot take quinine, one of these dextrorotatory alkaloids can be given and as demonstrated in the case herein reported, without ill effects. This substitution also eliminates the uncertain and dangerous process of hyposensitization to quinine. Dawson and Garbade³⁴

reported positive skin reactions only to the levo isomers of the cinchona group in a patient in whom 0.325 Gm. (5 grains) of quinine sulphate caused symptoms of intense urticaria, alarming dyspnea and abundant nasal discharge. These authors conveniently arranged the various alkaloids of the cinchona group in the accompanying table.

Positive evidences of ergot and quinine allergy caused by ingestion in the same patient inducing symptoms of thrombocytopenia, with positive skin and passive transfer reactions only to quinine (levorotatory) group assumes vast importance, because it carries the inference that drug and other allergenic substances probably enter into the etiology of thrombocytopenia more frequently than the few scattered reports in the literature would indicate.

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CYANIDE ANTIDOTES

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Successful chemical antidotes in the treatment of experimental cyanide poisoning are methylene blue, sodium nitrite, triose and sodium thiosulphate. Within limitations, all these agents, except triose, which has not been tried in man, have a demonstrated clinical usefulness. Their actions are both protective and resuscitative. Differing as they do chemically and physically, these agents might also be expected to mediate their antidotal actions differently. This is probably true for simple physical and biologic systems, but in mammals matters appear to be different, and even among different mammals. For instance, in some species (dogs) methylene blue and sodium nitrite are reported to act through the same mechanism which does not seem to be invoked in others (rabbits). Triose and thiosulphate appear to act differently from the dye and nitrite. The newer concepts and apparent complications in these antidotes ought to be understood and explained, if possible, for a proper appreciation and application of the newer treatment of cyanide poisoning.

Interestingly, there have been for many years suggestive data in the literature of pharmacology, which have recently been found valuable for this purpose. Now they are the basis of practical life-saving measures in this desperate poisoning. At the same time there is a large interest in the fundamental action of the novel antidotes for physiologic processes in general. The latter is quite natural, for, in large measure, these agents were originally the means to fundamental considerations of biologic processes, and their practical use in treatment of cyanide poisoning was not even mentioned. A brief summary of the essential historical facts will indicate the development of these various interests.

For instance Heymans and Maigre¹ of Ghent demonstrated in 1921 that methylene blue saved dogs from the cyanide poisoning of malonitrile this being done in connection with

27 Peshkin M. M. Ipecac Sensitization and Bronchial Asthma J. A. M. A. 75 1133 (Oct. 23) 1920.
28 Peshkin M. M. Bronchial Asthma and Other Allergic Manifestations in Pharmacists J. A. M. A. 82 1854 (June 7) 1924.
29 Berntson H. S. Occupational Sensitization to the Castor Bean Am. J. M. Sc. 165 196 (Feb.) 1923.
30 Unger Leon. Drug Idiosyncrasy J. Allergy 3 76 (Nov.) 1931.
31 Maritschek Moriz and Markowicz Heinrich. Hypersensitivity to Quinine with Purpura Haemorrhagica Especially in the Upper Air and Food Passages Monatsschr. f. Ohrenh. 67 410 (April) 1933.
32 Solis Cohen Solomon and Githens T. S. Pharmacotherapeutics Materia Medica and Drug Action New York D. Appleton & Co. 1928.
33 Fletcher William. Notes on the Treatment of Malaria with the Alkaloids of Cinchona London John Bale Sons & Danielsson Ltd. 1928.
34 Dawson W. T. and Garbade F. A. Idiosyncrasy to Quinine Cinchonidine and Ethylhydrocupreine and Other Levorotatory Alkaloids of the Cinchona Series Preliminary Report J. A. M. A. 84 704 (March 8) 1930.

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Read before the Society for Experimental Biology and Medicine Pacific Coast Branch Feb. 14 1934.
1 Heymans C. and Maigre E. Compt. rend. Soc. de biol. 85 141 1921.

metabolic studies of this dye. Then Sahlén² in 1926 showed that methylene blue possessed an antitoxic action in poisoning from sodium cyanide in mice. However Sahlén feared a possible poisoning action from methylene blue itself, which would preclude its use as a practical antidote. Finally Eddy,³ in 1930, conclusively demonstrated its life saving and respiratory resuscitative actions in dogs, this too being done in connection with fundamental studies of respiration. But in none of these reports was there a definite suggestion of the possible clinical usefulness of methylene blue in cases of cyanide poisoning until Geiger,⁴ in 1932, acting on the advice of one of us,⁵ actually treated with success a clinical case of poisoning and confirmed the experimental results. Since that time several other cases of cyanide poisoning have been successfully treated.⁶

Forty years ago, i.e. in 1893, Heinrich Szigeti⁷ of Budapest demonstrated the presence in living animals of "cyanhematin" which really was cyanmethemoglobin, after injection of cyanide in dogs previously treated with potassium chlorate nitrobenzene, and the like, until their blood was chocolate colored from methemoglobin. He showed that cyanmethemoglobin cannot occur in living animals without first producing methemoglobin. However, it remained for the pharmacologist Enrique Hug⁸ of Rosario, Argentina, to demonstrate the practical usefulness of sodium nitrite in cyanide poisoning. According to Hug its virtue rests on its power to form methemoglobin which it does more effectively than do potassium chlorate and nitrobenzene, originally tried by Szigeti. Hug⁹ has gone further and shown that, in mammals, apparently all methemoglobin formers, among which is included methylene blue act as cyanide antidotes. Thus, the dye and the nitrite would act as antidotes through a common mechanism, which converts the cyanide to the innocuous cyanmethemoglobin. Wendel¹⁰ has expressed a similar view.

The detoxicating action of sugar in cyanide poisoning has long been known, from fascinating tales in fiction to authentic reports in entomology and toxicology. From extensive comparisons of different sugars in this poisoning, Forst¹¹ has shown that only triose or glyceric aldehyde has resuscitative actions after the symptoms of toxicity are developed. The chief basis for the antidotal action of sugars is the direct formation of a nontoxic cyanhydrine although Forst believes that triose is assisted by actions on higher centers. Triose is comparatively poor in mixtures with cyanide in vitro and as a protective for animals while some other simpler sugars excel in these respects. This indicates certain complications which require careful consideration in selecting antidotes for use in the treatment of poisoning. Dihydroxyacetone may be considered in the saccharin category but is not comparable to triose as to efficiency in developed poisoning although it may increase the effectiveness of thiosulphate.¹²

Thiosulphate, of course, has long been recognized as a direct oxidant of cyanide which is converted to the nontoxic sulphocyanate, and is successful as an antidote provided the thiosulphate is injected just before or together with the cyanide. This makes it of little or no practical value in treatment of cases of poisoning. However Hug¹³ and Chen Rose and

Clowes¹⁴ have proposed combining it with other more potent and lasting antidotes such as nitrite, in order to increase the efficacy of the treatment. According to these authors there is a potentiation of antidotal action under these conditions. Colloidal sulphur and sodium tetrathionate belong with thiosulphate, but the former is erratic in action and the latter offers no particular advantage over thiosulphate.

From this brief consideration of the historical background for cyanide antidotes, certain claims and data are worthy of confirmation and correlation. For instance, claims for the efficiency of nitrite, of triose, and of the mixture of nitrite and thiosulphate, and for the unity of the methemoglobin mechanism for methylene blue and nitrite should be verified. Such a discrepancy as the failure of methylene blue and nitrite to act as cyanide antidotes in rabbits, in the face of successes in other mammals and in birds, ought to be clarified, if possible. Otherwise justifiable doubt of the value of these antidotes might persist and confuse attempts at improving the treatment of cyanide poisoning. These questions are considered in this paper, which embodies results on different animals and on blood.

The general purpose was to determine the effects of typical antidotes on blood directly in vitro, on blood after intravenous injection, and on the blood symptoms and outcome of poisoning after surely fatal doses of cyanide. The blood was examined for changes in oxygen capacity and for the presence of methemoglobin chiefly after successful antidotes, but also to some extent after the ineffective agents. The blood changes were compared with the antidotal effects for possible determination of the mechanism of action. The antidotal efficiency was tested in both protective and resuscitative treatments. In the former, the antidote was injected first, and ten minutes later a fatal dose of cyanide, both injections being made intravenously. In the latter type of treatment the cyanide was first injected intramuscularly and then the antidote was injected intravenously, as soon as convulsions were manifested, that is immediately on the development of definite symptoms of poisoning. The dose of sodium cyanide used was 3 mg per kilogram of body weight, which was a surely fatal dose for all animals, whether injected intravenously or intramuscularly. This dose of cyanide caused the typical violent symptoms of poisoning in all untreated animals. Convulsions were definite in from ten to fifteen seconds and death occurred in one minute after intravenous injection, and symptoms occurred in about one minute and death in from two to three minutes after intramuscular injection. The well known symptoms of this poisoning are practically the same for all species and require no description here.

In this work we used 100 pigeons, nine rabbits, seventeen white rats and sixteen guinea-pigs for antidotal tests and bloods from two dogs and three hospital patients besides the bloods of the birds and rodents for examination of chemical changes. At least three animals and three bloods were used for a test with each antidote, and more in the case of the positive antidotes. Pigeons were used for the most part because of economy and convenience, and they served the purpose of our work as readily as would larger mammals such as dogs and cats previously used by others. Rodents were used sufficiently to demonstrate their comparatively inefficient reaction to certain cyanide antidotes.

The oxygen capacity of the blood was determined with a simple device described by Anrep and Harris.¹⁵ Generally 1 cc of blood was used and the error did not exceed 1.5 per cent,

¹⁴ Chen K. K., Rose C. L. and Clowes G. H. A. *Proc. Soc. Exper. Biol. & Med.* 31: 250 (Nov.) 1933.

¹⁵ Anrep G. V. and Harris D. T. *Practical Physiology*. Philadelphia: P. Blakiston's Son & Co. 1933.

² Sahlén B. *Skandinav. Arch. f. Physiol.* 47: 284 (1926).
³ Eddy N. B. J. *Pharmacol. & Exper. Therap.* 1930 39: 271 1930 41: 449 (April) 1931.

⁴ Geiger J. C. *Cyanide Poisoning in San Francisco* J. A. M. A. 99: 1944 (Dec. 3) 1932.

⁵ Hanzlik P. J. *Methylene Blue as Antidote for Cyanide Poisoning* correspondence J. A. M. A. 100: 357 (Feb. 4) 1933.

⁶ Geiger J. C. *South M. J.* to be published (personal communication to the authors).

⁷ Szigeti Heinrich *Vierteljahrsschr. f. gericht. Med.* 3: 9 (supp.) 1893.

⁸ Hug Enrique *Rev. Soc. argent. de biol.* 8: 270 276 (May/June) 417 (Aug. Sept.) 1931. *Rev. med. del Rosario* 22: 912 (Nov.) 1932.

⁹ Hug Enrique *Rev. Soc. argent. de biol.* 8: 519 (Nov. 14) 1932.

¹⁰ Wendel W. B. *Compt. rend. Soc. de biol.* 112: 511 (Feb. 10) 1933. *Prensa med. argent.* 20: 371 (Feb. 15) 1933.

¹¹ Forst A. W. *Arch. f. exper. Path. u. Pharmacol.* 167: 108 (Proc.) 1932.

¹² Turner B. B. and Hulpien H. R. *J. Pharmacol. & Exper. Therap.* 48: 445 (Aug.) 1933. *Rentz E. Compt. rend. Soc. de biol.* 102: 59 (Oct. 18) 1929. *Wiegand C. Arch. f. exper. Path. u. Pharmacol.* 163: 150 1931.

¹³ Hug Enrique *Prensa med. argent.* 20: 1527 (July 12) 1933.

¹⁴ Chen K. K., Rose C. L. and Clowes G. H. A. *Proc. Soc. Exper. Biol. & Med.* 31: 250 (Nov.) 1933.

¹⁵ Anrep G. V. and Harris D. T. *Practical Physiology*. Philadelphia: P. Blakiston's Son & Co. 1933.

with 2 cc of blood it did not exceed 1 per cent. This simple device deserves to be more generally known both in experimental laboratories and in clinics, since its use would facilitate desirable studies of blood and tissues, in preference to the tedious Van Slyke pipet. Although it is a general practice to rely on changes in oxygen consumption or capacity of red blood corpuscles for evidence of methemoglobin formation, this does not conclusively prove the presence of this blood pigment. For the latter purpose the spectroscopic examination is final, and therefore we made examinations of the same bloods with an Englemann microspectroscope. Unfortunately, however, spectroscopic examination for methemoglobin cannot yield an accuracy greater than 25 per cent, as it cannot be made on whole blood. We used 2 per cent hemolyzed blood in all cases and made comparisons with fresh untreated blood and a blood containing methemoglobin, resulting from nitrite action, in microscopic fields side by side. Many hemolyzed bloods required filtering especially the blood of pigeons, before satisfactory examinations could be made. All results on oxygen capacity were corrected for the effects of the solvent or vehicle used with the antidote, for instance, distilled water or physiologic solution of sodium chloride added to blood or injected into the blood stream reduced the oxygen capacity.

TABLE 1—Positive Cyanide Antidotes Efficiency and Blood Changes in Pigeons

Antidote	Dose per Kg Body Weight	Per Cent Protected*	Per Cent Resuscitated*	Blood Changes		
				Per Cent Reduction in Oxygen Capacity	Met hemo globin (Spec tro scopie)	Number of Fatal Doses of Sodium Cyanide Antagonized
Methylene blue	20 mg	100	70	10	—	1½
Toluidine blue	20 mg	100		11.6	—	2
Methemoglobinizers						
Sodium nitrite	20 mg	100	100	20	+	3
Sodium nitrite and Sodium thiosulphate	1 Gm	100	100	20	+	6
Crystalline methemoglobin	0.5 Gm	100	100	4.5	—	1
Sugar						
Triose	1.0 Gm	100	100	0	—	1 to 2
Oxidant						
Sodium thiosulphate	1 Gm	100	75	0	—	1

* Median results

† The minus sign means absent plus sign present (?) questionable

about 25 per cent. Pigeon blood was found to have a normal oxygen capacity of about 95 per cent, rabbit blood 125 per cent, rat blood 123 per cent, guinea-pig blood 109 per cent, dog blood 17 per cent and human blood 18 per cent values which, in general, agreed with those reported in the literature.

The essential results with the positive antidotes are presented in table 1, these being compared with each other in pigeons. The results with other agents are briefly mentioned in the discussion which follows. A correlation of methemoglobin formation and antidotal efficiency of methylene blue and sodium nitrite in cyanide poisoning of different species is presented in table 2. All details are omitted, only the changes are reported.

POSITIVE ANTIDOTES

It is clear from table 1 that sodium nitrite was the most efficient single antidote and that a combination of sodium nitrite and sodium thiosulphate was the most efficient of all antidotal measures tried. Confirmation of Hug¹³ and of Chen, Rose and Clowes¹⁴ in pigeons, nitrite antagonized three fatal doses of cyanide and the nitrite-thiosulphate combination six, i. e., an efficiency ratio of two, while in dogs Hug and Chen, Rose and

Clowes found a ratio of three. Since thiosulphate protected against only one fatal dose of cyanide, there was a potentiation in the mixture, as claimed by Hug and Chen, Rose and Clowes. The antidotal efficiency of these salts was the same in protective and resuscitative treatments.

Methylene blue, as compared with equal doses of sodium nitrite, was only half as efficient, without potentiation in the presence of thiosulphate. A similar tendency was reported by Chen, Rose and Clowes¹⁴. Methylene blue was less successful in resuscitative treatment.

Toluidine blue was somewhat more efficient in protective treatment than methylene blue in equal doses. It was tried because it is more positive than methylene blue on the oxidation-reduction scale for reversible systems, and the result obtained sustained an expectation of greater efficiency, but more extensive data would be needed to prove this point.

Triose was somewhat more efficient than methylene blue, but the dosage was nearly eight times greater, although it was less efficient than sodium nitrite. It acted equally well in protective and resuscitative treatments but by itself produced rather marked physiologic disturbances—especially increased respiration and restlessness—whereas all the other antidotes appeared to be symptomless.

Crystalline dog methemoglobin antagonized only one fatal dose of cyanide but was equally effective in protective and resuscitative treatments. The dose of 0.5 Gm per kilogram used approximated the content of methemoglobin in blood, as indicated by reduced oxygen capacity after nitrite and methylene blue. However, the injected methemoglobin solution was quite rapidly excreted in urine, which probably explained its lower antidotal efficiency as compared with the higher efficiency of methemoglobin of corpuscles after injection of nitrite.

When the reduction in oxygen capacity of the blood was used as evidence of methemoglobin, there was clearly a division between the antidotes. Methemoglobin formers were methylene blue, toluidine blue, sodium nitrite, nitrite-thiosulphate combination and crystalline methemoglobin. However, only the nitrite alone showed the presence of methemoglobin spectroscopically. The other agents did not because not enough methemoglobin was present for identification. The decrease in oxygen capacity was not proportional to antidotal efficiency of the different agents. For instance, the nitrite-thiosulphate combination and nitrite had the same effect on oxygen capacity, but the former was once again as efficient against cyanide, toluidine blue had a greater antidotal efficiency than methylene blue but was only slightly more depressant on oxygen capacity, triose and thiosulphate were of about the same order of antidotal efficiency as the dyes but did not cause blood changes. Therefore the mechanisms of the antidotal actions of triose and thiosulphate, at least, were different from those of the dyes and nitrite. The sugar reacted with the cyanide to form cyanhydrin, and the thiosulphate oxidized it to sulphocyanate, both products being non-toxic. Since the sugar and the thiosulphate were less efficient than the dyes and nitrite, there was no doubt of the very high combining efficiency of methemoglobin for cyanide. A correlation of decreased oxygen capacity

and antidotal efficiency for methylene blue and nitrite will be discussed farther on

The time element was important in the antidotal efficiency of both methylene blue and sodium nitrite. The optimum time under the conditions of cyanide poisoning in our experiments was ten minutes for protection and blood changes. No decline in efficiency was noticeable at the end of fifteen minutes, but at the end of half an hour the reduced oxygen capacity of the blood was about one half that at the end of ten minutes, and the majority of animals died from the cyanide. One hour after injection of the methylene blue or nitrite the blood was practically back to normal and no animals could be saved. This rapid decline in efficiency with time was due partly to a rather rapid reconversion of the methemoglobin to oxyhemoglobin and partly to urinary excretion of methemoglobin. In pigeons, the rapid urinary excretion of injected methemoglobin was quite noticeable, the expelled urine at the end of from ten to fifteen minutes being a deep chocolate brown.

Added to bloods in vitro, the various agents caused effects identical with those after injection. Under these conditions it was clear that the dyes were extremely

and possibly even nitrite and nitrite-thiosulphate, although the predominant mechanism rests with methemoglobin.

NEGATIVE ANTIDOTES

Negative, inefficient or extremely variable agents tried in cyanide poisoning were Dyes ethylene blue (up to 40 mg per kilogram) and dinitrophenol (6 to 7 mg per kilogram, with pyrexia). Methemoglobinizers pyrogalllic acid (10 to 20 mg per kilogram, inefficient), chlorate (0.5 Gm per kilogram), acetanilid (4 Gm per kilogram) and amyl nitrite (inhalation, inefficient). Anticonvulsants barbitol (0.2 Gm per kilogram) and ether (inhalation). Oxidants dinitrophenol and crystalline dog oxyhemoglobin (0.5 Gm per kilogram).

Very interesting were the negative results with the two dyes ethylene blue and dinitrophenol. The results appear fundamentally significant. Ethylene blue is, of course, as close chemically to methylene blue as anything that might be conceived, yet the ethyl group in this dye cannot exert the blood and physiologic changes necessary for detoxication of cyanide. This dye did not affect the oxygen capacity of blood in vitro and in vivo and formed no methemoglobin. Therefore the methyl group of methylene blue is responsible for these changes. Dinitrophenol greatly increases the oxygen consumption of tissues and stimulates oxidative metabolism, but it does not affect the oxygen capacity of blood in vitro and in vivo or form methemoglobin, even after concentrations and doses that would prove ultimately fatal. Therefore the detoxication of cyanide, according to this evidence, would not be a concern of cellular metabolism, tissue oxidation or fundamental respiratory mechanism, but rather of methemoglobinemia. Conceivably, however, dinitrophenol may activate only some phase of cellular metabolism or oxidation, which is ineffective for oxidizing cyanogen. Finally there are reasons to believe that methylene blue also can activate fundamental respiratory and oxidative processes, as already referred to, and this dye is a good antidote for cyanide. The question becomes too involved with hypothetical mechanisms for profitable discussion, but it is believed that further study of these dyes is bound to throw additional light on the fundamental nature of metabolic processes.

Of the remaining negative agents, chlorate and acetanilid were too slow or imperfect as methemoglobin formers, no decrease in oxygen capacity of the blood after these agents was demonstrable. In less than toxic doses, pyrogalllic acid was inefficient. Inhalation of amyl nitrite¹⁷ proved unsatisfactory under our conditions. Barbitol and ether, in definitely depressant quantities, proved futile and disproved a theory of possible anticonvulsant effects of central depression resulting from any cause, including the low blood pressure of nitrites. The inefficiency of crystalline oxyhemoglobin showed that the protective effects of methemoglobin were of a chemical nature and not physical or colloidal.

VAGARIES AND CORRELATIONS OF METHYLENE BLUE AND SODIUM NITRITE

Negative results also were obtained with methylene blue and sodium nitrite in rabbits. This was due to a comparative absence of methemoglobin, since there was only about 2 per cent reduction in oxygen capacity of the blood. The complement to this result was the complete protection of two rabbits that received intravenously single fatal doses of sodium cyanide five minutes after intravenous injection of crystalline methemoglobin, 0.5 Gm per kilogram. Two other rabbits, which received the cyanide ten minutes after the methemoglobin were not saved, owing presumably to the rapid escape of this pigment from the circulation. Consequently, claims of positive results with a methemoglobinizing agent, such as methylene blue in cyanogen poisoning of rabbits, and treatments based on such results must be regarded with skepticism. The use of rodents, especially the rabbits was probably partly responsible for the negative results of Trautman,¹⁸ who tested the value of methylene blue in poisoning from inhalation of hydrocyanic acid vapor.

Clearly the rabbit is not suited for testing the antidotal efficiency of methylene blue or nitrites or for investigating

TABLE 2—Correlation of Percentage of Reduction in Oxygen Capacity of Blood (Methemoglobin Formation) with Antidotal Efficiency of Methylene Blue and Sodium Nitrite in Cyanide Poisoning of Different Species

	Methylene Blue		Sodium Nitrite	
	Per Cent Reduction in Oxygen Capacity	Number of Fatal Doses of Sodium Cyanide	Per Cent Reduction in Oxygen Capacity	Number of Fatal Doses of Sodium Cyanide
Dogs	16.0	2	24.0	4
Pigeons	10.0	1½	20.0	3
Rats	6.8	1	10.7	2
Guinea pigs	4.8	1	8.6	1
Rabbits	2.0	0	2.5	0

Estimates for dogs were based on data from Hug (Rev. Soc. Argent. Biol. 9: 461, 1933) and Chen, Rose and Clowes (Proc. Soc. Exper. Biol. & Med. 31: 2.0 (Nov. 1933)). One fatal dose of sodium cyanide 3 mg per kilogram intravenously or intramuscularly; doses of methylene blue and sodium nitrite each 20 mg per kilogram intravenously.

inefficient methemoglobinizers as compared with the nitrite. The dyes required several days for such catalytic action when concentrations approaching those of injections were used. This inefficiency in vitro, taken together with a low methemoglobinizing efficiency in vivo, but a high antidotal efficiency in practice, especially in clinical cases, suggests that cyanmethemoglobin is not the sole life-saving factor. After all, the seat of cyanide poisoning is in the tissues and not in the blood, and methylene blue is effective even after symptoms of tissue poisoning (convulsions, respiratory stimulation, and the like) are manifested, regardless of how the nitrite would act. This naturally raises questions of possible direct tissue and cell actions of the dye. Conceivable is a catalyzing action on respiration, or on respiratory ferments, or an action of the dye itself as respiratory catalyst. Either one of these mechanisms could preserve life and assist in overcoming the poison, meantime, natural detoxicating actions of the tissues on the cyanide would be taking place. The two actions combined would be greater than either one alone. Something of the sort might also be imagined as the basis of potentiation by sodium thiosulphate, which forms no methemoglobin whatever. Therefore, this leaves something yet to be discovered which might fully explain the actions of methylene blue and toluidine blue,

17 Chen K. K., Rose C. L. and Clowes G. H. A. Amyl Nitrite and Cyanide Poisoning. J. A. M. A. 100: 1920 (June 17) 1933.
18 Trautman J. A. Pub. Health Rep. 48: 1443 (Dec. 1) 1933.

methemoglobin That such life tests with these rodents are inconclusive and misleading was pointed out several years ago by Heubner¹⁹ in his criticism of the studies of methemoglobin formation from aniline, ferricyanide, nitrobenzene and nitrite by Van Slyke and Vollmund²⁰ who used horse and rabbit bloods, and of aniline poisoning by Young, Muehlberger and Meek,²¹ and of acetanilid poisoning by Young and Wilson,²² who examined rabbit blood. In fact, it was recognized forty years ago by Szigeti⁷ that the blood of carnivora was better suited to methemoglobin production than that of herbivora, but this fact has been ignored by many investigators up to the present day. Therefore the inadvisability of such tests with horse and rabbit bloods, which are not uncommonly employed in biochemical and physiologic experimentation, cannot be too strongly emphasized in order to avoid confusion when it comes to transferring results to cases of human poisoning.

However, not all rodents are to be regarded in the same class with rabbits, for we could demonstrate protection against fatal doses of sodium cyanide in rats and guinea-pigs receiving methylene blue and sodium nitrite. Simultaneously, the bloods of these rats and guinea-pigs showed reduced oxygen capacity and, after nitrite, also occasionally spectroscopic suggestion of methemoglobin. In fact, the data on antidotal efficiency, as indicated by the number of fatal doses of cyanide antagonized, and on reduction in oxygen capacity of the blood in different species, emphasize a close correlation of antidotal efficiency of the dye and nitrite with methemoglobin formation. Such data are presented in table 2, the data on dogs being obtained from recent literature and those on other animals from our experiments. According to table 2, the greater the percentage of reduction in oxygen capacity of the blood (methemoglobin) the greater is the number of fatal doses of cyanide antagonized. Gram for gram, sodium nitrite tends to be nearly once again as efficient as methylene blue in reducing oxygen capacity and antagonizing cyanide. Roughly, about 5 per cent reduction in oxygen capacity appears to be enough to antagonize one fatal dose of cyanide (guinea-pigs), 10 per cent reduction can antagonize from one and one half to two fatal doses (pigeons and rats), from 16 to 20 per cent, two to three fatal doses, and about 25 per cent, four fatal doses. Dogs respond most efficiently to both dye and nitrite as to reduction of oxygen capacity and efficiency against cyanide, pigeons somewhat less, rats and guinea-pigs still less, and rabbits least or not at all. The decrease in species reactivity to both antidotes is graduated according to decreases in oxygen capacity of their bloods, being especially noteworthy with nitrite. Man probably reacts similarly to omnivora, although our data were too limited and the doses of methylene blue and nitrite were not comparable with those in table 2. For instance, 10 mg per kilogram intravenously of methylene blue in an adult man reduced the oxygen capacity of the blood 11.9 per cent in ten minutes, and this recovered to 6.1 per cent in one hour, 5 mg of sodium nitrite per kilogram intravenously in another man reduced the oxygen capacity 6 per cent in ten minutes and there was a considerable fall of blood pressure, flushing of the skin and respiratory excitation.

Perhaps the differences between rodents and other species and between rodents themselves are related to dietary and metabolic differences. At least, omnivora (dogs, pigeons, rats) and carnivora (dogs, cats) respond very positively with these antidotes, while herbivora do so less effectively (guinea-pigs) or not at all (rabbits). Clearly, the greater the methemoglobinemia whether as the result of an antidote or according to animal species, the greater is the resistance to cyanide poisoning. Therefore, when biologic tests for methemoglobin formation are necessary in cases of poisoning, or in researches, the choice animals are dogs (cats, according to Heubner) or birds possibly also frogs for nitrite. Species peculiarity as to methemoglobin formation is apparently not related to normal oxygen capacity of the blood, for, in this regard, carnivora and birds

are farther apart than are carnivora and rodents. It might be related to corpuscle permeability. The use of hemolyzed blood in such tests would be something different from whole blood, as would also tests *in vitro* from those *in vivo*.

CHOICE OF ANTIDOTE AND DIRECTIONS FOR TREATMENT IN CYANIDE POISONING

From the results and questions that have been discussed, the first choice and an alternative choice of systemic antidotes in treating cyanide poisoning can be indicated. Although sodium nitrite and the nitrite thiosulphate combination are more efficient in animals than is methylene blue, other considerations indicate the desirability of choosing methylene blue, for human cases. The chief danger from nitrite is sustained circulatory collapse, which might be invoked before symptoms of poisoning have advanced to the danger point or be added to impending or existing shock. The marked methemoglobin formation that nitrite causes could hardly be anything but an added unfavorable influence in case of collapse. These undesirable effects would be expected from doses of from 10 to 20 mg per kilogram, which would give total intravenous doses of from 0.7 to 1.4 Gm for an adult of 70 Kg (140 pounds) body weight. Mota²³ injected a total dose of 0.57 Gm sodium nitrite intravenously in a human case of cyanide poisoning with recovery. It may be argued that the patient could be given the benefit of the doubt on the supposition that nitrite collapse could not be worse than cyanide poisoning. As for using thiosulphate together with the nitrite, this would not avoid nitrite shock. As a matter of fact the intravenous injection of a large volume of thiosulphate solution, in addition to the nitrite, should not be lightly undertaken. Furthermore, it is probable that thiosulphate as a stock antidote would give more trouble than value, for thiosulphate decomposes in moist air and in solution. The salt would have to be kept dry and the solution made fresh. Thus the time consumed would tend to defeat a possible potentiating action on the nitrite, and under such conditions the nitrite might as well be tried alone. Moreover, the effective dosage of thiosulphate used in animals would be prohibitive in man, that is, quantities from 70 to 105 Gm, or more than 2 to 3 ounces, total. Less than this is hardly worth while trying.

On the other hand, methylene blue keeps well in aqueous solution or in 1.8 per cent (isotonic) sodium sulphate solution. It should not be dissolved in physiologic solution of sodium chloride, since precipitation occurs, owing to a common ion (chloride) action. Its antidotal efficiency in cyanide poisoning is after all fairly high, and its clinical usefulness has been demonstrated. The antidotal action is assisted by preservation of all important physiologic functions practically unimpaired. Its toxicity is less than that of nitrite and it forms less methemoglobin, all of which accrues to physiologic recovery from poisoning. Doses of from 10 to 20 mg per kilogram would be the equivalent of from 0.7 to 1.4 Gm for a 70 Kg adult and actually Dr Guger has injected 2 Gm (200 cc of 1 per cent) intravenously with life-saving effects in cyanide poisoning. Triosulphate causes such vigorous excitation of respiration and restlessness that it cannot be advised at present. Thiosulphate alone is, of course, practically inefficient. Therefore this leaves methylene blue as the antidote of first choice, and sodium nitrite with or without thiosulphate, as the alternative, or second choice. In prac-

¹⁹ Heubner W. J. Pharmacol. & Exper. Therap. **30**: 273 (Jan.) 1927.

²⁰ Van Slyke, D. D. and Vollmund E. J. Biol. Chem. **60**: 415 (Dec.) 1925.

²¹ Young A. J., Muehlberger C. W. and Meek W. J. J. Pharmacol. & Exper. Therap. **27**: 101 (March) 1926. Young A. G. *ibid.* **27**: 125 (March) 1926.

²² Young A. C. and Wilson J. A. J. Pharmacol. & Exper. Therap. **27**: 133 (March) 1926.

²³ Mota Rev. med. del Posario **23**: 2 (Aug.) 1933 (with discussion by Hung).

tice, the treatment as proposed for and actually used in the emergency hospitals of San Francisco is as follows

Inject immediately 50 cc of a 1 per cent solution of methylene blue (containing 18 per cent of sodium sulphate) intravenously, repeat, if necessary, until a total of 200 cc is injected. Frequently, consciousness and reflexes are restored before the first 50 cc is completely injected, but, if the patient lapses into unconsciousness, or manifests respiratory depression, resume the methylene blue treatment. As quickly as possible proceed with gastric lavage, using 5 per cent sodium thiosulphate. This oxidizes any unabsorbed poison. Artificial respiration, or oxygen carbon dioxide inhalation is given if necessary, or as needed for the cyanosis and effemine or digitan hypodermically, or strophanthin intravenously, for circulatory and respiratory stimulation.

The alternative procedure from the beginning is a slow and careful intravenous injection of 1 per cent sodium nitrite solution, in five divided injections, until 50 cc is injected in about one hour. If improvement is manifested but prognosis is still unfavorable, the injection may be cautiously continued, but it is to be stopped at once in case of sudden collapse. Epinephrine should be ready at hand to combat nitrite shock, if necessary. Fortify the nitrite treatment at once with the intravenous injection of 20 cc of freshly prepared 5 per cent aqueous solution of sodium thiosulphate (filtered), and, if necessary, continue the injection up to a total of 500 cc if possible. The remainder of the treatment is the same as the foregoing.

The solutions used in these treatments can be readily sterilized by boiling for fifteen minutes.

It should be kept in mind that clinical cyanide poisoning is not always as rapidly fatal as may be imagined from animal experiments or textbook statements. There is generally considerable cyanosis in man, and symptoms or unconsciousness may be present for two or three hours, which ordinarily will be ample time for administering the treatments suggested. In suicidal poisoning, the cyanide is usually swallowed, which requires giving the whole treatment. Accidental poisoning, in different degrees, is quite common in ports where fumigation of ships with hydrocyanic acid is a routine procedure, and in fruit growing regions where hydrocyanic acid is used on a large scale as an insecticide, as in California. Emergency kits, therefore, should be properly equipped with the newer antidotes.

CONCLUSIONS

1 Experimentally effective in protective and resuscitative treatments of fatal cyanide poisoning, and clinically useful, in order of decreasing efficiency, are a combination of sodium nitrite and sodium thiosulphate, sodium nitrite, methylene blue and sodium thiosulphate. Experimentally effective, but clinically inadvisable, is triose (glyceric aldehyde).

2 In mammals, including probably man, the antidotal actions in cyanide poisoning of the following are mediated predominantly through methemoglobin formation: nitrite-thiosulphate combination, nitrite, methylene blue and toluidine blue. Triose apparently forms cyanhydrine and is assisted by central stimulant actions. Thiosulphate is a direct oxidant of cyanide with formation of sulphocyanate.

3 Some kind of direct action, in part at least, on mammalian tissues and cells, independently of methemoglobin, is postulated for methylene blue, and such action is predominant in antagonizing cyanide poisoning of simple physical and biologic systems.

4 The most interesting of a number of ineffective agents are ethylene blue which is chemically close to methylene blue, and dimetrophenol, a powerful meta-

bolic stimulant and oxidant. Their ineffectiveness clearly indicates the specificity of methylene blue, the high combining chemical efficiency of methemoglobin, and the subordinate importance of tissue oxidation, at least as activated by dimetrophenol.

5 Life tests for methemoglobin formation in certain species of animals are useless. There are procedures for and limitations of blood examinations, which are valuable in interpreting and transferring results to human cases of poisoning.

6 The choice of antidotes and directions for treatment in cases of cyanide poisoning are outlined in this paper.

SYMPTOMS OF VIOSTEROL OVERDOSAGE IN HUMAN SUBJECTS

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During the past five years there have been carried out in the department of physiology in the University of Illinois College of Medicine a number of fundamental investigations on the physiologic mechanisms involved in the action of vitamin D. The information derived from these and other investigations has suggested the therapeutic use of this substance in concentrated form in a number of clinical conditions. However, it is my purpose in this paper not to discuss the results of these investigations but to describe some of the results of overdosage. Consequently, the clinical results of overdosage will be discussed without particular regard to the conditions for which the administration was undertaken. A. F. Hess and Lewis,¹ Bamberger and Spranger,² Opitz,³ and J. H. Hess, Poncher, Dale and Klein⁴ have all described toxic conditions in children, and Laurens⁵ has reviewed the literature on toxicity in experimental animals due to irradiated ergosterol in some form. But there have been no extensive detailed accounts of this condition in adult human subjects, except those of Crimm.⁶

Much has been written and more implied about the danger from excessive amounts of activated ergosterol or viosterol. That it is an extremely potent substance is apparent. However, this fact does not militate against its use as a therapeutic agent if proper precautions are observed.

The first clinical use of viosterol was naturally in the condition resulting from vitamin D deficiency, namely, rickets. The cardinal manifestation of this condition is a disturbance of the metabolism of calcium and phosphorus. The predominant response to the administration of viosterol in this condition, then, is

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1 Hess, A. F., and Lewis, J. M. Clinical Experience with Irradiated Ergosterol. *J. A. M. A.* **91**: 783 (Sept. 15) 1928.

2 Bamberger and Spranger. Vigantol bei tuberkulösen Kindern. *Deutsche med. Wchnschr.* **54**: 116 (July 6) 1928.

3 Opitz, H. Hypermineralisation infolge intensiver antirachitischer Behandlung. *Monatschr. f. Kinderh.* **46**: 228 1930.

4 Hess, J. H., Poncher, H. G., Dale, M. L., and Klein, R. I. Viosterol (Irradiated Ergosterol). *J. A. M. A.* **95**: 316 (Aug. 2) 1930.

5 Laurens, Henri. The Physiologic Effects of Radiant Energy. New York: Chemical Catalog Company, 1933.

6 Crimm, P. D. Vitamin Therapy in Pulmonary Tuberculosis. II. The Treatment of Pulmonary Tuberculosis by Means of Hypercalcemia Induced by Massive Doses of Activated Ergosterol. *Am. Rev. Tuberc.* **26**: 112 (Aug.) 1932.

III. The Effect of Viosterol on the Absorption, Retention and Excretion of Calcium. *Am. Rev. Tuberc.* **28**: 202 (Aug.) 1933.

a correction of this dysfunction. For this reason, viosterol came to be characterized as the "calcium-raising" factor. Attention was focused on this action and for some years little attention was paid to possible effects on other physiologic mechanisms. Overdosage effects have been thus quite generally associated with hypercalcemia.

The various projects undertaken here have clearly shown that the danger of excessive dosage is not serious and that toxic effects are only incidentally associated with hypercalcemia. Or, perhaps, a more correct statement would be that in human subjects there are other more reliable signs of toxicity than hypercalcemia.

In an earlier publication⁷ it was shown that intravenous injections of concentrated viosterol in normal dogs may sometimes lead to extreme toxicity and death in a few days without consistent change in blood calcium. Also, severe symptoms of toxicity have been produced in human subjects without any elevation of blood calcium or phosphorus concentrations.⁸ On the other hand, in both normal dogs and human subjects, hypercalcemia of great magnitude has been produced and maintained for days without evidence of toxicity.

While it is probable that the two conditions—toxicity and hypercalcemia—occur together very frequently, there are enough exceptions to make it clear that they are not interdependent but merely concurrent. With the administration of parathyroid extract it is seldom possible to elevate the blood calcium of dogs above 16 mg per hundred cubic centimeters without danger, while with viosterol we have been able to sustain a hypercalcemia of 29 mg for two weeks without even loss of weight. In one young adult human subject, a hypercalcemia of 24 mg was sustained for eight days without evidence of intoxication. This subject has been observed for two years since, with no indication of subsequent injury.

That excessive calcium deposition in soft tissues may occur even with relatively low dosages of viosterol has been shown in this laboratory⁹ and elsewhere. This has led to considerable apprehension. That this is not justified may be shown by the following observation.

If normal animals to which large doses have been administered until definite symptoms of toxicity have appeared are killed at any time during the period when calcium elimination in the urine is high and the tissues are examined, it will be found that many organs contain calcium deposits, microscopic examination will show that in many tissues, particularly the kidneys, cellular injury has occurred.

If, however, dogs in a comparable state of toxicity are allowed to survive until urine calcium elimination is again normal and until weight losses are recovered, no such deposits of calcium will be found in the soft tissues, and cellular injuries will have been repaired.

Furthermore, the toxicity in man may be recognized very early, even by the subjects themselves, before any serious damage has occurred. The indication, in such cases, is for discontinuance of viosterol until these symptoms disappear. Except under unusual conditions, it is then possible to resume administration at a lower dosage and still secure therapeutic results. Apparently

such subjects become tolerant in certain respects after a rest period.

Viosterol 10,000 X has been administered to more than 300 human subjects during the past three years for a variety of purposes. Of this number, 230 had hay fever and asthma, fourteen had postoperative parathyroid tetany, and the remainder, including several apparently normal subjects, comprised a group with a variety of conditions. With the highly potent preparation it was not difficult to induce early symptoms of overdosage. From these cases it has been possible to secure accurate information as to the onset of symptoms of overdosage, the symptom complex of which is fairly uniform in course and outcome.

This preparation is approximately 100 times as potent as the standard preparation available on the market. It contains 920,000 international units of vitamin D per cubic centimeter. The average of a large number of determinations was 30 ± 2 drops per cubic centimeter of this particular concentration. Since most of the quantitative administration has been by drops, it is convenient to note that 1 drop contains approximately 30,000 international units whereas 1 drop of the 250 D (100 X) preparation would contain about 300 international units.

It is a question whether the doses we have given in many cases bear any relation to the normal physiologic action of vitamin D. There is not enough evidence at present to settle this question. Although very much smaller doses are sufficient to correct the physiologic disturbances in vitamin D deficiency, there is some evidence which suggests that the effects of even these high doses are physiologic.

The therapeutic effect sought will determine the dosage to be administered in a given condition. For various conditions we have administered daily as high as 3 cc of viosterol 10,000 X to human subjects—in one case for a period of five days without the slightest evidence of injury. However, in a few cases as little as 4 drops daily for three days produced symptoms of gastrointestinal disturbance. Several of these patients have been found to be sensitive to corn protein. It will be recalled that viosterol is a solution of irradiated ergosterol in corn oil. From this it appears that the symptoms were not due to hypervitaminosis D *per se* but to the allergic response to the protein contained in corn oil.

In a woman, aged 40, 15 drops daily for ten days has on three successive occasions produced nausea on the eleventh day. Corn oil alone did not cause this result. Obviously this represents a toxic threshold for this particular subject that is not due to allergy.

The most common initial symptom of incipient toxicity is increased frequency of urination. Most patients do not appear to experience any particular urethral irritation, and there does not appear to be any pronounced polyuria. In dogs, however, polyuria is rather common. The reason for this frequency is not clear. At first it appeared to be always associated with increased urinary calcium elimination. However, it has since been found that it occurs independently.

Concurrently with this symptom in many cases, or following its appearance, there also occurs anorexia with persistent nausea. This has occurred in every case of overdosage. In the earlier investigations the significance of this symptom was not recognized because certain subjects neglected to report the occurrence of nausea.

⁷ Reed C I and Thacker E A. The Intravenous Administration of Irradiated Ergosterol. *Am J Physiol* 96: 21 (Jan) 1931.

⁸ Rappaport B Z and Reed C I. Viosterol of High Potency in Seasonal Hay Fever and Related Conditions. *J A M A* 101: 105 (July 8) 1933.

⁹ Reed C I, Dillman L M, Thacker E A and Klein R I. The Calcification of Tissues by Excessive Doses of Irradiated Ergosterol. *J Nutrition* 6: 371 (July) 1933.

Following quickly on the stage of nausea there was usually a gastro-intestinal disturbance easily confused with a generalized gastro-intestinal infection, except that there was never any significant elevation of temperature. Vomiting and diarrhea were usually quite severe but always abated within three to four days after the dose was reduced or the treatment discontinued.

While most subjects tend to gain weight on a dose of from 4 to 6 drops daily, every one showing definite symptoms of toxicity lost weight, in two cases as much as 20 pounds (9 Kg). In an investigation of the effects of viosterol on oxygen consumption in normal dogs¹⁰ and rats,¹¹ it was noted that whenever weight loss occurred there was always an increase in oxygen consumption. While no determinations of metabolic rate were made in any of our human subjects, it seems probable that there was an increase in metabolic rate along with loss of body weight. Poncher and Gasul¹² have suggested the same thing in connection with a study of viosterol therapy in tuberculous children.

This increase in metabolic rate is associated with an increase in the urinary excretion of nitrogen.¹⁰ It appears that the thyroid mechanism must be affected by the excessive viosterol therapy.

Other symptoms that have been noted more or less commonly are muscular weakness, lassitude, dull aching in the muscles, dizziness, disturbed muscular coordination and disturbed equilibrium.

Despite a rather widespread impression that viosterol exerts an aphrodisiac effect, careful questioning of fifty men, forty-three of whom were married, as to subjective libido, frequency of intercourse and general interest in sex life has failed to bring out any evidence of aphrodisia other than that associated with general improvement in health. The maximum doses in this group ranged from 10 to 60 drops over periods of from one month to three years.

A similar group of women ranging in age from 20 to 60, all married, were questioned, and of this group only one admitted any stimulation of libido. Since this woman was given corn oil alone for a period of two weeks during which she first reported this stimulation, it is apparent that the viosterol was not responsible.

The work of Dodds and his collaborators¹³ indicates that the sterols constitute a large group of chemically related substances, some of which are estrogenic to experimental animals. This suggested an investigation of the possibility that viosterol might exert such an influence on human subjects. A carefully prepared questionnaire was circulated among ninety female subjects ranging in age from 13 to 58 years, all of whom were menstruating regularly. The data requested included information as to the age of onset, regularity, frequency and duration. The doses ranged from 8 to 75 drops. The period of administration ranged from two weeks to six months.

One young unmarried woman who received a dose ranging from 20 to 60 drops daily over a period of two and one-half months stated that the frequency of menstruation was exactly doubled during that period and promptly returned to normal on discontinuance of the treatment.

One other subject, a widow aged 35, stated that during a period of three months of viosterol administration, in doses ranging from 6 to 40 drops, the menses appeared six days early in each cycle and that for two cycles after discontinuance of administration there was a delay of five days each time. Subsequently there was no disturbance.

In another instance a married woman, aged 47, stated that about ten days after cessation of normal flow at the first cycle after the beginning of administration of viosterol (two weeks previously) there began a scanty flow which lasted about ten days and then ceased. The treatment was continued for another six months, during which time there were no further irregularities. At the time of this irregularity she was receiving 15 drops daily. Subsequently the dose was increased to 40 drops a day for seven days.

Two other women reported definite shortening of the intermenstrual period on doses of 20 and 25 drops, respectively.

In three other instances there were complaints of slight disturbances, which, however, never became serious enough to cause any great discomfort. The doses were from 15 to 20 drops. While it is possible and even probable that all these effects did depend on the viosterol administration, it is evident that the disturbances are not of serious consequence, since there are only eight such cases in the group of ninety, and only one of these experienced any pronounced increase in subjective discomfort.

There has been some apprehension that continued heavy dosage of viosterol will lead to arteriosclerosis. A recent publication by Appelrot¹⁴ indicates that, in dogs, a hypertension occurs, associated with a thickening of the media of the blood vessels. There is a practical criticism that may be made of his work, namely, that the method of measurement of blood pressure employed is not reliable.

Viosterol 10,000 X has been administered to twenty-three subjects 50 years of age or over. One of these was a woman, aged 72, who ingested 20 drops, or 600,000 international units, daily over a period of four months. At the beginning the blood pressure was 152 systolic, 108 diastolic. At the end of that time the reading was 145 systolic, 88 diastolic. Subsequent observation during a period of one month without treatment did not show any significant change, the reading now being 145 systolic, 92 diastolic. While none of these changes are of a magnitude that would be of much significance, there appears to be slight improvement, if anything.

Another subject, a woman, began to take 0.5 cc of viosterol 10,000 X daily over three years ago for relief from postoperative tetany. After two months this was reduced to 20 drops a week. She was then 63 years old. Her blood pressure was 158 systolic, 97 diastolic, average of four readings. In January 1934 the reading was 160 systolic, 100 diastolic, a change of no significance. In none of the other subjects has there been any evidence that the treatment has in any way affected the state of resilience of the blood vessels.

That calcification or medial fibrosis may produce hypertension is recognized. That viosterol in sufficiently high dosage may produce one or the other of these conditions is possible. The amount necessary to produce either condition in the human subject has never

¹⁰ Reed C. I., Thacker E. A., Dillman L. M. and Welch J. W. The Effects of Irradiated Ergosterol on the Metabolism of Normal Dogs. *J. Nutrition* 6: 355 (July) 1933.

¹¹ Reed C. I. Unpublished results.

¹² Poncher H. C. and Gasul B. M. The Effect of Moderately Large Dosage on Tuberculous Children to be published.

¹³ Dodds E. C. and others. A Synthetic Estrus Exciting Compound. *Nature* 131: 56-131 1933.

¹⁴ Appelrot Samuel. Hypertension D and Blood Pressure in Dogs. *Am. J. Physiol.* 105: 294 (Aug.) 1933.

been determined. If conclusions may be drawn from results in dogs, there has never yet been given to any human subject enough viosterol to produce either calcification or medial fibrosis within the periods of time reported.

In four men ranging in age from 50 to 60 years there developed within a week after administration of from 10 to 20 drops daily very severe and persistent constipation, which disappeared after from two to three weeks. During this period, however, it was necessary to resort to frequent enemas.

It would appear, then, that there need be little apprehension about the administration of amounts ranging up to 150,000 international units daily for indefinite periods. Larger amounts had better be limited to periods of a few months at most, depending on the therapeutic effects desired.

The treatment of the condition of overdosage has in our work been limited entirely to decreasing the dose or discontinuing the treatment. Crumm⁶ has suggested the intravenous injection of sodium bicarbonate or Ringer solution. We have not investigated either procedure.

SUMMARY

A study has been made of the administration of highly concentrated viosterol to 300 human subjects ranging in age from 7 to 72 years. The doses ranged from 3,000 to 2,760,000 international units daily, or a maximum of 920 times the normal antirachitic dose of 3,000 international units. Of these, forty-three patients showed symptoms of toxicity in varying degrees.

1853 West Polk Street

THE INCIDENCE AND TREATMENT OF TRICHOMONAS VAGINALIS IN PREGNANCY

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Little attention is given to the vaginal secretion of pregnancy. Though normally greater in amount than in the nonpregnant, it is often considerably increased, contains leukocytes and pathogenic micro-organisms, and results in definite symptoms of varying intensity. The latter condition is frequently dismissed as a normal physiologic change, whereas if the secretion is examined microscopically it will be found in a great majority of instances to be associated with *Trichomonas vaginalis*.

This flagellate is found in about 10 to 40 per cent of pregnant patients and may be found in from 50 to 70 per cent of all patients with leukorrhea. It probably occurs more frequently in the pregnant than in the nonpregnant. One of the reasons may be that the increased female sex hormone in the body enhances its growth. Stein¹ has shown that female sex hormone added to a culture medium causes a much more rapid growth of the parasites and suggests that the marked recurrence of the organism following the menses may be due to the female sex hormone in the menstrual blood and not to the blood itself.

In a series of 309 unselected pregnant patients personally examined at the Berwind Maternity Clinic, trichomonas was found in the vaginal secretion in 20.7

per cent. Seitz² found the parasite in 20 per cent of pregnant patients, Brumpt³ in 10 per cent of gynecologic patients, Hoehne⁴ in 28 per cent nongravid as against 34 per cent of 102 gravid patients, Vavilova⁵ in 28 and 35 per cent, respectively, of pregnant and nonpregnant women, Liss⁶ in 405 pregnant women, observed the organism in 19.5 per cent and Traugott⁷ in 125 pregnant women, in 21.6 per cent, while Hausmann⁸ in 200 unselected gravid patients reported 37 per cent infected as against three in 150 cases examined by Davis⁹. Bland¹⁰ found an incidence of 23.6 per cent in 500 obstetric patients. Of these, 257 were Negroes and 243 were white. Of seventy-nine patients with *Trichomonas vaginalis* in our clinic, forty-five or 57 per cent were Negroes. There apparently is a greater incidence in Negro than in white women.

Several authors report an increased puerperal morbidity in cases presenting trichomonas infection. Bland and his associates report a puerperal morbidity rate of 50 per cent in patients with the parasite and 25.4 per cent in those without. The morbidity was higher in white than in the Negro patients. Schmid and Kamnicker¹¹ show a morbidity of 10.3 per cent in cases with trichomonas as against 4.8 per cent without trichomonas, and Liss, 29 and 15.3 per cent, respectively. Gragert¹² has 29.1 per cent morbidity. After antenatal treatment his morbidity rate dropped to 7.7 per cent. When the cases were positive for trichomonas in spite of treatment, the rate was 11.3 per cent. Cornell¹³, Greenhill¹⁴ and others state that the trichomonas did not influence the lying-in period in their cases. We found no increase in puerperal morbidity in our series.

There is still a controversy as to the pathogenicity of this parasite. Donne¹⁵ (1836) in the first report associated it with venereal disease. The various views at present are that it is harmless, that the purulent discharge is a result of specific bacterial infection and the trichomonas is a secondary invader, that the primary pathogen is yeast and the trichomonas occurs symbiotically as a nonpathogenic parasite, and that it is a specific infection. Most observers here and abroad, however, agree that with the eradication of this flagellate the associated symptoms and leukorrhea disappear.

The life history of the trichomonas is not known. It can be obtained in cultures and it reproduces by longitudinal binary fission. No cyst forms have been described, except possibly by Bensen¹⁶ but there is apparently a focus from which reinfection occurs. The parasite has been found in the rectum, mouth and bladder as well as in the vagina. One case of pyelitis due to this organism has been reported, as well as a number of cases of urethritis and prostatitis. In a few of the latter, the wives had a trichomonas vaginitis. It has also been found in the vagina of the monkey, in the

- 2 Seitz A. *Munchen med Wchnschr* 66 837 1919
- 3 Brumpt E. *Precis de parasitologie* Paris, 1913
- 4 Hoehne O. *Zentralbl Gynak* 40 4 113 1916
- 5 Vavilova N. M. *Russian J Trop Med* 5 513 1927 abstr
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- 11 Schmid A. L. and Kamnicker H. *Arch f Gynak* 127 367 1926
- 12 Gragert O. *Monatschr f Geburtsh u Gynak* 64 3, (Sept.) 1923
- 13 Cornell F. L. *Goodman I. J. and Matthies Mabel* *Am J Obst & Gynec* 22 360 (Sept.) 1931
- 14 Greenhill J. P. *Am J Obst & Gynec* 16 870 (Dec) 1934
- 15 Donne M. A. *Compt rend Acad d sc* 3 382 1836
- 16 Bensen W. *Arch f Protistenk* 18 115 1910

1 Stein I. F., and Cope Elizabeth J. *Am J Obst & Gynec* 25 519 (June) 1933

mouth of the cat and in the intestine of the monkey, opossum and prairie dog,¹⁷ as well as in other animals.¹⁸

Trichomonas hominis, which is found in the stools, is very similar to *Trichomonas vaginalis* except in the length of the undulating membrane. Stein has shown that under varying conditions the size and shape of the parasite and the length of the membrane can change. The proximity of the rectum to the vagina and the habit of most women of cleansing the anus toward the vagina after each defecation would allow of easy access from the intestine if this should be the focus. The bladder has been mentioned as a focus for reinfection, but the trichomonas would undoubtedly have been observed in routine examination of the urine and would have aroused considerable study long before the present interest.

The symptoms are essentially the same as found in nonpregnant patients, notably profuse discharge, which may be foul itching and burning about the vulva and introitus, dyspareunia, and sometimes urinary symptoms. In mild cases the symptoms can be elicited only on close questioning, as they may not be very annoying, depending on the sensitiveness and cleanliness of the patient. On the other hand, they may at times be severe enough to disturb sleep.

Examination reveals a characteristic picture of diffuse redness about the introitus, with foamy fluid pus which is often mistaken for gonorrhea. The vagina may be diffusely red or reddened in patches. Sometimes there is little to be seen in spite of moderate symptoms. The increased vascularity and succulence, which is the most striking change in the vagina of pregnancy, should not be mistaken for evidence of trichomonas, nor should a moderate secretion be overlooked as a normal condition. The normal secretion of pregnancy is represented by a thick, white, crumbly substance, which possesses a distinctly acid reaction and is composed of epithelial cells and debris, and a great many Doderlein bacilli.

The diagnosis is readily made by placing a little vaginal secretion in two or three drops of physiologic solution of sodium chloride on a slide covered with a cover slip and examined microscopically under the high dry lens, or the hanging drop method may be used. The parasites are easily seen by their motion and often aggregate clumps of cells or debris in which they become entangled. They vary in size but are usually a little larger than a pus cell. Stained smears are not used for diagnosis, because of the difficulty in differentiating the parasite from pus cells unless specially prepared.

The secretion for examination should be taken from the fornices and not from the cervix, as trichomonas is apparently not found in the alkaline cervical secretion. Specimens may be obtained by a platinum loop or from the lower blade of a bivalve speculum. Even simpler, when the examination is finished, the gloved finger is dipped into two or three drops of saline solution on a slide. The adherent secretion is generally sufficient for examination. If the latter method is used one should have no antiseptic solution, lubrication jelly or dusting powder on the gloved finger as the trichomonas is easily affected and if not killed may become amotile.

TREATMENT

The multiplicity of treatments indicates that a satisfactory method has not been obtained. All relieve the symptoms, but reinfection is very prone to occur. This

may be due to the fact that as yet the life cycle or focus of the parasite is not known. The methods used can be divided into two types: (1) those in which douches or tampons are used with various antiseptics, usually preceded by scrubbing of the vagina with tincture of green soap, and (2) the drying or powder treatment.

The treatments used in nonpregnant cases, which are rather drastic, are employed in modified form in cases of pregnancy. Hoehne washes the vagina with 1 per cent corrosive mercuric chloride followed by a glycerin mixture containing sodium bicarbonate or sodium borate. De Lee¹⁹ favors this method but advocates putting the patient to bed for two days during the treatment. Schmid and Kammer have used this method with fairly good results. Greenhill, after scrubbing the vulva and vagina with tincture of green soap, uses methylene blue (methylthionine chloride) tamponades followed by 0.5 per cent lactic acid douches. Mohler²⁰ injects a solution of Doderlein bacillus culture and lactose into the vagina with a syringe. Hibbert²¹ uses a specific streptococcus bouillon filtrate. Cornell and his associates have used mercurochrome, methylene blue, gentian violet, acriflavine hydrochloride, glycerin with and without sodium bicarbonate, tincture of iodine, hexylresorcinol, lead acetate, zinc oxide ointment, metaphen and the like and they advocate the Kleegman²² treatment, which consists of scrubbing the vagina with tincture of green soap, painting with pyrolytic acid and insertion of Lassar's paste²³ tampons. Holden uses kaolin as a drying powder. Bland precedes the kaolin with 1 per cent trinitrophenol and follows with douches of compound solution of iodine. Sure and Bercey²⁴ use quinine sulphate with insufflation. Northrup²⁵ advises powdered sulphur, and Gellhorn²⁶ has obtained good results with acetarsone (stovarol).

My associates and I have tried a number of these methods, which relieved many but were not entirely satisfactory. Lately we have used with very good effect a pure crystalline phenol in an acid medium, notably boric acid powder instead of the usual sodium bicarbonate, as the sodium bicarbonate often produces an irritation. Essential oils are added for their cooling effect. In acute cases the patient is allowed to take daily douches (from 1 to 2 drachms to a quart of water) for one or two weeks, which relieves the symptoms and allays the irritation. The vagina is then swabbed with a cotton pledget and the dry powder mixed with three times its volume of boric acid powder, is instilled into the vagina, the patient being instructed to take a douche with warm water the same evening or the next morning. As the phenol content of the douche powder averages from 6 to 8 per cent, it must be mixed with at least three times its volume of boric acid powder before it is used dry in the vagina. If used full strength in a sensitive patient, it may cause a severe burn, as did occur in one case.

In a number of patients who harbored the organisms during pregnancy and had no treatment, a spontaneous cure occurred during labor and the puerperium. Follow-up examinations found them to be free from infec-

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- 20 Mohler R W and Brown C P Am J Obst & Gynec 25 718 (May) 1933
- 21 Hibbert G F Am J Obst & Gynec 25 465 (April) 1933
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- 23 Lassar's paste consists of salicylic acid 2 Gm zinc oxide 24 Gm starch 24 Gm and petrolatum 30 Gm
- 24 Sure J H and Bercey J E J Obst & Gynec 25 136 (Jan) 1933
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- 26 Gellhorn George The Treatment of Trichomonas Vaginitis with Acetarsone (Stovarol) J A M A 100 1762 (June 3) 1933

17 Hegner R and Ratcliffe H J Parasitol 14 27 (Sept) 1927
18 Tanabe Misao J Parasitol 12 101 (Dec) 1925

tion Two of the latter patients became pregnant shortly thereafter and again showed the parasites

CONCLUSIONS

1 Vaginal discharge during pregnancy is often dismissed as a normal physiologic change but is frequently associated with *Trichomonas vaginalis*

2 In a series of 309 pregnant patients personally examined, *Trichomonas vaginalis* was found in 207 per cent

3 The symptoms are essentially the same as in the nonpregnant, and the diagnosis is easily made by a hanging drop

4 My cases showed no increased puerperal morbidity

5 The multiplicity of treatments indicates that a satisfactory method is not available, but we offer the use of a crystalline phenol powder which has been used with good effect in our series

6 Some cases are apparently cured spontaneously during labor and the puerperium

7 The life cycle of the trichomonas requires further study, but in the meantime many patients may be given much relief from the annoying symptoms and leukorrheal discharge associated with this organism by more careful attention to the microscopic examination of the vaginal secretion

55 East Eighty-Sixth Street

THE LATENT PERIOD IN THE ROENTGEN DIAGNOSIS OF PULMONARY TUBERCULOSIS

PRELIMINARY REPORT

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The roentgenologic diagnosis of pulmonary tuberculosis stands today on a firm foundation. It is generally conceded that tuberculous lesions in the lungs can be recognized at their earliest stages in the roentgenogram, often long before physical signs are present and frequently in advance of recognizable symptoms. The increased utilization of this method for the routine examination of the chest has resulted in a vast increase in the number of cases of incipient tuberculosis that have been recognized.

This development of our ideas as to the place that the roentgenogram should have in the recognition of pulmonary tuberculosis depends largely on the pioneer work of Cole, Dunham, Pancoast, Baetjer, Brown and Sampson, and Amberson. Williams and Hill's¹ study established firmly the superiority of the roentgen over the physical examination in the detection of minimal tuberculosis. Webb² summarized well the situation in this regard, and since then there have been numerous contributions which reflect the opinion that the roentgenogram is by far the most sensitive recorder of early pulmonary tuberculosis.

The statement has been repeatedly made³ that in the presence of symptoms due to pulmonary tuberculosis the roentgen examination should reveal evidences of the disease in practically all cases. It has been said also that pulmonary tuberculosis might be present in the lungs without roentgen signs if it was of such a nature that it produced no symptoms. This appears to be borne out by cases without symptoms or signs in which the roentgen examination, made as a routine procedure, proves negative while later events indicate that a pulmonary lesion was probably present at that time.

There is, however, little accurate or definite evidence bearing on the question of how long a period must elapse from the time of the infection itself until roentgen manifestations first appear. The opinion is widely held that tuberculous lesions remain concealed for long periods before developing sufficiently to produce symptoms or signs. While numerous observations have been made as to the rapidity of development of tuberculosis in the lungs of animals after the artificial introduction of tubercle bacilli, there is very little specific evidence on this point in human beings. Redeker⁴ has reported some cases of primary tuberculous infection in which the presumption that the infection occurred at a certain time is very strong because of the history of exposure, and evidences of tuberculosis in the roentgenogram appeared approximately four months later. The observation of roentgenographic changes in the chests of young children within relatively short periods after a known exposure to tuberculosis has been made. Ligner⁵ has reported a case in an infant in which the roentgen signs appeared within ten days after the tuberculin skin test became positive. There was a period of at least twenty-five days between the occurrence of the infection and the development of definite changes observable in the roentgenogram. Aside from these few observations, no statements can be found in the current literature or in standard textbooks as to the matter.

Wessler and Jaches⁶ state that there must be an area of infiltration near the surface of the lung at least 4 mm in diameter to be visible on a roentgenogram. They observe that a tuberculous focus can exist without roentgen evidence of its presence, and a latent period intervenes during which the focus gets larger and finally becomes evident. The time consumed by this latent period is not given. McPhedran⁷ believes that a tubercle from 1.5 to 2 mm in diameter can be seen in the roentgenogram but also does not state how long a period must elapse before this size is attained. Fishberg⁸ gives the clear impression that long periods may elapse between the occurrence of a tuberculous infection of the lungs and the appearance of roentgen signs. He believes that an active tuberculosis may be present without roentgenographic signs. He also states that it takes about eight weeks for a tubercle to develop.

It is obviously most difficult to date actually the occurrence of a tuberculous infection in the human being. It is often possible to state with accuracy the time of onset of symptoms, but that may be long after the onset of the infection. Only one means of great accuracy is at hand, i. e., the tuberculin skin test. That

3 Rigler, L. G. The Value of X-Ray Examination in Pulmonary Tuberculosis. *Minnesota Med.* 13: 25 (Jan.) 1930.

4 Redeker, Franz. *Ztschr. f. Tuberk.* 49: 163, 1927-1928.

5 Ligner, J. *Ztschr. f. Kinderh.* 50: 505, 1920.

6 Wessler, H. and Jaches, Leopold. *Clinical Roentgenology of Diseases of the Chest*. Troy, N. Y., Southworth Company, 1923.

7 McPhedran, F. M. and Weyl, C. N. *Am. J. M. Sc.* 17: 313 (March) 1927.

8 Fishberg, Maurice. *Pulmonary Tuberculosis*. Philadelphia, Lea & Febiger, 1932.

From the Department of Radiology, University of Minnesota and the University Hospital.

1 Williams, L. R. and Hill, Alice M. The Utilization of Certain Diagnostic Aids of Special Value in Determining Tuberculosis. *J. A. M. A.* 92: 1989 (June 15) 1929.

2 Webb, Gerald. The Early Diagnosis and Early Care of Pulmonary Tuberculosis. *J. A. M. A.* 92: 1811 (June 1) 1929.

this is a most accurate means of indicating the presence or absence of tuberculous infection has now been well established, as shown by the recent work of Hart⁹ and Myers¹⁰ and the opinion of Fishberg⁸ and others. The interval between the occurrence of the infection and the establishment of a positive skin test must be very short, probably only a few weeks or less.¹¹ A negative tuberculin skin test, except under unusual circumstances, is extremely good evidence of the absence of a tuberculous infection. By most observers, in fact, it is considered to indicate that the patient has never been infected with tuberculosis. In some instances, however, this may not be true, as the allergy may disappear, leaving a negative tuberculin skin test in an individual who had had a primary infection in childhood. In the young adult this is rather unlikely, but this possibility makes it difficult to state definitely that any particular individual has never had a tuberculous infection. A positive skin test has, of course, much less significance, indicating only that an infection has occurred at some time, and it has no imperative relationship to the present symptoms of any patient. When however, a negative tuberculin test is followed in a relatively short time by a positive one, and a definite exposure to tuberculosis has taken place in the meantime, it seems justifiable to date the occurrence of the infection to some time during the interval between the two tests. It is assumed, of course, that the tests are properly done and properly interpreted.

With the increased use of the tuberculin skin test as a routine procedure, especially among university students, nurses, interns, school children and others, cases of the type previously cited are being observed.¹² If, in such cases, roentgenograms of the lungs were made prior to the negative skin test, promptly after the positive skin test and at frequent intervals thereafter, some idea of the duration of time that must take place between the occurrence of a tuberculous infection of the lungs and the development of roentgen signs might be obtained.

It must be noted that this can apply, in the majority of cases, only to a first infection or childhood type of tuberculosis. It is generally agreed that the adult type of tuberculosis rarely, if ever, occurs in individuals who have not had a childhood infection. The vast majority of persons, therefore, who develop the adult form of tuberculosis must already have a positive skin test. In that event there is no sure means of dating the occurrence of the infection. On the other hand, first infections no doubt occur frequently in young adults, and these lend themselves particularly well to this type of study. In the typical first infection tuberculosis, as seen in young children, the development may be very rapid, and the lesions are detected in the roentgenogram with ease because of their extensive character. In the group of young adults with first infection whose cases are to be reported here, the lesions had more the roentgenographic characteristics of the adult type of tuberculosis, so that their detection was not much easier than that of any early adult type of lesion. While the development may have been more rapid than that of the usual adult type of tuberculosis, nevertheless a study of these cases will throw some light on the minimum time which must elapse before the roentgenogram will reveal a tuberculous infection of the lungs even if the maximum time is not clearly demonstrated.

We have been fortunate in observing a number of cases of pulmonary tuberculosis developing in medical students and interns who have previously had repeated tuberculin skin tests, chiefly by the Mantoux method, 0.1 mg of old tuberculin being used in most cases and also have had repeated roentgenograms of the chest. Some of these are included in the report of Myers.¹² For a number of years, under the direction of the Student's Health Service, all the medical students of the University of Minnesota have had routine tuberculin skin tests and roentgenograms of the chest at yearly intervals. We have therefore been able in some of these cases to trace exactly the time of onset of the infection and the period of time that elapsed before roentgen signs in the lungs became apparent. The important detailed incidents in these cases are tabulated farther on. It must be noted, however that we have

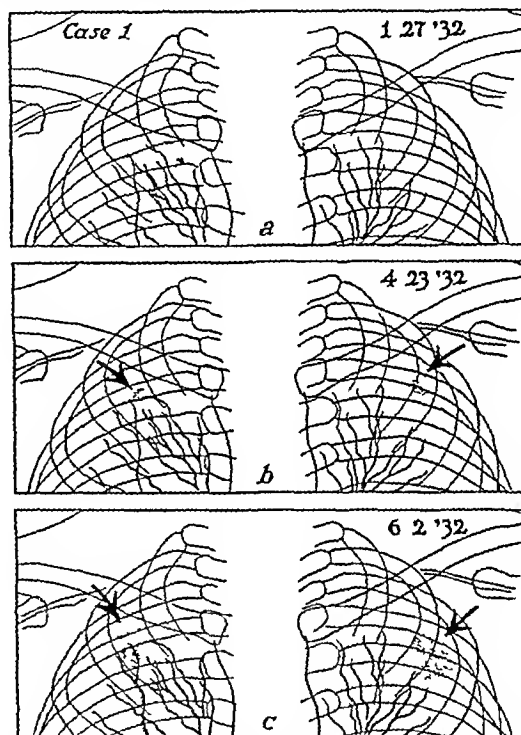


Fig 1 (case 1)—Diagrammatic representation of roentgenograms of chest showing only the upper portions: a normal chest showing vascular markings this was made almost six weeks after the first day of exposure to tuberculosis and about four weeks after the first positive tuberculin skin test; b first positive film taken about eighteen weeks after the first tuberculosis exposure note the characteristic nodular infiltration in both subclavicular regions; c film made about six weeks later note the increase in the area of infiltration and the establishment of a drainage band especially on the right.

not attempted to record all the cases studied, or even all the cases in which the skin test changed under observation. We have, rather, selected a group of cases with a fairly definite exposure to tuberculosis in which a positive skin test and definite roentgen signs developed.

CASE 1—Nov 21, 1928 Pirquet negative
Jan 16, 1930 Mantoux negative, 0.1 mg Roentgenogram of chest negative
Jan 3, 1931 Mantoux negative, 0.1 mg Roentgenogram of chest negative
Dec 19, 1931 Known exposure to tuberculosis, first day
Dec 23, 1931 Mantoux negative, 0.01 mg Roentgenogram of chest negative
Dec 31, 1931 (12th day) Mantoux positive, 0.1 mg
Jan 27, 1932 (39th day) Roentgenogram negative (fig 1 a)¹³

¹³ Owing to the difficulty of reproducing the fine changes shown in the roentgenograms all the illustrations are diagrammatic faithfully representing the original films.

⁹ Hart P. D. M. Res. Council Spec. Report Series No. 164, 1932.
¹⁰ Myers J. A. Ann. Int. Med. 6: 672 (Nov.) 1932.
¹¹ Hart P. Myers J. A. Minnesota Med. 15: 26 (Jan.) 1932.
¹² Myers J. A. Recent Facts on Transmission of Tuberculosis. A. M. A. 97: 316 (Aug.) 1931.

Feb 20 1932 Mantoux positive, 0.1 mg Physical examination negative

March 17 1932 In bed with cold

April 23, 1932 (125th day) Roentgenogram positive (fig 1b) Physical examination negative Temperature normal

June 2, 1932 Roentgenographic observations increased (fig 1c) Slight afternoon fever

April 6, 1933 Roentgenographic observations decreased No symptoms or physical signs

In this case there was a definite exposure followed very shortly by a positive skin test. The roentgenogram made more than five weeks later was entirely negative (fig 1a). Sixteen weeks after the positive skin test and less than eighteen weeks after the first known exposure to tuberculosis the roentgenogram (fig 1b) was clearly positive. Unfortunately, no films were taken in the interim. Judging from the extent of the lesions shown in figure 1b it seems highly probable that roentgenographic evidence could have been detected

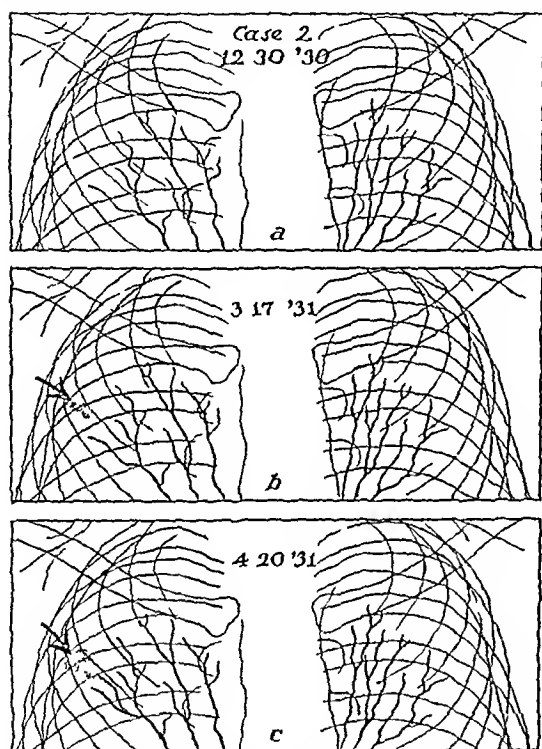


Fig. 2 (case 2)—Diagrammatic representation of roentgenograms of chest showing only the upper portions: a normal chest showing vascular markings; this was made a few days after first tuberculosis exposure; b first positive film taken about eleven weeks after the first exposure; note the small irregular nodule in the right upper lobe some distance below the clavicle; c film made about five weeks later; the nodule has increased so that the changes are much more definite.

a month or two earlier. There were no physical manifestations at any time. The roentgen manifestations have now persisted with some increases and some recessions for about twelve months.

The character of the roentgen observations is worthy of some note. There was a rather nodular type of infiltration in both infraclavicular regions (fig 1c). This was surrounded by a zone of haziness, although the nodules themselves were fairly well demarcated. Repeated roentgenograms at monthly intervals have shown both recessions and accretions in the size of the lesions until the last which shows some decrease. The appearance is very similar to that described as an early adult type of tuberculosis by Wessler and Jachess¹³ Assmann¹⁴ and others. The repeated negative tuber-

culin skin tests obtained before this exposure strongly suggest that this was a first infection. Nevertheless, the possibility that this was a second infection in an individual who had lost his allergy cannot be excluded.

CASE 2—Jan 1, 1929 Pirquet negative

Feb 27, 1930 Mantoux negative, 0.1 mg Roentgenogram negative

Dec 26, 1930 Known exposure to tuberculosis, first day

Dec 30, 1930 (4th day) Roentgenogram negative (fig 2a)

Jan 5, 1931 (10th day) Mantoux negative, 0.1 mg

March 8, 1931 Known exposure to tuberculosis

March 14, 1931 (78th day) Mantoux positive, 0.1 mg

Roentgenogram positive with minimal signs (fig 2b)

April 20, 1931 Mantoux positive, 0.01 mg Roentgenogram positive with increased signs (fig 2c)

June 5, 1931 Pleurisy with effusion, same side as lesion

April 17, 1933 Roentgen signs hardly discernible. Some thickening of pleura

In this case the exact sequence is less clear because of the two exposures to tuberculosis. In view of the presence of roentgen signs six days after the beginning of the second exposure (fig 2b), it seems most reasonable to assume that the first exposure produced the lesion in spite of the negative skin test following this exposure. The latter was done only ten days after the beginning of this period, so it might still have been negative, even though an infection had occurred.

Assuming that the infection occurred with the first exposure there was an interval of only eleven weeks from the first day of the contact until the roentgen signs were first observed. The later development of the pleurisy with effusion served merely to confirm the diagnosis.

A small rounded nodule was observed in this case in the periphery of the right upper lobe (fig 2c), which would correspond well with a primary tuberculous focus as often seen in childhood. It is notable that it did not increase in size but did persist for a long period. On the last examination, some two years after the original finding, the lesion could be identified only with difficulty.

CASE 3—Jan 20 1930 Roentgenogram negative

Feb 19, 1930 Mantoux negative, 0.1 mg

Jan 30 1931 Roentgenogram negative

Feb 25 1931 (1st day) Mantoux positive (+), 0.1 mg

March 3, 1931 (6th day) Mantoux positive (+++), 0.1 mg

May 5 1931 (69th day) Roentgenogram positive (minimal signs) Pleurisy with effusion occurred shortly

April 11, 1933 Roentgen signs hardly apparent

In this case there was no known exposure to tuberculosis. The change in the skin test was definite, however, and was followed in a relatively short time by the symptoms of an acute pleurisy. It is more difficult to date the occurrence of the infection, because a whole year intervened between the last negative and the first positive skin test. In view of the fact that the roentgenogram of Jan 30, 1931, was negative and that the first skin test of Feb 25, 1931, was only slightly positive while in a short time it became strongly positive it seems reasonable to assume that the infection occurred at about that time. We can say with certainty only that positive roentgen signs appeared within about ten weeks after the first positive skin test. Repeated roentgenograms since that time have demonstrated the persistence of the small nodule in the upper lobe, which was first observed. This nodule was very similar in appearance and location to that illustrated in case 2 (fig 2). The pleurisy with effusion merely tended to confirm the diagnosis. The final roentgenogram almost

two years later showed almost a complete disappearance of all the changes

CASE 4—Dec 12, 1929 Mantoux doubtful probably negative 0.1 mg
Jan 10, 1930 Roentgenogram negative
Jan 23, 1931 Roentgenogram negative (fig 3a)
Jan 23, 1931 Mantoux negative, 0.1 mg
Sept 15, 1931 Known exposure to tuberculosis first day
Sept 15, 1931 Mantoux negative, 0.1 mg Roentgenogram negative
Oct 15, 1931 (30th day) Mantoux positive (++) 0.1 mg
Jan 19, 1932 (126th day) Roentgenogram positive (very slight) (fig 3b)
May 30, 1932 Roentgenogram positive (marked) (fig 3c)
Dec 13, 1932 Roentgenogram shows some diminution of the condition

In this case an exposure to tuberculosis for a month was followed immediately by a change in the skin test from negative to positive. The first roentgenogram (fig 3b) was taken eighteen weeks after the first known exposure and about thirteen weeks after the first positive skin test. The original interpretation of this examination was negative, but reexamination of these films after the observation of the rather marked changes four and a half months later showed clearly the presence of a small nodule in the apex where the subsequent changes were seen.

The roentgen observations in case 4 are unusually interesting. The character of the infiltration in the right apex (fig 3c) was typical of what is ordinarily considered to be an adult type of tuberculosis. The occurrence of the lesion in connection with the skin tests, as recorded makes it appear that this was a primary infection and indicates how difficult it is to determine from the roentgenogram alone whether a lesion is of the primary or of the adult type. Again the possibility that this was a true adult type in an individual who had lost his sensitivity to tuberculin as previously stated, must be strongly considered.

CASE 5—Nov 16, 1928 Pirquet negative
Nov 10, 1930 Known exposure to tuberculosis first day
Nov 11, 1930 Roentgenogram negative
Jan 12, 1931 (63d day) Mantoux negative 0.1 mg
April 10, 1931 (151st day) Cervical nodes enlarged (biopsy later showed tuberculosis)
April 11, 1931 (152d day) Mantoux positive 0.01 mg
May 1, 1931 (171st day) Roentgenogram positive
June 6, 1931 Roentgenogram shows more marked lesion (incipient bilateral apical)

In this case the enlarged lymph nodes presented the first physical evidences of tuberculosis. There was an interval of twelve weeks between the last negative and the first positive skin test. The roentgenographic observations appeared almost simultaneously with the positive skin test, and the negative roentgenogram five months earlier indicates the recent character of these observations. The increase in the lung changes also indicates the active character of the lesion. The exact date of the infection is difficult to determine but was most probably dated at the time of the known tuberculosis exposure in spite of the negative skin test nine weeks later. If this date is assumed the positive roentgen signs appeared within twenty-four weeks after the earliest possible occurrence of the infection. In this case also the roentgen manifestations were those of an adult lesion there being a bilateral apical involvement of a rather fibrotic type, very similar to that in case 4.

From the records of these five cases it appears that an interval of from eleven to twenty-four weeks may

elapse from the occurrence of a tuberculous infection to the development of roentgen signs that are susceptible of interpretation as indicating pulmonary tuberculosis. This obviously represents only the minimal time. It is possible that in some cases the minimal time may be even less. This might have been demonstrated if roentgenograms had been made at weekly intervals after the occurrence of the positive skin test. What the maximum time would be it is impossible to state. It is striking that the roentgenographic manifestations should appear so quickly and it is notable that in none of these cases were there any physical changes determined or absent. In the others the symptoms were conditioned by the acute pleurisy or the presence of tuberculous lymph nodes.

The data here presented tend to confirm abundantly the assertion that the roentgenogram is a most sensitive

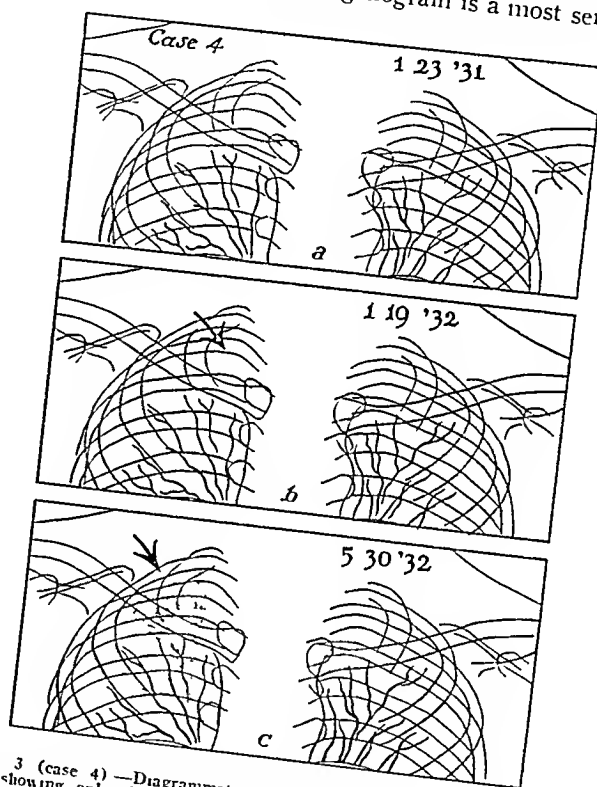


Fig 3 (case 4)—Diagrammatic representation of roentgenograms of chest showing only the upper portions. *a* normal chest shown in film taken about nine months before the first tuberculosis exposure. *b* first positive film taken eighteen weeks after the first tuberculosis exposure. *c* note the very small nodule in the right apex. *c* film made more than four months later the changes have greatly increased the whole appearance suggesting a fibrotic apical adult lesion.

method of detecting pulmonary tuberculosis in its earliest stages. It gives also some practical information bearing on the question of when it would be wise to make a roentgen examination of an individual after a tuberculous contact to determine whether an infection has occurred. It is evident that rarely will any information be obtained in this way until after the skin test becomes positive. Following this, a latent period of from three to six months possibly less, must elapse before any roentgen changes will appear. How much longer the case must be followed, beyond the six months period, before a pulmonary lesion can be ruled out it is impossible to say. Our experience thus far suggests that the lesions will be demonstrable by this time, but this is not clearly proved. As the length of time becomes prolonged, observations such as those

reported here become much less valuable, because of the possibility of a new exposure occurring and thus producing changes that might be assigned to the original exposure. For this reason any statement as to the maximum latent period would be most inaccurate if based on an observation of the ordinary human case.

It should be noted that these observations are based on a relatively small number of cases. It is obviously difficult to collect a large number of cases in which the coincidence of events detailed here occurs, and in which such close observations have been made. Nevertheless, the observations in these five cases have been so consistent and are in such accord with the previously known data that the conclusions derived are highly credible. It is hoped that this paper will direct the attention of those who are doing routine tuberculin skin tests and roentgen examinations of the chest to the possibility of making such observations, so that a larger body of cases may be collected.

SUMMARY

Careful observations in five cases of tuberculous infection in young adults seem to indicate the following:

1 The roentgenogram is an exceedingly sensitive method of detecting pulmonary tuberculosis.

2 A minimum latent period of from three to six months may elapse between the occurrence of a tuberculous infection and the appearance of roentgenographic changes.

3 The maximum period of delay in the development of roentgen changes cannot be determined.

MULTIPLE SCLEROSIS

CERVICODORSAL SYMPATHECTOMY AS A RELIABLE MEASURE: REPORT OF A CASE

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The therapeutics of multiple sclerosis has been a baffling problem since the time of recognition of the disease as a clinical entity, and the multiplicity of agents employed in attempts at relief of the condition signify their lack of specificity. Perhaps the best results, and those rather evanescent in their effects, have been obtained when some form of fever therapy has been employed. This includes the vasodilatation obtained by diathermy, hot baths and the like.

A surgical procedure, namely, cervicodorsal sympathectomy, following which a most remarkable alleviation of symptoms has occurred in five cases, is the matter under discussion in this paper. Four cases have been reported by Royle,¹ and one case is herewith reported.

A full discussion of the symptomatology of multiple sclerosis, with its protean manifestations, a detailed analysis of the newer conceptions of the pathology or of the minutiae of the rationale of the treatment here suggested would be monographic. Only a short discussion of these phases will be presented, the main object at present being to call to the attention of the profession of this country a method already tried,

which now appears to be the nearest approach to a solution of the problem of therapeutics yet presented.

SYMPTOMATOLOGY

It is now well known that the old triad of Charcot—nystagmus, scanning speech and intention tremor—manifests itself late in the disease. Many of the earlier symptoms are often overlooked and, because of the sudden remissions so characteristic in its beginning, are put down as hysterical attacks or mild apoplexies, or "rheumatism." Among these early manifestations are ocular palsies, transitory diplopias, muscular weaknesses, which are associated with giddiness, nausea and headache, stumbling and tripping, stiffness of the legs, and difficulty in climbing stairs, urinary frequency of sudden onset and cessation equally sudden,² slight difficulties in speech, and the like. Very often these disturbances follow or occur during a period of distress. Pregnancy, in a patient who has had previous attacks, causes an exacerbation almost without fail. In view of what follows, the analogy to hyperthyroidism and pregnancy is here emphasized, with its associated relation to the sympathetic nervous system.

PATHOLOGIC CHANGES

Charcot's description of the pathologic changes, consisting of a patchy loss of myelin, with relatively intact axis cylinders, perivascular infiltration, and dense glial infiltration, has not been markedly altered by later investigators. Plaques of sclerosis may be found in any part of the central nervous system.

Putnam⁴ has recently made an important contribution in which he shows that vascular abnormalities with concurrent disturbances of circulation, notably decreased vascularization around the plaques, may be an etiologic factor. He cites Pfeiffer,⁵ who found that a zone of capillary deficiency surrounded many of the smaller vessels of the brain. This allows the inference that many areas of brain tissue are chiefly nourished by transudation through a single vessel. It would follow, then, that a constriction of this vessel would cause a relative anemia of the surrounding area, the absence of actual tissue necrosis being due to a supply from a neighboring vessel. The plaques of sclerosis have a constant perivascular distribution, and, as has been shown, the reaction to the relative anemia is such that the more resistant axis cylinders and glial fibers do not degenerate as does the myelin.

These observations are important when considered in the light of animal experimentation, which shows that the circulation to the brain may be noticeably increased by section of sympathetic vasomotor fibers. Further investigations may show that sudden elimination of an irritating factor that is affecting the sympathetic supply, with the resultant increase in circulation due to vasodilatation,⁶ is a reasonable explanation for the remissions in the disease. Likewise, the fact that certain sympathetic nerve fibers may suddenly be free from irritation could account for the cessation of one manifestation of the disease while other symptoms remained stationary. This sequence of events might

2 Charcot, Jean. Hospice de la Salpêtrière. *Gaz. d. Hop.* 102 405 (Sept.) 1868.

3 Jelliffe, S. E. and White, W. A. *Diseases of the Nervous System*. Philadelphia: Lea & Febiger, 1929.

4 Putnam, T. J. *The Pathogenesis of Multiple Sclerosis*. A Possible Vascular Factor. *New England J. Med.* 209 786 (Oct. 19) 1933.

5 Pfeiffer, R. A. *Grundlegende Untersuchungen für die Architectonik des menschlichen Gehirns*. Berlin: Julius Springer, 1919, p. 220.

6 Forbes, H. S. *The Cerebral Circulation*. *Arch. Neurol. & Psychiat.* 19 751 (May) 1928. Forbes, H. S. and Wolff, H. *Cerebral Circulation* *ibid.* 19 1057 (June) 1928.

From the Surgical Department of Syracuse Memorial Hospital and the Department of Surgery, Medical College of Syracuse University.

Credit is due Dr. Leslie G. Osborn of the Endicott Johnson Medical Staff for calling to the author's attention Royle's work on multiple sclerosis.

1 Royle, N. D. *The Surgical Treatment of Disseminated Sclerosis*. *N. J. Australia* 1 586 (May) 1933.

be compared to the uneven distribution of the vasoconstrictor manifestations found in a vasospastic disease, such as Raynaud's, in which the fingers may be affected, or the toes, or both. The previous condition of the vessels in one digit may be a factor in the determination of whether that member rather than another is to be the seat of a terminal ulcer. The same argument might be advanced in relation to the circulation in various parts of the cerebrospinal system.

EXPERIMENTAL EVIDENCE

Decreased vascularization has been shown⁷ to result in myelin degeneration of the type found in multiple sclerosis and can be explained on the basis of an asphyxia or anoxemia of the tissue in the neighborhood of the involved vessels.

In a summary of his investigations Putnam says

The histological characteristics of the disease may be closely imitated experimentally by a number of different procedures, all of which have in common an interference with the blood supply of the affected area. These facts give a new importance to the vascular abnormalities which have long been recognized as a characteristic of sclerotic plaques. The ultimate etiological factor should probably be sought in a local vascular abnormality, or in some alteration in coagulability of the blood.

Royle⁸ has shown by animal experimentation on brains of living goats that there is an improvement in cerebral circulation following sympathetic trunk section. His observations relative to relief of venous congestion are interesting when considered in the light of Pfeiffer's studies, which show that the "perivascular free space" obtains part of its nourishment from the vein contained within it, and of Putnam's, that blocking of this venous supply produces acute lesions having a gross and microscopic resemblance to the lesion found in multiple sclerosis in man.

REPORT OF CASE

History—R E, a man, aged 57, referred to me by Dr R J McMahon of Endicott, N Y, was admitted to the Syracuse Memorial Hospital, Nov 6, 1933, with a diagnosis of multiple sclerosis. The examination was checked by Dr Noble Chambers, neurologist to the Memorial Hospital, who concurred in the diagnosis. The patient was unable to walk without the assistance of two strong men. He had a marked ataxia of both upper and lower extremities. Diplopia, nystagmus and scanning speech were present. Feeding himself was a practical impossibility because of intention tremor. It was impossible for him to write legibly. He was unable to arise from a chair and could not maintain his balance, even with the eyes open, when he was brought to a standing position. There was a marked euphoria present also forced laughter at times, which however, was not of the same degree as noted in pseudobulbar palsies. It was impossible to understand what he said, his wife, having become accustomed to the change in his speech, had to interpret for us.

All the foregoing had been present for eight years, with a gradual increase in severity. He had been practically bedridden for several years. He was troubled with constipation, requiring cathartics.

His past history and significant parts of his family history reveal that at 18 years and again at 39 he had attacks of disability which were diagnosed as "rheumatism." The latter attack disabled him for seven months. He states that he had pain in the joints and in his wrists at that time but that there was never any swelling. His brother a physician reports that there have been several cases of multiple sclerosis in relatives. He had never been operated on and except for a recent illness

during which there was jaundice due to cholelithiasis, as diagnosed at the Charles S Wilson Memorial Hospital at Johnson City, N Y, Sept 10, 1933, he had been well, except at 18 and 39, as stated.

Examination—The patient was very obese. In addition to the manifestations already enumerated, he had a blood pressure ranging between 175 systolic, 80 diastolic and 155 systolic, 90 diastolic, the former in September, the latter before operation November 8. The pulse was 82. Dr J G F Hiss, cardiologist, reported that a soft systolic murmur was present over the apex and as far as the anterior axillary line. A pulmonary systolic murmur, found by another examiner a few months previously, was not heard. There was no electrocardiographic evidence of disease (Drs Chambers and Hiss both felt that the attacks called rheumatism may have been early manifestations of multiple sclerosis). Tendon reflexes were normal, the abdominal reflexes were absent. The Wassermann reaction was negative. A diagnosis of multiple sclerosis, largely cerebellar in type, was made and several internists felt that the diagnosis was correct.

An examination of the eyes by Dr S B Marlow, attending ophthalmologist to Syracuse Memorial Hospital, showed that bitemporal pallor was lacking. There was a fine right lateral nystagmus present, and relative scotomas were present for red.

Operation—November 15, a right cervicodorsal sympathectomy was performed. The superior thoracic and the inferior cervical ganglions with the sympathetic trunk and connecting rami were removed. The posterior approach, as described by Henry,⁹ was used, with the exception that the first rib rather than the second was sectioned.

Following the operation a right-sided Horner's syndrome was noted. The blood pressure was right arm, 182 systolic, 120 diastolic, left arm, 188 systolic, 124 diastolic. Five hours after operation both his wife and a patient in the next bed were astounded at the improvement in his speech. This was very noticeable and commented on by every one in attendance on him, nurses and interns. While the possibility that this may have been a postanesthetic result was considered, the continued improvement beyond a period when this could have been possible argues against such a conclusion.

On the following day his nurse reported that he would not wear his glasses, saying that he could see better without them. Three days later a marked improvement of his intention tremor was noted. He said that his legs felt different and that he felt as if he could walk if he should be allowed out of bed.

All these manifestations of sudden improvement coincide with those in the cases reported by Royle.

The speech improved daily, enunciation becoming clearer, and slurring was markedly lessened when he did not attempt to hurry his speech. He was delighted to be able to pronounce the words "cookie" and "calculate" distinctly—words that were among the first with which he had difficulty in the beginning of his illness.

December 6 the left side was operated on the same procedure being followed as on the right. A bilateral Horner's syndrome was present following this operation. He was discharged from the hospital, December 22.

The improvements noted at that time were briefly as follows:

Possibly the disks had a better color, but this was uncertain.

He said that his eyesight was much better.

Constipation was no longer present.

He was able to hold a glass of water with one hand and could feed himself.

He could pick up a safety pin without evidence of intention tremor.

He wrote much better unless he was tired following exercise.

He was able to get up from a rocking chair and stand with his eyes closed.

He could walk several hundred feet, leaning on his wife's arm.

These observations were checked by numerous persons interested in the case.

Jan 7, 1934, Dr McMahon and I, after examining the patient at his home and after conversing with his wife,

9 Henry A H Exposures of Long Bones New York William Wood & Co 1927

⁷ Ferraro Armando Experimental Toxic Encephalomyelopathy Diffuse Sclerosis Following Subcutaneous Injection of Potassium Cyanide Arch Neurol & Psychiat 29 1364 (June) 1933

⁸ Royle N D Alteration of the Circulation of the Brain by Surgical Means in Diseases of the Central Nervous System Brit M J 1 1063 (June 11) 1932

recorded that in general there was an improvement of 40 per cent. In some respects even a greater improvement could be recorded. This was particularly true with regard to enunciation. He pronounced such words as "liquid electricity" and "truly rural" very distinctly. The patient noticed a daily increase in general strength. Asked to stand from a sitting position on a low davenport, he arose easily and without the assistance of his arms. He stood with his eyes closed and feet together, maintaining his balance perfectly. He was able to read and remembered the thread of the article or story. The finger to nose and finger to finger tests were approximately 90 per cent perfect. The same applied to the heel to knee test. He did not require cathartics. His wife had noticed that he fed himself better than he did, that there was a decided improvement in his temperament, and that he was definitely stronger in every way.

These observations regarding improvement coincide closely with those in the cases reported by Royle. For this reason justification may be granted for reporting them so soon after operation.

Dr McMahon reexamined the patient with a view to recording percentage improvements and wrote as follows, January 12:

My impression of the result of this operation on Mr. E. is that he has, to date, been benefited somewhere between 30 and 50 per cent. His speech, I believe, is at least 75 per cent better. The ataxia of his upper extremities somewhere between 30 and 50 per cent. He is able to get out of a chair unassisted and to stand with his eyes closed—something that he never could do since I have known him. He certainly can pick up a glass of fluid and feed himself much better than when I sent him to you. He is able to walk across the room unassisted but still lacks confidence. His wife tells me that when they are alone he goes all over the house but when he thinks he is being watched he is like a child learning to walk. He gets excited and needs a little reassurance simply taking a hold of some one's hand being enough to steady him.

SUMMARY

1. In a case of multiple sclerosis marked improvement was noted following a bilateral cervicodorsal sympathectomy.

2. The experiments quoted tend to rationalize the procedure on the basis of improved circulation and decreased irritation in the central nervous system.

3. Four cases reported by Royle show improvement similar to that noted in the case here reported. His oldest case shows improvement over a period of eighteen months.

4. The possibility that a sudden remission took place in five cases following the procedure outlined is extremely remote.

514 Medical Arts Building

The Student of Internal Medicine—Poll the successful consulting physicians of this country today and you will find they have been evolved either from general practice or from laboratory and clinical work. Many of the most prominent having risen from the ranks of general practitioners. I once heard an eminent consultant rise in wrath because some one had made a remark reflecting upon this class. He declared that no single part of his professional experience had been of such value. But I wish to speak here of the training of men who start with the object of becoming pure physicians. From the vantage ground of more than forty years of hard work, Sir Andrew Clark told me that he had striven ten years for bread, ten years for bread and butter, and twenty years for cakes and ale, and this is really a very good partition of the life of the student of internal medicine of some at least since all do not reach the last stage—Sir William Osler. Internal Medicine as a Vocation. Address delivered before the New York Academy of Medicine 1897.

Clinical Notes, Suggestions and New Instruments

LIGATURES AND SUTURES OF ALLOY STEEL WIRE*

W. WAYNE BARCOCK, M.D., PHILADELPHIA

From its resistance to chemical change, modern alloy steel has been called the new noble metal. Soft or annealed stainless steel wire has marked tensile strength, stretches over one third of its length before breaking, and has such resistance to corrosion that when buried in the tissues for prolonged periods of time it remains untarnished and does not give rise to tissue discoloration or local irritation. After three months under a plaster cast skin sutures of the wire retain their brilliant luster and show no tendency to irritate the tissues. For surgical purposes it may be substituted for the weaker and more brittle silver and bronze wires and replace, with advantage, horsehair, silk, and "dermal" as a fine approximating suture, and silkworm gut as a strong supporting through and through suture. The finer wire may readily be tied in the ordinary square knot without breaking or losing appreciable tensile strength and may even be used to ligate blood vessels. Encouraged by the toleration of living tissue for the wire, I have occasionally buried interrupted sutures and ligatures of fine wire in both septic and clean wounds to avoid the tissue reactions to catgut and silk. While further experience is desirable it would seem that these insoluble bits of metal should cause no more trouble than the larger silver clips used in intracranial surgery. For delicate approximating sutures and for ligatures I would advise the 36 or 35 B & S gage (0.0007 inch), which is the size of a fine hair and has a tensile strength of about 2½ pounds. For supporting sutures, the 30 B & S gage with a tensile strength of about 15 pounds is strong enough to support an ordinary abdominal wall. When applied as a ligature, a hemostatic forceps should be used in tying, to make sufficient traction to seat the knot firmly. The larger sizes, as used for the retention of broken bones, should also be tied by the traction of hemostats. The ends should be cut close to the knot, an old pair of scissors being used. In introducing a running suture, care should be taken not to kink the wire. The operating nurse should also be instructed to roll the wire carefully from one spool to another to avoid the kinking and twisting produced in careless winding. To its ease of handling, impermeability and other good qualities may be added that of cost. Nearly a mile of the fine stainless steel wire may be purchased for one dollar.

1720 Spruce Street

CONGENITAL STENOSIS OF THE LARYNX

RICHARD W. WILKINSON, M.D., WASHINGTON, D. C.

Congenital stenosis of the larynx is a comparatively rare condition. Not more than twelve cases have been recorded in the literature within the past decade. Textbooks on laryngology give little more than mention to the subject. Within all probability numerous cases occur but are not diagnosed owing to death at birth or shortly after by asphyxia.

True congenital stenosis is limited to atresia, bands or webs occurring within the glottis, involving the vocal cords, ventricular bands or arytenoids, and is permanent unless relieved by some surgical method. This condition should not be confused with the commonly seen congenital laryngeal stridor that results from an abnormal flaccidity of the epiglottis which is usually elongated, or abnormal flaccidity or thickening of the aryteno-epiglottic folds. The majority of such cases need little treatment, and the condition is outgrown.

Jackson¹ states that the most frequent lesion of congenital stenosis of the larynx is a web or band situated at the anterior

*From the Surgical Department of Temple University School of Medicine.
From the Bronchoscopic Clinic, George Washington University School of Medicine.
Read before the Section on Ophthalmology and Otolaryngology of the Medical Society of the District of Columbia, Oct. 20, 1933.
¹ Jackson, Chevalier and Coates, G. M., The Nose, Throat and Ear and Their Diseases, Philadelphia, W. B. Saunders Company, 1917, p. 753.

commisures and they may extend to or beyond the middle of the glottis. The atresic type is very rare and usually incompatible with life. The case that I report in this paper is of the atresic type.

Many theories have been advanced as to the etiology of this condition. Congenital syphilis has been blamed, but little support is offered this theory. Clerf² recently reported three cases, two of which were in brothers, but he feels that there are too few cases to justify placing etiology on heredity.

According to Clerf the embryologic fusion theory is most tenable and is generally accepted. Embryologically there is a period of fusion of the structures of the glottis, apparently a provision on the part of nature to prevent passage of the amniotic fluid down the respiratory tract. Later, about the eleventh week, there is a period of dissolution, at which time the arytenoid folds or swellings separate followed by the superior and inferior folds parting to form the ventricular bands and the vocal cords proper, thus gradually forming the open glottis, which is seen at birth.

When stenosis occurs it is the result of incomplete separation of the fusion process and there remains a base of mesoderm covered with epithelium forming an atresia or in an attempt to separate, forming a band or web, which may be of variable thickness.

The symptoms depend on the impairment of laryngeal function. Small bands at the anterior commissure may cause little or no disturbance of respiration or phonation. Greater degrees of closure result in respiratory and vocal difficulties of a serious nature. In some cases laryngeal stridor may be the only symptom. This is usually heard both on inspiration and on expiration whereas congenital laryngeal stridor is heard only on inspiration.

The diagnosis is made by direct laryngoscopy in the young and by direct or indirect methods in older subjects. Dean³ states that this condition is not so rare and many cases would be recognized if the Washington University procedure were followed of examining every infant with an abnormal cry or stridor of any type.

The treatment depends entirely on the severity of the stenosis. In cases in which there is no dyspnea little need be done. Jackson's⁴ method is to incise the web along one cord only and allow it to flap down thus preventing adhesions during the healing process. Bands are excised or removed with punch forceps. When the cords themselves are adherent, they are separated by median incision. Surgical diathermy has been recommended by Arbuckle⁵ and others. Repeated bouginage is usually employed following any of these operative procedures, as adhesions are very prone to form. In infants and young children, tracheotomy is at times necessary to facilitate the operation and subsequent bouginage.

REPORT OF CASE

S. R., a girl, aged 7, seen, July 7, 1933, had frequent attacks of dyspnea, easily elicited by excitement or a slight infection of the upper respiratory tract. She spoke with a whisper that could not be heard farther than the distance of 1 foot.

The past history, related by the mother, revealed that the labor was normal and that immediately after delivery she noticed that the child did not cry naturally but with difficulty, emitting a feeble, high pitched sound. During infancy there were frequent attacks of severe dyspnea to the point of cyanosis. These attacks diminished in frequency with growth but were easily produced by any excitement or mild coryza. There was no history of childhood diseases other than measles, the personal history and the family history were negative for syphilis and tuberculosis. The child was well nourished and of healthy appearance. General physical examination was negative except for a small umbilical hernia and enlarged tonsils. The Wassermann reaction negative.

Examination by direct laryngoscopy revealed an atresia of the free borders of the vocal cords anteriorly, reducing the glottis to half its normal size. The remainder of the larynx appeared normal, with good movements of the arytenoids and

posterior halves of the cords. At this time attempts to dilate the stenosis were made with Jackson's brass bougies, without success, owing to the thickness of the atresia. Several days later, under general anesthesia, the cords were separated to the anterior commissure by a median incision with practically no hemorrhage. Reacting from the anesthetic, the child cried aloud for the first time in her life.

Under local anesthesia a week later direct examination showed the anterior borders of the cord adherent. This was easily broken down with dilators. At a subsequent examination it was necessary to incise adhesions at the anterior commissure, followed by bouginage.

The child has now a very slight atresia at the anterior commissure, the incised edges of the cords are a little roughened, the glottis is four-fifths patent, and movements of the arytenoids and true cords are normal. She has a normally audible speaking voice, which is slightly husky, and she has had no attacks of dyspnea since the first operative procedure.

COMMENT

Congenital stenosis of the larynx is a rare and interesting condition. Every infant with a persistent stridor or abnormal cry should have a laryngeal examination.

1408 L Street, N.W.

A CASE OF GAS GANGRENE TREATED BY INFILTRATION OF THE TISSUES WITH PERMANGANATE SOLUTION

FREDERICK C. WARNSHUIS, M.D. AND BERT VANDER KOLK, M.D.
GRAND RAPIDS, MICH.

B. B., a white man, aged 58, was brought to Butterworth Hospital, Dec. 16, 1933, at 1 p.m. from a railroad right of way, where he had been struck by a train. The right leg was frightfully mangled and, except for a band of skin, was severed at its midpoint. Measures to combat shock were immediately instituted and an amputation about four inches below the knee accomplished as soon as possible.

The postoperative course was not remarkable until the third day, when the patient became irrational with a temperature of 104°. At 3 p.m. of this day definite crepitation was elicited along the medial aspect of the amputation stump. The patient was isolated and all sutures were removed from the stump leaving the wound wide open. A continuous drip of permanganate solution 1:1000 was started into the wound. The crepitant area of the leg was infiltrated with a 1:500 solution of permanganate by means of a long needle and a Luer syringe. Then the mid thigh was infiltrated with the same solution, producing an encircling block. The patient was given 10,000 units of perfringens antitoxin intravenously. He became rapidly worse and at 8 p.m. was delirious and violent, so much so that an ether anesthetic had to be given to apply a restraining sheet. At 11 p.m. he seemed at least to be holding his own so amputation higher up was postponed. At this time the leg was again infiltrated and the fascial compartments were incised.

On the following day the laboratory reported a stormy growth of *B. welchii*. The patient was rational and seemed somewhat better. Ten thousand units of perfringens antitoxin was again given intravenously. The infiltration of the tissues with permanganate solution 1:500 was also repeated. In the afternoon of this day an extensive debridement of the sloughing stump was done. On the following day the patient's condition was definitely improved. No advancement of the gangrene was apparent, in fact, little crepitus could be detected. The infection did not extend beyond the infiltrated area. The patient was rational and quiet.

From that time on the patient's course was uneventful except for the removal of a small amount of slough Jan. 2, 1934. A severe secondary anemia was treated by repeated blood transfusions and the giving of iron by mouth. The patient improved steadily and on February 3 went home. At that time the stump was covered with healthy granulation tissue.

In a search of the literature we have been unable to find a report of any cases treated by infiltration of the tissues with permanganate solution. There are numerous references to the

² Clerf, L. H. Tr. Am. Laryng. A. 1931, p. 210.

³ Dean, L. W. Tr. Am. Laryng. A. 1931, p. 215.

⁴ Jackson, Chevalier. Personal communication.

⁵ Arbuckle, M. F. Tr. Am. Laryng. A. 1912, p. 70.

use of permanganate solution as a wet dressing¹ or for irrigating wounds². It is also spoken of as without beneficial effect³. This report is made in order that others may employ this infiltration procedure and determine its value.

1514 Grand Rapids National Bank Building

Special Article

DIPHTHERIA MORTALITY IN LARGE CITIES OF THE UNITED STATES IN 1933

ELEVENTH ANNUAL REPORT

This report concerns the ninety-three cities dealt with in the recent article on typhoid,¹ and the rates are calculated on the basis of the population figures used in that article. The number of diphtheria deaths in each city has been reported to us by the respective health department.² Particulars as to the years that are included in the five year averages annotated as "incomplete data" are given in footnotes to tables 1-8.

TABLE 1—Death Rates of Fourteen Cities in New England States from Diphtheria (Including Croup) per Hundred Thousand of Population

	1933	1932	1931	1930	1929	1928	1927	1926	1925	1924	1923	1922	1921	1920	1919	1918	1917	1916	1915	1914	1913	1912	1911	1910	1909	1908	1907	1906	1905	1904	1903	1902	1901	1900	1899	1898
Hartford	00	12	24	12	3	110	138	263	281	388	478	1209																								
Springfield	00	26	26	53	103	134	249	191	313	296	513	682																								
New Haven	06	06	06	06	16	72	142	149	227	156	348	74																								
Bridgeport	07	07	14	14	118	10	234	233	268	342	639	703																								
Lynn	10	23	39	107	135	170	178	172	217	380	440	490																								
Providence	12	25	98	79	05	158	293	268	307	412	333	333																								
Cambridge	17	26	09	09	32	89	129	238	263	467	710	580																								
Worcester	20	60	40	15	86	133	141	213	322	165	603	476																								
Somerville	26	26	27	260	57	197	202	214	201	211	278	374																								
Boston	33	42	47	29	83	202	263	200	262	637	839	1122																								
Fall River	44	26	71	39	120	235	236	240	344	401	438	460																								
New Bedford	54	27	80	80	109	160	170	209	226	291	336	200																								
Waterbury	50	20	00	30	20	179	230	296																												
Lowell	12	01	50	50	40	167	230	206	310	693	443	364																								

sible for Buffalo, Camden and Paterson to bring their diphtheria mortality to a lower point than that reported in recent years?

The cities in the South Atlantic states (table 3) have an average rate (3.49) more than double that of the cities of the Middle Atlantic division (1.47). Baltimore makes an excellent record, but the cities of sunny Florida (Miami, Tampa and Jacksonville) had in 1933 a considerably higher diphtheria mortality than most of the cities in the relatively inclement climate of New York and New England. Atlanta had one of the

TABLE 4—Death Rates of Eighteen Cities in East North Central States from Diphtheria (Including Croup) per Hundred Thousand of Population

	1933	1932	1931	1930	1925	1920	1915	1910	1905	1900	1895	1890
South Bend	0.0	0.0	0.9	5.8								
Chicago	0.0	1.9	6.2	12.2	11.7	17.5	31.2	37.9	27.0	33.9	69.7	117.3
Youngstown	0.0	5.7	2.0	6.5	10.5	18.5	11.9	40.5	33.5	23.0	17.6	28.4#
Milwaukee	0.8	2.5	1.8	3.6	8.5	11.4	19.5	27.8	26.4	22.7	51.7	116.2
Grand Rapids	1.1	0.0	0.0	0.6	2.0	19.6	13.0	20.0	26.6	17.2	32.4	99.2
Columbus	1.2	3.7	3.4	3.4	4.6	8.5	7.6	12.1	10.5	11.6	28.5	56.9
Canton	1.8	2.8	0.9	1.0	2.9	17.5	15.1#					
Akron	1.9	2.2	1.1	3.1	4.0	10.4	18.9	27.8	21.8#			
Cleveland	2.6	1.4	1.2	4.1	13.3	14.7	20.0	24.6	20.8	42.0	4.3	0.7
Cincinnati	3.0	2.8	2.0	2.9	5.2	10.6	13.2	13.9	17.0	17.3	37.3	103.7
Detroit	3.0	3.7	5.6	11.0	19.7	24.3	32.2	33.3	22.6	38.5	62.9	132.9
Toledo	3.0	1.7	0.0	2.4	7.2	22.4	14.1	2.4	20.4	56.8	34.6	89.3
Fort Wayne	3.2	3.8	4.2	0.0	5.1	13.1	0.3					
Peoria	3.6	12.6	1.8	5.7	4.9	7.4	10.8	10.6	10.9#	14.0	14.6	68.0
Dayton	3.8	7.7	2.1	0.5	4.6	9.4	9.3	22.1	13.3	17.2	27.4	82.0
Indianapolis	4.0	1.9	2.4	3.6	6.6	11.7	21.4	13.6	13.3	15.9	36.4#	97.3#
Evansville	4.7	1.9	1.9	3.9	3.7	13.9	14.9	10.1	21.2	13.8	18.1	69.7
Ellet	5.3	2.9	3.0	0.0	4.5	29.9	25.5	12.7	11.0	10.8	6.9	69.2

† One third or more of the reported diphtheria deaths were stated to be in nonresidents.
‡ Diphtheria deaths from Chapin's Municipal Sanitation.
Incomplete data.

TABLE 5—Death Rates of Six Cities in East South Central States from Diphtheria (Including Croup) per Hundred Thousand of Population

	1933	1932	1931	1930	1925	1920	1915	1910	1905	1900	1895	1890
Birmingham	2.9	4.0	3.7	7.7	6.4	5.3	7.2	8.3	6.2	13.4	16.5	26.3
Memphis	4.5	7.6	10.8	4.7	5.8	9.5	11.2	11.0	13.4	6.0	10.0	28.5
Nashville	7.6	7.0	6.4	11.7	11.8	8.0	8.9	7.3	10.3	13.0	30.1	28.4
Chattanooga	8.0	4.8	9.8	1.7	5.9	8.7	8.9					
Knoxville	8.0	15.2	11.0	2.8	6.3	11.2						
Louisville	11.0	3.6	3.9	1.6	4.6	10.4	9.5	9.0			9.0#	49.6#

† One third or more of the reported diphtheria deaths were stated to be in nonresidents.
‡ Diphtheria deaths from Chapin's Municipal Sanitation.
Incomplete data.

TABLE 6—Death Rates of Nine Cities in West North Central States from Diphtheria (Including Croup) per Hundred Thousand of Population

	1933	1932	1931	1930	1925	1920	1915	1910	1905	1900	1895	1890
Duluth	0.0	1.0	0.0	1.0	2.0	6.0	10.2	8.8	38.2	29.1	7.6	49.6
Omaha	0.9	6.8	8.3	4.7	6.4	22.0	3.8	15.8	24.6	20.5	28.2	82.9
St. Paul	1.1	0.3	1.1	2.2	5.2	17.5	20.7	31.4	31.1	27.9	43.3	75.4
Minneapolis	1.4	1.0	2.7	2.4	11.9	13.4	10.0	28.3	24.4	44.6	34.0	55.0
Kansas City Kan.	2.4	2.4	4.1	4.9	4.6	9.8	23.1	12.4#				
Wichita	2.5	0.2	5.2	3.6	4.2							
Kansas City Mo.	2.6	3.4	3.9	4.0	4.7	14.4	22.8	15.7#				
St. Louis	3.7	3.5	4.6	3.1	10.3	16.1	24.4	23.7	19.4	43.3	62.9	67.7
Des Moines	5.5	8.2	0.7	2.1	5.2	15.1	10.6	15.1	23.5#			

† One third or more of the reported diphtheria deaths were stated to be in nonresidents.
Incomplete data.

highest diphtheria rates in the country (12.0), equaled only by Lowell, Mass. (12.0), and Dallas, Texas (12.0), but a large proportion of the deaths in that city was said to be among nonresidents.

The East North Central cities (table 4) make a fine showing. Chicago's record is indeed spectacular (02). Detroit also makes a new low record. This group of

cities had in 1925-1929 the highest average rate in any geographic division (11.21), it now has the next to the lowest (1.75). Here also sanitarians will watch with interest to see whether the change has a permanent basis or whether it is connected with one of the natural, if little understood, fluctuations sometimes manifested by this disease.

TABLE 7—Death Rates of Eight Cities in West South Central States from Diphtheria (Including Croup) per Hundred Thousand of Population

	1933	1932	1931	1930	1925	1920	1915	1910	1905	1900	1895	1890
New Orleans	2.7	5.5	3.8	8.5	8.5	6.5	11.6	19.6	10.2	11.5	17.1	51.3
Oklahoma City	3.0	8.2	5.1	7.0	10.9							
Tulsa	6.0	7.3	15.1	2.1	12.5	8.8#						
San Antonio	6.1	6.5	6.2	7.3	10.3	7.7	8.7	6.7	7.6	17.1	20.6	4.4
Houston	8.3	5.5	3.9	4.1	8.2	6.4	6.1	7.8	10.5	4.2#	2.4	1.8
El Paso	9.3	5.0	5.7	8.8	7.3	20.0	17.6	29.2				
Fort Worth	0.4	11.7	7.2	4.3	10.8	1.7#	2.6#	2.6	2.8	5.4		
Dallas	12.0	16.3	6.6	6.9	9.8	8.3	7.4	6.9	8.1	16.9	16.0	21.8

Incomplete data.

TABLE 8—Death Rates of Eleven Cities in Mountain and Pacific States from Diphtheria (Including Croup) per Hundred Thousand of Population

	1933	1932	1931	1930	1925	1920	1915	1910	1905	1900	1895	1890
Salt Lake City	0.0	0.7	0.0	0.7	10.1	12.5	14.5	15.1	34.2	46.0	14.8	56.7#
Seattle	0.0	0.3	0.3	1.6	1.4	6.6	5.5	5.2	12.5	13.4#	27.2#	
Spokane	0.0	0.8	0.6	1.7	7.5	11.3	4.2	7.6	25.8		59.5#	18.1
Long Beach	0.0*	1.2	0.6	1.4	2.6	10.4#						
Oakland	0.7	2.3	0.3	3.9	7.4	18.8	8.1	10.3	10.1	29.1		
Tacoma	0.9	0.0	8.3	8.4	9.3	12.4	7.7#					
Portland	1.0	2.2	0.6	2.3	6.4	11.3	6.0	12.3	12.2	20.2		
San Francisco	1.2	1.5	0.8	2.2	4.6	23.0	17.0	9.2	14.4	44.2	21.6	54.8
Denver	2.0	5.4	4.4	3.5	8.9	23.2	6.7	10.2	20.8	29.6	27.3	130.2
Los Angeles	3.7	6.3	5.2	5.6	7.0	14.4	7.1	7.5	15.3	2.4	35.8	46.0
San Diego	4.9	3.1	2.5	2.0	6.6	12.2	10.5	8.0	5.8	2.4		

* All of the diphtheria deaths reported were stated to be in nonresidents.
† One third or more of the reported diphtheria deaths were stated to be in nonresidents.
‡ Diphtheria deaths from Chapin's Municipal Sanitation.
Incomplete data.

TABLE 9—Ten Cities with Highest Diphtheria Rates for 1933

Atlanta	12.0	El Paso	9.3
Dallas	12.0	Paterson	8.6
Lowell	12.0	Houston	8.3
Louisville	11.0	Chattanooga	8.0
Fort Worth	9.4	Knoxville	8.0

TABLE 10—Eleven Cities with No Diphtheria Deaths in 1933

Duluth	Salt Lake City	Springfield
Elizabeth	Seattle	Syracuse
Hartford	South Bend	Yonkers
Rochester	Spokane	

The cities of the East South Central division, with the exception of Birmingham and Memphis, do not show much improvement. Louisville seems to have had an excessively high diphtheria mortality, to judge from its own past record (table 5). Is it not about time for an intensive antidiphtheria campaign in some of these Southern cities?

The average for the West North Central cities (table 6) shows substantial improvement over that for the past three years. Duluth again leads the list and Omaha shows marked improvement over the three preceding years. Wichita and Des Moines, especially the former, seem to have recovered from their flurry of 1932.

The West South Central cities (table 7) bettered their average somewhat over 1932 but are still worse

off, on the whole, than they were in 1930 and 1931 New Orleans shows real improvement But why should there continue to be so high a diphtheria rate in Fort Worth and Dallas? The latter city, together with Atlanta and Lowell, had for the year 1932-1933 the highest diphtheria mortality in the United States in proportion to its population Thus cannot be pleasant

TABLE 11—Number of Cities with Various Diphtheria Death Rates

	No of Cities	40 and Over	30 and Over	10 and Over	5 and Over	Under 5	0 0
1890-1894	64	52	60	61	62	2	0
1895-1899	66	34	53	63	67	1	0
1900-1904	66	22	46	64	66	2	0
1905-1909	72	3	43	66	71	1	0
1910-1914	70	1	36	63	78	1	0
1915-1919	54	0	25	62	81	3	0
1920-1924	88	0	14	65	86	2	0
1925-1929	92	0	1	22	67	25	0
1927	92	0	2	31	62	39	1
1928	92	0	1	21	68	34	2
1929	92	0	2	17	47	45	1
1930	93	0	2	11	32	61	3
1931	93	0	6	3	29	64	4
1932	93	0	0	5	27	66	5
1933	93	0	0	4	21	72	11

TABLE 12—Total Diphtheria Death Rates for Eighty-Eight Cities 1923-1933*

	Population	Diphtheria Deaths	Diphtheria Death Rate per 100 000 Population
1923	31 060 848	4 061	13.13
1924	31 722 841	2 430	10.84
1925	2 54 834	3 133	9.67
1926	33 046 827	3 106	9.40
1927	33 708 820	3 403	10.36
1928	31 310 813	3 176	9.24
1929	35 032 806	2 738	7.82
1930	35 694 802	1 827	5.12
1931	36 003 412	1 766	3.74
1932	37 054 712	1 191	3.21
1933	37 954 712	661	2.32†

* The five following cities are omitted from this summary because data for the full period are not available: Jacksonville Miami, Oklahoma City, South Bend and Ulen.

† Data for Fort Worth lacking.

‡ The rate for the ninety-three cities in 1933 is 2.33 (population 37 733 512, diphtheria deaths 881). The corresponding rate was 5.12 in 1930 3.72 in 1931 and 3.25 in 1932.

TABLE 13—Total Diphtheria Death Rates per Hundred Thousand of Population for Ninety-Three Cities According to Geographic Divisions

	(1932) Population	Diphtheria Deaths		Diphtheria Death Rates				
		1933	1932	1933	1932	1931	1930	1929
New England	2 931 505	70	91	2.66	3.65	4.85	4.57	8.34
Middle Atlantic	13 038 300	192	336	1.47	2.53	2.78	4.10	9.97
South Atlantic	2 375 007	83	76	3.49	3.29	4.42	3.65	7.37*
East North Central	9 719 600	171	249	1.75	2.65	4.23	7.79	11.21†
East South Central	1 242 500	85	76	6.84	6.11	6.87	5.00	6.34
West North Central	2 720 700	68	91	2.40	3.34	3.72	3.74	7.82
West South Central	1 991 700	132	160	6.73	8.16	5.93	6.43	9.24‡
Mountain and Pacific	4 025 700	80	138	1.99	3.43	2.71	3.59	6.28

* Lacks data for 1925 for Jacksonville and Miami.

† Lacks data for South Bend.

‡ Lacks data for Oklahoma City for 1925 and 1926.

reading for the Dallas chamber of commerce, and it is encouraging to learn that measures to remedy this condition are being undertaken.

The Mountain and Pacific cities (table 8) make a new low average. This group which ranked best in 1925-1929 is now quite outclassed for the second year in succession by the Middle Atlantic and East North Central cities. San Francisco continues to have a lower

rate than the climatic resorts San Diego and Los Angeles.

Many sanitarians will consider that the evidence in the tables here presented warrants a continuance of the efforts to lessen diphtheria mortality by immunization of susceptible children.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT:
H. A. CARTER, Secretary

COLSON SAFETY INHALATOR ACCEPTABLE

The Colson Company, Elvira, Ohio, manufactures and offers for sale to the profession an electrically operated vaporizer Model NH-10. The unit may be described as a container having a heating coil on the inside and a connecting flexible tube, which conducts the vapor to the patient. It is recommended as an adjunct in the treatment of such diseases as pneumonia, laryngitis, croup, whooping cough, bronchitis and asthma.

The 400 watt immersion type heating element is located in the bottom of the kettle or water reservoir. A water tight seal is provided between the element and the kettle. The two concentric copper sleeves or cylinders that form the central vaporizing chamber are directly over the element. The space between these cylinders is sealed at the bottom to form a dead air insulating space between the water reservoir and the heating chamber. This keeps the water at a low temperature in the reservoir yet permits the water in the heating chamber to reach

a maximum temperature of 212 F and steam to be produced in less than four minutes after the current is turned on with the reservoir filled to the proper level with cold water. With warm water the time required is even less.



Colson Safety Inhalator

The medicine cup container is located at the top of the inner cylinder, the 'hot spot' of the Inhalator so that the medicine volatilizes quickly and the result is that the vapor administered contains a greater amount of medicine, insuring more satisfactory results. A curved tube conducts the steam from the inner chamber into the bottom of the flexible tube. The steam passing up the tube draws a current of cool air in through the intake opening and over the medicine cup. On the way up through the tube the volatilized medicine, cool air and steam are mixed, resulting in a medicated vapor of uniform quantity and temperature.

The Inhalator is prevented from overheating by means of an automatic thermostat, which is an integral part of the heating element. This prevents damage being done if the kettle should accidentally boil dry although care should be taken to see that the Inhalator is not allowed to remain without water for any length of time while the current is on.

The cover of the Inhalator is of cast aluminum and is held in place by means of four tie rods. It can be easily removed by unscrewing the four acorn nuts. The medicine cup can be removed from its holder through the filler opening. The proper water level mark to which the reservoir should be filled is visible on the inner cylinder through the water filler opening.

The chromium plated tube is 36 inches long and 1½ inches in diameter. It can be detached from the Inhalator top by unscrewing the large nut at its base. The bakelite tip is permanently fastened to the tube. The Inhalator base and top have a baked on crinkle finish and all exposed metal parts are bright aluminum or chromium plated.

The capacity of the Inhalator is approximately 5 quarts, which is said to be sufficient to operate it continuously for twelve hours. The overall diameter is 10 inches and the overall height to the top of the cover is $12\frac{1}{2}$ inches. The weight empty is $10\frac{1}{2}$ pounds and the shipping weight packed in corrugated shipping container is 14 pounds.

One unit has been investigated in a clinic acceptable to the Council. The construction appeared satisfactory and the claims made in the advertising matter and descriptive literature conformed with the Official Rules of the Council. The Colson Safety Inhalator, therefore, is included in the Council's list of accepted devices.

T J LEAK-PROOF ATOMIZER ACCEPTABLE

The T J Manufacturing Company, Attleboro Mass., submitted a product known as the T J Leak Proof Atomizer. This unit comes in a small box measuring about $1\frac{3}{4}$ by $\frac{1}{4}$



Leak Proof Atomizer

inches. It is so arranged that oil or other spray solution may be poured conveniently into the bottle. The nozzle is provided with a cap, which screws tightly and prevents leakage and also prevents leakage of the solution back into the atomizer bulb. The firm claims that the nozzle can be removed for sterilization and that the unit is economical and efficient. It is highly recommended by the company for use by those who travel extensively.

Several of these units were examined by consultants of the Council. Their findings were in agreement with the claims made by the manufacturers. The company declared

that no medicament of any kind is sold with the atomizer as part of the package.

The T J Leak-Proof Atomizer therefore is included in the Council's list of accepted devices.

SAMSON ULTRAVIOLET SUNLAMP, TYPE 140 A, NOT ACCEPTABLE

The Samson United Corporation, Rochester N. Y., manufactures a product known as the Samson Ultraviolet Sunlamp, Type 140 A. It is advertised to the public and profession in pamphlets containing statements such as "health and light in the same lamp," "prevention and cure of rickets and building sound bones and teeth."

In a laboratory acceptable to the Council, measurements were made on a Samson Ultraviolet Sunlamp, Type 140 A at distances of 30 inches (76 cm) and 24 inches (61 cm) from the front edge of the reflector. The lamp was operated with 115 volts A C (60 cycles) on the primary of the transformer under which conditions (the secondary output) the input through the lamp was 103 volts and 62 amperes. The transformer accompanying this lamp was noisy and became rather warm on continuous operation.

Under these operating conditions the ultraviolet radiant flux of wavelengths less than and including 3,130 angstroms in microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$) was as follows:

Samson type 140 A = $15.5 \mu\text{W}/\text{cm}^2$ (at 30 inches)

Samson type 140 A = $21.6 \mu\text{W}/\text{cm}^2$ (at 24 inches)

The aforementioned values do not agree with the physical measurements submitted by the manufacturer of which part of the report reads "thus the erythemic efficiency (2804 to 3130 Å) of the Samson type 140 was 225 microwatts."

The firm's measurements appear to be the result obtained by integrating the radiant flux in all directions, whereas in the Council's opinion the profession and public are concerned only with the radiant flux at a specified distance below the lamp when it is in its reflector.

If this lamp is to comply with the specifications of minimum intensity (which, for this type of glow lamp amounts to an

erythemogenic equivalent of $108 \mu\text{W}/\text{cm}^2$) the Samson unit, type 140 A, it seems, would have to be operated at a distance of 10 to 11 inches to produce an erythema on the average skin in fifteen minutes. On the other hand, at a distance of 18 inches an exposure of about forty-five minutes would be required, and about one hour and twenty minutes at 24 inches.

The Samson United Corporation has not submitted evidence of animal experiments indicating that radiations from the lamp will cure or protect against rickets in rats or other rachitic animals under control. Furthermore, the firm has not submitted clinical or scientific evidence of any kind substantiating the therapeutic efficacy of the lamp.

Since the Samson Ultraviolet Sun Lamp, Type 140 A, does not meet the specifications of minimum intensity adopted by the Council on Physical Therapy and since the firm has failed to submit clinical or scientific evidence substantiating its therapeutic efficacy, the Council has omitted the Samson Ultraviolet Sunlamp, Type 140 A, from the list of acceptable devices for physical therapy.

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING
REPORTS

PAUL NICHOLAS LEECH Secretary

IODOCHLOROL AND IODOCHLOROL EMULSION NOT ACCEPTABLE FOR N N R

Iodochlorol is the proprietary name under which G. D. Searle & Co., Inc., market a preparation stated by the firm to be "an iodine and chlorine addition product of peanut oil containing 25 to 27 per cent of iodine and 67 to 76 per cent of chlorine in organic combination." The firm also markets Iodochlorol Emulsion, which is Iodochlorol in an emulsifying menstruum containing ethyl esters (unhalogenated) of peanut oil as a diluent. The product was presented for the Council's consideration as an iodized oil for roentgen diagnosis and for iodine medication.

The manufacturer claims that "Iodochlorol (Searle) is the first successful attempt to prepare a fatty oil, which contains beside iodine, also chlorine in appreciable quantities chemically combined." Mainly on this claim the firm asserted justification for the use of a proprietary name. It was pointed out to the firm that the Council at that time was considering an iodized rapeseed oil which also contained chlorine and that the literature showed that the studies on which this product was based antedated those claimed by Searle & Co. for its product. The firm was informed, therefore, that the Council could not recognize a proprietary name for this product but would give further consideration to it if it was submitted under nonproprietary names such as "Chloriodized Peanut Oil," "Chloriodized Peanut Oil Ethylated" and "Chloriodized Peanut Oil Emulsion." After a considerable correspondence, the firm still insisted that it deserved priority in the making of chloriodized oil and in effect insisted on retention of the proprietary name.

The Council therefore declared Iodochlorol (Searle) and Iodochlorol Emulsion (Searle) unacceptable for inclusion in New and Nonofficial Remedies because they are not entitled to proprietary names.

BISMOLD NOT ACCEPTABLE FOR N N R

Bismold is the proprietary name under which Eli Lilly and Company markets a product stated to be a stabilized suspension of finely divided bismuth, 25 mg per cubic centimeter in a sterile aqueous medium containing approximately 5 per cent of carbohydrate and glucose derivatives. The suspended matter is stated to contain at least 90 per cent of bismuth. It is proposed for use in the treatment of syphilis.

When the firm presented the product for consideration by the Council it submitted practically satisfactory experimental data consisting of toxicity and clinical tests on animals. No data based on the clinical use of the product in man has been

presented. The firm presented also advertising which the Council found, in some respects, objectionable. After consideration of the material submitted by the firm, the Council decided that the product was not yet ready for acceptance for New and Nonofficial Remedies but directed that the firm be informed that the Council would sponsor a preliminary report if the advertising was revised to meet stated objections and if the name was changed to the generic designation "Bismuth Metal Suspension (Aqueous)" in accordance with a report of the Council's Committee on Nomenclature, which found that the firm could not properly claim priority for this preparation. The Council stipulated the further condition that the product be found acceptable by the A. M. A. Chemical Laboratory. The Council voted also to postpone further consideration of the product until satisfactory clinical data were submitted.

Although Eli Lilly and Company, early in the Council's consideration of the product, had agreed to accept the proposed change of name, the firm later informed the Council that on account of objections by its sales division, the change could not be accepted. In view of this the Council was obliged, without further consideration of the claims for the composition of the product, to declare "Bismoid" unacceptable for New and Nonofficial Remedies because it is a preparation of bismuth without sufficient originality to justify the proprietary and insufficiently informing name under which it is marketed.

Committee on Foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.



RAYMOND HERTWIG, Secretary

MEAD'S SOBEE

Manufacturer—Mead Johnson and Company, Evansville, Ind.

Description—An infant food preparation containing soy bean flour, olive oil, arrowroot starch, Dextri-Maltose (essentially maltose and dextrans), dicalcium acid phosphate and sodium chloride.

Manufacture—The soy bean flour ingredient is prepared from split and hulled soy beans, which are extracted with a fat solvent to remove most of the fat. The solvent is removed by evaporation in "vacuum." The resulting cake is ground to a flour.

Formula proportions of the solid ingredients are mixed with a suitable amount of water and cooked under low steam pressure, olive oil is added, the mixture is homogenized, dried in an atmospheric drum dryer and packed in cans.

Analysis (submitted by manufacturer) —

	per cent
Moisture	2.4
Ash	8.0
Sodium chloride	1.0
Fat (modification of the Roese Gottlieb method)	19.2
Protein (N \times 6.25)	32.0
Crude fiber	1.4
Carbohydrates other than crude fiber (by difference)	37.0
Calcium (Ca)	1.45
Chlorine (Cl)	0.66
Copper (Cu)	0.008
Iron (Fe)	0.02
Magnesium (Mg)	0.16
Phosphorus (P)	1.40
Potassium (K)	1.42
Sodium (Na)	0.43
Sulphur (S)	0.30
Arsenic (As)	less than 0.5 parts per million
Lead (Pb)	less than 1.9 parts per million

Calories—4.5 per gram 128 per ounce

Vitamins—Vitamin B (complex), 85 Chick and Roscoe units per ounce

Claims of Manufacturer—A dietary preparation free from animal and milk protein for infants with milk idiosyncrasy.

SHENANDOAH APPLE SYRUP

SWEETENED WITH FRUIT SUGARS—INVERT SUGAR

Manufacturer—Ridgewood Fruit Growers, Winchester, Va.

Description—Syrup prepared from concentrated apple juice and cane sugar.

Manufacture—The juice is expressed by hydraulic pressure from ripe Virginia apples free from arsenical spray residues, as certified by the state department of agriculture. The juice is filtered. A definite proportion of sucrose is added and the sweetened juice is concentrated to approximately 72 per cent sugar content and packed in glass jugs. The malic acid inverts the added sucrose to invert sugar during the concentration.

Analysis (submitted by manufacturer) —

	per cent
Moisture	28.0
Ash	0.4
Fat	0.0
Protein (N \times 6.25)	0.2
Reducing sugars as invert sugar	69.6
Carbohydrates (by difference)	71.4

Calories—2.9 per gram 82 per ounce

BEECH-NUT PRESSURE COOKED FARINA CERE-JEL

(SLIGHTLY SEASONED WITH SALT)

Manufacturer—Beech-Nut Packing Company, Canajoharie, N. Y.

Description—Sieved cooked farina, seasoned with salt.

Manufacture—Farina is cooked for thirty minutes in water containing 0.5 per cent sodium chloride. The remainder of the process is the same as that for Beech-Nut Strained Carrots (THE JOURNAL, Nov. 11, 1933, p. 1562) except that the jars are processed for two to three hours at 104°C.

Analysis (submitted by manufacturer) —

	per cent
Moisture	88.5
Total solids	11.5
Sodium chloride	0.5
Ash	0.7
Fat (ether extract)	0.01
Protein (N \times 6.25)	1.4
Crude fiber	0.1
Carbohydrates other than crude fiber (by difference)	9.3

Calories—0.4 per gram 11 per ounce

Claims of Manufacturer—Especially intended for infants, children and convalescents and for special smooth diets. Only warming is required for serving.

STOKELY'S FOR BABY SPECIALLY PREPARED STRAINED GREEN BEANS (ADDED SALT)

Manufacturer—Stokely Brothers & Company, Inc., Indianapolis.

Description—Strained green beans, seasoned with salt, retaining in high degree the natural vitamin and mineral content.

Manufacture—Fresh green beans are carefully inspected (imperfect ones eliminated), washed under high pressure water sprays, blanched a minimum time in boiling water, pressure cooked in an atmosphere of steam and comminuted in an atmosphere of steam by being forced through a fine screen to produce the desired texture. The strained material is adjusted with hot water to the desired consistency, slightly seasoned with salt, heated and filled into enamel lined cans which are sealed and heat processed.

Analysis (submitted by manufacturer) —

	per cent
Moisture	92.0
Total solids	8.0
Ash	1.2
Sodium chloride	0.6
Fat (ether extract)	0.2
Protein (N \times 6.25)	1.4
Reducing sugars as dextrose	0.4
Sucrose (copper reduction method)	0.9
Crude fiber	4.3
Carbohydrates other than crude fiber (by difference)	1.1
Alkalinity number (cc normal acid per gram ash)	2.1
pH	5.2

Calories—0.2 per gram 6 per ounce

Vitamins—The natural vitamin content is retained in large measure in the manufacturing process by the use of equipment.

and procedure which exclude incorporation of air, the vegetable material is exposed to steam only

Claims of Manufacturer—Supplementary to the infant milk diet and valuable for children and adults on soft diets. Has smooth consistency and supplies desirable bulk without roughness. The straining renders the nutrient content readily available for digestion. Scientifically prepared to retain in high degree the natural flavor, mineral and vitamin values. Seasoned to bring out full flavor and packed in enamel lined cans. Requires only warming for serving.

- (a) LIBBY'S FANCY RED ALASKA SALMON
LIBBY'S ALASKA SOCKEYE SALMON
LIBBY'S FANCY BLUEBACK SALMON
(b) LIBBY'S CHINOOK ALASKA SALMON
LIBBY'S FANCY CHINOOK SALMON

Packer—Libby, McNeill & Libby, Chicago

Description—(a) Alaska Red or Sockeye Salmon and (b) Alaska King or Chinook Salmon

Manufacture—Salmon is rushed from the fishing nets to the cannery, inspected for elimination of bruised or deteriorated fish, conveyed to butchering machines, into tanks of flowing cold water, and to tables where the cleaning and inspecting operations are completed. The fish are again washed cleaned, automatically cut into proper lengths, and automatically canned with the addition of a definite amount of salt. The cans are sealed under a high "vacuum" and processed for ninety minutes at 116 C. The processing makes the fish ready to eat and softens the bone.

Analyses (submitted by manufacturer) —

Red —	per cent
Moisture	68.8
Total ash	2.9
Sodium chloride	1.1
Fat (ether extract)	7.6
Protein (by difference)	20.7
Calcium (Ca)	0.21
Phosphorus (P)	0.34
Chinook —	
Moisture	68.2
Total ash	2.6
Sodium chloride	1.2
Fat (ether extract)	9.7
Protein (by difference)	19.5
Calcium (Ca)	0.21
Phosphorus (P)	0.34

Iodine (I) (all species) — 120 630 parts per billion

Calories—1.5 and 1.7 per gram 43 and 48 per ounce

Vitamins—Fair, good and excellent source of vitamins A, G and D, respectively

BEECH-NUT TOMATO JUICE (SLIGHTLY SEASONED WITH SALT)

Manufacturer—Beech-Nut Packing Company, Canajoharie, N. Y.

Description—Tomato juice seasoned with salt (0.5 per cent), retaining in high degree the natural mineral and vitamin content.

Manufacture—Juice is expressed from carefully selected washed ripe tomatoes by a machine permitting minimum exposure to air, 0.5 per cent sodium chloride is added and dissolved air is removed by vacuumizing. It is heated to 82 C and filled into jars which are sealed under 'vacuum' and heated to 82 C for twenty minutes.

Analysis (submitted by manufacturer) —	per cent
Moisture	94.1
Total solids	5.9
Ash	0.8
Sodium chloride	0.5
Fat (ether extract)	0.1
Protein (N X 6.25)	0.9
Crude fiber	0.1
Carbohydrates other than crude fiber (by difference)	5.8

Calories—0.2 per gram 6 per ounce

Claims of Manufacturer—The natural mineral and vitamin values are efficiently retained. Sealed under vacuum.

GOLDEN DRIP BRAND GOLDEN TABLE SYRUP

Distributor—Union Sales Corporation, Columbus, Ind.

Manufacturer—Union Starch & Refining Co., Granite City, Ill.

Description—A table syrup, corn syrup flavored with refiners' syrup.

Manufacture—Same as Pennant Golden Table Syrup. THE JOURNAL, Jan 30, 1932, page 403, excepting that less refiners' syrup is used.

Analysis (submitted by manufacturer) —	per cent
Moisture	25.5
Ash	0.7
Fat (ether extract)	0.0
Protein (N X 6.25)	0.1
Reducing sugars as dextrose	30.3
Sucrose (invertase method)	4.4
Dextrins (by difference)	19.0
Titratable acidity as HCl	0.04
Sulphur dioxide as SO ₂	0.002
pH	5.4

No methods are available for accurately determining the composition of syrups of this nature, therefore the foregoing analysis is roughly approximate.

Calories—3.0 per gram 85 per ounce

Claims of Manufacturer—For table use and as a carbohydrate supplement for milk modification in infant feeding.

STOKELY'S FOR BABY SPECIALLY PREPARED STRAINED PRUNES NO SEASONING ADDED

Manufacturer—Stokely Brothers & Company, Inc., Indianapolis

Description—Sieved prunes largely retaining the vitamins and all the natural minerals.

Manufacture—High grade medium sized prunes are carefully inspected to eliminate any unsuitable material, are washed under high pressure cold water sprays, are covered with a minimum amount of water, and the temperature is slowly raised to simmering and held there till the prunes are swelled and softened. The prunes and juice are drawn off and passed through a pulping machine to remove the pits, the mass is sieved through a fine screen, adjusted with hot water to the desired consistency, heated and filled into enamel lined cans, which are sealed and processed.

Analysis (submitted by manufacturer) —	per cent
Moisture	65.7
Total solids	34.3
Ash	0.9
Fat (ether extract)	0.04
Protein (N X 6.25)	1.2
Reducing sugars as dextrose	20.6
Sucrose	1.0
Crude fiber	0.8
Total acidity as malic acid	0.8
Pectin	2.1
Pentosans	1.1
Carbohydrates other than crude fiber (by difference)	31.4
pH	5.1

Calories—1.3 per gram 37 per ounce

Vitamins—The natural vitamin content is retained in large measure in the manufacturing process by the use of equipment and procedure which exclude incorporation of air, the fruit material is exposed to steam only.

Claims of Manufacturer—Supplementary to the infant milk diet and valuable for children and adults on soft diets. Has smooth consistency and supplies desirable bulk without roughness. The straining renders the nutrient content readily available for digestion. Scientifically prepared to retain in high degree the natural flavor, mineral and vitamin values. Packed in enamel lined cans. Requires only warming for serving.

TARTAN BRAND UNSWEETENED EVAPORATED MILK

Distributor—Alfred Lowry & Bro., Philadelphia

Packer—The Defiance Milk Products Co., Defiance, Ohio

Description—Unsweetered, sterilized, evaporated milk. The same as Defiance Pure Evaporated Milk, THE JOURNAL, March 3 1934, page 693.

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SATURDAY, MAY 26, 1934

HYPERPARATHYROIDISM A CHAPTER IN SUCCESSFUL LABORATORY RESEARCH

A stimulating record of clinical research, recently published in *THE JOURNAL*,¹ serves as an interesting reminder of how effectively some of the disconcerting manifestations of disease and the "pathologic curiosities" of practical medicine are being explained by improved procedures in laboratories of medicine. To many it may seem strange that in this day "laboratory medicine" needs any apologies or defense. Yet not long ago Mendel² of Yale University said that there are today not a few physicians as well as other friends of medicine who although admitting the noteworthy contributions of animal experimentation, nevertheless urge that its dominant importance is passing. Though the pendulum of enthusiasm for a laboratory innovation may at times swing too far, it soon reaches a stable level. In his defense of scientific experimentation in medicine, Mendel made a vigorous plea that devotees of practical medicine and surgery refrain from unwarranted derogatory attacks on one of the best helps of their profession in the past. It is difficult enough, he added, to fight suffering, disease and death without being obliged to fight the ignorance and prejudices of those who would tie the arms of the laboratory worker. The ultimate objective of all methods of attack on ignorance is the same.

Osteitis fibrosa cystica, commonly called von Recklinghausen's disease, has long been recognized as a chronic progressive disease of the skeleton. One will look in vain for any rational or well founded discussion of its etiology and treatment in all except the most recent textbooks, for it was not until the present decade that the relation of the malady to hyperparathyroidism was clearly established, through the classic observations of Mandl³ in Vienna and Du Bois⁴ and his co-workers

in New York. Only a few years ago less than 100 cases of von Recklinghausen's disease had been mentioned in medical literature. The report of Albright, Aub and Bauer¹ presents seventeen proved cases of hyperparathyroidism from a single clinic in the Massachusetts General Hospital in Boston.

What are the main features of the newer knowledge? Foremost is the observation that hyperparathyroidism is usually due to a functioning adenoma of the parathyroid glands. Sometimes there is hyperplasia of all parathyroid tissue. As a result of the increased production of the parathyroid hormone there is a disturbance in the metabolism of calcium and phosphorus. The easily measurable manifestations of this disturbance are an increased serum calcium level, a decreased serum phosphorus level and an increased excretion of both elements in the urine. The ascertainment of these diagnostic features has depended on the discovery of the endocrine function of the glands involved, on methods for the ready clinical estimation of calcium and phosphorus in readily obtained small specimens of blood, on the unraveling of the fundamental features of replacement therapy and dietary control. Every detail of these highly significant and frequently life-saving factors has emanated from the scientific laboratories through the laborious and modest efforts of persons who are sometimes referred to somewhat disparagingly as "research hounds." One may recall that the epithet "book farmer," similarly applied to progressive students of agriculture a generation ago, has long since been abandoned.

The relations of parathyroid function to calcium and phosphorus may bring the reminder that about 85 per cent of the mineral matter of bone, or at least three fourths of the entire ash of the body, consists of calcium phosphate. Probably more than 99 per cent of the calcium in the body belongs to the bones, the remainder occurring as an essential constituent of the soft tissues and body fluids. That is why any influence such as hyperfunction of the parathyroids with its attendant hypercalcemia leads so characteristically to demineralization of the bones. They become porous and filled with osteoclasts. There are drastic secondary consequences. The increased mobilization and excretion of calcium and phosphorus in the urine not infrequently lead to the formation of urinary calculi. In some instances the calcium phosphate precipitates occur in the kidney parenchyma and lead to secondary kidney contracture and insufficiency.⁵ Again, the replacement of so much of the marrow cavity with fibrous tissue leads to a decrease in the hematopoietic elements and hence occasionally to an anemia and leukopenia.

Despite the fact that the bones are the storehouse for calcium and phosphorus in the body, according to

1 Albright Fuller Aub J C and Bauer Walter Hyperparathyroidism J A M A 102 1276 (April 21) 1934

2 Mendel L B Scientific Experiment and Medicine Science 76 393 (Nov 4) 1932

3 Mandl Felix Klinisches und Experimentelles zur Frage der lokalisierten und generalisierten Osteitis fibrosa B Die generalisierte Form der Osteitis fibrosa Arch f klin Chir 143 245 1926

4 Hannon R R Shorr Ephraim McClellan W S and Du Bois E F A Case of Osteitis Fibrosa Cystica (Osteomalacia?) with Evidence of Hyperactivity of the Parathyroid Bodies Metabolic Study I J Clin Investigation 8 215 (Feb) 1930

5 Locke E A in Cecil's Textbook of Medicine ed 2 Philadelphia W B Saunders Company 1930

6 Albright Fuller Baird P C Cope Oliver and Bloomberg Esther Studies on the Physiology of the Parathyroid Glands IV Renal Complications of Hyperparathyroidism, Am J M Sc 187 9 (Jan) 1934

Albright, Aub and Bauer, the teeth do not take part in the generalized decalcification. They may fall out because of disease of the jaws, but they themselves remain well calcified. This is brought out strikingly by roentgenograms in which the well calcified teeth stand out sharply against the poorly calcified jaws. This failure of the teeth to become decalcified is featured as strong evidence against their being a reserve supply of calcium.

The management of the parathyroid tumors presents a real challenge to the modern surgeon. As Albright, Aub and Bauer say, before undertaking an operation he must be more than just "a good thyroid surgeon." He should know the normal and possible aberrant situations of the parathyroid glands, he must be familiar with their reddish brown coloration and smooth surface (in contrast to the granular surface of the thyroid), he must be able to differentiate them from lymph nodes, collections of fetal fat and thyroid lobules, and he must be prepared to continue the search, even if this leads him into the anterior mediastinum. For the latter reason the surgeon must not undertake the operation until he is convinced by the blood chemistry that a tumor is present. There is no time like the initial operation to find the tumor. The hypoparathyroidism following the removal may be dangerous, with its attendant tetany. A dietary regimen including calcium and phosphorus in abundance may prevent decalcification and thus improve the bones, yet may need to be avoided because of the possibility of renal damage. These features suffice to indicate the acumen and modern knowledge that are requisite for the management of hyperparathyroidism. The Boston investigators stress the point that, whereas the disease can hardly be called common, it must frequently be considered when any of a multiplicity of symptoms is present. Failure to make the diagnosis is regrettable in that the treatment for it is highly successful.

PSITTACOSIS

Although psittacosis was known prior to 1929, the epidemic of that year and the attendant publicity brought the disease to the attention of almost every physician and health officer in the country. There have been repeated occurrences during the intervening years, but the fact that the mode of transmission of the disease and the susceptibility of various species have been discovered and practical methods of control have been instituted indicate that progress has been made in the attempt to eliminate it as a factor in our national health. Indeed, a recent report describes the successful vaccination of human patients against the disease. The present status of psittacosis from various points of view has recently been summarized by Hoge.¹ The incidence of the disease is generally

decreasing, whereas in 1932 there were seventy-six cases and seven deaths, in 1933 only fifteen cases, of which four were fatal, came to the attention of the authorities. This year, however, up to the middle of March, twenty-seven cases and eleven deaths were recorded. As the epidemic of 1929-1930 was shown to have its origin in infected parrots, the disease was called "parrot fever." It has been demonstrated, however, that the most important vector of psittacosis is the shell parakeet, principally because this bird enters into commerce in large numbers. On the other hand, it is known that all or nearly all birds belonging to the family Psittacidae are actual or potential carriers of the disease. Up to the present, a large proportion of the human cases of psittacosis have occurred in California. This circumstance is correlated with the widespread occupation of breeding and rearing psittacine birds in that state. The fact that all reported human cases of the disease occurring in the United States have been traced to California-bred birds indicates the importance of strict control of the aviaries in those sections where the climate is favorable to the rearing of these birds.

Psittacosis is caused by a filtrable virus that appears to be readily passed from an infected bird to a healthy one, young birds being more susceptible than old birds. Apparently the virus can pass from birds to man by direct contact or through the lungs. The period of incubation is usually about twice as long in the birds (approximately fifteen days) as in human patients, in man the disease simulates pneumonia but with a marked dissociation of pulse rate and temperature. The virus can usually be demonstrated in the sputum and, when injected into mice, produces the disease in these animals. In the tissues of man, mice and bird with psittacosis there usually occur the so-called L. C. L. bodies, which can be stained and observed microscopically and which may be one form assumed by the virus in a developmental cycle.

Psittacosis presents a unique problem in public health control. On the one hand, the known facts definitely connect the presence of infected psittacine birds with the spread of the disease to human beings. On the other hand, the fact that most of those rearing birds are in business in a small way, together with the hesitation in accepting advice resulting in financial loss, has rendered regulation difficult. However, certain states and Hawaii have already prohibited the importation of parakeets. As it has been found that psittacosis is endemic in California aviaries, both federal and state regulations have been formulated to permit the shipment only of birds that are certified to be free from the disease by the state health officer.

Despite the difficulties arising from lack of fundamental knowledge of the disease as well as from opposition to regulation, the results of the efforts to control psittacosis have been favorable. However, there is presented here a situation of extremely grave

¹ Hoge, V. M. Pub. Health Rep. 49:451 (April 6) 1934.

possibilities Hoge states that "few diseases can claim a more diversified list of susceptible species" Recently the chicken has been shown to be susceptible to the disease both by inoculation and by feeding infected material The widespread use of poultry as human food and the necessary contact with chickens in the egg industry emphasize the great potential danger from this source alone The accumulating facts indicate that in uncontrolled psittacosis there exists a serious menace both to the public health and to commerce

Current Comment

ARTIFICIAL RESPIRATION MAINTAINED FOR TWO YEARS

In this day of complex mechanical devices for the care of the sick, it is refreshing to observe that the simple things at hand sometimes serve the purpose well A unique example is found in a case of progressive muscular atrophy, recently reported by Kerridge,¹ in which artificial respiration has been maintained for two years A man, aged 63, gradually lost control of various groups of muscles until he was unable to breathe without assistance In the first serious attack of difficult breathing, which occurred when he was riding in a car, he was relieved by companions pressing rhythmically on the front of his chest From this time he was treated by his family in the same way, whenever respiratory difficulty recurred The attacks gradually lengthened and in less than a year he was having artificial respiration performed continuously day and night by relatives and nurses Sir William Bragg, the physicist, a friend of the patient, suggested bandaging a football bladder to the patient's chest and connecting it through a rubber tube to another bladder fixed between two hinged boards so that it could be moved rhythmically by the foot or with a lever This apparatus was effective, but the bladders wore out in three days They were replaced by a hot water bottle, which lasted three weeks, when it had to be patched or replaced The boards were used until the hinges wore loose A more substantial apparatus made on the same principle proved to be too hard for the nurses to operate Then a small hydraulic machine was constructed, worked off the main water supply, which alternately compressed and relaxed a rubber bellows—except on one occasion when the water froze in the pipes This apparatus has been keeping the patient alive since October 1933 For a few hours each day, the manual method of artificial respiration is used to relieve the constriction of the bandage about the patient's chest Recently Kerridge has replaced the hot water bottle and binder by a linen belt interlined with a bag of rubber of a size to surround the front and back of the left side of the chest The patient has worn this apparatus comfortably and continuously for weeks A pressure in the bag of nine-tenths pound per square inch, produced twenty-two times a minute, has been sufficient This almost completely paralyzed

patient is active mentally, although wasted He lies on his right side almost continuously His appetite is good There have been no bed sores When artificial respiration was stopped for one minute, movement did not occur in the thorax or diaphragm Prior to the development of progressive muscular atrophy, the patient led an active outdoor life and had no serious illness This interesting case shows that positive pressure can be used without apparent ill effects for a long time A striking feature of the case, which Kerridge notes, is the comfort of the patient and the simplicity of the mechanism used The patient carries on his normal intellectual pursuits at home In this issue of *THE JOURNAL*, some papers presented at the second annual meeting of the Society for the Prevention of Asphyxial Death are abstracted The case report by Kerridge casts a bright glow on the great field in life saving which that society has undertaken to illuminate

THE INORGANIC STRUCTURE OF BONE

The biochemist's conception of the nature of bone and related structures has been developed to an increasingly clear understanding in recent years The definition of bone as a tissue consisting of water and about equal parts of organic and inorganic material has become obsolete The inorganic constituents of bone can be regarded as consisting almost entirely of a mixture of calcium phosphate and carbonate, in the proportion of three to (somewhat less than) one, built together into some complex along with traces of the corresponding magnesium compounds and of chloride and fluoride No definite clue to the constitution of this complex has as yet been obtained, though the proportions of the constituents are constant¹ By roentgen examination and by chemical analysis it seems to be similar, as far as its inorganic constituents are concerned, to the mineral dahllite, though there is no complete agreement on this feature The application of x-ray diffraction methods, which have afforded so much new information in other fields of scientific research seems destined to extend the knowledge of the structure of bone not only in health but also in disease of the osseous tissues Janet H. Clark² of Johns Hopkins University has produced x-ray diagrams of bones and teeth She believes that inorganic crystals of apatite are present in bone oriented so as to give fiber structure in longitudinal section There are also nonoriented crystals present which are attributed to organic crystals of collagen or ossein In a more recent study, by Clark and Mrgudich³ of the Department of Chemistry at the University of Illinois, the longitudinal orientation of the inorganic micelles of bone has been confirmed In rickets this preferred orientation seems to be to a large extent destroyed The Illinois observers look on the attack of rickets as a breaking down of the organic "cement" (collagen or

¹ Kerridge, Phyllis M. Tookey. Artificial Respiration for Two Years. *Lancet* 1: 786 (April 14) 1934

¹ Cameron, A. T. A Textbook of Biochemistry. New York, Macmillan Company, 1933

² Clark, Janet H. A Study of Tendons, Bones and Other Forms of Connective Tissue by Means of X-Ray Diffraction Patterns. *Am. J. Physiol.* 98: 328 (Sept.) 1931

³ Clark, G. L. and Mrgudich, J. N. An X-Ray Diffraction Study of the Effect of Rickets upon the Structural Characteristics of Bone. *Am. J. Physiol.* 108: 74 (April) 1934

osseous) which holds the inorganic crystals in their normal oriented position. After this 'cement' has been decomposed the inorganic material, although remaining chemically unchanged, loses its preferred orientation and the bone loses its resistance to strain in much the same manner as a tied bundle of sticks loses its supporting strength when untied and scattered. On healing, the inorganic micelles of a rachitic bone do not regain their preferred orientation, although the organic constituent assumes the same form as in the normal bone. Clark and Mrgudich conclude that any theory involving equilibrium between serum calcium and bone calcium must take into account the more fundamental equilibrium between serum and the organic constituent of bone.

Association News

THE CLEVELAND SESSION

Visit to Home of George Edward Follansbee

The home of Dr. and Mrs. George Edward Follansbee will be open to visiting women guests at the American Medical Association convention at Cleveland on Tuesday, Wednesday and Thursday afternoons of the convention week from 2 to 5 p. m. Visitors will enjoy Mrs. Follansbee's nationally famous collection of Americana. Tea will be served.

Guests desiring to visit the Follansbee home will be expected to leave notification at the women's registration desk in the Hotel Carter.

Golf for Pediatricians

Members of the Section on Pediatrics are urged by the Cleveland committee to bring their golf clubs. A special event has been scheduled for the members of the section at the Country Club. Details will be announced at the section meetings.

Rotary Club Luncheon

The regular luncheon of the Cleveland Rotary Club will be held Thursday noon, June 14, in the Rainbow Room of the Hotel Carter. All Rotarians are invited to attend.

Railroad Rates

The Transcontinental and Western Passenger Associations state that fare and one third of the current one-way first class fares is lower than summer excursion fares from New Mexico and that selling dates of tickets from New Mexico will be June 4 to 12 inclusive.

MEDICAL BROADCASTS

National Broadcasting Company

The American Medical Association broadcasts on a coast-to-coast network each Monday afternoon from 3:45 to 4 o'clock, Central daylight saving time (3:45 Eastern standard time, 2:45 Central standard time, 1:45 Mountain standard time and 12:45 Pacific standard time).

The next three broadcasts will be as follows:

May 28 The Family Medicine Chest Morris Fishbein M.D.
June 4 Highway Hazards W. W. Bauer M.D.
June 11 The Common Cold Wilson G. Smillie M.D. (from Cleveland)

The National Broadcasting Company talks will be discontinued for the summer with the talk from Cleveland on June 11.

Columbia Broadcasting System

The Association broadcasts on a Western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4:30 to 4:45 Central daylight saving time. The June 14 broadcast will be from Cleveland at 4 to 4:15 p. m., Eastern daylight saving time. The next three broadcasts will be as follows:

May 31 Health Slogans W. W. Bauer M.D.
June 7 The First Month W. W. Bauer M.D.
June 14 Medicine Marching Forward Morris Fishbein M.D.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Clinical Meeting—Dr. Joseph H. Griffin, Bainbridge, Ga., was elected president by the John A. Andrew Clinical Society at its twenty-third annual clinic at Tuskegee Institute, April 8-14. Papers were presented by the following physicians, among others:

Richard H. Miller, Boston, Diagnosis of Acute Abdominal Emergencies
Thomas M. Smith, Chicago, Coronary Occlusions
James L. Hall, Chicago, Intestinal Parasites and Infections
Roman T. Adair, Montgomery, Diagnosis and Treatment of Bronchial Asthma
Roscoe C. Giles, Chicago, Diagnosis and Treatment of Osteomyelitis
Walter G. Crump, New York, Science of Medicine As It Is Related to the Art of Medicine
Ralph H. Scull, Chicago, Common Fungus Diseases of the Skin and Preliminary Report on Work Done with Trichophyton at Rush Medical College
Alan P. Smith, Jr., Tuskegee, Syphilis of the Parenchyma of the Brain
John E. Hunter, Lexington, Ky., Intestinal Obstruction
Lee O. Miller, Asheville, N. C., Reduction of Blood Pressure Without Injury
Clarence Leon Wilson, Chicago, Sterility in the Female: Etiology, Diagnosis and Treatment
Ulysses G. Dailey, Chicago, Present Status of Treatment of Hyperthyroidism
John W. Chenault, Chicago, Intervertebral Disk and Spinal Disabilities
Willard M. Lane, Washington, D. C., Appendicitis, with Special Reference to the Disease in Women
John H. Hale, Nashville, Tenn., Rupture of the Meningeal Artery with a Depressed Fracture of the Brain
Frank Jones, Washington, D. C., A Case of Nephrobronchial Fistula and a Case of Elephantiasis of the Scrotum Due to Filaria Bancrofti
Henry A. Calhoun, Washington, D. C., Dehydration
Toussaint T. Tilden, Tuskegee, Ala., Spontaneous Cardiac Rupture, with Report of Case

Clinics and demonstrations in the various specialties were conducted.

ARKANSAS

Society News—At a meeting of the Benton County Medical Society in Siloam Springs, March 8, speakers were Drs. Davis W. Goldstein and James C. Ogden, Fort Smith, on 'Malignancies of the Skin' and 'The Eye in Relation to General Medicine,' respectively. Among others, Dr. Johnson J. Baker, Magnolia, spoke before the Sixth Council District Medical Society in Texarkana, March 8, on 'Treatment of Malaria Other Than Quinine.' Speakers before a joint meeting of the Sebastian and Jasper County medical societies, March 13, included Dr. Samuel A. Grantham, Joplin, Mo., on a method of spinal fusion. The Second Council District Medical Society was addressed in Batesville, April 15, among others, by Drs. Wells F. Smith, Little Rock, and Martin C. Hawkins, Jr., Searcy, on traumatic epilepsy and uterine bleeding, respectively.

CALIFORNIA

The Health Insurance Racket—A charge of selling insurance without a permit against John C. Moore, San Francisco, head of one of the racketeering health insurance associations in California, was dismissed, April 24, on the grounds of insufficient evidence. The state board of medical examiners was not consulted when Moore's trial was called, and it was held when the special investigator for the board was out of town. Moore operated the 'Pacific International Health Association' at 127 Montgomery Street, San Francisco. This organization had previously been known as the International Metropolitan Health and Accident Association but was changed following the objection by the Metropolitan Life Insurance Company to the word 'Metropolitan.' An application given by Moore to the investigator for the board read 'United States Agency—Pacific International Health Association—medical-surgical-dental-hospital-ambulance-laboratory-optometry services—Emergency Expense—Life—Accident—Health Protection.' It purports to offer medical and surgical benefits 'by any duly licensed physician in any sickness or accident.' According to the state medical board, investigation indicates this to be 'sales talk,' because when the purchaser receives his contract, it is said to specify therein that the professional service to which he is entitled is limited to a physician chosen by the company. It is pointed out that a holder of a contract as a complainant, having accepted it, is precluded from bringing in as evidence the application which he signed should he begin any legal

action. He is further penalized because that portion of the application which he signs is immediately torn from the other portion of the application so that, in case of controversy, it is later impossible to connect the promises made in the application with the phraseology of that portion of the contract which has been signed by the applicant. Harry Kramer, head of five of these health associations recently received a sentence of from one to two years in San Quentin Prison and a fine of \$5,000 (THE JOURNAL, March 28, p. 1091).

COLORADO

Clinic for Venereal Diseases—The Pueblo County Medical Society recently appointed a committee on venereal diseases to educate the public to the need of a free clinic for the treatment of these diseases. About a year ago the state venereal clinic, administered by the state health board, was discontinued in Pueblo and other cities of the state thus putting an end to the supervised treatment of these patients. It is hoped that the committee's work and public opinion will bring about the establishment, by legislative action, of one health board with definite duties not only for the treatment of the indigent, but for the entire public health problem. It was pointed out that until this is assured the Child Welfare and Public Health Association of Pueblo will endeavor to seek county and community chest funds to continue the free clinic.

DELAWARE

Health at Wilmington—Telegraphic reports to the U. S. Department of Commerce from eighty-six cities with a total population of 37 million for the week ended May 12 indicate that the highest mortality rate (186) appears for Wilmington and that the rate for the group of cities as a whole was 119. The mortality rate for Wilmington for the corresponding week of last year was 166, and for the group of cities, 108. The annual rate for eighty-six cities for the nineteen weeks of 1934 was 125, as against a rate of 119 for the corresponding period of the previous year. Caution should be used in the interpretation of these weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

DISTRICT OF COLUMBIA

Medical Bills in Congress—S. 3479, proposing to amend the healing arts practice act of the District of Columbia, has been reported to the Senate, without amendment (S. Rept. 990). The bill would amend the existing law (1) by substituting the corporation counsel of the District of Columbia for the United States district attorney as a member of the Commission on Licensure to Practice the Healing Art and (2) by transferring to the corporation counsel for the District of Columbia, from the United States district attorney, the duty of instituting legal proceedings for the enforcement of the act.

ILLINOIS

Society News—Dr. William C. Danforth, Evanston, Ill., addressed the Vermilion County Medical Society in April on "Symptoms and Treatment of Fibroids."—At a meeting of the Madison County Medical Society in Madison, April 6, Dr. Lee Pettit Gay, St. Louis, spoke on allergy.—Speakers before the Douglas County Medical Society April 28, included Drs. Don W. Deal on acute conditions of the abdomen, Hermon H. Cole, prevention of heart disease and Walter G. Bain, general relation of sinuses and chest conditions. All are from Springfield.—Dr. Max Thorek, Chicago, addressed the Warren County Medical Society at Monmouth May 2, on "An Electrosurgical Method of Obliterating the Gallbladder."

Chicago

Hospital News—The cornerstone of the new \$1,000,000 Chicago Polyclinic Hospital was laid, May 11. The institution, formerly known as Henrotin Hospital, will be six stories high with a capacity of 100 beds. The old hospital was erected in 1907.

Alumni Reunion Rush Medical College—The annual reunion of Rush Medical College will be held in Chicago June 8 and 9, in order to permit visiting alumni to attend this reunion and to go to the annual meeting of the American Medical Association in Cleveland the week following. Special clinics will be held for the visiting alumni on June 8 and 9. The annual banquet of the Rush Faculty and Alumni will be held at 6:30 Saturday evening, June 9, at the Palmer House. Special class reunions of the tenth, twentieth, thirtieth, fortieth and fiftieth year classes will be held Friday evening, June 8, at the Palmer House.

IOWA

Society News—The eighth Iowa Conference on Child Development and Parent Education will be held in Iowa City June 19-21. Dr. William E. Blatz, director, St. George's School of Child Study, Toronto, Canada, will be among the speakers. Details may be obtained from the Iowa Child Welfare Research Station, State University of Iowa, Iowa City.—The Cerro Gordo County Medical Society was addressed, May 14, by Dr. Verne C. Hunt, Los Angeles, on "Cancer of the Breast."—Dr. James W. Young, Newton, discussed socialized medicine before the Jasper County Medical Society in Newton, April 3.—At a meeting of the Jefferson County Medical Society, April 18, Dr. Robert O. Hughes, Ottumwa, spoke on diagnosis of diseases of children.—The Johnson County Medical Society was addressed, April 4, by Dr. Harry L. Alexander, St. Louis, on "Allergy from the Standpoint of the General Practitioner."—Dr. Charles B. Taylor, Ottumwa, was guest of honor at a meeting of the Keokuk County medical and dental associations, April 16, in Sigourney. The guest speaker was Ralph A. Fenton, DDS, Iowa City, on "Focal Infections."—Dr. Jack V. Treynor, among others, addressed the Pottawattamie County Medical Society in Council Bluffs April 26 on "Indications for Tracheotomy."—At a meeting of the Scott County Medical Society in Davenport, Dr. David S. Hilts, Chicago, discussed obstetrics and the general practitioner.

KENTUCKY

Extension Course in Russellville—Drs. Malcolm D. Thompson and Winston U. Rutledge, Louisville, were the lecturers in an extension course under the auspices of the Kentucky State Medical Association at Russellville, May 9, with the Logan County Medical Society as host. Dr. Rutledge discussed dermatologic subjects and Dr. Thompson, treatment of injuries.

Dr. Jones Returns to Utah—Dr. John L. Jones, Louisville, director of the bureau of epidemiology of the state board of health for the past six years, has resigned to become assistant health officer of Utah, his native state. Dr. Jones was honored with a farewell dinner at the Pendennis Club April 24, at which guests included the staff and members of the board of health and representatives of county health departments, the city health department, medical societies and auxiliaries. Dr. Arthur T. McCormack, state health officer, presided and addresses were made by Drs. Hugh R. Leavell, city health commissioner, John D. Trawick, county health officer, Louis Frank, Philip F. Barbour, all of Louisville. Dr. Robert H. Crowley, Berea, and Dr. Jones. A silver service was presented to Dr. and Mrs. Jones. Dr. Martin H. Jensen, formerly assistant director of the bureau of county health work, has been appointed to succeed Dr. Jones.

MARYLAND

State Medical Election and Meeting—Dr. John M. T. Finney, Baltimore, was elected president of the Medical and Surgical Faculty of Maryland at its one hundred and thirty-sixth annual meeting in Baltimore April 24-26. Vice presidents elected are Drs. Louis Hamman, Baltimore, James McFadden Dick, Salisbury, and Victor D. Miller, Hagerstown. Dr. Walter D. Wise, Baltimore, was reelected secretary and Dr. Charles Emil Brack, Baltimore, was reelected treasurer. Dr. George O. Sharrett, Cumberland, delivered his address as retiring president on "Our Duty and Responsibility." The Trimble lectures were presented by Dr. John A. Kolmer, professor of medicine, Temple University School of Medicine, Philadelphia, on "Etiology, Diagnosis and Treatment of Septicemia," and Dr. Fred W. Rankin, Lexington, Ky., "The Development of Surgery of the Colon and Rectum." Other speakers on the scientific program included:

Dr. William H. Pearce, "The Sphere of State Medicine."
Dr. Cyrus F. Horine, "Distribution of Physicians in Maryland Counties."
Dr. Max Kahn, "Irradiation of Radiosensitive Tumors."
Dr. Dean Lewis, "President American Medical Association, Diagnosis and Prognosis of Gastrointestinal Tumors."

A round table luncheon was held, April 25, and included among others, the following speakers: Drs. Charles R. Austrian and "Pneumonia," Maurice C. Pincoffs, "Hyperthyroidism and Hypothyroidism in Relation to the Heart," "Recent Use of Thyroidectomy in the Therapy of Chronic Heart Disease," Esther L. Richards, "Strains of Life in Relationship to Nerves," and Other Forms of Poor Mental Health, and Henry J. Walton, "Educational and Professional Aspects of the Practice of Radiology."

New Marine Hospital—A new U S Marine Hospital was recently dedicated at Baltimore. Influenced by the design of the Johns Hopkins University group of buildings, the architecture generally follows the Georgian style. A dark granite base is used for the main buildings with rusticated limestone courses between the first and second floors. The other exterior facing is of sand finish red colonial brick in a full range of color with limestone trim. Black granite was used at the three main entrance doorways with bronze exterior bracket lamps. The interior of the main building is of typical hospital finish. Administrative offices, the pharmacy, eye, ear and nose clinic, clinical laboratory, staff room and hospital library are located on the first floor of the transverse wing while on the first floor of one of the lateral wings is the dental department and in the other, small isolation wards. On the first floor of the central wing are located the physical therapy and roentgen-ray departments. On the second floor of the transverse and lateral wings are located wards and private rooms, together with professional and administrative facilities and the basal metabolism section. This floor is for medical patients only. The second floor of the central wing contains the kitchen and dining rooms. The third floor of the transverse and lateral

I Weiner has resigned as medical director of the Oakland County Tuberculosis Sanatorium, Pontiac, on account of ill health.—Dr William E McNamara, Lansing, was recently named a member of the state council of health.

District Conference—The Michigan State Medical Society, and the department of graduate medicine of the University of Michigan conducted a conference in the fourteenth councilor district in Adrian, May 10, when the following program was presented:

Prevention and Repair of Birth Injuries to the Mother, Dr Howard H. Cummings, Ann Arbor
Differential Diagnosis in Acute Abdominal Disease, Dr Eugene B. Potter, Ann Arbor
Diagnosis and Treatment of Pneumonia, Dr Edward D. Spaulding, Detroit
Recognition and Management of Speech Defects, Prof John R. Mjuskens, Ann Arbor

Society News—The committee on preventive medicine of the Michigan State Medical Society presented the program before the Gogebic County Medical Society at its meeting in Ironwood, May 10, the program of the state medical society, its general principles and applications to counties were discussed by Dr Ledru O. Geib, Henry F. Vaughan, Dr P. H. Detroit, and Dr Garner M. Bjington, Battle Creek. Dr John E. Gordon, Detroit spoke on 'Differential Diagnosis in the Acute Communicable Diseases'.—Dr Claire L. Straith, Detroit, discussed 'Correction of Facial Injuries and Deformities' before the Livingston County Medical and Dental Society, May 4.—A symposium on diseases of the blood-forming organs was presented at Harper Hospital, Detroit, May 18, by Drs Russell L. Haden, Cleveland, Raphael Isaacs, Ann Arbor, and Hugo A. Freund, Detroit.

MINNESOTA

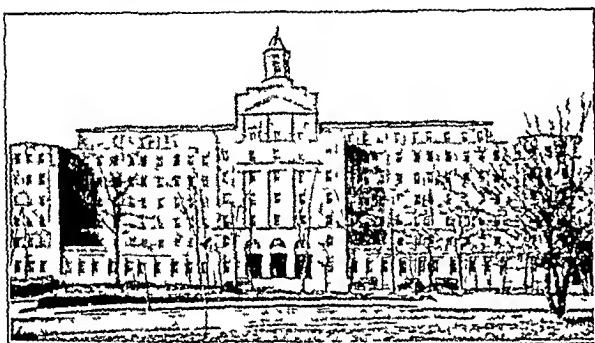
"Bone-Setters" Warned to Stop Practicing—The state board of medical examiners has issued a warning to three unlicensed practitioners of healing, so-called bone-setters, that they are to cease their activities unless they are registered under the Basic Science Law and licensed to practice. These men are P. D. Heppner, Butterfield, Claus Hiebert, Bingham Lake, and Jacob Goertzen, Mountain Lake. The board asks that any case of treatment subsequent to March 17 by any of these persons be promptly reported to the board at 524 Lowry Medical Arts Building, St. Paul, and action will be taken to force a compliance with the laws of Minnesota.

Society News—Speakers before the Hennepin County Medical Society, April 11, were Drs. Edward D. Anderson and Paul W. Gessler on 'Relationship of the Physician to the Handicapped Child' and 'Adjusting the Crippled Child to His Environment' respectively. Dr. Henry Schmitz, Chicago, addressed the society, May 7, on 'Early Diagnosis and Treatment of Uterine Carcinoma'.—Dr. Thomas B. Magath, Rochester, Minn., was elected president of the Minnesota Academy of Medicine at its second annual meeting in Rochester, April 21. Walter A. Kenyon, Ph.D., St. Paul, vice president, and Harold K. Wilson, Ph.D., St. Paul, reelected secretary.—Speakers before the Camp Release Medical Society at Dawson April 6, were Drs. Thurston W. Weum, Minneapolis on obstetrics, Myron O. Henry, Minneapolis, fractures, and Charles Bolsta, Ortonville, enforcement of the basic science law.—Dr. Hugh Cabot discussed 'Wartime Reminiscences of the Royal Army Medical Corps' before the sixteenth semiannual meeting of the Minnesota Society of Internal Medicine at Rochester, April 23.

MISSOURI

Personal—Dr. Herluf G. Lund, St. Louis, was presented with a gold watch at a buffet supper given in his honor April 6, at the Lenox Hotel, to mark his completion of twenty years as chairman of the staff of Lutheran Hospital. Dr. Theodore P. Brookes presided and the presentation was made by Dr. Phelps G. Hurford.

Society News—Members of the staff of the St. Louis City Hospital presented the program before the St. Louis Medical Society, May 15. Drs. Arthur A. Hines, "Preparation of Psychotic Patients for Spinal Puncture with Sedative Medication," James M. Macmish, "Cysto-Urethrography in the Male" and James M. Coleman "Hypersensitization"—"Necrotizing Ulcerations Complicating Erysipelas" was discussed before the Jackson County Medical Society, May 1, by Drs. Paul F. Stookey, Caryl R. Ferris, Hubert M. Parker and Louis A. Scarpellino. At a meeting of the society, May 15, Dr. Thomas G. Orr, Kansas City among others discussed the "Action of Morphine on the Intestinal Tract with Its Clinical Application".—Dr. George



New U S Marine Hospital at Baltimore

wings are for surgical patients. The fourth floor of the transverse and lateral wings is used for patients with genito-urinary and venereal diseases. The fifth and sixth floors of these wings are to be utilized for surgical and medical cases, while the seventh floor of the transverse or main wing will be nurses quarters. The central wing of the basement is used in part for a morgue and autopsy section.

MASSACHUSETTS

Safety Conference—The first annual New England Safety Conference convened at the Statler Hotel in Boston April 30-May 1. Included among the speakers on topics of medical interest were Dr. Robert S. Palmer of Harvard Medical School, Boston, Arthur B. Lamb, director, chemical engineering, Harvard University, Dr. Alton S. Pope, director, division of tuberculosis, Massachusetts State Department of Public Health, Dr. Timothy Leary, medical examiner of Suffolk County South, Theodore F. Hatch and Philip Drinker, of the faculty of the Harvard School of Hygiene and Public Health.

Society News—Dr. Alfred Stengel, Philadelphia, conducted a clinic on pneumothorax in the treatment of pneumonia, April 26, at the Peter Bent Brigham Hospital, Boston.—At a meeting of the Massachusetts Psychiatric Society in Boston, April 20, the speakers were Drs. Julius Loman, Boston, and Clifford D. Moore, Waltham on 'Effects of the Alteration of Posture on the Cerebrospinal Fluid Pressure' and 'Mental Disease in a Tuberculosis Sanatorium Population'.—Dr. Abraham Myerson, Boston addressed the Hampden District Medical Society in Springfield April 24 on 'The Neuroses as the General Practitioner Meets Them'.—At the annual meeting of the Worcester North District Medical Society in Fitchburg, April 25, Dr. Andrew R. MacAusland, Boston gave the annual oration on 'Recent Trends in the Treatment of Fractures'.

MICHIGAN

Personal—Dr. William M. Donald has been made head of the department of medicine of Wayne University School of Medicine, Detroit.—Dr. John J. Prendergast Jr., Detroit, has been named acting superintendent of Receiving Hospital, Detroit, succeeding Dr. Egil T. Olsen resigned.—Dr. Walter

Gellhorn, St. Louis, addressed the Kansas City Obstetrical and Gynecological Society, May 3, on "Local Anesthesia in Obstetrics and Gynecology."—Dr. Raymond E. Teall has been elected president of the Kansas City Society of Ophthalmology and Otolaryngology, and Dr. Andrew W. McAlester III, secretary.

NEW MEXICO

Health Survey Concluded—A health survey of New Mexico sponsored by the New Mexico Tuberculosis Association and directed by Carl E. Buck, Dr. P. H., of the American Public Health Association, was concluded April 30. A special survey of syphilis in one district was made under the auspices of the American Social Hygiene Association, and blood examinations were made by the survey staff in all the districts visited. Among other results it was found that active syphilis appears to be about twice as common as active tuberculosis. The morbidity rate of active adult tuberculosis is about twice as high among Anglo-Americans as among Spanish Americans, but the childhood type is twice as high among the Spanish American school children, as revealed by the Mantoux test. Special eye examinations showed that 85 per cent of school children had subnormal visual acuity and other symptoms of eye difficulty. The most frequent diseases of the eyes encountered among school children were folliculosis, in 54 per cent, conjunctivitis, 31 per cent, blepharitis, 1 per cent. Muscle imbalance was noted in 19, and symptoms of reading difficulties were observed in 78 per cent.

NEW YORK

State Medical Election—Dr. Frederic E. Sondern, New York, was chosen president-elect of the Medical Society of the State of New York at its annual meeting in Utica, May 15. Vice presidents elected are Drs. Andrew Sloan, Utica, and Leon M. Kysor, Hornell. Dr. Daniel S. Dougherty, New York, was reelected secretary. A silver loving cup was presented to Dr. Marian Craig Potter, Rochester, in recognition of her completion of fifty years in the practice of medicine.

Society News—The Schenectady County Medical Society celebrated its one hundred and twenty-fourth anniversary with an all day meeting at Ellis Hospital, Schenectady, April 12. A course of lectures on internal medicine was recently presented by the Tioga County Medical Society for its members alternately at Waverly and Owego, given by five Brooklyn physicians, as follows: Drs. George H. Roberts Jr., coronary thrombosis, Albert F. R. Andresen, biliary tract diseases, John Hamilton Crawford, cardiac failure, John B. d'Albora, ulcerative colitis, and Eugene R. Marzullo, pernicious anemia.—Dr. Clarence O. Cheney, New York, addressed the Binghamton Psychiatric Society, May 22, on "Treatment of Behavior Disorders in Children."

New York City

Joint Obstetric Meeting—The Obstetrical Society of Philadelphia, the Boston Obstetrical Society and the New York Obstetrical Society held a joint meeting in New York, April 10. Clinics were held at New York and Brooklyn hospitals and at an evening meeting at the Hotel Pennsylvania, Dr. Edward A. Schumann, Philadelphia, read a paper on "The Contribution of New York to American Obstetrics and Gynecology."

Portrait of Dr. Senior—In honor of the twenty-fifth anniversary of Dr. Harold Dickinson Senior as a member of the faculty of New York University and Bellevue Hospital Medical College, an oil portrait of him was recently unveiled in the students' lounge of the college. Dr. Senior is professor of anatomy and director of the anatomic laboratories. Dr. Benjamin Spector, professor of anatomy, Tufts Medical College, Boston, made the presentation on behalf of a committee of alumni and donors and Dr. John H. Wyckoff accepted the gift.

The Voluntary Hospital Emergency—At the annual luncheon of the United Hospital Fund for distribution of funds, May 14, a committee appointed in April to study the emergency situation of the voluntary hospitals reported that the fifty-six hospitals have a deficit of \$2,500,000 for which no provision has been made. Furthermore the hospitals have accounts, bills and notes payable for current expenses amounting to \$5,000,000, excluding capital loans. The committee recommended that before a campaign for funds is undertaken, the fund join with the municipal department of hospitals in a thorough survey of the hospital needs and problems of the city. The city, with a population of 7 million, has more than six beds per thousand of population, more than the ratio considered neces-

sary. The beds are not well distributed, however, either as to location or division between municipal and private accommodations. The committee also declared that the voluntary hospitals have not been sufficiently reimbursed for their care of city patients. Checks totaling \$450,000 were distributed to the fifty-six hospitals.

NORTH DAKOTA

State Medical Meeting in Fargo—The North Dakota State Medical Association will hold its annual session in Fargo, May 28-29, under the presidency of Dr. Jesse W. Bowen, Dickinson. According to the tentative program, guest speakers will be:

Dr. Walter L. Biering, Des Moines, Iowa, President-Elect, American Medical Association, Heart Disease.
Dr. Edward Starr Judd, Rochester, Minn., Surgical Treatment of Cancer of the Stomach.
Dr. Albert M. Snell, Rochester, Minn., Clinical Aspects of Gastric Cancer.
Dr. Ray Morton Balyeat, Oklahoma City, Allergy.
Dr. Ernest M. Hammes, St. Paul, Cerebral Hemorrhage.
Dr. Edwin F. Robb, Minneapolis, Poliomyelitis.
Dr. Wallace H. Cole, St. Paul, Arthritis.

Drs. Judd, Snell and Byrl R. Kirklin, Rochester, Minn., will conduct a gastro-intestinal clinic the first day; Drs. Robb and Cole, clinics on pediatrics and fractures, respectively, the second day. North Dakota physicians who will appear on the program include:

Dr. George C. Foster, Fargo, Bronchoscopy.
Dr. Victor J. LaRose, Bismarck, Significance of Genito-Urinary Bleeding.
Dr. John H. Moore, Grand Forks, Safer Motherhood.
Dr. Julius O. Arison, Bismarck, Cardiac Arrhythmia.

OHIO

Alpha Omega Alpha Lecture—Dr. Francis Peyton Rous of the Rockefeller Institute for Medical Research, New York, delivered the Alpha Omega Alpha Lecture at the Institute of Pathology of Cleveland, May 7, on "Studies on the Etiology of Tumors."

Society News—Drs. Charles T. Souther and Carl W. Koehler, Cincinnati, addressed the Clermont County Medical Society, Owensville, April 18, on "Anastomosis of the Large Bowel" and "Indications for X-Ray Therapy," respectively.—Dr. Robert C. Austin, Dayton, addressed the Auglaize County Medical Society on intestinal obstruction, April 12, at Lake St. Marys.

Ohio State Alumni Meeting in Cleveland—Alumni of Ohio State University College of Medicine will meet in Cleveland during the annual session of the American Medical Association at the Hollenden Hotel, Wednesday evening, June 13, at 6 o'clock. Dr. John H. J. Upham, Columbus, dean of the college of medicine, will preside, and Mr. W. N. King, Cleveland, president of the Ohio State University Alumni Association, will give an address of welcome. Mr. John Fullen, secretary of the alumni association, and Dr. Russel G. Mean, Columbus, are in charge of arrangements.

PENNSYLVANIA

Optometrist Convicted—Listed in 1932 Blue Book of Optometrists under Allentown, Pa., H. O. Ulrich, optometrist, was convicted in the Dauphin County court, March 23, of the illegal practice of medicine. Ulrich paid the costs of prosecution, repaid the victim \$45 and served thirty days in the Dauphin County prison.

Society News—Dr. Francis S. Chambers, Elizabethtown, addressed the Dauphin County Medical Society, Harrisburg, May 1, on "Principles Underlying the Prevention of Deformities in Children."—Dr. Leonard G. Rowntree, Philadelphia, addressed the Harrisburg Academy of Medicine, May 15, on recent advances in knowledge of the endocrine glands.—At the final meeting for the season of the Allegheny County Medical Society, May 15, the graduating class of the University of Pittsburgh School of Medicine and interns finishing their services in Pittsburgh hospitals were guests. Addresses were made by Dr. John W. Dixon, Wilkensburg, on "Management of Inflammation" and Gerald C. North, Ph.D., research assistant of the Wisconsin Alumni Research Foundation, Madison, on "Irradiated Vitamin D Milk."

Philadelphia

Portrait of Dr. Rugh—The senior class of Jefferson Medical College presented to the college April 26 an oil portrait of Dr. James T. Rugh, James Edwards professor of orthopedic surgery. Dr. Rugh was graduated from Jefferson forty-two years ago and has taught orthopedic surgery there for forty-one years. Dean Ross V. Patterson accepted the gift.

Seminars on Physical Therapy—The Philadelphia County Medical Society presented the sixth course of graduate seminars during the week of April 30-May 4. Lecturers were as follows:

Dr. William Schmidt: Fever Therapy
Dr. William T. Johnson: Physical Therapy in Peripheral Paralysis
Dr. John R. Moore: Physical Therapy in Orthopedics
Dr. Valentine William Murray Wright: Physical Therapy in Fractures
Dr. Josef B. Nylin: Hydrotherapy
Dr. William Bates: Influence of Posture on Disease
Dr. Frank H. Krusen: Light Therapy
Dr. Lewis C. Scheffey: Diathermy in Pelvic Inflammatory Disease
Dr. Joseph C. Doane: Histamine Iontophoresis in Treatment of Vaso spastic Conditions
Dr. Nathaniel W. Winkelman: Physical Therapy in Neurology

Society News—A symposium on rheumatic fever was presented by members of the medical department of the University of Pennsylvania before the Philadelphia County Medical Society, May 9, speakers were Drs. William D. Stroud, John C. Gittings, George M. Coates and Oliver H. Perry. Pepper—Drs. Isidor S. Ravidin and Charles C. Wolferth among others, addressed the Philadelphia Academy of Surgery, May 7, on "Immediate Results of the Treatment of the Congestive Heart by Complete Ablation of the Thyroid Gland."—Dr. Richard E. Shope of Rockefeller Institute, New York, among others, addressed the Pathological Society of Philadelphia, May 10, on "Results of the Study of Swine Influenza and Their Possible Relation to the Human Disease."

SOUTH CAROLINA

State Medical Election—Dr. Samuel E. Harmon Columbia, was named president-elect of the South Carolina Medical Association at the annual meeting in Charleston, May 1-3, and Dr. William Eggleston, Hartsville, was installed as president. Dr. Edgar A. Hines, Seneca, was reelected secretary for the twenty-fifth year. Florence was selected for the place of the 1935 meeting.

UTAH

Appendicitis Mortality Rate—The Salt Lake County Medical Society has recently launched a campaign in cooperation with the Salt Lake City Board of Health to reduce the mortality from appendicitis in Salt Lake City. In 1933 the rate was 44 per hundred thousand of population. Two questions have aroused interest: (1) Is there an unusual incidence of appendicitis in the vicinity? and (2) Do any local conditions cause delay in operation? A campaign to warn the public against taking laxatives for abdominal pain and to urge prompt medical attention has been begun. In addition, surgeons have been asked to fill out a questionnaire on all cases seen by them and incorporate it into the hospital records. It is hoped that this procedure will supply a mass of data that will permit evaluation of the factors that make for success or failure in treatment. Dr. John F. Sharp is chairman of the committee on appendicitis mortality.

VIRGINIA

Summer Courses—The University of Virginia Department of Medicine, Charlottesville, announces courses in medical sciences for the summer quarter, June 18 to July 28 intended primarily for medical students who desire to make a review. Subjects included are histology, embryology, anatomy, topographic anatomy, anatomy of the human nervous system, biochemistry, physiology, medical bacteriology, pathology, pharmacology and mental hygiene.

New Roentgen Ray Department—Fourteen rooms in the Norfolk Protestant Hospital have recently been equipped as an x-ray unit, known as the F. S. Royster Memorial, the gift of the children of Mr. Royster. A high voltage therapy unit with a capacity of 220,000 volts has been installed and there are special rooms for fluoroscopy and cystoscopy in addition to the equipment for making roentgenograms. Provision for light therapy and hydrotherapy has also been made in the new section, and electrocardiography will also be done there.

WEST VIRGINIA

Society News—Dr. James L. Blanton, Fairmont, addressed the Monongalia County Medical Society, Morgantown, April 3, on acute anterior poliomyelitis.—Drs. Hugh G. Thompson and Moritz F. Peterson discussed diabetes at a meeting of the Kanawha Medical Society, Charleston, April 10.—Dr. John H. Neff, University, Va., addressed the Ohio County Medical Society, Wheeling, April 13 on "Malignant Tumors of the Kidney." Dr. Carl H. Lenhart, Cleveland, addressed the

society, Wheeling, March 30, on pathology and therapy of peritonitis.—Dr. William Dameshek, Boston, addressed the annual meeting of the medical societies of the sixth district, Charleston, March 27, on "Primary Hypochromic Anemia."—Dr. Ray C. Otte, Wellsburg, addressed the Brooke County Medical Society, April 11, on varicose veins.—Dr. Henry Wald Bettman, Cincinnati, presented a paper on diagnosis and treatment of duodenal ulcer before the Cabell County Medical Society, Huntington, April 12.—Drs. Ralph M. Fisher and Harvey M. Andrew addressed the Lewis County Medical Society at a meeting at Weston State Hospital, March 13 on "Cardiac Physiology" and "Myocardial Degeneration" respectively.—Dr. Albert Graeme Mitchell, Cincinnati, addressed the Parkersburg Academy of Medicine, April 3, on nephritis in children.

GENERAL

A More Stringent Food and Drugs Bill—The American Society of Biological Chemists at its recent annual meeting in New York adopted a resolution favoring the passage of 'a more stringent food and drugs act, so designed as to afford ultimate protection for the consumer.'

Baltimore Wins Health Conservation Contest—Baltimore won the annual inter-chamber health conservation contest for cities of more than 500,000 population, sponsored by the U. S. Chamber of Commerce. Chicago won second place. Winners in other population classes were: Rochester, N. Y., 250,000 to 500,000; Hartford, Conn., 100,000 to 250,000; Schenectady, 50,000 to 100,000; and Hackensack, N. J., 20,000 to 50,000.

Joint Hospital Association Meetings—The hospital associations of Kentucky, Ohio and West Virginia met jointly in Cincinnati, April 17-19. A feature of the program was a public meeting on cancer at which Dr. Irvin Abell, Louisville, spoke on diagnosis and treatment of cancer and Clarence C. Little, Sc.D., managing director of the American Society for the Control of Cancer, New York, on economic aspects and progress in research.—The hospital associations of Indiana, Illinois and Wisconsin held their annual meetings jointly in Chicago, May 2-4.

Dinner of Diplomates of Special Board—The American Board of Obstetrics and Gynecology has planned a dinner and round table conference for Wednesday evening, June 13, at the Hotel Cleveland, Cleveland. Diplomates of the board and all physicians interested in the subjects are invited to be present. New diplomates granted certificates at the examination held immediately preceding the annual session of the American Medical Association will be introduced individually. Tickets may be obtained from Dr. Joseph L. Baer, 104 South Michigan Avenue, Chicago.

Association for Research in Ophthalmology—The Association for Research in Ophthalmology will hold its annual meeting in Cleveland, June 12, at the Hotel Allerton. A tentative program includes the following speakers:

Dr. Benjamin Rones: Baltimore. Genesis of Typical Coloboma.
Dr. Jonas S. Friedenwald: Baltimore. Allergic Theory of Sympathetic Ophthalmia.
Dr. Phillips Thygeson: Iowa City. Etiology of Inclusion Blepharitis.
Drs. George M. Dorrance and Paul E. Loudenslager: Philadelphia. Physiologic Considerations in Treatment of Pulsating Exophthalmos.
Dr. Ramon Castroviejo: New York. Detachment of the Retina.
Howard B. Adelman: Ph.D. New York. Embryologic Basis of Cyclopia.
George A. Bishop, Ph.D. and Howard S. Bartley, Ph.D. St. Louis. Functional Study of the Nervous Elements of the Optic Pathway.
Gordon L. Wallis: Sc.D. Iowa City. The Reptilian Retina.

Thoracic Surgeons' Meeting—The American Association for Thoracic Surgery will hold its annual meeting in Boston, May 31-June 2, with headquarters at the Copley-Plaza. Meetings will be at Harvard Medical School and clinics at the Deaconess, Peter Bent Brigham and Massachusetts General hospitals. Among speakers will be:

Mr. Arthur Tudor Edwards, London, England. Intrathoracic Malignant Disease.
Dr. Edward Archibald: Montreal. Dangers of Lobectomy in Relation to the Technique of the Operation.
Dr. Chevalier Lawrence Jackson: Philadelphia. Bronchial Carcinoma. Diagnosis by Bronchoscopic Biopsy in a Series of Fifty Cases.
Dr. Harold Jensen: Davos Platz, Switzerland. Thoracoplasty in Bilateral Cavernous Tuberculosis.
Drs. Thomas J. Kinsella and Peter M. Matliff: Oak Grove, Minn. Simultaneous Bilateral Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis.

Association for Study of Goiter—The annual meeting of the American Association for the Study of Goiter will be held in Cleveland, June 7-9, with headquarters at the Wade Park Manor. At the first session a symposium on hyperthy-

roidism will be presented by Drs. Stuart D. Gordon, Toronto, Urban Maes, New Orleans, Howard M. Clute, Boston, and Edward H. Rynearson, Rochester, Minn. Dr. George W. Crile, Cleveland, will give an address at the annual banquet on "Comparative Studies of the Thyroid Gland in Animals." Among other speakers will be

Dr. Hermann L. Blumgart, Boston, Indications, Contraindications and End Results in Treating Various Forms of Cardiovascular Disease by Complete Removal of the Thyroid

Dr. Arnold S. Jackson, Madison, Wis., A Survey of Cretinism in the United States

Dr. William F. Rienhoff, Jr., Baltimore, Histologic Structure of the Thyroid in Patients Cured of Hyperthyroidism by Operation

Dr. Louis J. Karnosh, Cleveland, Psychoses in Hypothyroidism and Hyperthyroidism

Medical Bills in Congress — Changes in Status The Senate, May 16, by a vote of 26 to 22, agreed to take up for consideration S. 2800, the Copeland food, drugs and cosmetics bill. H. R. 3768 has been favorably reported to the Senate, proposing to change the name of the retail liquor dealers' stamp tax in the case of retail drug stores or pharmacies to "medicinal spirits stamp tax." **Bills Introduced** S. 3630 introduced by Senator Wagner, New York, proposes to provide compensation for disability or death resulting from injury to employees in interstate commerce. The bill would apparently authorize an employer to select the physician to treat an injured employee. H. R. 9616 introduced by Representative Woodruff, Michigan, would authorize the withdrawal of alcohol tax free "for the use of any clinic operated for charity and not for profit including use in the compounding of bona fide medicines for treatment outside of such clinics of patients thereof but not for sale."

A Million for Infantile Paralysis Fund — A sum of \$1,003,030.08, to be used for the benefit of Georgia Warm Springs Foundation, Warm Springs, Ga., was presented to President Roosevelt, May 9, in a ceremony in the White House. Of the total, \$100,000 will be used "to stimulate and further the meritorious work being done in the field of infantile paralysis" outside Warm Springs, "so that the greatest encouragement may be given to others interested in this problem." In addition, \$650,000 will be set aside for "the furtherance of the present work done at Georgia Warm Springs Foundation," of which President Roosevelt is the head and founder, while the balance of \$253,030.08 will be used "for building maintenance, and contingencies of the foundation." Executed on parchment, three feet long and eighteen inches wide, the check was presented to President Roosevelt by Rear Admiral Cary T. Grayson. The fund represents the public contributions made at the recent charity balls held in honor of President Roosevelt's fifty-second birthday. The foundation has been in operation since 1927, when it was incorporated not for profit. Only the cost of maintenance and treatment is charged. A patients' aid fund enables the management to admit a few cases at a reduced rate, the amount of reduction depending on the financial circumstances and probability of marked improvement. Preference is given to adults who need treatment in order to increase their ability to become self supporting.

PUERTO RICO

Medical Association Officers — At the annual meeting of the Medical Association of Puerto Rico in December 1933 Dr. Pablo Morales Otero, San Juan, was elected president and Dr. Julio R. Rolenson Santurce, secretary. The next session will be held in San Juan in December.

Government Services

Venereal Disease Information

The U. S. Public Health Service wishes to call the attention of physicians to the monthly abstract journal *Venereal Disease Information*, published by the service for the past ten years for the information of physicians, health officers and others. It contains usually one original article and abstracts of current literature pertaining to these diseases. More than 350 medical journals are reviewed for the abstracts. The journal may be ordered from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 50 cents a year. The announcement points out that this nominal charge represents only a part of the expense of preparing the journal, which is a contribution of the public health service in its program directed against the venereal diseases.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 28, 1934

The Reform of Medical Education

The reform of medical education has been under discussion for the last few years. Medical teachers, physicians and students agree that the curriculum is overloaded. The British Medical Association appointed a committee on medical education, which has now presented a lengthy report advocating drastic reforms. The primary object of the medical curriculum is described as the production of a practitioner with the right attitude toward professional duties, ability to deal in the early days of practice with such conditions as may confront him, and such basic knowledge and mental training as will enable him to profit by experience. At the same time there should be such a coordinated course of study as will make the student an educated person and not merely a skilled technician. Throughout the curriculum, attention should be directed primarily to health and its preservation, perfection or restoration, and not to disease. The student should start the curriculum with adequate previous equipment. The curriculum should not be regarded as divided into separate blocks of study, but all subjects should be to some extent interdependent. The preliminary sciences in relation to the rest of the medical course, and also anatomy and physiology in relation to clinical study, should be continuous in their application, revision and development. There is no need to prescribe any strict uniformity of method in the application of the curriculum or in the system of teaching adopted. Indeed, it is desirable to encourage a wide liberty of choice in the different schools, provided certain broad requirements are satisfied.

Before registration, the student should be required to show a somewhat higher degree of general education than the minimum now required, and also a sufficient knowledge of physics, chemistry and the general principles of biology. His general education should include the English language and literature, a foreign language and perhaps history. The usual duration of such a course should be two academic years, within which, with average ability, he should get a thorough grounding in physics, chemistry and biology, while continuing his general education. Representatives of the teaching profession consulted by the committee unanimously held that registration of a medical student below the age of 18 years should not be allowed.

ANATOMY AND PHYSIOLOGY

Anatomy and physiology should be taken as interrelated subjects with reference to their subsequent clinical application and should be pursued largely in relation to the living body. During the course the student should become familiar with the methods of manual examination and be taught the use of the clinical thermometer, ophthalmoscope, laryngoscope, rhinoscope, otoscope, estimation of blood pressure, examination of the blood and analysis of secretions. Anatomy should be intimately concerned not merely with structure but with the relation of structure to function and with occasional reference to cases of impaired function as manifested clinically. At present too great demands are made on the student's time in the course on anatomy and physiology. Dissection of every part of the body is unnecessary. Dissections prepared by experts are of great value. Meticulous detail, such as the exact bony attachments of muscles and the relations of the less important arteries, veins and nerves should not be required. Similarly, as regards physiology a good deal of time might be saved by releasing the student from preparing all his own histologic sections and preparing and carrying out many laboratory experiments. On

the other hand, greater attention should be given to genetics, growth and mental function, instruction in which has usually been inadequate. The first is almost a new science since the last revision of the curriculum.

MEDICINE

Of the teaching of medicine in the schools the committee does find grounds for serious criticism. But there appears to be need for more abundant opportunity for the student to have experience with those minor operative procedures regarded within the province of the general practitioner, such as the taking of blood specimens, intravenous medication, lumbar puncture and diagnostic exploration of serous cavities. It would be of great advantage if the student received as a matter of course some of the instruction given to nurses. This might be given by members of the nursing staff. How can the physician supervise the methods of nurses without practical knowledge of these? He should have full opportunities of acquiring skill in special methods of examination, such as of the fundus of the eye, the vocal cords and the ear. He should receive greater instruction in the psychonuroses. Though these will be always with him in his daily practice as a physician, they now receive less attention than the much rarer psychoses.

SURGERY

Much criticism has been directed to the teaching of surgery. The student should become familiar with the diagnosis and treatment of all the common surgical diseases and injuries and have opportunities of gaining skill in the treatment of fractures and dislocations and the performance of minor operations. An acquaintance with the more common major operations is important, but the mere watching of operations in the theater is largely a waste of time. The treatment of septic conditions in their earliest stage is an essential function of the general practitioner. Therefore every student should have the experience of dealing surgically with such conditions as whitlow, carbuncle and cellulitis. Knowledge so acquired can be applied in many other surgical directions.

APPRENTICESHIP BEFORE INDIVIDUAL PRACTICE

In former times a student was trained by apprenticeship to a practitioner. Now the training required for license to practice is entirely hospital. The most revolutionary proposal of the committee is the revival of the apprenticeship after the passing of the final examination. This examination cannot be taken before the close of the fifth year of the curriculum. On passing it a full license to practice independently will not be granted. This can be obtained only after a further period of clinical experience under supervision that would normally extend to nine months and never be less than six. This period might be occupied (1) in a resident appointment in a teaching or other hospital, (2) as a clinical assistant in an approved hospital or clinic, (3) as pupil assistant to an approved general practitioner or (4) in regular attendance at hospital practice in a medical school.

Improved Medical Services for South African Natives

Mr Hofmeyr, minister of health in South Africa, made an important statement in the house of assembly on the government's intention to improve medical services for the natives. It has long been recognized that medical services in the native territories are pitifully inadequate. In some areas there is only one physician to 30,000 people. It is impossible to supply an adequate number of fully trained native physicians but the government intends to train several hundred native aids. These will be given three years of professional training and will work on a system similar to that in Tanganyika and Uganda under the supervision of district surgeons. The training will be at a native college financed largely by \$375,000 given by the chamber of mines in recognition of services ren-

dered by the native peoples in the gold mining industry." The government will assist additionally in the training overseas of a selected number of native physicians. It also will appoint a commission to investigate the position of the Cape colored population. These people, who are a mixture of Hottentots, slaves from the East Indies, Bantu and Europeans, are now a more or less well defined racial entity, and investigation of their special problems is long overdue. The government also intends to expand the antituberculosis measures by the institution of clinics and hospitals in all the provinces for colored patients.

PARIS

(From Our Regular Correspondent)

April 4 1934

Diseases Transmitted by Blood Transfusion

The Societe des medecins des hopitaux de Paris devoted recently a long session to discussing diseases transmitted by blood transfusion. Since the creation at Paris of special centers with professional donors, the number of blood transfusions has increased. In connection with the official services of the Assistance publique, a philanthropic society has been founded, which is developing an ever increasing activity. At its recent session it was reported that 220 transfusions were provided in 1929. The number was increased to 3,738 in 1932 and to 5,272 in 1933. At the meeting of the Societe des medecins des hopitaux, special attention was paid to the accidents that occur as a result of transfusions, especially the transmission of syphilis, malaria and infectious diseases. Carnot, Caroli and Maisson reported a case of syphilis transmitted by a donor to a typhoid patient affected with profuse and grave intestinal hemorrhages. The first two transfusions had been made with the aid of a professional donor but the third was an emergency transfusion made with the aid of a hospital patient who appeared healthy and on whom there was no time to do the Wassermann test, which later was found positive. The patient recovered from the typhoid but presented, eighty days later, a typical roseola, which began with a slight eruption at the site of the puncture. Carnot stated that only twenty such cases have been recorded in France and about a dozen in America. They are almost unheard of in well organized transfusion centers. Tertiary syphilis does not appear usually to give rise to accidents after transfusion. A donor affected with eye symptoms and presenting a positive transitory Wassermann reaction was used for eight transfusions without transmitting syphilis. Nevertheless, Spillmann observed a retrograde and syphilitic infection in a physician infected by a patient who presented syphilis of six years' standing. The authors conclude that it is advisable to select donors from among professional donors and to repeat frequently the Wassermann test. Mr Tzanck reported the case of a donor with a negative Wassermann test who presented later eye lesions that evidenced tertiary syphilis. This donor furnished his blood eighteen times without untoward incidents. In the colonies, in which white persons are commonly affected with grave malarial anemia, the only donors safe to use are Negroes. Unfortunately, most of the Negroes are syphilitic. Tertiary syphilis with a negative serologic test never causes untoward incidents. The case of a physician was recalled who, having served as a donor to a patient who presented a grave hemorrhage after confinement, revealed a roseola in his own person twenty-four days later. This unusual infection was probably due to an error in the technic which permitted a reflux of blood from the recipient to the donor. Inquiry revealed that the patient showed evidence of syphilis, her husband presented a positive serologic test. Mr Gougerot cited a case of syphilis transmitted by a donor in whom the Wassermann test was negative but in whom a chancre developed a few days later.

Mr Gougerot and Mr Dufour observed a veritable epidemic of syphilis among the clientele of a physician who gave alleged rejuvenating treatments by the injection of blood serum of young persons and who was content, in order to avoid the necessity of the Wassermann test, to add mercuric cyanide to the blood serum thus injected. The mercuric cyanide had no effect on the spirochetes. To the suggestion of Mr Milian, who proposed the use of animal blood to avoid all these risks, Tzanck replied that such use is dangerous and that fatalities may result if doses slightly in excess of normal are employed. Numerous speakers cited cases of transmission of malaria through blood transfusion. With respect to malaria, Mr Pinard pointed out that one may observe an ordinary infection if it is a question of a first attack or of manifestations of superinfection, with abortive reactions, in persons who have previously presented malarial attacks. The addition of mercuric cyanide to malarial blood does not prevent malarial attacks from developing. Mr Harvier reported the case of a malarial attack following transfusion for hematemesis. The donor, in apparently good health, had never had a malarial attack (he had been taking quinine as a preventive measure), but he had resided in the colonies. Examination of a thick smear revealed the presence of parasites.

The author recalled that many persons who have resided in the colonies have late attacks of malaria, hence a malarial person who has not had an attack for eighteen months would not be regarded as cured. Such flareups are well known, for even though the hematozoon may have disappeared from the peripheral blood it may persist in the deep lying organs for years, the malaria reappearing in connection with a traumatism, a chill, and the like. He therefore recommended the rejection of all prospective donors who have resided in the colonies, even though the Henry reaction is found to be negative. P. E. Weil confirmed the existence of latent malaria in association with splenomegaly. Tzanck and Juliet reported four cases of septicemia as transmitted from the recipient to the donor by reflux of blood, which always evidences some grave technical error, even though citrated blood is employed.

Mr Laubry exhibited an apparatus devised by Henry and Jouvet, which is designed to prevent such accidents.

Lyons Invaded by Mosquitoes

Lyons situated at the confluence of the Rhone and the Saone, has many rainy days, and mosquitoes constitute a plague in that region. Fortunately, the mosquitoes are not *Anopheles* and are not hosts of malaria, at least at present. But their continual attacks, during a large part of the year, make life almost unbearable. The magnificent Hospital de Grange Blanche (just recently completed with the aid of funds furnished by the Rockefeller Foundation), which represents the highest development in hospital construction, is so infested by mosquitoes that the patients constantly complain. The city of Lyons includes in its annual budget 20,000 francs (\$1,200) to carry on an everlasting crusade against the mosquitoes. Dr Nove Josserand and Mr Sahuc presented recently to the municipal council the results of their studies on this subject. They concluded that these mosquitoes (*Culex pipiens*) are not brought in by the winds but are hatched in the buildings of the city, in the eaves under the roofs, and especially in the cesspools, to which protruding tile pipes establish communication with the outer air and through which the female mosquito descends to deposit its eggs on the excrementa. They belong, therefore, to the category that Dr Legendre has termed "Stercoraires." The only remedy, according to Nove-Josserand, would be to pour a light oil into the toilets. Dr Garin, on the contrary, regards such a measure as merely palliative. In his opinion the mosquitoes will not be eliminated from Lyons until a complete sewer system has been installed in the city.

BERLIN

(From Our Regular Correspondent)

April 9, 1934

Divorces in the German Reich, 1919-1932

According to statistics compiled by the Reichsgesundheitsamt, there were more than 16,000 divorces in 1913 among the 11 million married persons, or 152 per 10,000. In the fourteen postwar years 1919-1932 the percentage of divorces just about doubled. In the years 1920-1922, in which a large portion of the war marriages were dissolved, the figure rose to 30 per 10,000. During the period 1923-1932 the percentage of divorces did not recede to the prewar condition but ranged around 86 per cent higher, or 282 per 10,000. In 1932, the last year for which statistics are available, 42,000 of the 14 million married persons were divorced by court action, or 297 per 10,000. The slight fluctuations in most of these years leads to the conclusion that the frequency of divorce is not controlled so much by changing economic conditions, and that the fairly uniform postwar figures may be regarded as an expression of a decline of family unity and solidarity. Before the war, the alleged grounds for divorce in 48 per cent of the trials were adultery, bigamy and various forms of unchastity, 40.8 per cent of violations of conjugal duties and dishonorable behavior, and 9 per cent of wilful desertion. Only 2.2 per cent of the cases were based on mental illness and the like. The first postwar years (1919-1921) brought considerable increase in the number of divorces due to adultery, bigamy and the like, the proportion reaching 64.3 per cent, whereas divorces due to violations of conjugal duties or dishonorable behavior declined to 31.6 per cent, the divorces due to wilful desertion dropped to 2.9 per cent. During the following years the importance of adultery as a ground for divorce declined, and violations of conjugal duties, together with dishonorable behavior, increased, the figure reaching 63.2 per cent in 1932, whereas adultery was the charge in only 33.4 per cent of the cases.

The greatest divorce frequency was for marriages contracted from three to six years previously (30.5 per cent of all divorces). A comparatively large number of divorces concerned marriages of long duration. It was estimated that nearly one fifth of all legal decisions had to do with marriages that had continued fifteen years or more.

Observations on the Results of Castration

In connection with recent German legislation, Professor Lange, psychiatrist, of Breslau, reports on experiences to date with castration. Reports of observations on castration and its results are fairly numerous, although not systematically arranged as yet. The best known are those on church choir singers among certain religious sects. In recent years, Denmark and some cantons of Switzerland have adopted legislation similar to that of Germany. The reason why the results in those countries have been particularly good is that operations have been performed only at the request of the person intimately concerned, the request itself furnishing evidence of a desire to reform.

Lange's observations are based mainly on a study of the official reports on soldiers wounded and operated on during the war. A follow up of these patients supplies a more objective basis than the subjective accounts, which are often veiled or exaggerated. The results of later examinations are recorded in the army reports. In most cases, in addition to the first examination previous to discharge from the service, there was a second examination in 1919 and a further control examination during the period 1920-1922. Among 330 patients, the later life experiences of 250 were recorded. The age of the patient at the time of castration was below 25 in more than 300 instances. Some patients had undergone complete castration.

some had been affected with bilateral tuberculosis of the testes, and still others presented small testicular remnants. Potency was seldom destroyed, and in some instances there seems to have been even an abnormal sexual desire often with a discrepancy between potency and libido, or even inversion of the sex impulse. Of the patients undergoing complete castration, ninety married. During the first years after marriage there was no reduction of energy, working capacity or the like in some instances even an increase in artistic trends was observed. There was no increase in the incidence of suicide and no evidence of early mortality. In some patients vasomotor disturbances developed, while in others neurasthenia and depression states appeared. As time went on there were changes in body form and hair growth, height and weight, evidences of physical and psychic effeminacy, and less frequently premature senility along with climacteric disturbances. These appeared usually soon after age 40.

All such emotional fluctuations would doubtless be more marked in persons with mental disease. An individual prognosis is impossible. Lange suggested the creation of a center for the systematic elaboration of the results to be secured. The observations to date may be regarded as a support for the recent legislation. The fact must never be forgotten, however, that castration is a serious intervention that is often associated with grave damage to both body and mind.

Photography of Beginning Cataract

With the cooperation of the Firma Zeiss, the director of the ophthalmologic department of the Allerheiligen-Hospital in Breslau has constructed an apparatus with which changes that occur in the crystalline lens during the development of cataract can be recorded by means of photographs. The slit lamp method is not adapted to this purpose, but the speculum termed the lupenspiegel furnishes pictures giving a good general survey of the field. The photographic method is complicated. Beginning with a mild light one must suddenly go over to the strongest light in making the photograph. The photograph is taken with a camera which has an arrangement that enables the operator to change the intensity of the illumination and to insert the photographic plate at the same moment. The camera can be set to photograph the same sites again in precisely the same manner, which makes possible a continuous control by means of projections made several weeks or months apart. At first only the sites with the most marked changes are photographed, three projections are sufficient to bring out plainly the relations of the deeper tissues. The changes that the eye undergoes are of an exceedingly manifold type.

Changes in Hemoglobin in Relation to Porphyrinuria

Research on the porphyrins has been carried out chiefly by H. Fischer of Munich and his collaborators. The importance of the porphyrins extends far beyond the known disease groups. On the basis of recent research, particularly that of Schreus, the Dusseldorf professor of dermatology and that of his collaborator Carrie there is a close connection between changes in the hemoglobin and porphyrin excretion. For the body, porphyrins in quantities that only slightly exceed the physiologic norm exert an important influence although their actions have not as yet been carefully studied. The symptoms affecting the intestinal tract, the kidney (oliguria), the nerves and the blood vessels in lead porphyrinuria, and in other diseases associated with disintegration of the blood are in all probability due to the effects of porphyrin and hence can be grouped together as porphyrinopathies. Research on these syndromes is the task of the clinic. Furthermore important disclosures concerning the closer connection between blood disintegration and porphyrin excretion are anticipated. It has been found that even small doses of arsenic produce blood disintegration

and porphyrin excretion, from which fact it may be concluded that the therapeutic effect of the administration of arsenic is due to the blood disintegration it causes.

ITALY

(From Our Regular Correspondent)

March 15, 1934

Vaccine Treatment of Undulant Fever

At a recent session of the Società medico chirurgica of Catania, vaccinotherapy by the intravenous route in undulant fever was discussed by Dr. Guglielmo, who based his statements on an experience with more than 130 cases, with 100 per cent of recoveries. The treatment was harmless at all ages (from 4 to 77) and in all conditions, even the most grave, not excepting renal involvement. The majority of cases require about a month's treatment, with massive doses of vaccine containing 75 million germs. There is a possibility of short courses of treatment (two injections, or sometimes a single injection, with from 5 to 10 million germs) and also the possibility of prolonged treatment (a month and a half, with from twelve to fourteen injections, massive doses up to 125 million germs). Fichera obtained good results in the nine cases in which he tried the method. Grasso also had treated ambulatorially twenty cases by this method, obtaining sixteen recoveries and four notable improvements, still under treatment.

Signorelli considered the various types of reaction observed. In persons not affected with undulant fever, fever is not ordinarily produced as the result of intravenous injections of small doses of vaccine. But in some cases the reaction does occur, and hence an absolute diagnostic value cannot be given to this test in doubtful cases of undulant fever. Furthermore, with small doses of vaccine a frank febrile reaction may not occur even in true undulant fever patients.

Cordaro studied in twenty-eight cases the sedimentation speed of the red corpuscles. The febrile reaction that follows vaccinotherapy is accompanied by a considerable increase of the sedimentation speed, which however, after the reaction has ceased, returns to the original values. When defervescence has been brought about, the sedimentation speed decreases slowly and reaches almost normal values in about ten days.

Sorge called attention to the practical value of Burnet's skin reaction for the diagnosis of undulant fever.

Early Aid for Tuberculous Patients

At the suggestion of the Sanità pubblica, the commission appointed to study the diagnosis and early aid of tuberculous patients held a meeting presided over by Professor Micheli. The commission pointed out that it is desirable to extend gradually compulsory insurance against tuberculosis, applying it more generally to persons employed to render personal service, carriers and persons engaged in the handling of food products. Every effort must be made to bring it about that persons with tuberculosis shall be treated early. To that end the provincial antituberculosis societies should be financed more generously and should be organized in such a manner as to be able to function as general consultation centers and attract thus a greater number of suspected patients.

Method of Exploring the Functioning of the Liver

Before the Accademia delle scienze medico chirurgiche of Naples, Dr. Zappacosta recently described a method for the determination of glycocholic acid in the blood. He injected glycocholic acid by the intravenous route in the amount of 3 or 4 mg per kilogram of body weight, and a quarter of an hour after the injection he no longer found it in the blood of forty-five normal individuals. On the other hand, in forty-six patients with various disturbances of the liver he observed that the

glycocyamine is still present in the blood after the same period of time and even in a conspicuous quantity—in the majority of the cases proportionately to the decreased functional capacity of the liver. In these liver patients the author employed as controls also other means of exploration, including provoked bilirubinemia and the amino-acidemia curve. Dr Zappacosta concludes that the test is highly sensitive.

The Death of Professor Angelucci

Dr Arnaldo Angelucci, professor emeritus of clinical ophthalmology at the University of Naples, died recently. He had a brilliant career. At the age of 31 he became director of the Clinica di Cagliari, from which he passed to that of the universities of Messina and Palermo and finally to the University of Naples, where he was for twenty-five years.

His most notable studies are those on the function of the retina, in which he explained the complex changes that take place in the retina through the effects of light. He found that such changes are observed also in the parts of the central nervous system that have direct relation with vision, whereupon he formed a new theory of vision. He studied also the physiopathology of the cervical sympathetic in its relations to the eye, the loss of secretion of the aqueous humor, and the nutrition of the eye. Owing to these studies, he was entrusted with writing the chapter on the physiology of the eye in the *Enciclopedia francese di oftalmologia*.

He interpreted glaucoma as due to a vascular change. This conception he confirmed later—also with reference to infantile glaucoma. Professor Angelucci was the first to discover in patients with spring conjunctivitis a syndrome characterized by an excitable temperament, palpitation and vasomotor disturbances, which he termed the Angelucci syndrome and which today is interpreted as an expression of neuro-endocrine disturbances associated with the still unknown cause of the disease.

Angelucci devised operative procedures for the treatment of senile ectropion of the lower eyelid and of paralytic ptosis of the upper eyelid. He was a pioneer in studies on constitution in ophthalmology. To trachoma Angelucci had devoted himself in recent years. With regard to treatment, he emphasized the advantages of autoserotherapy and for prophylaxis, the need of improving the general condition of children with adenoids.

He established in his Clinica di Napoli a combination school and sanatorium for trachomatous children of the elementary classes, and a combination institute and preventorium for the treatment of constitutional diseases in school children. He founded in 1893 the *Archivio d'oftalmologia*, a journal that is still flourishing.

Council on Research

The Consiglio nazionale delle ricerche met in Rome, March 8. The head of the government was present. Senator Marconi, president of the council, gave an account of its activities during the year. Research was conducted on a possible submicroscopic type of malarial parasite. The first results showed that there are differences between the action of strains artificially transmitted from man to man for therapeutic purposes and the genuine parasitic strains. Questions pertaining to alimentations continue to be the subject of intensive studies. Twelve university laboratories have about completed their research on the nutritional value of food products of Italian origin. An inquiry into the alimentations of the various classes of the Italian people is being conducted, and a study is being made on the population of the swamps recently drained. With the latter research is associated an investigation on the somatic and demographic characters of the families that have settled here, in order to ascertain their adaptation to the new surroundings. Research is also being carried on to discover the causes for the depopulation of the mountain regions.

JAPAN

(From Our Regular Correspondent)

March 31, 1934

Official Japanese Physicians in Manchuria

A number of Japanese physicians have been appointed official practitioners in the new empire of Manchokuo. They established in the remote parts of the country, where no properly qualified doctors practiced. Here only the old Chinese medicine was represented and a kind of medicine men practice in the most primitive manner. Now the official physicians have been placed in every prefecture. Their duties are to prevent epidemics, to do research on local diseases, to vaccinate, to take charge of school hygiene, to hold inquests and necropsies, to give free medical treatment to the poor, and to gather medical statistics. In time of emergency they must be at the scene to render medical aid on the spot. For those duties and work they are paid reasonably well and are furnished with offices, general medical equipments and dwelling houses. They can, of course, do private practice also but they and their families cannot set themselves up in the drug or chemical business.

Industrial Guild Hospitals

According to the annual report of the central industrial guild, sixteen hospitals belong to the guild, there are sixty-five consulting offices, each of which is attached to one sickness union. As for the maintenance of the hospitals and offices, nearly half of them are said to face economic difficulty. A union that has 2,000 members or so in the same district is successful, but the union with 400 or 500 members is a failure because it is in remote villages or small towns, where the patients can hardly pay in cash owing to the depression. When the patient leaves a medical fee unpaid, he prefers to go to another practitioner who is rich enough to wait until the end of the year to be paid. The union established by the lower classes cannot do this.

The International Culture Association

The Kogakukai, under the charge of Dr. Choei Ishibashi, has recently changed its name to the International Culture Association, which aims to promote international understanding through learning foreign languages, especially through medical science. The society has long been making great efforts to introduce German among physicians as a convenience for them in studying medical science. They intend to extend the work to French and English. The association endeavors to assist physicians with foreign languages by translations and by introducing foreign medical science in this country, and vice versa.

The Question of Reporting All Tuberculous Cases

In the revision of the regulations for the prevention of tuberculosis, there are these important facts. The government insists on the need of reporting every case of tuberculosis to the police, without which, it is asserted, no prevention can be expected. On the contrary, the antagonists, chiefly found among practitioners, indicate that compulsory notification will seriously affect a patient's social relations such as unemployment and marriage. Who will be honest and courageous enough to consult a physician at the peril of those disadvantages in social affairs? He would rather be a good customer of the druggist than of the practitioner. This would tend not only to spread the disease more and more but tempt physicians to conceal the cases of tuberculosis from government officials. Under present conditions they could not accommodate all the tuberculous patients if reported, owing to the great shortage of hospital beds for such cases. Moreover, it should not be forgotten that physicians will be hard hit by this system. The establishment of dispensaries was debated at length in a meeting of the national health investigation committee last winter, and it was

concluded that one dispensary ought to be established for each hundred deaths from tuberculosis, there is one dispensary to each 100,000 of population at present. As to the function of the dispensary, there is a controversy: physicians want the dispensary to be only a consultation office which would not undertake treatment; the government's idea is that the dispensary should give not only advice but medical treatment, if necessary. With debates to everybody's satisfaction, the policy is expected to be agreed on before long.

The Loss Charged to Tuberculosis

Dr E. Kanasugi, veteran physician, and member of the house of peers, made a speech in the present session on fixing the national policy of stamping out tuberculosis in Japan. He presented as the basis of his argument the following facts: The deaths in 1931 from this disease numbered 121,874, that is 18.64 for 10,000 of population, 76,750 of the deceased were between 15 and 34 years old. Moreover, this number may be far smaller than the true number. The economic loss may be roughly estimated at over 400,000,000 yen if each case is allowed one yen a day for medical treatment. The loss of the families may be estimated at millions of yen besides the loss to industry, education, and the army. The comparison of these deaths with the hospital beds in 1931 shows only 7.5 beds for tuberculosis per hundred deaths while England has 64.7 beds, America 112.28 beds, and Germany 115.5 beds. In England there is one dispensary for every 50,000 of population, in America one for 28,000 and in Germany one for 47,000, while in Japan there are only a few dispensaries in the greater cities as if they were established only as samples. The sum of 3,500,000 yen, including the national and local governmental expenditure and that of various nonofficial societies, is paid every year for preventive work, that is, only 5.3 sen (or about 2 cents) a man, while England spends 2 shillings a man and Germany 2 marks.

In the diet, the prime minister declared that the government would lose no time in adopting a better national policy against tuberculosis. The only question is how to raise the large sum necessary. Plans are said to be under consideration by the authorities, such as an increase of the tax on some luxuries.

Another Study on Menstruation

The *Women's Review* or *Fujin Koron*, a monthly magazine for women, after six months of hard work under the guidance of prominent physicians has issued a pamphlet called "menstruation reports," which is based on replies from over 6,000 women. The reports were given voluntarily and have come from almost every class and district of the country, including both the married and the unmarried. According to this report the first menstruation of these Japanese women occurred at the average age of 14 years and 3 months. Out of 4,884 women, 1,435 had the first flow in winter, 1,315 in summer, 1,184 in spring and 950 in autumn. The average menstrual cycle is thirty-one days, but the normal lies anywhere between twenty-seven and thirty-four days. Among 1,612 women the period lasted five days, 1,160 women, four days, 1,071 women, six days, 481 women, seven days and 363 women, three days. Among 3,074 women, 2,559, or 83.25 per cent, did not feel pain at menstruation, while 515, or 16.75 per cent, did feel pain.

A Daily Medical Paper

Dr S. Tsuchiya, a member of parliament who is proprietor of the *Japan Medical World* a weekly journal has announced that he and his colleagues would publish a daily medical paper. This is the first attempt in this country to have a daily medical paper and 50,000 physicians throughout the country are glad it is reported to have a powerful protector of their own kind in such troubled times. The new medical paper is going to fight for the doctors.

Marriages

WILLIAM JENNINGS SWEENEY, Vermilion, S. D., to Miss Edith Keeling Maggart of Winnetka, Ill., May 5.

EUCLID MONROE SMITH, Hot Springs National Park, Ark., to Miss Madge Eloise Wootton, February 20.

JOHN WHITTIER LEECH, West View, Pa., to Miss Katherine Enid Evans of Pittsburgh, May 12.

HOWARD CHANDLER SMITH to Miss Mary Burnam, both of Baltimore, April 26.

LEONE M. SCRUBY, Des Moines, Iowa, to Mr. Oscar Lofquist, February 15.

Deaths

Clement Cleveland, New York, College of Physicians and Surgeons in the City of New York, Medical Department of Columbia College, 1871, fellow of the American College of Surgeons, past president of the American Gynecological Association and the New York Obstetrical Society, at one time vice president of the American Society for the Control of Cancer, surgical director emeritus to the Woman's Hospital for many years on the staff of the Memorial Hospital and formerly on the staff of the City Hospital, aged 90, died, April 16, in Palm Beach, Fla.

Bern Budd Gallaudet, New York, College of Physicians and Surgeons in the City of New York, medical department of Columbia College, 1884, member of the Medical Society of the State of New York and the American Association of Anatomists, associate professor of anatomy at his alma mater, consulting surgeon to the Bellevue Hospital, aged 74, died March 30, of intestinal obstruction due to chronic diverticulitis.

Melvin J. Locke, Bellefonte, Pa., Hahnemann Medical College and Hospital of Philadelphia, 1891, member of the Medical Society of the State of Pennsylvania, formerly secretary of the Center County Medical Society, fellow of the American College of Surgeons, on the staff of the Center County Hospital, president of the school board, aged 66, died, April 14, of septic meningitis.

William Walter Beattie, Montreal, Que., Canada, McGill University Faculty of Medicine, 1920, lecturer in bacteriology at his alma mater, member of the Society of American Bacteriologists, formerly assistant on the staff of the Rockefeller Institute for Medical Research, aged 39, was instantly killed in an automobile accident, April 13, near Biggleswade, Bedfordshire, England.

Jocelyn Joseph Emmens, Medford, Ore., Medico-Chirurgical College of Philadelphia, 1905, member of the Pacific Coast Ophthalmological Society, on the staffs of the Community Hospital and the Sacred Heart Hospital, aged 53, died April 13, in the Scripps Memorial Hospital, La Jolla, Calif. of cerebral hemorrhage.

Edwin Fred Gissler Jr., Brooklyn, Eclectic Medical College of the City of New York, 1897, member of the Medical Society of the State of New York, aged 58, on the medical board of the Evangelical Deaconess Hospital, where he died, April 24, of atrophic cirrhosis of the liver, and arteriosclerotic heart disease.

Francis Marion Thigpen, Montgomery, Ala., Tulane University of Louisiana Medical Department, New Orleans 1891, member of the American Laryngological, Rhinological and Otological Society, on the staff of St. Margaret's Hospital, aged 66, died, April 22, of influenza and cardiorenal complications.

Albert S. Rudy, Lima, Ohio, Medical College of Ohio, Cincinnati 1884, member of the Ohio State Medical Association, at one time city health officer and member of the board of education, formerly on the staffs of the Lima City and St. Rita's hospitals, aged 78, died, April 6, of carcinoma of the liver.

Charles Oren Burke, Atlanta, Ill., Jefferson Medical College of Philadelphia 1887, member of the Illinois State Medical Society, served during the World War, formerly on the staff of St. Joseph's Hospital, Bloomington, aged 69, died, May 3, of chronic myocarditis, hypertension and arteriosclerosis.

John William Gunn, Boise, Idaho, Cooper Medical College, San Francisco, 1884, past president of the Medical Association of Montana, past president and secretary of the Silver

Bow (Mont) County Medical Society, formerly health officer of Butte, aged 78, died, April 8, in San Francisco

Allen Joseph Ingersoll, Mentor, Ohio, Western Reserve University Medical Department, Cleveland, 1893, member of the Ohio State Medical Association, for thirty-three years a member of the school board, aged 72, died, April 11, of injuries received when he was struck by an automobile

Ross Grosshart, Tulsa, Okla., Kansas City (Mo.) Medical College, 1899, member of the Oklahoma State Medical Association, past president of the Tulsa County Medical Society, on the staffs of the Morningside and St. John's hospitals, aged 56, died, April 15, of coronary occlusion

John Dougherty Joseph Curran, Atlantic City, N. J., Georgetown University School of Medicine, Washington, D. C., 1903, served during the World War formerly instructor in pediatrics, Jefferson Medical College of Philadelphia, aged 56, died, April 18, of cardiorenal disease

Clarence John Burns, Columbus, Ohio, Ohio State University College of Medicine, Columbus 1919, on the staff of the Mount Carmel Hospital, aged 38, died, March 17, in Tucson, Ariz., of lung abscess, bronchiectasis and cardiac decompensation

Adelbert Morton Austin, Quincy, Ill., Washington University School of Medicine, St. Louis, 1904, past president of the Adams County Medical Society, on the staff of the Blessing Hospital, aged 53, died, March 20, at his home in Mendon, of heart block

Daniel Webster O'Connell, New Britain, Conn., College of Physicians and Surgeons, Baltimore, 1905, member of the Connecticut State Medical Society, on the staff of the New Britain General Hospital, aged 53, died, March 18, of coronary occlusion

John Richard Taylor, Madison, Wis., College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois 1899, served during the World War aged 72, died suddenly April 5, in London, England, of heart disease

Max Reynolds Gabrio, Philadelphia, Jefferson Medical College of Philadelphia, 1913, instructor in ophthalmology, University of Pennsylvania School of Medicine on the staff of the Wills Hospital, aged 49, died, April 26, of heart disease

Robert Cecil Potter, Newark, N. J., University of the City of New York Medical Department, 1893, member of the Medical Society of New Jersey, for many years on the staff of St. Michael's Hospital, aged 63, died, February 6

Bronislaw Jozef Nowierski, Yorktown, Texas, University of Missouri School of Medicine, Columbia, 1884, past president and secretary of the De Witt County Medical Society, aged 70, died, February 19, of chronic myocarditis

Julius Goldfinger, Cleveland, Cleveland College of Physicians and Surgeons, Medical Department of the University of Wooster, 1895, on the staff of the Fairview Park Hospital, aged 62, died, March 20, of heart disease

Leslie Grant Hill, Estherville, Iowa, Hahnemann Medical College and Hospital, Chicago, 1895, member of the Iowa State Medical Society, fellow of the American College of Surgeons, aged 65, died, February 24

Carl O. Larson, Superior, Wyo., Jefferson Medical College of Philadelphia, 1918, member of the Wyoming State Medical Society, aged 44, died, March 19, in Rochester, Minn., of tuberculosis of the kidney

Stanley J. Beckett, Chicago, Chicago Medical School, 1928, aged 33, died, May 9, in the Danish-American Hospital, of injuries received when the automobile in which he was driving was struck by a street car

William Penn Reese, Taylors Store, Va., University of Pennsylvania School of Medicine, Philadelphia, 1872, member of the Medical Society of Virginia, aged 86, died, February 15, of acute dilatation of the heart

Alexander H. Pearson, Hamburg, Mich., University of Michigan Medical School, Ann Arbor, 1904, served during the World War, aged 55, died, March 13, of acute nephritis, hypertension and arteriosclerosis

Robert Francis McLeod, Titusville, Fla., Bennett Medical College, Chicago, 1915, member of the Florida Medical Association, served during the World War aged 40, died, March 27, of acute dilatation of the heart

William Norrie Robertson, Toronto, Ont., Canada Victoria University Medical Department, Coburg, 1884, L.R.C.P., Edinburgh, L.R.C.S., Edinburgh, and L.F.P.S. Glasgow, 1885, aged 79, died February 19

Delvoss Houseworth, Douglasville, Ga., University of Georgia Medical Department, Augusta, 1895, secretary of the Douglas County Medical Society, aged 63, died, April 17, of carcinoma of the pancreas

Joseph Emanuel Larson, Chicago, Northwestern University Medical School, Chicago, 1909, aged 55, on the staff of the Roseland Community Hospital, where he died, April 24, of gastric ulcer

Obe Haight Hoag, San Francisco, College of Physicians and Surgeons of San Francisco, 1911, served during the World War, aged 63, died, March 3, in the Veterans' Administration Facility, Palo Alto

Robert O. Huffaker, Greeneville, Tenn., University of Louisville (Ky.) School of Medicine, 1892, aged 68, died April 19, in the Greeneville Hospital, of uremia, nephritis and myocarditis

Russell Davenport Walton, Frankfort, Maine, College of Physicians and Surgeons, Baltimore, 1902, served during the World War, aged 57, died, April 1, of cerebral embolus and mitral stenosis

Cheney Isaac Cole, Goffstown, N. H., Baltimore Medical College, 1896, member of the New Hampshire Medical Society, aged 68, died, February 26, of hypertension and chronic nephritis

John Fleming Goodchild, Toronto, Ont., Canada Queen's University Faculty of Medicine, Kingston, 1899, L.R.C.P. London, and M.R.C.S., London, 1904, died, April 27, of influenza

Franklin Cauthorn, Portland Ore., University of Missouri School of Medicine, Columbia, 1878, Jefferson Medical College of Philadelphia, 1879, aged 75, died, February 13, in Harmon N. Y.

John Nicholas Atheneos, New York, Columbia University College of Physicians and Surgeons, New York, 1933, aged 29, died May 7, in the Morrisania Hospital, of pneumonia

George E. Countryman, Aberdeen, S. D., Missouri Medical College, St. Louis, 1888, on the staff of St. Luke's Hospital, aged 69, died, April 24, of cerebral hemorrhage

Lewis Charles Robinhold, Auburn, Pa., Jefferson Medical College of Philadelphia, 1891, aged 64, died, March 9, of cardiovascular renal disease and bronchopneumonia

William Von Boenigk, Chicago, National Medical University, Chicago, 1909, on the staff of the Martha Washington Hospital, aged 60, died, May 9, of coronary thrombosis

Alfred S. Weiss, Lebanon, Pa., Medico-Chirurgical College of Philadelphia, 1903, on the staff of the Good Samaritan Hospital, aged 54, died, April 2, of coronary thrombosis

John George Crosby, New York, University of Arkansas School of Medicine, Little Rock, 1924, aged 41, died, February 1, in the Bellevue Hospital, of cerebral embolus

John W. Kinsinger, Vaughn, N. M., Cincinnati College of Medicine and Surgery, 1887, past president of the New Mexico Medical Society, aged 70, died, February 18

Walter W. Holladay, Porterville, Miss. (licensed in Mississippi in 1883), president of the Kemper County Medical Society, aged 77, died, January 12, of myocarditis

Valentine J. Yorty, Pittsburgh, Baltimore Medical College, 1906, member of the Medical Society of the State of Pennsylvania, aged 56, died, April 17, of fibrosarcoma

Charles Henri Ferguson, Toledo, Ohio, Toledo Medical College 1896, aged 70, died, April 25, in St. Vincent's Hospital, of cirrhosis of the liver and diabetes mellitus

Fordyce G. Gabbert, Casey Creek, Ky., University of Louisville School of Medicine, Philadelphia, 1909, aged 51, died, March 16, of pneumonia and heart disease

Birdie Eugenia McLain Springs Higginbotham, Chicago, Bennett Medical College, Chicago, 1912, aged 43, died, January 6, of toxemia, due to extensive burns

William Pardee Sprague, Los Angeles, Bellevue Hospital Medical College, New York, 1882, aged 73, died, March 19, of coronary thrombosis and arteriosclerosis

Marks Murray Waxman, New York, University and Bellevue Hospital Medical College, 1903, aged 50, died April 9, of heart disease, aboard the *Mauretania*

William Cooke Lester, Batesville, Miss., University of Louisville (Ky.) School of Medicine, 1911, served during the World War, aged 48, died, February 11

William Albert Holden, Pasadena, Calif., American Medical College, St. Louis, 1899, aged 74, died, April 1, in the Los Angeles General Hospital, of uremia

Alexander Reid, Umatilla, Ore., University of Oregon Medical School, Portland, 1896, aged 73, died, March 8 in Los Angeles, of carcinoma of the throat

William Wirt Jones, Dayton, N. Y., University of Buffalo School of Medicine, 1892, for many years health officer, aged 66, died, April 14 of myocarditis

Garrett Joseph Hickey, Northampton, Mass. University of Maryland School of Medicine Baltimore, 1893, aged 67, died, April 9, of cerebral hemorrhage

Frederick William Arlt, New Haven, Conn. University of Bellevue Hospital Medical College, New York 1906, aged 57, died, March 8, of heart disease

Paul Truitt Willis, Brooklyn Cornell University Medical College, New York, 1921, aged 37, died, March 27, of myocarditis and bronchopneumonia

Lucius Field Foote, Minneapolis, Chicago Medical College, 1877, aged 81, died, April 10, in the Hill Crest Surgical Hospital, of arteriosclerosis

Emil Joel © New York, Bellevue Hospital Medical College, New York, 1894, aged 68, died, April 22, of pneumonia and cerebral hemorrhage

Le Roy Newlin, Robinson, Ill., Kentucky School of Medicine, Louisville, 1891, aged 74, died, February 18, of chronic myocarditis and hepatitis

Giovanni Alphonso Barricelli, Cleveland, University of Illinois College of Medicine, Chicago, 1903, aged 61, died April 16, of heart disease

Charles Smoot Holton, Richmond, Ky. Hahnemann Medical College and Hospital, Chicago, 1885, aged 73 died, April 3, of heart disease

William Andrew Montgomery, Atkins Ark. Memphis (Tenn.) Hospital Medical College, 1889, aged 77 died, March 5, of angina pectoris

Benton V Canfield, Indianapolis Central College of Physicians and Surgeons, Indianapolis, 1890, aged 69, died April 27, of heart disease

Harold Hartley Greene © Jefferson City, Mo., Harvard University Medical School, Boston, 1929, aged 30, died April 9, of mastoiditis

George Espy Doty, New York University of the City of New York Medical Department, 1891, aged 65, died, April 25, of pneumonia

George W Wood, Bristol Colo., University of Louisville (Ky.) School of Medicine, 1894, aged 74, died, March 30, of hypertension

Walter Benjamin Kirk, Darlington, Md., University of Maryland School of Medicine Baltimore 1893 aged 65, died, February 21

Louis William Dimsdale, Los Angeles Bennett Medical College Chicago, 1911, aged 50, died, March 6, of carcinoma of the lung

Milton D Striplin, Funston, Ga., Georgia College of Eclectic Medicine and Surgery, Atlanta, 1891, aged 65, died, February 9

Benjamin Levan Saeger, Ojai, Calif., University of Michigan Medical School, Ann Arbor, 1878, aged 81, died February 14

Jane Mason Bowen, San Jose, Calif., Hahnemann Hospital College of San Francisco 1891, aged 90 died, February 19

Harry Hollister Boynton © Lisbon, N. H., Baltimore Medical College, 1893 aged 64 died, April 23 of angina pectoris

Edwin A Taylor, Chicago Hering Medical College, Chicago, 1895, aged 70, died, March 25 of a self-inflicted gunshot wound.

Jesse K Hayes, Hanson, Ky. University of Louisville School of Medicine, 1880, aged 83 died, March 9 of senility

Clement Milton Beck, Beverly Hills, Calif. National Medical University, Chicago, 1909 aged 68 died February 25

Archibald Wilson, Toronto Ont., Canada University of Toronto Faculty of Medicine, 1878 aged 82, died February 7

Thomas James Jameson, Ottawa Ont. Canada Trinity Medical College Toronto 1888 aged 72 died, February 6

David W Baggs, Ludowici, Ga. Atlanta Medical College, 1894, aged 63 died April 7 in a hospital at Jesup

Mark H Sears, Denver, Chicago Medical College, 1883, aged 75, died March 5 in the Mercy Hospital

Correspondence

LONGEVITY OF THE ERYTHROCYTE

To the Editor—In a recent editorial on the longevity of the erythrocyte (*THE JOURNAL*, April 21, p 1304) are quoted the results of studies made by Escobar and Baldwin, who found the life of the red blood cell to be from eighteen to thirty days. The method used by Escobar and Baldwin and also the other methods mentioned in the editorial are indirect and therefore may yield inconclusive results. There is a simple method for determining the life of an erythrocyte by means of which accurate results can be obtained but which is not mentioned in the editorial, namely, by tracing the fate of transfused blood cells.

In the editorial, the following statement was made: "Unfortunately, one cannot earmark an erythrocyte and follow its fate in the circulation or in some secluded organ." This is not entirely true, for there are certain natural "earmarks" by which the transfused red blood cell can be identified in the recipient's circulation, namely the agglutinogens A, B, M and N. The agglutinogens A and B are well known since on them depends the existence of the four Landsteiner blood groups, O, A, B, and AB, which are used as the basis for the selection of donors for blood transfusion. The agglutinogens M and N were discovered in 1927 by Landsteiner and Levine by using immune rabbit serum obtained after injecting human blood into rabbits. With the aid of the anti-M and anti-N reagents which they prepared, Landsteiner and Levine were able to differentiate three additional types of human blood: type M or M + N—(blood containing agglutinin M but not agglutinin N), type N or M—N + (blood containing only agglutinin N), and type MN or M + N + (blood containing both agglutinogens, M and N).

The technic used for tracing the fate of the transfused blood cell is simple, provided potent, specific anti-M and anti-N serums are available and the investigator has had sufficient experience in working with these reagents. Suppose for example, that donor and recipient both belong to group A, but the donor belongs to type M and the recipient to type N. Before the transfusion the recipient's blood naturally gave no reaction with the anti-M serum. After the transfusion, however, if a suspension of the recipient's blood is tested with anti-M serum there will be a partial agglutination, since the donor's blood in the patient's blood stream will react with the serum. This test may be repeated as frequently as desired, from day to day and from week to week. The time it takes for the recipient's blood to return to its original status, namely to give no trace of agglutination with the anti-M serum, is the maximum lifetime of the transfused blood cells. Using this method, Landsteiner, Levine and Jones (*Proc Soc Exper Biol & Med* 25 672 [May] 1928) were able to recognize transfused blood cells in a patient's circulation for more than seven weeks after the transfusion (no tests were made after that time). In a study on a series of ten cases, I have found that the life of the transfused blood cell probably averages between 80 and 120 days (unpublished observations).

If it is desired to trace the decrease in number of transfused blood cells from day to day, a simple modification of the technic is necessary. In the illustration given, in which type M blood is transfused into a type N individual, if, subsequent to the transfusion the blood cell suspension of the recipient is tested with anti-N serum all the blood cells except those derived from the donor will agglutinate. The unagglutinated cells can be counted as follows: Blood is taken as for a red blood cell count, using anti-N serum in place of the usual diluting fluid. The suspension obtained is transferred to a small test tube and allowed to stand for from two to three hours at room tempera-

ture (when the agglutination will be complete) The tube is then gently shaken until the unagglutinated cells are evenly suspended, and a small drop of the mixture is transferred to a counting chamber, care being taken to avoid the clumps Using this technic, I have found that the decrease in the number of transfused cells is directly proportional to the time, from one third to one fourth of the transfused blood disappearing each month This type of continuous decrease is to be expected under the assumption that all red blood cells have approximately the same duration of life, since naturally, the oldest cells will disappear first and the youngest survive the longest

The methods just described can be applied in any hospital where transfusions are performed, since the agglutinogens M and N play no part in transfusion reactions and therefore need not be taken into account when donors are selected for blood transfusions Transfusions of type M and MN blood into type N individuals, and of type N and MN blood into type M individuals, must therefore occur very frequently Even before the agglutinogens M and N were discovered, however, Winifred Ashby (*J Exper Med* 29 267 [March] 1919, *Arch Int Med* 34 481 [Oct] 1924) had used a similar method for determining the life of transfused blood cells, with the aid only of the four Landsteiner blood groups Ashby succeeded in demonstrating the presence of the blood of group O donors in the circulation of Group A and group B recipients for periods up to 100 days after transfusions, performed under the principle discovered by Ottenberg, that group O individuals can serve as universal donors for emergency transfusions Using Ashby's method, Wearn, Warren and Ames (*Arch Int Med* 29 527 [April] 1922) found that transfused blood may remain in circulation for periods of from 59 to 113 days, the average being 83 days

Curiously enough despite all this work most textbooks still give the life of the erythrocyte as thirty days

ALEXANDER S WIENER, M D, Brooklyn
Division of Genetics and Biometrics
of the Department of Pathology,
Jewish Hospital of Brooklyn

McDONAGH METHOD DISAVOWS MICRO-DYNAMICS

To the Editor —Your Bureau of Investigation rather belies its title in the reference it made to me and my work in THE JOURNAL, January 6 I am unaware of any investigation it has made of my work, in which I have been engaged for nearly thirty years, and had it done so it would not have made the misstatements it has Indeed, THE JOURNAL has always steadfastly refused to review my books and has done everything possible to prevent my views from becoming known Surely, investigation inside medicine would be more fruitful than outside medicine If medicine rendered the public the service it should, there would be no room for quacks If my attempts to place medicine on a sounder basis than it now stands are misjudged, it should be your duty to expose them before going further afield But your refusal to deal with what you fear is becoming a cult suggests they are right, in which case it is equally your duty to allow light to get at them

Theories are intricate and involved only when there is absence of desire to understand them In this case they are extraordinarily simple because not a single word has been coined to explain them, hence the mention of 'private nomenclature' is a misstatement of fact I am completely disinterested in any particular remedy and not one of the many I have introduced into medicine is proprietary, of secret composition, or carries a peculiar name Taking one of the remedies to which you refer, viz, 'S U P 36,' it is the best pyrexial antidote extant provided it is prescribed in time In measles, for example, it shortens the attack, reduces the malaise and prevents complica-

tions It can be made by any good chemist, its composition has been published in my writings since 1923, and the name is a contraction of its chemical nature, symmetrical urea of para benzoyl-para-amino-benzoyl-1 amino-8-naphthol 3 6 sodium sulphate I have nothing whatever to do with the introduction of "Antrypol"

J E R McDONAGH, London, England.

TRICHINA IN BLOOD

To the Editor —In THE JOURNAL, April 14, page 1249, in answer to the question of a New Jersey physician, reference was made to the demonstration of the larval form of the trichina in the circulating blood, as follows

The first and apparently so far the only other demonstration of trichinous larvae in the circulating blood in man is by W W Herrick and Theodore C Janeway (Demonstration of Trichinella Spiralis in the Circulating Blood in Man *Arch Int Med* 3 263 [April] 1909) who found them in fresh samples of blood after taking with 3 per cent acetic acid

In the *New England Journal of Medicine* (201 816 [Oct. 24] 1929) I reported a case with Dr Ralph E Bicknell in which the larval form of the trichina was demonstrated in the fresh samples of blood by the same technic

S SEYMOUR HORLICK, M D, Boston.

STAPHYLOCOCCUS TOXOID

To the Editor —May we offer the following data to support the conclusions reached by Kindel and Costello in their study of staphylococcus toxoid in the treatment of pustular dermatoses (THE JOURNAL, April 21, p 1287) We, too, have treated but a small number of patients but our results, like theirs, were so definitely unsatisfactory that we feel impelled to record them, especially since commercially prepared toxoids are gaining wide use Our patients were from the Department of Dermatology, University of Illinois College of Medicine We treated about fifty patients, of whom only twenty three received the minimum dosage recommended by Dolman This group included twelve cases of pustular acne vulgaris, five of sycosis barbae coccigenica, four of furunculosis, one of pustular folliculitis of the scalp and one of dissecting cellulitis of the scalp (perifolliculitis capitis abscedens et suffodiens) The toxoid material was prepared essentially according to the specifications outlined by Kindel and Costello We used weaker concentrations than did they, but in larger volumes, injected subcutaneously Of the twelve patients with acne, three showed some improvement but did not get well, seven were unaffected and two definitely became worse The injections were given twice each week, in one case for four months, and the average number of injections was twelve There was no noticeable improvement in any of the patients with sycosis barbae or in the two patients with scalp lesions These received an average of eighteen treatments and as a group they seemed to show milder local reactions to the injections Of the four patients with furunculosis, two were not influenced by the toxoid and two responded promptly and favorably Of the latter, one returned in six weeks with a recurrence These patients received an average of nine injections They showed local reactions to a greater degree than did the other patients, and we too noticed that in all our cases the local reactions became lessened with succeeding injections In two instances there were systemic reactions with slight rise of temperature, muscle pains and malaise One man with recurrent furuncles while under treatment, and after he had received an "adequate number of injections in the arms, developed a huge carbuncle on the thigh, which required surgical intervention

The results in our other patients were equally disappointing certainly they were far less satisfactory than with the usual methods of treatment We are aware that favorable

results have been reported elsewhere, but our observations so paralleled those of Kundel and Costello that we thoroughly endorse their recommendation to the profession that caution be exercised against becoming overenthusiastic about the value of staphylococcus toxoid until much more study has been made

THEODORE CORNBLEET, M.D.,
HERBERT RATTNER, M.D.,
Chicago

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted on request.

CORONARY THROMBOSIS ASSOCIATED WITH FALL IN BLOOD PRESSURE

To the Editor—A woman aged 56 has had a blood pressure averaging 200 systolic for at least five years. Three months ago she had an attack during which her pulse rose to 120 but was regular except for an occasional extrasystole. The pressure first dropped to 170/80 and then to 130/80. There was no decrease in urinary output and the only subjective signs were liver tenderness and gastric disturbances. Of course she is digitalized and her pulse varies between 70 and 80, never lower. The urine contained a few hyaline casts at first but now is normal. Hemoglobin is 86 per cent and blood pressure remains at 130/80. How long would you keep this patient in bed and what would be the guide in allowing her to return to restricted activities? At present she has no complaints. I would sincerely appreciate your discussion. Please omit name.

M D California

ANSWER—It is difficult to evaluate properly the information given, because some most significant facts are omitted. The height of the diastolic tension prior to the attack is important. It is also notable that no mention is made of dyspnea, or perhaps change of color, at the time of the attack. Three possible explanations of the acute attack can be considered on the basis of the data at hand: (1) acute relative hypotension with the cardiac manifestations secondary, (2) cardiac decompensation, and (3) coronary occlusion.

Not knowing the height of the diastolic tension before the acute disturbance, it is impossible to do more than include the first hypothesis among the possibilities. It is well known that any abrupt reduction of the arterial tension, as sometimes occurs in spastic hyperpiesis, induces a notable tachycardia through a reflex by way of the sensory fibers in the aorta and that, inversely, a rise in arterial tension is accompanied by a bradycardia. However, there is no history to indicate that sudden reduction of the arterial tension was the primary phenomenon. Furthermore, with exceptions, such acute periods of relative hypotension are transient unless due to a fundamental cardiac change. Cardiac decompensation occurring because of myocardial exhaustion secondary to the hypertensive disease is rarely so acute in onset and almost invariably presents the typical picture of congestive cardiac decompensation marked dependent edema, dyspnea, pulmonary edema and gross hepatic engorgement. The description of the attack is by no means characteristic of such a clinical picture.

Coronary occlusion is the most logical diagnosis on the basis of the facts as presented. Perhaps one of the most significant diagnostic points in coronary thrombosis is a rapid and prolonged fall in arterial tension. When present, a pericardial friction rub is pathognomonic and is usually heard within the first twelve hours. Coronary thrombosis without pain is not rare, many reports of such instances have appeared in the literature, the accuracy of the diagnoses having been confirmed by necropsy. Many minor attacks, involving small branches of the coronary vessels, may be wholly asymptomatic and result in gradual replacement with collagenic connective tissue, chronic fibrous myocarditis or myocardosis. When pain does occur in coronary thrombosis it is frequently unlike that seen in angina pectoris, being more commonly referred to the upper part of the abdomen and the epigastric area. This patient presented such complaints.

As yet no fully satisfactory explanation has been presented of the acute, marked and often persistent drop in arterial tension associated with coronary accidents. This fall differs from that observed in congestive heart failure in the rapidity of the fall and especially in the marked reduction of the diastolic tension. In congestive failure prior to actual decompensation or during the period of low cardiac reserve, a slowly falling systolic ten-

sion with a relatively fixed diastolic tension has long been recognized as a sign of impending cardiac exhaustion, particularly in hypertensive disease. It is quite obvious that here the change in tension must have involved the diastolic as notably as the systolic tension. It is presumed, and on significant evidence, that this characteristic acute relative hypotension occurring with coronary thrombosis is largely reflex in origin. It closely resembles true shock in its mechanism. It is only through extensive arteriolar dilatation that such marked reduction in the diastolic tension is possible, the route of the cardiac-arteriolar reflex is unknown.

It may perhaps be pertinent to emphasize the fact that despite the long habituation to extensive hypertension there was little if any evidence of renal impairment resulting from the relative hypotension. The arterial tension after the attack was relatively low for this particular patient, although well within the normal range. The transient appearance of a few hyaline casts does not imply that the fall in arterial tension caused them; rather there may have been a mild proteinuria and casts in the urine for some time prior to the attack (as is common in hypertensive disease), which persisted for a short time after the reduction in arterial tension. Here, then, is another of a great many clinical examples illustrating that even marked reduction of the arterial tension does not result in renal functional inadequacy. It is the contention of Whipple that the state of hypertension is largely a compensatory mechanism to maintain an adequate renal circulation and that reduction to normal levels is dangerous from the point of view of inducing renal failure thereby. Repeated clinical observations contradict this contention, especially when the reduction in arterial tension is relatively gradual. It can be said that in most instances the renal circulation is not more efficient in hypertensive individuals but less so, and with reduction of the excessive hypertension there is improvement in the renal function and therefore, presumably, also of the renal circulation.

The present status of the patient appears to be good, but such freedom from symptoms may be misleading. On the quite justified assumption (no more is possible with the data on hand) that the attack consisted in a coronary thrombosis, the most significant therapeutic measure available is rest, especially prolonged rest. Confirmation of the diagnosis and evaluation of the approximate extent of injury might be greatly aided by electrocardiographic study. To rely wholly on the electrocardiogram, however, would be most unwise. If the patient has been in bed for three months, as suggested by the query, that should suffice for the period of absolute bed rest. Repair and rehabilitation take time and the older the person the longer is the time required for repair. Her activity should be resumed very gradually, the extent of activity being based largely on the cardiac response to increased effort. After all, as Sir James Mackenzie declared, it is the ability to respond to an increased burden that best measures the degree of cardiac reserve. At present, with a normal pulse rate, full digitalization is not necessary or desirable, but small doses of digitalis for some months may be of value as was recently reemphasized by Christian. The continuous administration of some of the theobromine coronary dilators, such as theophylline-ethylenediamine or theophylline-calcium salicylate offers perhaps some prophylactic protection against recurrence.

BENIGN OR ESSENTIAL HYPERTENSION

To the Editor—I have recently heard the term "benign hypertension." In none of my textbooks on medicine and medical diagnosis was I able to find this condition mentioned or otherwise discussed. I shall be much indebted for any information you may give me briefly on the subject. Kindly omit name.

M D Connecticut

ANSWER—The term "benign hypertension" has been loosely used to be more or less synonymous with "essential hypertension." For many years it was thought that there were two types of arterial hypertension: the type associated with extensive renal injury and renal functional impairment and the form in which the hypertensive changes existed independent of any demonstrable gross renal impairment. The latter type has often been loosely and really incorrectly termed "benign hypertension" or "essential hypertension." It is now known, and generally conceded, that there is but one fundamental form of hypertensive disease, which may or may not be associated with extensive nephritis (Fishberg, A. M. *The Arteriolar Lesions of Glomerulonephritis*, *Arch Int Med* 40:80 [July] 1927). Naturally, when nephritis coexists as a complication the prognosis is distinctly darker and therefore the situation may then be considered as less "benign." In more recent years the term "malignant hypertension" has been introduced to designate that type of arterial disease characterized by a rapidly progressive arterial degeneration and a relatively short course before fatal

termination. Careful studies (Keith, N. M., Wagener, H. P., and Kernohan, J. W. The Syndrome of Malignant Hypertension, *Arch. Int. Med.* 41: 141 [Feb.] 1928) have revealed no fundamental differences in the processes of this "malignant" form except for the rate of progression. As yet no adequate explanation of this difference has been presented. Perhaps the term "benign hypertension" was employed to contrast this so-called malignant form.

In the pathogenesis of hypertensive disease (Stueglitz, E. J. Arterial Hypertension, New York, Paul B. Hoeber, Inc., 1930) the arterioles are first intermittently spastic, later continuous hypertonicity occurs and still later degeneration of the arteriolar musculature permits of fibrotic scarring, so that the end-result is an extensive arteriosclerosis. Thus the single disease progresses through various phases, early in the course the changes are reversible and are amenable to therapeutic correction, later, when fibrotic scarring has occurred, the changes are irreversible, irrevocable and not amenable to therapy. In a single individual in different stages of the disease the situation shifts slowly from a potential threat to a permanent irrevocable injury, early the disease may be considered "benign," but unless the processes are interrupted the progression is onward to more and more severe permanent injury. It is felt that the use of the terms "benign" or "essential" hypertension is distinctly undesirable, as they are both misleading and do not rest on a firm scientific foundation. It must be emphasized that hypertensive arterial disease has a distinctive consistent pathogenesis and that in this progression of changes the clinical, pathologic and physiologic states gradually change.

ARTHUR PHENOMENON OR LOCAL ANAPHYLAXIS

To the Editor—I wish to report an unusual series of reactions following the use of typhoid paratyphoid vaccine. A boy aged 8 years was given 0.25 cc of the vaccine with nothing unusual happening until about the fourth day when a localized abscess about 2 cm in diameter formed on the arm. This was opened and drained since it was thought at the time that the aseptic technic might have been at fault. However when the same thing occurred following a second dose of about 0.35 cc given with extreme precautions I felt quite sure that I was dealing with an unusual reaction of the tissues. This abscess was not opened and was absorbed in about two weeks. Following the third dose of about 0.5 cc there was a moderately severe systemic reaction, a general malaise lasting from two to three days. This time the local reaction was more severe than ever—an abscess about 4 cm in diameter. This ruptured spontaneously when the youngster had a fall. After that the arm healed up rather quickly and no further vaccine was given at the time. Three other patients were immunized with vaccine from the same vial used for this patient with no unusual reactions. Dec. 19, 1933 the same patient, now a young man of 18 was given 0.1 cc of the vaccine with the idea of starting out cautiously and avoiding untoward reactions. A week later he had quite a swelling on his arm—about 2 cm in diameter, not painful—which looks to be another sterile abscess. There was no systemic reaction noted. Will you please give us your opinion of the nature of these reactions, tell me of other reported cases and advise me about the advisability of further immunizing doses. Please omit name. M. D. California

ANSWER—The description of sterile abscess formations at the site of typhoid inoculations is that of the Arthus phenomenon, or local anaphylaxis. It is exceedingly uncommon in typhoid injections, also in other protective injections, except when serum is used. It is more common in such instances, and a number of instances following antiserum injections have been reported.

HEMIATROPHY OR ARRESTED DEVELOPMENT OF BODY

To the Editor—A man aged 43, 5 feet 8 inches (173 cm) in height complains of severe pains in the right shoulder and arm present for a period of two years. The patient shows a distinctly smaller left half of the body including the face, upper and lower extremities and chest; the upper extremities being not only smaller but also shorter. The left nipple is present but there is no breast although the right breast is unusually well developed. There is no paralysis or previous history of disease to account for this condition which has been evident from early childhood if not from birth. Blood urine and all neurologic examinations are otherwise negative. Roentgen examination of the spine, shoulder and joint is negative. Cholecystography gives negative results. Roentgen examination revealed a mediastinal mass, probable an aortic aneurysm. What is the disease and what is the cause of the lack of development of an entire half of the body? Kindly omit name. M. D. New York

ANSWER—No doubt the changes in the mediastinum will explain the pain referred to in the shoulder and arm.

The central nervous system is not myelinated until one or two years after birth. Injuries during birth or in early infancy are therefore more likely to be permanent.

Cerebral hemorrhages are known to be rather common at birth and might explain the condition of asymmetry. They

most commonly produce spastic paraplegia, although there may be symptoms without spasticity.

The diagnosis in this case would probably come under congenital muscular deficiency or early arrest of growth caused by injury or infection. In the first condition, lack of development of a portion of the brain itself might be present, but one would expect to find some mental changes or perhaps epilepsy. In the latter condition, birth injury would be the most likely cause in absence of a history of illness preceding the arrested development.

The asymmetry is also similar to that present in progressive hemiatrophy, or Romberg's disease. The onset here is usually after ten years of age, although it has been recorded as being congenital. The symptoms are those of progressive atrophy and not arrested development, although the congenital type might be difficult to rule out. However, the trophic changes are quite extensive in hemiatrophy. It is usually limited to the face, especially in the region supplied by the fifth nerve.

The location of the lesion in hemiatrophy is probably in the sympathetic nervous system but may be in either the central or the peripheral portion. The cause has not been determined from the few necropsies performed.

Hemiatrophy is closely related to scleroderma.

In the case described there are probably some pathologic changes in the sympathetic nervous system the nature and actual site of which cannot be accurately surmised from present knowledge.

PREVENTION OF VENEREAL DISEASE AND CONCEPTION AFTER RAPE

To the Editor—Please give me information regarding the best approved technic to follow after rape to prevent venereal disease and if possible to prevent conception. Has such a procedure ever been worked out with accuracy similar to the methods used to prevent venereal disease after exposure in men? I have no specific case in mind but would like to be prepared to the best of my ability, to combat such conditions. It is evident that at least three types of precaution should be taken: (1) against gonorrhea, (2) against syphilis, (3) against conception. Please discuss fully. Has any progress been made in any states toward legalizing properly carried out abortions if conception occurs after rape? Please omit name. M. D., California

ANSWER—No technic has been worked out to prevent venereal disease and conception following rape, chiefly because instances of true rape are seen infrequently. Most instances of so-called rape do not come within the definition of rape, namely, "carnal knowledge of a woman by a man accomplished by force and against her will." Children especially are prone to make false accusations, but adult women also make false charges occasionally.

Usually a case of rape is not seen for at least a few hours after the crime has been committed. At this time little can be done to prevent conception because in nearly all instances in which conception takes place the fertilizing spermatozoon gains access to the uterine cavity within a few minutes after coitus. It reaches the fallopian tube shortly afterward but even if it did not it is possible, though hardly likely, that a curettage performed when the patient is first seen will help. For a curettage to be effective in such a case, every bit of endometrium above the basalis must be thoroughly removed and also all the spermatozoa in the uterine cavity. Should a spermatozoon succeed in fertilizing an ovum in spite of a curettage, it is possible for the ovum to find a sufficiently prepared endometrium for embedding because it usually takes about ten days from the time of coitus to the time of implantation in the endometrium. It may be dangerous to perform a curettage immediately after rape, because not infrequently the offender has gonorrhea. Smears should, of course, always be made of the vaginal contents to see whether gonococci are present. If such organisms are found, a curettage is contra-indicated. If the smears fail to show gonococci, this does not imply the absence of gonorrhea. The disease may not manifest itself until a number of days later. Evidences of syphilis will surely be absent if the woman did not have the disease before the rape was perpetrated, even though the offender has active syphilis, because of the incubation period of syphilis.

When a case of rape is seen, one should obtain careful information about the exact time of occurrence of the crime and make a thorough examination not only of the external genitalia and surrounding tissue but also of the entire body for marks of violence. It is necessary for the physician to know this information because he will undoubtedly be asked about these facts in court. Smears should be made of any discharge seen on the external genitals and also the contents obtained from the vagina. Careful notes should be made of the character of the vaginal contents, especially as to whether spermatozoa, blood and pus cells are present. Immediately after all the examina-

tions have been made, the vagina should be irrigated with a weak mercuric chloride or potassium permanganate solution. Then the entire vagina but especially the region of the Bartholin gland ducts, the cervix and the urethra should be swabbed with a 2 per cent silver nitrate solution. In addition, one of the prophylactics used by men for syphilis, such as 33 per cent ointment of mild mercurous chloride, should be used on the external genitalia, in the vagina, on the external urethral orifice and on the cervix. Two weeks later and again at four weeks smears should be made from the cervix, vagina and urethra, and blood should be subjected to a Wassermann or Kahn test. If the blood test is positive, another test should be made to verify it. If the Wassermann or Kahn test is negative, three more tests should be made at intervals of three weeks.

As far as is known, no state in this country has made provisions for the induction of abortion in cases of rape.

ETIOLOGY OF SWELLING OF ARM

To the Editor—A man aged 25 a clerk in a local grocery store whom I have known since childhood whose habits are good and who has no history of disease excepting that his father died of diabetic coma has enjoyed good health all his life. Dec 26 1933 he came to me with his left arm swollen from the deltoid down to the tip and a little cyanosed, with a little ache in the elbow. A roentgenogram of the elbow gives negative results. Since that he has responded to rest and carrying the arm in sling, but it remains swollen and a little boggy like, hardly boggy but with a little boggy feel. Then there have appeared since some crows feet blood vessels round the inside of the deltoid. His brother says that he took a strong hold of his arm not hard but just firm but he does not think that would cause it. He does not recall hurting it but he did handle 100 pound sacks of sugar during the holiday rush and noticed that the arm became somewhat tired. He may have strained it. I made a diagnosis of phlebitis of the arm although I have never seen a case like it in my thirty four years of practice. I wish that you would advise me as to whether this condition occurs in the arm. I have never seen one. He has a good grip on both hands. This has been reported as a compensation case and I wish to know whether my grounds are correct. Please omit name. MD Minnesota

ANSWER—The swelling of the arm might be due to a number of conditions.

A slight rupture of some muscle fibers or rupture of a blood vessel in the muscle or under the fascia would produce the symptoms described. A complete rupture of the long head of the biceps tendon occasionally occurs from a severe muscular effort.

Phlebitis may occur in the arm. This condition would involve the entire distal portion of the extremity with edema of the forearm. There should be some evidence of inflammation with tenderness along the veins. Some focus of infection is usually present.

While the possibility of a neoplasm in this case is rather slight one must bear in mind the occurrence of a sarcoma with the dilated veins described.

Either phlebitis or a deep hematoma might produce peripheral swelling of the extremity. Evidence of inflammation locally and of general symptoms should differentiate them. An increased leukocyte count with an increased percentage of polymorphonuclears would speak for phlebitis.

In the absence of a neoplasm or a history of a definite injury preceding the symptoms, the evidence of the heavy work described should establish it as a case for compensation.

USE OF TUBERCULIN SKIN TEST

To the Editor—What is the present consensus relative to the value of the routine use of the tuberculin skin test? What beneficial knowledge either to the individual or to the physician would be derived by giving the tuberculin cutaneous test as a routine procedure in identical dosage to school children of various ages and degrees of hypersensitivity? From my limited experience such testing is of no value and may do harm to the susceptible child. Please omit name. MD Texas

ANSWER—Physicians who have had an extensive experience with the use of the tuberculin skin test are enthusiastic about its value. There are two beneficial facts obtained from a positive test. First the person reacting has been exposed either directly or indirectly to some person or some animal suffering from tuberculosis or acting as a carrier and spreader of tubercle bacilli. Seeking this source often results in finding an open case of tuberculosis in a person not previously suspected of having the disease. The finding of such a case may be of great benefit to the patient since his disease may not have reached too advanced a stage for successful treatment. Even if it cannot be treated successfully isolation or teaching methods of prevention of spread may save the family and community from contamination with tubercle bacilli from that particular source.

Second the individual who reacted positively to the test is known to have a focus of tuberculosis somewhere in his body.

This focus may harbor living and virulent tubercle bacilli over many years or even a lifetime. The positive test establishes the fact that the tissues are sensitive or allergic to the products of growth of tubercle bacilli. Allergy is a dangerous factor, therefore the person who reacts positively to the test although he may appear in perfect health at the time, is a potential case of a reinfection type of tuberculosis from either exogenous or endogenous sources.

These facts make the routine administration of tuberculin tests to children of various ages and degrees of hypersensitiveness of great value, since a negative reactor may become a positive reactor after a subsequent exposure to tuberculosis. In many parts of the country not more than 10 or 20 per cent of children of school age have been contaminated with tubercle bacilli. Obviously, the lower this incidence becomes the more valuable is the selectivity of the test.

Identical dosage is necessary so that a standard is set up, the deviation from which gives a measure of the individual's reaction. The dose of tuberculin used in testing school children causes no harm whatever, even if the child has a reinfection type of disease.

DANGERS TO WORKERS IN NITROCELLULOSE SOLVENTS

To the Editor—A primipara aged 18 employed in a bakelite factory working in nitrocellulose solvents (amyl and ethyl acetate) developed oliguria and albuminuria without casts a blood pressure of 96 systolic, 46 diastolic and a mild secondary anemia. Her work in a close room amid the fumes arising from these solvents requires her to keep her ungloved hands more or less constantly wet with this solution. Is it to be regarded as probable that these chemicals are etiologic factors in this nephrosis? RICHARD BARTLETT OLESON, M D, Lombard Ill

ANSWER—If amyl and ethyl acetates were the only solvents of bakelite to which exposure was provided, it might be doubted whether the clinical condition described should be attributed to these substances as the cause. The toxicity of these agents is at this time believed to be limited to the production of a mild inflammation of the eyes, nose, throat and bronchi. However, it is frequently true that solvents other than those mentioned are employed in the procurement of the solution of the bakelite resin. In the past, benzene (benzol) has been extensively used. Methanol has been considered a practical solvent for bakelite and possibly has been so used. In either case the condition described might have been brought about as an occupational disorder. Differential blood counts in which a leukopenia is detected would suggest the possibility of benzene poisoning. The detection of wood alcohol or its decomposition products in the urine would tend to place responsibility on that agent as a causative factor. Further inquiry should be made as to the solvents other than amyl and ethyl acetates and, unless others of greater toxicity are established, belief that the condition described is of occupational origin seems unwarranted.

USE OF SODIUM HYPOCHLORITE IN INFECTED WOUNDS

To the Editor—Please give me the correct technique for using sodium hypochlorite solution in the irrigation of infected wounds.

L A CROWELL JR M D, Lincolnton N C

ANSWER—Sodium hypochlorite solution should contain between 0.45 and 0.50 per cent of available chlorine. If it is below that it is too weak and if it is above that it is too caustic.

An apparently satisfactory preparation is known as hychlorite, described in New and Nonofficial Remedies, 1933, page 216. When diluted with seven volumes of water, the solution has the same available chlorine content as surgical solution of chlorinated soda and is isotonic. It deteriorates at the rate of about 12 per cent a year.

A preliminary cleansing of the skin and the wound is necessary. Excision of all lacerated or devitalized tissue should be done. All pockets of the wound should be explored and Carrel rubber tubes introduced for instillation of the solution. Ordinarily, counterdrains are not required.

The drainage tubes are of fine pure rubber, approximately 15 to 25 cm long, having a diameter of 5 mm and a lumen of 3 mm. The ends are tied off with linen or silk and, beginning at the distal end, from six to twelve small holes, approximately 0.5 mm in diameter, are pierced at intervals of 0.5 cm. One may make these with a special punch, going through the two sides at the same time and staggering the direction.

The number of tubes used must be decided by the size and depth of the wound. All parts of the wound should be bathed by the solution coming out of the tubes. To prevent the tubes

from bunching in the wound, strips of gauze are placed between them, which also helps to retain the solution

For superficial wounds, the Carrel tubes are covered with Turkish toweling and strips of gauze are placed between the tubes. A large pad of nonabsorbent cotton may be placed around the extremity. Simple wet compresses are sometimes used and changed frequently in superficial wounds.

The skin should be protected by covering with strips of gauze impregnated with petrolatum

At present, intermittent irrigation every two hours day and night with just enough solution to fill the wound has been most satisfactory. This is not always possible, and good results may be obtained by less frequent irrigation, although it is not so efficient in sterilization.

The wound should be redressed daily, the skin being cleansed and the tubes renewed. In certain conditions the change of dressings may be delayed for two or three days, provided the irrigations are kept up.

Bacteriologic films are made of the wound discharge from day to day and, when sterile, deep wounds may be sutured

OTOSCLEROSIS

To the Editor—A patient aged 30 is suffering from otosclerosis of two and a half years duration. Blood chemistry, the Wassermann reaction and other laboratory tests are all negative. A coexisting catarh has cleared up under instillation catheter infusion and the application of silver nitrate. Is there anything that will help to check the otosclerosis? Is radium applied through the external auditory meatus of any value in checking the progress of the disease? Is radium harmful? Please omit name.

MD New York

ANSWER—The etiology of otosclerosis is still unknown, despite the extensive research that is being conducted regarding this problem in a number of centers throughout the world. Nothing definite has been developed regarding the therapy, so that it is impossible to state definitely what can be done to check the progress of the disease. Radium, x-rays and other measures have been used to date but none have given any definite result regarding either the arresting of the disease or its cure.

ABSENCE OF ULVIA

To the Editor—In the routine examination of school children I have noticed absence of the uvula in many that have had their tonsils removed. I have noticed this in several cases of my own in which I felt certain that I did not accidentally include the uvula in removing the tonsil. Can this disappearance of the uvula following tonsillectomy be explained in any other manner than accidental removal? Kindly omit name

MD New York

ANSWER—Spontaneous disappearance of the uvula has never been recorded. As a rule when the loss of the uvula is noted after tonsillectomy the uvula has been inadvertently caught in the snare during the removal of the tonsil. However, its ablation is of no significance as long as no other portion of the soft palate is removed. Aside from operative procedure, it is not likely that there would be disappearance of the uvula unless some ulcerative process destroyed the tissue.

DISCHARGE OF SYPHILITIC PATIENT FROM TREATMENT

To the Editor —An automobile mechanic aged 34 who consulted me June 28 1932 was very nervous and with a symmetrically enlarged thyroid the blood pressure was 90 systolic 60 diastolic the pulse rate was 105 the temperature was normal I put him on tincture of iodine twenty drops three times a day July 14 his systolic blood pressure was 110 diastolic 60 pulse 95, temperature normal September 15 he came with a hard chancre on the penis but refused to have a blood test made October 27 he returned still with a chancre, and allowed a blood test to be made Kolmer's Wassermann test was 4442 — and the Wassermann reaction was 2 plus I gave him bismuth salicylate in oil October 27 and ordered daily inunctions with mercurial ointment also saturated solution of potassium iodide to toleration Beginning October 29 I gave him one injection of neoparsaphenine 0.3 Gm and three other doses of 0.6 Gm at intervals of five days owing to the smallness of his veins which caused trouble to get into them After the fourth dose I switched to bismuth in oil at intervals of five days and kept it up until Jan 7 1933 when I had another Wassermann test made which was reported negative I then stopped all injections but kept him on the inunctions and potassium iodide until the first of July having Wassermann tests made every month up to July 1 all being negative as was the test Oct 1 1933 and Jan 1 1934 He is apparently in excellent health at present and is not taking any medicine A Wassermann test of his wife was returned negative at the time he first came in Will you be good enough to advise me what I should say to a patient with the foregoing history Please omit name

M D Maryland

MD Maryland

ANSWER—The patient should be told that he is clinically and serologically well but that he should be kept under observation for several years with periodic blood tests and careful physical check ups. A spinal fluid examination is an additional

safeguard and should be done some time during the second year. One should hesitate to employ the word "cure" in cases of syphilis in which treatment was started in the primary sero-positive stage, as it has been frequently stressed that the golden opportunity for a cure is in the primary seronegative period. Nevertheless this patent apparently has what might be termed an abortive cure. Unless there is a clinical or serologic relapse, further treatment will probably not be necessary.

TREATMENT OF MASTURBATION BY OPERATION ON NERVE

To the Editor—I read an article in the Cincinnati *Lancet-Clin.* (n s 37 1896) by J H McCassy M D about the excision of certain nerves of the penis as a cure for masturbation in young men. In some cases he advises division of the dorsal nerve of the penis. He also says that the nerve can be cut and be made to reunite after a time as long as from two to three years. Dogs and horses treated in this way regained their sexual power. Could you tell me a physician preferably near here who has done this operation? Also is the vas deferens ever cut for this purpose and with what success? Who does this? Please omit name

MD, Ohio.

ANSWER—The operation referred to is technically quite simple and any genito-urinary surgeon could perform it. There are many excellent specialists in Cleveland. We doubt, however, whether any specialist would today perform this operation for masturbation. It is not mentioned in any modern works on the subject. In the first place it is entirely too hazardous, as one could not at all be certain that the nerves would reunite and if they do not the condition of impotence that might follow would be more serious than the original condition. In the second place masturbation can at present be treated with most satisfactory results by gentle prostatic massage and installations of weak silver nitrate solutions (from 1,000 to 1,500) with the Bangs sound syringe without taking any such serious risks as the operation mentioned. The vas deferens is never cut for this condition as it would do no good.

WASSERMANN FAST SYPHILIS

To the Editor—A married woman aged 28 has been under treatment by me for syphilis for the past two years. The source of the infection is unknown but the husband has been treated in a government hospital for dementia paralytica and is well at present. The husband states that he has no knowledge of a primary infection. The wife has no knowledge of a primary lesion and never had secondaries. From Feb. 6, 1932 to the present date she has had almost continuous treatment but presents a positive reaction at all times. I have given her six courses consisting of eight injections of neoparsphenamine from 0.3 to 0.6 Gm. and the first course of a bismuth compound. Ten injections of iodobismutol were given concurrently. Each course was of about two months duration with intervals of one or two months between courses. During the which she was given saturated solution of potassium iodide. On the last course I substituted silver arsphenamine from 0.15 to 0.25 Gm. After the fifth course I also gave her four injections of sodium thio sulphate. All told she has had forty injections of neoparsphenamine, eight of silver arsphenamine and sixty six of a bismuth compound. The Wassermann Kahn and Rosenthal reactions have remained persistently 3 plus and 4 plus until at the end of the last series with silver arsphenamine when the report was 2 plus. Spinal Wassermann colloidal gold and globulin tests give negative results. Her blood pressure is 104 systolic 70 diastolic. The heart and lungs are normal. No abnormal sensory reflexes are present and she feels quite well in all respects. In 1932 she weighed from 102 to 104 pounds (about 47 Kg.) at present she weighs 111 pounds (50 Kg.). In your opinion has she had sufficient treatment? Would you consider this a Wassermann fast case? Should I advise persistent treatment until at least one negative reaction has been obtained? Should silver arsphenamine be continued since the Wassermann reaction was 2 plus after its use in spite of the peculiar reaction she had with each injection especially with the larger dose of 0.25 Gm. During and following the injection she experienced a nervousness and faint tongue checks and lips rapid pulse a feeling of nervousness and fainting and crying. This would subside in about three to five minutes leaving no after effects. The injections were given slowly and carefully. Thank you for any suggestions you may give me. Please omit name.

M.D. Brooklyn

M D Brooklyn

ANSWER—The amount of treatment that has been administered in this case over a period of two years is adequate. The persistent positive serologic reaction would bring this into the category of Wassermann-fast cases. The Wassermann test should be considered only as one symptom of the disease and continuous treatment might prove detrimental to the patient's health. Intermitent treatment consisting of a short course of one of the arsphenamines, with a bismuth or mercury compound conjointly followed by iodides and a long rest period without any medication might bring about a reversal of the Wassermann reaction. There is no accepted criterion of treatment for a Wassermann-fast case. Further treatment with silver arsphenamine in view of the peculiar reaction experienced by the patient would not be advisable. Bismuth arsphenamine sulfonate (bismarsen) intramuscularly would be a good substitute.

Council on Medical Education and Hospitals

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land June 11 12 Sec Dr C Guy Ianc 416 Marlboro St Boston
AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY Oral (all candi-
dates) Cleveland June 12 Sec, Dr Paul Titus, 1015 Highland Bldg,
Pittsburgh
AMERICAN BOARD OF OPHTHALMOLOGY Cleveland June 11 and Butte
Mout July 17 Sec Dr William H Wilder, 122 S Michigan Blvd,
Chicago
AMERICAN BOARD OF OTOLARYNGOLOGY Cleveland, June 11 Sec
Dr W P Wherry, 1500 Medical Arts Bldg Omaha
ARIZONA Basic Science Tucson June 19 Sec Board of Basic
Examiners Dr R L Nugent, Univ of Arizona Tucson Medical Phoe-
nix July 3 Sec Dr J H Patterson 320 Security Bldg Phoenix
CALIFORNIA San Francisco July 9 12 and Los Angeles July 23 26
Sec Dr Charles B Pinkham, 420 State Office Bldg Sacramento
COLORADO Denver July 3 6 Sec, Dr Wm Whitridge Williams
42 State Office Bldg Denver
CONNECTICUT Basic Science New Haven, June 9 Prerequisite to
license examination Address State Board of Healing Arts 1895 Yale
Station New Haven Regular Hartford, July 10 11 Endorsement
Hartford July 24 Sec Dr Thomas P Murdock 147 W Main St
Meriden Homeopathic New Haven, July 10 Sec Dr Edwin C M
Hall 82 Grand Ave New Haven
DELAWARE Wilmington June 12 14 Sec. Medical Council of
Delaware Dr Harold I Springer 1013 Washington St Wilmington
DISTRICT OF COLUMBIA Basic Science Washington June 25 26
Medical Washington July 9 10 Sec Commission on Licensure
Dr W C Fowler 203 District Bldg Washington
FLORIDA Jacksonville June 11 12 Sec, Dr William M Rowlett
Box 786 Tampa
ILLINOIS Chicago, June 26 29 Supt of Regis Dept of Regis
and Edu Mr Eugene R Schwartz Springfield
INDIANA Indianapolis June 19 21 Sec Board of Medical Regis and
Exam Dr W R Davidson Room 5 State House Annex Indianapolis
IOWA Iowa City June 5 7 Dir Division of Licensure and Registra-
tion Mr H W Grete Capitol Bldg Des Moines
KANSAS Topeka June 19 20 Sec Board of Medical Registration
and Examination Dr C H Ewing Larned
KENTUCKY Louisville June 6 8 Sec State Board of Health Dr
A T McCormack 532 W Main St, Louisville
MAINE Augusta July 5 6 Sec, Board of Regis of Medicine Dr
Adam P Leighton Jr 192 State St, Portland
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Bldg Lansing
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Charney McKinley 126 Millard Hall University of Minnesota Minne-
apolis Medical Minneapolis June 19 21 Sec Dr E J Engberg 350
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HOSPITAL MEDICAL LIBRARY SUGGESTIONS

Prepared by the Council on Medical Education
and Hospitals

The "Essentials in a Hospital Approved for Interns" con-
tains the following provision

There must be a working medical library, in charge of a
librarian, which should contain a useful selection of late edi-
tions of standard text and reference books and current files of
not less than ten of the better medical journals. The library
should be inside the hospital building and be located where it
is readily accessible to the interns and staff members. Collec-
tions of choice reference books in pathology and clinical diag-
nosis and in roentgen-ray work should be found respectively
in the pathologic and roentgenologic departments."

Included in the "Essentials in a Hospital Approved for
Residencies in Specialties" is the following medical library
requirement

"The hospital shall maintain, or provide ready access to,
an adequate medical library containing modern texts and cur-
rent journals covering the fields in which residencies are
offered"

Since the internship must now be considered as the fifth
year in medicine and approved residencies in specialties as
postgraduate work, hospitals on such educational bases should
provide adequate medical libraries

While it is impossible for all hospitals to be possessed of
an ideal library such as may be found in a medical school and
in some of the large teaching hospitals, there are few hospi-
tals that cannot maintain a library of a few choice medical
periodicals, standard texts and reference books

The important function of a medical library in a hospital
is to provide attending physicians and interns with material
for immediate reference and consultation, intensive study of
the patients in the hospital, and the preparation of papers,
discourses and special reports to be used in staff meetings,
medical gatherings and for publication. Through the library
service, both the interns and the regular staff are provided
with a means of professional growth and are inspired to
greater zest and thoroughness in their work

Organization

The medical library should be under the supervision of a
committee consisting of several members of the staff. Many
library committees are such in name only and care should be
exercised in order to assure the inclusion of such doctors as
would take an active interest in developing the library. The
funds for regular additions to the library should be placed at
the disposal of this committee

The hospital that has no library may establish one by various
means (a) by an annual appropriation (as little as \$300 annu-
ally would be sufficient for establishment and expansion), (b)
by annual subscription from staff members, or (c) through
gift or endowment in the manner that other equipment and
furnishings are given a hospital. A good nucleus no matter
how small, and an assured annual income are the essential
requisites of the hospital just beginning its medical library.
By the gradual addition of material from year to year a library
would be evolved that could be considered an asset to the
institution and the community

The cost of maintaining the library already established is
not prohibitive and could be made a legitimate item in the
operating budget. When this cannot be done, an excellent plan
is for each member of the medical staff to contribute at least
a small sum annually toward maintaining and improving the
library and this amount could be made a part of the staff dues

It is desirable that the library should be immediately in
charge of a librarian who has had training and experience in
library work. In the absence of an experienced librarian, some
competent person frequently the superintendent or record clerk
or some other person selected from among the regular admin-
istrative personnel, should be placed in charge

A code of library regulations should be drawn up by the
library committee and should be carefully adhered to by the
staff members. In general, books or periodicals should not be
removed from the library, if this is unavoidable, record should
be made of the removal and return

Location and Furnishings

The hospital medical library should occupy a prominent location, preferably in the hospital building. The actual location of the room will affect directly the amount of usage. If it is placed in an obscure corner of a floor that is used very little as compared with other floors, it will naturally not be visited often.

The location should be chosen with a view to attractiveness, convenience and comfort to those who will use the library. It is often preferable to have it on the administrative floor or in close proximity to the doctors' room.

The room should be sufficiently large to house the books along with the necessary furnishings, and to permit its comfortable use for reading, discussion and conversation. The very atmosphere of the room will have much to do with the extent to which the library will be used.

It would be worth while for those interested in developing such a library to visit similar libraries and study the elements that seem to make them a success. Any well ordered and well used library, whether medical or not, would furnish good suggestions. The best type of shelf or rack is whatever enables the book or journal to be quickly found, easily removed and easily replaced. There should be a complete card index. Binding journals into volumes adds to their life and usefulness.

Reading Matter

In establishing the library, it is well to purchase only one or two comprehensive textbooks on each subject. Only recent books should be chosen, with the exception of such standard works as are recognized as classics in their respective lines, and which do not grow obsolete with age. The literature on therapy and diagnosis, for example, is changing so rapidly as to warrant the use of the most recent books. In the field of the more fully developed sciences, such as anatomy and histology, literature is more stabilized and longer lived. More recent editions of the standard textbooks should be added from time to time, thus keeping the library up to date with regard to new methods of diagnosis and treatment that have been digested and tested. After a good foundation has been formed, the balance of the apportioned funds may be expended in purchasing varied references that are known to be of particular value. The library should not be allowed to become a depository for antiques, and out of date books should be removed or discarded.

The usefulness and efficiency of the hospital medical library depend not only on a good selection of medical books but also on a well chosen group of periodicals. Limited library funds are often more usefully expended for periodicals than for texts and references. When ample funds are provided there is no great difficulty experienced in the matter of choice.

The hospital medical library may supplement its service by the use of state medical school libraries, county society libraries (in some cases), and the package library of the American Medical Association. The package library consists of collections of reprints and other material on various subjects, prepared for lending to members of the Association and to individual subscribers to publications of the American Medical Association. Information on the loan systems of state medical school libraries or society libraries can readily be obtained on inquiry.

Dr. Vincent¹ at the fiftieth anniversary of the Boston Medical Library in 1926, spoke of the library as being part of the social memory.

"A medical group which works with little or no reference to books and journals suffers serious limitations. Without knowledge of what others have discovered, daily experience cannot be resourcefully interpreted. Avoidable mistakes, waste and duplication of effort are inevitable. Doctors become victims of empiricism and routine, imagination and initiative lack stimulus, enthusiasm and energy decline, minds grow sterile that under the quickening influence of the recorded experience of others might have been fruitful."

Harvey Cushing,² in his address at the opening of the new building of the Cleveland Medical Library in 1926, aptly states

¹ Boston Medical Library. Celebration of the fiftieth anniversary Jan. 19 1926. Boston 1926.
² Cushing, Harvey. The Doctor and His Books. Cleveland 1926.

"The soul of an institution that has any pretense to learning comes to reside in its library, and no less well may one gauge the quality of a medical school, of a hospital, of a laboratory, of the individual doctor himself, than by the condition of its library."

SUGGESTED PERIODICALS

A selection of a few leading medical journals is indispensable. Obviously, the average hospital library will contain only a portion of the following list. It is desirable that the library of a general hospital should select its periodicals from those included under "Medicine" and "Surgery" before journals from the special lists are made available. The specialties receive a certain amount of attention in the general medical and surgical publications listed below.

ANATOMY

American Journal of Anatomy. Wistar Institute 36th St and Woodland Ave. Philadelphia. Bi M \$15.

DERMATOLOGY AND SYPHILOLOGY

American Journal of Syphilis and Neurology. C V Mosby Co. 3523 Pine Blvd. St. Louis. Q \$10.
Archives of Dermatology and Syphilology. American Medical Association 535 N Dearborn St. Chicago. M \$8.
British Journal of Dermatology and Syphilis. H K Lewis & Co. Ltd., 136 Gower St. London W C 1 M 2g.
British Journal of Venereal Diseases. Constable & Co. Ltd. 10 Orange St. Leicester Sq. London W C 2 Q 20s.

HOSPITAL ADMINISTRATION

Hospital Management. 537 S Dearborn St. Chicago. M \$7.
Hospital Progress. 1402 S Grand Blvd. St. Louis. M \$3.
Modern Hospital. 919 N Michigan Ave., Chicago. M \$3.

INDEX AND DIRECTORY

American Medical Directory. American Medical Association 535 N Dearborn St., Chicago. Bi A \$15. (A register of legally qualified physicians of the United States Alaska Canal Zone Hawaii Philippine Islands Puerto Rico Guam Samoa and Virgin Islands Canada Newfoundland and Yukon. Contains a list of hospitals in the above countries.)
Quarterly Cumulative Index Medicus. American Medical Association 535 N Dearborn St. Chicago. Q \$12. (An index and guide to the medical literature of the world.)

INFECTIOUS DISEASES HYGIENE AND PREVENTIVE MEDICINE

American Journal of Hygiene. Managing Editor, F M Root 613 N Wolfe St. Baltimore. Bi M \$12.
American Journal of Public Health and the Nation's Health. American Public Health Association 450 7th Ave. New York. M \$5.
American Journal of Tropical Medicine. Williams & Wilkins Co. Mt Royal and Guilford Aves. Baltimore. Bi M \$5.
Journal of Immunology. Williams & Wilkins Co. Mt. Royal and Guilford Aves. Baltimore. M \$9.
Journal of Industrial Hygiene with Abstract of Literature. Williams & Wilkins Co. Mt Royal and Guilford Aves. Baltimore. Bi M \$2.
Journal of Infectious Diseases. 637 S Wood St. Chicago. Bi M \$2.

MEDICINE

American Heart Journal. C V Mosby Co. 3523 Pine Blvd. St. Louis. Bi M \$7.50.
American Journal of the Medical Sciences. Lea & Febiger 600 S Washington Sq. Philadelphia. M \$6.
Annals of Internal Medicine. American College of Physicians Prince and Lemon St. Lancaster Pa. M \$7.
Archives of Internal Medicine. American Medical Association 535 N Dearborn St. Chicago. M \$5.
British Medical Journal. British Medical Association House 19 Tavistock Sq. London W C 1 W \$20.
Canadian Medical Association Journal. 3640 University St. Montreal. M \$6.
Clinical Science Incorporating Heart. Shaw & Sons Ltd. 7 8 & 9 Fetter Lane Fleet St. London E C 4 Irreg. 37s 6d.
Hygeia. 535 N Dearborn St. Chicago. M \$2.50.
Industrial Medicine. 844 Rush St. Chicago. M \$2.
International Clinics. J B Lippincott Co. 227 E Washington Sq. Philadelphia. Q \$12.
Journal of Allergy. C V Mosby Co. 3523 Pine Blvd. St. Louis. Bi M \$7.50.
Journal of the American Medical Association. 535 N Dearborn St. Chicago. W \$7.
Journal of Clinical Investigation. 654 Madison Ave. New York. Bi M \$10.
Journal of Experimental Medicine. Rockefeller Institute for Medical Research 1 York Ave and 66th St. New York. M \$10.
Lancet. 7 Adam St. Adelphi London W C 2 Oxford University Press (American Branch) 114 5th Ave. New York. W \$2.10.
Medical Clinics of North America. W B Saunders Co. W Washington Sq. Philadelphia. Bi M Cloth \$16 paper \$12.
Medicine Analytical Reviews of General Medicine Neurology and Pediatrics. Williams & Wilkins Co. Mt Royal and Guilford Aves. Baltimore. Q \$5.50.
New England Journal of Medicine. 8 The Fenway Boston. W \$6.
Quarterly Journal of Medicine. Dr A G Gibson Sec. 27 Banbury Rd. Oxford. Q 35s.
Review of Gastroenterology. 148 Lafayette St. New York. Q \$7.

NEUROLOGY AND PSYCHIATRY

American Journal of Psychiatry. American Psychiatric Association 450 7th Ave. New York. Bi M \$6.
Archives of Neurology and Psychiatry. American Medical Association 535 N Dearborn St. Chicago. M \$8.

MEDICAL EDUCATION AND HOSPITALS

1787

Brain A Journal of Neurology Macmillan & Co Ltd St Martin's
St London W C 2 (American office—60 5th Ave New York)
Q 24s
Journal of Mental Science J & A Churchill 40 Gloucester Place
Portman Square London W 1 Q 7s 6d per issue
Journal of Nervous and Mental Disease Dr Smith Ely Jelliffe 64
W 56th St New York M \$10
Journal of Neurology and Psychopathology British Medical Associa
tion Tavistock Square London W C 1 Q 30s
Psychanalytic Quarterly 372 374 Broadway, Albany N 1 Q \$5

NUTRITION
American Journal of Digestive Diseases and Nutrition 435 455 Lin
coln Bank Tower Fort Wayne Ind M \$5 50
Journal of Nutrition Wistar Institute of Anatomy and Biology 36th
St and Woodland Ave Philadelphia M \$10
Nutrition Abstracts and Reviews Imperial Bureau of Animal Nutri
tion Reid Library Rowett Institute Aberdeen Scotland Q 21s

OBSTETRICS AND GYNECOLOGY
American Journal of Obstetrics and Gynecology C V Mosby Co
3523 Pine Blvd St Louis M \$8 50
Journal of Obstetrics and Gynecology of the British Empire Sherratt
& Hughes 34 Cross St Manchester B M £2 15s
Surgery Gynecology and Obstetrics (Listed under Surgery)

OPHTHALMOLOGY
American Journal of Ophthalmology Ophthalmic Publishing Co 508
Metropolitan Bldg St Louis M \$10
Archives of Ophthalmology American Medical Association 53s N
Dearborn St Chicago M \$8
British Journal of Ophthalmology Geo E Pulman & Sons Ltd 24
Thayer St Marylebone London W 1 Q 2g

ORTHOPEDIC SURGERY
Journal of Bone and Joint Surgery Boston Medical Library Bldg
8 The Fenway, Boston Q \$5

OTORHINOLARYNGOLOGY
Annals of Otolaryngology and Rhinology Annuals Publishing
Co 7200 Wydown Blvd St Louis Q \$6
Archives of Otolaryngology American Medical Association 53s N
Dearborn St Chicago M \$6
Journal of Laryngology and Otolaryngology Headley Brothers 109 Kings
way London W C 2 (American agent—G E Stechert & Co
31 33 E 10th St New York) M 40s
Laryngoscope 912 S Kingshighway St Louis M \$6

PATHOLOGY AND CLINICAL LABORATORY WORK
American Journal of Clinical Pathology Williams and Wilkins Co
Vt Royal and Guilford Aves Baltimore B M \$5
American Journal of Pathology Dr F B Mallory 818 Harrison
Ave Boston B M \$8
Archives of Pathology American Medical Association 53s N Dear
born St Chicago M \$6
British Journal of Experimental Pathology H K Lewis & Co
Ltd 136 Gower St London W C 1 B M £2
Journal of Laboratory and Clinical Medicine C V Mosby Co
3523 Pine Blvd St Louis M \$8 50
Journal of Pathology and Bacteriology Oliver & Boyd Tweeddale
Court High St Edinburgh B M 60s

PEIATRICS
American Journal of Diseases of Children American Medical
Association 535 N Dearborn St Chicago M \$8
Archives of Disease in Childhood British Medical Association Tav
istock Square London W C 1 B M 25s
Archives of Pediatrics E B Treat & Co 45 E 17th St New
York M \$5
British Journal of Children's Diseases Adlard & Son 21 Hart St
Bloomsbury Sq London W C 1 Q 25s
Journal of Pediatrics C V Mosby Co 3523 Pine Blvd St Louis
M \$8 50

PHARMACOLOGY AND THERAPEUTICS
Journal of Pharmacology and Experimental Therapeutics. Williams
& Wilkins Co Mt Royal and Guilford Aves Baltimore M \$15

PHYSICAL THERAPY
Archives of Physical Therapy V Ray Radium American Congress of
Physical Therapy 30 N Michigan Ave Chicago M \$5
British Journal of Physical Medicine 17 Featherstone Bldg London
W C 1 M \$5
Physiotherapy Review American Physiotherapy Association 719 Barry
Ave Chicago B M \$2 50

PHYSIOLOGY AND BIOCHEMISTRY
American Journal of Physiology American Physiological Society
Managing Editor Dr D R Hooker 19 W Chase St Baltimore
M \$30
Journal of Biological Chemistry Williams & Wilkins Co Mt Royal
and Guilford Aves Baltimore M \$5 per vol (About 4 vols
yearly)
Journal of Physiology Cambridge University Press Fetter Lane
London E C 4 M 30s per vol (About 4 vols yearly)
Physiological Reviews American Physiological Society D R
Hooker Managing Editor 19 W Chase St Baltimore Q \$6

RADIOLOGY
American Journal of Roentgenology and Radium Therapy Charles
C Thomas 220 E Monroe St Springfield Ill M \$10
British Journal of Radiology British Institute of Radiology 32 Wel
beck St London W 1 M £2 2s
Radiology Radiological Society of North America 607 Medical Arts
Bldg Syracuse N Y M £6

SURGERY
American Journal of Cancer Institute of Cancer Research of Colum
bia University 654 Madison Ave New York M \$9
American Journal of Surgery Paul B Hoeber Inc 76 5th Ave
New York M \$10

Annals of Surgery J B Lippincott Co E Washington Sq Phila
delphia M \$10
Archives of Surgery American Medical Association 535 N Dearborn
St Chicago M \$8
British Journal of Surgery John Wright & Sons Ltd Bristol
Aves Baltimore Q 42s
Journal of Thoracic Surgery C V Mosby Company 3523 Pine
Blvd St Louis B M \$7 50
Southern Surgeon Southern Surgeon Pub Co 478 Peachtree St
Surgery Atlanta Q \$3
Surgery Gynecology and Obstetrics with International Abstract of
Surgical Clinics of North America W B Saunders Co W Washing
ton Sq Philadelphia B M Cloth \$16 paper \$12

TUBERCULOSIS
American Review of Tuberculosis National Tuberculosis Association
450 7th Ave New York M \$8
British Journal of Tuberculosis Bailliere Tindall & Cox 8 Henrietta
St Covent Garden London W C 2 (American agent—G E
Stechert & Co 31 33 E 10th St New York) Q \$2 50

UROLOGY
Journal of Urology Williams & Wilkins Co, Mt Royal and Guilford
Aves Baltimore M \$8
Review of Urologic Surgery in Archives of Surgery (See Surgery)

SUGGESTED BOOKS

The accompanying list is not intended to be complete, but
it contains the suggestions of physicians outstanding in their
respective fields (The complete names and addresses of the
publishers appear at the end of the list of books)

ANATOMY
Arey Leslie B Developmental Anatomy Ed 2 \$6 50 Saunders
1930
Bailey Frederick R Text Book of Histology Ed 8 \$5 50 Wood
1932
Bailey Ed 5 \$7 Wood 1929
Callander C Latimer Surgical Anatomy Textbook of Embryology
Cunningham Daniel J Text Book of Anatomy Ed 6 ed by Arthur
Robinson \$11 Oxford, 1931
Davis Gwilym G Applied Anatomy Ed 8 \$9 Lippincott 1929
Dodd's Gideon S Essentials of Human Embryology \$4 Wiley
1929
Gray Henry Anatomy of the Human Body Ed 22 rev and reed
by Warren H Lewis \$10 Lea 1930
Mossie Grant Surgical Anatomy Ed 2 \$6 Lea 1933
1933 Sir Henry (ed) Human Anatomy Ed 9 \$10 Blakiston
Piersol George A Normal Histology Ed 15 ed by William H F
Addison \$6 Lippincott 1932
Piersol George A (ed) Human Anatomy Ed 9 rev under the
supervision of G Carl Huber \$10 Lippincott 1930
Spalteholz Werner Atlas of Human Anatomy In 3 volumes
Trans by Lewellys F Barker Ed 4 \$18 Lippincott [1924]
Toldt Carl and Rosa A dalla Atlas of Human Anatomy Ed 2
\$8 Macmillan 1928

ANESTHESIA
Braun Heinrich Local Anesthesia Trans and ed by Malcolm L
Harris Ed 2 \$5 Lea 1924
De Takats Geza Local Anesthesia \$4 Saunders 1928
Flagg Paul J Art of Anesthesia Ed 5 \$5 Lippincott 1932
Gwathmey James T Textbook of Anesthesia Ed 2 \$5 Macmi
lan 1924
Hertzler Arthur E Technic of Local Anesthesia Ed 5
Mosby, 1933
Labat Gaston Regional Anaesthesia Ed 2 \$7 50 Saunders
1928

CARDIOLOGY
Cabot Richard C Facts on the Heart \$7 50 Saunders 1926
Lewis Sir Thomas Clinical Disorders of the Heart Beat Ed 7
\$2 50 Chicago Med Bl Co 1933
Lewis Sir Thomas Clinical Electrocardiography Ed 5 \$3
Chicago Med Bl Co 1931
Mackenzie Sir James Diseases of the Heart \$3 50 Macmillan 1933
Treatment in Heart Affections Ed 3 \$3 50 Oxford 1926
Moon Robert O Growth of Our Knowledge of Heart Disease
\$1 40 Longmans 1927
Pardee Harold E B Clinical Aspects of the Electrocardiogram
Ed 3 \$5 50 Hoeber 1933
Parsonnet Aaron E and Hyman A S Applied Electrocardiography
\$2 75 Macmillan 1929
Quain Jones Elements of Anatomy Vol IV Pt 3 The Heart
by Thomas Walmsley Ed 11 \$6 Longmans 1929
Reid William D Heart in Modern Practice Ed 2 \$6 Lippin
cott 1928
Roth Irving R Cardiac Arrhythmias \$7 50 Hoeber 1928
White Paul D Heart Disease \$7 50 Macmillan reissue 1932

DERMATOLOGY AND SYPHILOLOGY
Andrews, George C Diseases of the Skin \$12 Saunders 1930
Burke Edmund T Treatment of Venereal Diseases in General Prac
tice \$1 75 Oxford 1927
Davie Thomas A Primary Syphilis in the Female \$4 Oxford
1931
Harrison Laurence W Diagnosis and Treatment of Venereal Di
cases in General Practice Ed 4 \$8 25 Oxford 1931
Hazen Henry H Diseases of the Skin Ed 3 \$10 Mosby 1927
Hazen Henry H Syphilis Ed 2 \$10 Mosby 1928
Mackee George V Rays and Radium in the Treatment of Dis
eases of the Skin Ed 2 \$10 Lea 1927
Machenna Robert W Diseases of the Skin Ed 3 rev by
R M B Macchenna \$7 Wood 1932
MacLeod John M H Diseases of the Skin 40s Lewis 1933

- Moore Joseph L. Modern Treatment of Syphilis \$5 Thomas, 1933
Ormsby Oliver S. Diseases of the Skin Ed 4 \$11.50 Lea 1934
Pusey William A. Principles and Practice of Dermatology Ed 4 \$10 Appleton 1924
Richl Gustav and Zumbusch L. von Atlas of Diseases of the Skin In 3 volumes \$25 Blakiston, 1925
Schamberg Jay F. and Wright C. S. Treatment of Syphilis \$8 Appleton 1932
Sequeira, James H. Diseases of the Skin Ed 4 \$10 Macmillan 1927
Stokes John H. and others Modern Clinical Syphilology \$12 Saunders 1926 (New edition in preparation)

DIAGNOSIS

- Barton Wilfred M. and Yater W. M. Symptom Diagnosis Regional and General Ed 2 \$10 Appleton Century 1933
Blumer George. Beasde Diagnosis In 3 volumes \$30 Saunders 1928
Cabot Richard C. Physical Diagnosis Ed 10 \$5 Wood 1930
Cemach Alexander I. Surgical Diagnosis in Tabular Outline Trans by Edward L. Bortz \$12 Davis 1928
Elmer Warren P. and Rose W. D. Physical Diagnosis Ed 6 \$10 Mosby 1930
Emerson Charles P. Physical Diagnosis Ed 2 \$7 Lippincott 1929
French Herbert (ed.) Index of Differential Diagnosis of Main Symptoms (Medical and Surgical) Ed 4 \$18 Wood 1928
Gibson Alexander G. and Collier W. T. Methods of Clinical Diagnosis \$5 Longmans 1927
Graham Everts A. (ed.) Surgical Diagnosis In 4 volumes \$35 Saunders 1930
Greene Charles L. Medical Diagnosis In 2 volumes Ed 6 \$16 Blakiston 1926
Hare Hobart A. Use of Symptoms in the Diagnosis of Disease Ed 9 \$5.50 Lea 1928
Norris George W. and Landis H. R. M. Diseases of the Chest and the Principles of Physical Diagnosis Ed 5 \$10 Saunders 1933
Querciam Fritz de. Clinical Surgical Diagnosis Ed 4 \$14 Wood 1926
Stern Neuton S. Clinical Diagnosis Physical and Differential \$3.50 Macmillan, 1933

DIETETICS AND NUTRITION

- American Medical Association. Vitamins \$1 A. M. A. 1932
Christie C. D., Beams A. J., and Geraghty C. M. Dietary Suggestions \$1.50 A. M. A. 1930
Friedenwald Julius and Kuhrah John. Diet in Health and Disease Ed 6 \$8 Saunders 1925
Harrop George A. Diet in Disease \$4 Blakiston 1930
Lusk Graham. Elements of the Science of Nutrition Ed 4 \$7 Saunders 1928
McCollum Elmer V. and Becker J. E. Food Nutrition and Health Ed 3 \$1.50 E. V. McCollum 2301 Monticello Rd. Baltimore 1933
McLester James S. Nutrition and Diet in Health and Disease Ed 2 \$8.50 Saunders 1931
Rose Mary D. Foundations of Nutrition \$3 Macmillan 1933
Sherman Henry C. Chemistry of Food and Nutrition Ed 4 \$3 Macmillan 1932
Sherman Henry C. Food Products Ed 3 \$3 Macmillan 1933

ENDOCRINOLOGY

- Allen Edgar (ed.) Sex and Internal Secretions \$10 Williams and Wilkins 1932
Berkeley William N. Principles and Practice of Endocrine Medicine \$4.50 Lea 1926
Cramer William. Fever Heat Regulation Climate and the Thyroid Adrenal Apparatus \$6 Longmans 1928
Crile George W. and others. Diagnosis and Treatment of Diseases of the Thyroid Gland \$6.50 Saunders 1932
Engelbach William. Endocrine Medicine In 4 volumes \$35 Thomas 1932
Hoskins Roy G. Tides of Life the Endocrine Glands in Bodily Adjustment \$3.50 Norton 1933
Jackson Arnold S. Goiter and Other Diseases of the Thyroid Gland \$10 Hoeber 1926
Mazer Charles, and Goldstein Leopold. Clinical Endocrinology of the Female \$6 Saunders 1932
Rowe Allan Winter. Differential Diagnosis of Endocrine Disorders \$4 Wood 1932

FRACTURES AND DISLOCATIONS

- American Medical Association. Cooperative Committee on Fractures Primer on Fractures Ed 3 \$1 A. M. A. 1933
Bohler Lorenz. Treatment of Fractures Trans by M. E. Steinberg \$6 Chicago Med. Bk. Co. 1929
Orr Hiram W. Osteomyelitis and Compound Fractures and Other Infected Wounds \$5 Mosby 1929
Scudder Charles L. Treatment of Fractures with Notes Upon a Few Common Dislocations Ed 10 \$12 Saunders 1926
Sinclair Maurice. Thomas Splint and Its Modifications in the Treatment of Fractures \$4.50 Oxford 1927
Speed Kellogg. Text Book of Fractures and Dislocations Ed 2 \$11 Lea 1928
Wilson Philip D. and Cochrane W. A. Fractures and Dislocations Ed 2 \$10 Lippincott 1928

HISTORY OF MEDICINE

- Clendening Logan. Behind the Doctor \$5 Knopf 1933
Cushing Harvey W. Life of Sir William Osler In 2 volumes \$12.50 Oxford 1925
Dana Charles L. Peaks of Medical History Ed 2 \$3 Hoeber 1928
Fishbein Morris. Fads and Quackery in Healing \$3.50 Covici 1932
Fishbein Morris. Frontiers of Medicine \$1 Appleton Century 1933
Garrison Fielding H. Introduction to the History of Medicine Ed 4 \$12 Saunders 1929
Haggard Howard W. Devils Drugs and Doctors \$1 Blue Ribbon Books 386 4th Ave. New York 1933
Haggard Howard W. Lame the Halt, and the Blind \$4 Harper 1932

- Haggard Howard W. Mystery Magic and Medicine \$1 Doubleday 1933
Packard Francis R. History of Medicine in the United States In 2 volumes \$12 Hoeber 1931
Sigerist Henry L. Great Doctors A Biographical History of Medicine Trans by Eden and Cedar Paul \$4 Norton 1933
Sigerist Henry L. Man and Medicine Trans by Margaret G. Bol... \$4 Norton 1932
Singer Charles J. Short History of Medicine \$3 Oxford 1928

INFECTIOUS DISEASES HYGIENE AND PREVENTIVE MEDICINE

- Boyd Mark T. Preventive Medicine Ed 4 \$4.50 Saunders 1932
Fish Eugene L. and Crawford J. R. How to Make the Periodic Health Examination \$4 Macmillan 1927
Jordan Edwin O. Epidemic Influenza, A Survey \$5 A. M. A. 1928
Jordan Edwin O. and Falk I. S. (eds.) Newer Knowledge of Bacteriology and Immunology \$10 Univ. Chicago Press 1928
Ker Claude B. Infectious Diseases Ed 3 \$10.50 Oxford 1929
New York Academy of Medicine. Committee on Public Health Relations. Outline of Preventive Medicine Prepared under the auspices of the committee Ed 2 \$5 Hoeber 1937
Park William H. Public Health and Hygiene In contributions by eminent authorities Ed 2 \$9 Lea 1928
Rolleston John D. Acute Infectious Diseases Ed 2 \$5 Phys. & Surg. Bk. Co. 1929
Rosenau Milton J. and others. Preventive Medicine and Hygiene Ed 5 \$10 Appleton 1927
Schamberg Jay F. and Kolmer J. A. Acute Infectious Diseases Ed 2 \$10 Lea 1928
Wells Harry Gideon. Chemical Aspects of Immunity Ed 2 \$4.50 Chem. Catalog Co. 1929
Zinsser Hans. Resistance to Infectious Diseases Ed 4 \$5 Macmillan 1931

MEDICAL JURISPRUDENCE AND TOXICOLOGY

- American Medical Association. Bureau of Legal Medicine and Legislation. Medical Legal Cases Abstracts of Court Decisions 1926 to 1930 Inclusive \$7 A. M. A. 1932
Brothers, Elmer D. Medical Jurisprudence Ed 3 \$3.50 Mosby 1930
Damon Samuel R. Food Infections and Food Intoxications. \$4 Williams and Wilkins 1928
Glaister John and Glaister John. Medical Jurisprudence and Toxicology Ed 5 \$8.50 Wood 1931
Kessler Henry H. Accidental Injuries the Medico-Legal Aspects of Workmen's Compensation and Public Liability \$10 Lea 1931
McKendrick Archibald. Medico-Legal Injuries \$6 Longmans 1927
Scheffel Carl. Medical Jurisprudence \$2.50 Blakiston 1931
Stryker, Lloyd P. Courts and Doctors \$2 Macmillan 1932
Webster Ralph W. Legal Medicine and Toxicology \$8.50 Saunders 1930

MEDICAL DICTIONARIES

- Dorland William A. N. and Miller E. C. Le R. American Illustrated Medical Dictionary Ed 16 \$7 With thumb index \$7.50 Saunders 1932
Gould George M. Medical Dictionary Ed 3 \$7 With thumb index \$7.50 Blakiston 1931
Lang Hugo. German English Dictionary of Terms Used in Medicine and the Allied Sciences Ed 4 \$10 Blakiston 1932
Stedman Thomas L. Practical Medical Dictionary Ed 12 \$4 With thumb index \$7.50 Wood 1933

MEDICINE

- Aaron Charles D. Diseases of the Digestive Organs Ed 4 \$11 Lea 1927
Abel A. Lawrence. Oesophageal Obstruction Its Pathology Diagnosis and Treatment \$9 Oxford 1929
Bassler Anthony. Diseases of the Intestines Ed 3 \$9 Davis 1928
Beaumont George E. and Dodds E. C. Recent Advances in Medicine Ed 7 \$4 Blakiston, 1934
Bethae Oscar W. Clinical Medicine \$7.50 Saunders 1928
Blumer George (supervising ed.) Practitioners Library of Medicine and Surgery In 12 volumes \$10 per volume Appleton 1932-
Boyd William. Pathology of Internal Diseases \$10 Lea 1931
Cecil Russell L. (ed.) Textbook of Medicine By American authors Ed 3 \$9 Saunders 1933
Clendening Logan. Modern Methods of Treatment Ed 4 \$10 Mosby 1931
Coca Arthur F. Hypersensitiveness Anaphylaxis Allergy Three parts in 1 volume \$8.50 Thomas 1931
Conyheare John J. (ed.) Textbook of Medicine By various authors Ed 2 \$7 Wood 1932
Coope Robert. Diagnosis of Pancreatic Disease \$1.50 Oxford 1927
Crohn Burrill B. Affections of the Stomach \$10 Saunders 1927
Eyster John A. E. Clinical Aspects of Venous Pressure \$7.50 Macmillan 1929
Feinberg Samuel M. Allergy in General Practice \$4.50 Lea 1934
Fitzwilliams Duncan C. L. Tongue and Its Diseases \$11 Oxford 1927
Fleming Alexander and Petrie G. F. Recent Advances in Vaccine and Serum Therapy \$4 Blakiston 1934
Graham Everts A. and others. Diseases of the Gall Bladder and Bile Ducts \$8 Lea 1928
Hamilton Alice. Industrial Poisons in the United States \$5 Macmillan 1925
Hogan Edmund. Reconstruction of the Biliary Tract \$4 Macmillan 1932
Joslin Elliott P. Diabetic Manual Ed 5 \$2 Lea, 1934
Joslin Elliott P. Treatment of Diabetes Mellitus Ed 4 \$9 Lea 1928
Kober George M. and Hayhurst E. R. (eds.) Industrial Health \$15 Blakiston 1924
Lawrence Robert D. Diabetic Life, Its Control by Diet and Insulin Ed 7 8s 6d Churchill 1933
McCord Carey P. and Allen F. P. Industrial Hygiene for Engineers and Managers \$5 Harper 1931
Musser John H. (ed.) Internal Medicine \$10 Lea 1937

Nelson New Loose Leaf Medicine Editor in Chief W W Herrick
In 8 volumes, incl index \$129.50 Nelson 1920 1932
Norris George W Buxett, H C and Macmillan F M Blood
Pressure Its Clinical Applications Ed 4 \$4.50 Lea 1927
Oder Sir William Principles and Practice of Medicine Ed 11
rev by Thomas McCrae \$8.50 Appleton 1930
Oder Sir William (ed.) Modern Medicine Its Theory and Prac-
tice In original contributions by American and foreign authors
In 6 volumes Ed 3 rev and red by Thomas McCrae \$9 per
vol Lea 1925
Oxford Monographs on Diagnosis and Treatment Ed by Henry A
Christian In 10 volumes \$100 Oxford 1928 1931
Rickenmann, Francis M Clinical Allergy Particularly Asthma and
Hay Fever \$7.50 Macmillan 1931
Rehberger, George E Lippincott's Quick Reference Book for
Medicine and Surgery Ed 8 \$15 Lippincott 1932
Rehfsus Martin E Diagnosis and Treatment of Diseases of the
Stomach \$12 Saunders 1927
Rolleston Sir Humphry Davy and McNece J W Diseases of the
Liver Gall Bladder and Bile Ducts Ed 3 \$16 Macmillan 1929
Rowe Albert H Handbook for the Diabetic \$2.50 Oxford 1928
Stevens Arthur A Practice of Medicine Ed 3 \$4 Saunders
1931
Snehlitz Edward J Arterial Hypertension \$2.50 Hoeber 1930
Tee Frederick Friedenwald Julius and Warren I F (eds) Prac-
tice of Medicine In 10 volumes \$115 Prior 1932
Trumper Max and Cantarow Abraham Biochemistry in Internal
Medicine \$5.50 Saunders 1932
Vaughan Warren T Allergy and Applied Immunology \$4.50
Mosby 1931
Wyrd Stanley Handbook of Diseases of the Stomach \$5 Oxford
1927

MISCELLANEOUS

American Medical Association Principles of Medical Ethics Single
copy 5 cents 12 copies 50 cents prepaid 50 copies or more each
4 cents prepaid A M A
American Medical Association Council on Medical Education and
Hospitals Laws (Abstract) and Board Rulings Regulating the
Practice of Medicine in the United States of America and Abroad
Ed 42 \$1 A M A 1933
American Medical Association Council on Medical Education and
Hospitals and Council on Pharmacy and Chemistry Hospital Prac-
tice for Interns 75 cents A M A 1932
Fishbein, Morris Medical Writing—Its Technique and Practice \$2
A M A (In preparation)
Gepp Rudolph M State Board Questions and Answers Ed 6
\$6 Saunders 1929
National Conference on Nomenclature of Disease Standard Classified
Nomenclature of Disease Ed by H B Logie \$1.50 Common-
wealth Fund Division of Publications 41 E 57th St New York
City 1933
Rypins Harold Medical State Board Examinations \$4.50 Lippin-
cott 1933

NEUROLOGY AND PSYCHIATRY

Association for Research in Nervous and Mental Disease Infections
of the Central Nervous System \$7.50 Williams and Wilkins
1932
Berry Richard J A Brain and Mind \$8 Macmillan 1928
Cushing Harvey W Intracranial Tumors \$5 Thomas 1932
Elsberg Charles A Tumors of the Spinal Cord and the Symptoms
of Irritation and Compression of the Spinal Cord and Nerve Roots
\$10 Hoeber 1925
Freud Sigmund Select Papers on Hysteria and Other Psycho-
neuroses Trans by A A Brill Ed 3 \$3 Nerv and Ment
Dis Pub Co 1920
Hart Bernard Psychology of Insanity Ed 4 \$1 Macmillan
1931
Henderson David K and Gillespie R D Text Book of Psy-
chiatry Ed 3 \$5.50 Oxford 1932
Herrick Charles J Introduction to Neurology Ed 5 \$3 Saun-
ders 1931
Jelliffe Smith E and White W A Diseases of the Nervous
System Ed 5 \$9.50 Lea 1929
Kretschmer Ernst Hysteria Trans by Osvald H Boltz \$2.50
Nerv and Ment Dis Pub Co 1926
Monrad Krohn Georg H Clinical Examination of the Nervous Sys-
tem Ed 6 \$2.50 Hoeber 1933
Parkinson James A Shaking Palsy—An Essay \$1.25 A M A
Ramouy y Cajal Santiago Degeneration and Regeneration of the
Nervous System In 2 volumes Trans and ed by Ramouy
May \$18 Oxford 1928
Russon Stephen W Anatomy of the Nervous System Ed 4 \$6.50
Saunders 1931
Siebs Bernard and Hansman Louis Nervous and Mental Dis-
orders from Birth Through Adolescence \$10 Hoeber 1926
Sharpe William Diagnosis and Treatment of Brain Injuries with
and without a Fracture of the Skull \$8 Lippincott 1920
Stewart Sir James P Intracranial Tumors and Some Errors in
Their Diagnosis \$3.75 Oxford 1927
Strecker Edward A and Ebaugh F G Practical Clinical Psychi-
atry Ed 3 \$4 Blakiston 1931
Thom Douglas A Normal Youth and Its Everyday Problems
\$2.50 Appleton 1932
Villiger Emil Brain and Spinal Cord Ed 4 \$6 Lippincott 1931
Wechsler Israel S Text Book of Clinical Neurology Ed 2 \$7
Saunders 1931
White William A Lectures in Psychiatry \$3 Nerv and Ment
Dis Pub Co 1928
White William A Outlines of Psychiatry Ed 13 \$4 Nerv
and Ment Dis Pub Co 1932
White William A and Jelliffe S L (eds.) Nervous and Mental
Disease In 2 volumes \$15 Lea 1929

OBSTETRICS AND GYNECOLOGY

Anspich Brooke M Gynaecology Ed 4 \$10 Lippincott 1929
Blair Bell William Principles of Gynecology Ed 4 \$10 Wood
1934
Croen Harry S and Croen R J Diseases of Women Ed 7
\$11.50 Mosby 1930
Croen Harry S and Croen R J Operative Gynecology Ed
4 \$15 Mosby 1930
Curtis Arthur H Text Book of Gynecology \$5 Saunders 1930

Curtis Arthur H (ed.) Obstetrics and Gynecology In 3 volumes
\$35 Saunders 1930
Davis, Carl H (ed.) Gynecology and Obstetrics In 3 volumes \$35
Prior 1933
De Lee Joseph B Principles and Practice of Obstetrics Ed 6
\$12 Saunders 1931
Eden Thomas W and Lockyer C H J Gynaecology for Students
and Practitioners Ed 3 \$11 Macmillan 1928
Graves William P Gynecology Ed 4 \$10.50 Saunders 1928
Johnstone Robert W Text Book of Midwifery for Students and
Practitioners Ed 6 \$5 Macmillan 1933
Kelly Howard A and others Gynecology \$12 Appleton 1928
Kerr John M M and others Combined Text Book of Obstetrics
and Gynecology Ed 2 \$11.25 Wood 1933
Miller Charles Jefferson Introduction to Gynecology \$5 Mosby
1931
Polak John O Manual of Gynecology Ed 3 \$5 Lea 1927
Sherris George P Obstetrics Normal and Operative Ed 6 \$8
Lippincott 1929
Thoms Herbert Chapters in American Obstetrics \$2 Thoma
1932
Williams J Whitridge Obstetrics Ed 6 \$10 Appleton 1930
Year Book of Obstetrics and Gynecology Ed by Joseph B De Lee
and J P Greenhill \$2.50 Year Bk Pubs

OPHTHALMOLOGY

Adler Francis H Clinical Physiology of the Eye \$5 Macmillan
1933
Ball James M Modern Ophthalmology In 2 volumes Ed 6 \$24
Davis 1927
Butler Thomas H Illustrated Guide to the Slit Lamp \$9 Oxford
1927
De Schweinitz George L Diseases of the Eye Ed 10 \$10
Saunders 1924
Friedenwald Jonas S Pathology of the Eye \$3.50 Macmillan
1929
Fuchs, Ernst Diseases of the Eye Trans by E V L Brown
Ed 10 \$7 Lippincott 1933
May Charles H Manual of the Diseases of the Eye Ed 13 \$4
Wood 1930
Sheehan Joseph L Plastic Surgery of the Orbit \$12 Macmillan
1927
Thorington James Refraction of the Human Eye and Methods of
Estimating the Refraction Ed 2 \$3 Blakiston 1930

ORTHOPEDIC SURGERY

Campbell Wilks C Textbook of Orthopedic Surgery \$8.50 Saun-
ders 1930
Jones Sir Robert and Lovett R W Orthopedic Surgery Ed 2
\$11 Wood 1929
Mercer Walter Orthopedic Surgery \$10.50 Wood 1933
Stendler, Arthur Textbook of Operative Orthopedics \$7.50
Appleton 1925
Whitman Royal Treatise on Orthopaedic Surgery Ed 9 \$10
Lea 1930

OTORHINOLARYNGOLOGY

Ballenger, William L Diseases of the Nose Throat and Ear Ed
6 \$11 Lea 1930
Barnhill John F Nose Throat and Ear \$7.50 Appleton 1928
Coakley Cornelius G Diseases of the Nose and Throat Ed 7
\$4.50 Lea 1930
Crow Douglas A Ear Nose and Throat in General Practice
\$3.25 Oxford 1927
Gleason Edward B Manual of Diseases of the Nose Throat and
Ear Ed 7 \$4.50 Saunders 1933
Jackson Chevalier Bronchoscopy and Esophagoscopy Ed 2 \$8
Saunders 1927
Jackson Chevalier Cortes G M and Jackson C L (eds.) Nose
Throat and Ear and Their Diseases \$13 Saunders 1929
Kerrison Philip D Diseases of the Ear Ed 4 \$6.50 Lippin-
cott 1930
Kopetsky Samuel J Otologic Surgery Ed 2 \$8 Hoeber 1929
McAuliffe George B Essentials of Otology \$4 Oxford 1927
Phillips Wendell C Diseases of the Ear Nose and Throat Ed 7
\$9 Davis 1928
Politzer Adam Diseases of the Ear Rev by Milton J Ballin
Ed 6 \$10 Lea 1926
Year Book of the Eye Ear Nose and Throat Ed by Edward V L
Brown and others \$2.50 Year Bk Pubs

PATHOLOGY BACTERIOLOGY AND CLINICAL LABORATORY WORK

Boyd William Surgical Pathology Ed 3 \$10 Saunders 1933
Boyd William Text Book of Pathology \$10 Lea 1932
Clifford Randall Sputum Its Examination and Clinical Significance
\$4 Macmillan 1932
Craig Charles F Manual of the Parasitic Protozoa of Man \$7
Lippincott 1926
Ewing James Neoplastic Diseases Ed 3 \$14 Saunders 1928
Jordan Edwin O Text Book of General Bacteriology Ed 10 \$5
Saunders 1931
Kahn Reuben J Kahn Test a Practical Guide \$4 Williams
and Wilkins 1928
Karsner Howard T Human Pathology Ed 3 \$10 Lippincott,
1931
Kolmer John A Practical Text Book of Infection Immunity and
Biologic Therapy Ed 3 \$12 Saunders 1923
Kolmer John A Serum Diagnosis by Complement Fixation with
Special Reference to Syphilis \$7 Lea 1928
Kolmer John A and Boerner F Approved Laboratory Technic
\$7.50 Appleton 1931
Lee Arthur B Microtome Stains Vade Mecum Ed 9 \$7.50 Blais-
ton 1928
Levinson Abraham Cerebrospinal Fluid in Health and Disease Ed 3
\$8 Mosby 1929
Long Esmond R History of Pathology \$5 Williams and
Wilkins 1928
McCallum William G Text Book of Pathology Ed 5 \$10
Saunders 1932
McClung Clarence E (ed.) Handbook of Microscopical Technique for
Workers in Both Animal and Plant Tissues \$8 Hoeber 1929
Myers Victor C Practical Chemical Analysis of Blood Ed 2 \$5
Mo by 1925

- Noguchi Hideyo Laboratory Diagnosis of Syphilis Ed 3 \$7 50 Hoeber 1923
 Park William H and Williams A W Pathogenic Microorganisms Ed 10 \$7 Lea, 1933
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A Diabetic Manual for the Mutual Use of Doctor and Patient By Elliott P Joslin MD Clinical Professor of Medicine Harvard Medical School Fifth edition Cloth Price \$2 Pp 224 with 50 Illustrations Philadelphia Lea & Febiger 1934

This edition of Joslin's diabetic manual for the mutual use of doctor and patient is thoroughly revised and constitutes a valuable form of this standard textbook. It is packed full of useful information, encouragement for the patient with diabetes, and warnings against carelessness. It is a complete answer to the doubts and fears of wavering diabetic patients who grow tired of diet and insulin and are tempted to follow the will o the wisps of quackery to their own speedy destruction. Joslin characterizes the diabetic patient as "his own nurse, doctor's assistant and chemist" but immediately warns that "if he tries to be his own doctor he will come to grief." Of particular interest is the incontrovertible evidence Dr Joslin presents that diabetes has become more and more a disease of old age. The death rate is decreasing among all the age groups except those past 50. Especially hopeful is the outlook for diabetic children, this, of course, is in sharp contrast to the situation before insulin was introduced in 1922. The author is uncompromising in his statements that a properly advised patient can control his diabetes. He designates the following ingredients as essential in the treatment of diabetes: medical supervision, cooperation of the patient, diet, exercise, insulin, brains and character. Even persons who do not have diabetes would make no mistake in reading this book because of the emphasis on prevention of diabetes through weight control, avoidance of marriage among individuals with diabetic family histories, and general supervision of the dietary.

Intercortical Systems of the Human Cerebrum Mapped by Means of New Anatomical Methods By Joshua Rosett Assistant Professor of Neurology Columbia University Cloth Price \$3 Pp 133 with 41 Illustrations New York Columbia University Press 1933

The fibers in the white center of the cerebrum are arranged in parallel rows to form flat bands and sometimes lamellae of paper-like thinness. In many places these lamellae lie one on another and can be dissected away one at a time like the layers of an onion. This is particularly true of the association fibers joining different parts of the cerebral cortex. These lamellae and the arrangement of their constituent fibers have been studied in detail by Rosett. For this investigation he used a new method, charging the brain with carbon dioxide under pressure of about 1,000 pounds and then allowing it to explode, thus rendering conspicuous the planes of cleavage between the lamellae. Since the pictures thus obtained are quite fragmentary and the observations that Rosett has made have not been combined into a comprehensive account of the association pathways of the cerebral hemisphere, the book will be of interest chiefly to those who are concerned with the minutiae of the intercortical fiber systems.

Allen's Commercial Organic Analysis A Treatise on the Properties Modes of Analysis and Proximate Analytical Examination of the Various Organic Chemicals and Products Employed in the Arts Manufactures Medicine Etc With Concise Methods for the Detection and Estimation of Their Impurities Adulterations and Products of Decomposition Volume X Haemoglobin and Its Derivatives Albuminoids or Scleroproteins Structural Proteins Examination of Foodstuffs for Vitamins The Hormones The Identification of Unknown Woods and Charcoals The Pectic Substances Edited by C Alsworth Mitchell MA DSc FIC Consulting Chemist London (General Reference Index by M B Elliott) Fifth edition Cloth Price \$7 50 per volume Pp 317 with Illustrations Philadelphia P Blakiston's Son & Company Inc 1933

This volume, the tenth of this important series, completes the fifth edition. It contains monographs by various writers on hemoglobin and its derivatives, albuminoids, structural proteins, vitamins, hormones, identification of woods and charcoals, and pectic substances. These maintain the standard of the earlier contributions to this work. A general index to the whole ten volumes completes the book. The section on hemoglobin by Gardner and Buckmaster contains much valuable information but does not attain the completeness expected in a reference series of this sort. It is surprising to find that the only devices described for estimating erythrocytes are the antiquated Gower and Thoma-Zeiss hemacytometers, that diameters of blood cells are given in some tables in fractions

of an inch without the equivalent metric dimensions, that blood grouping is stated only according to the classification of Moss (although it is not here attributed to Moss and no mention is made of the widely used Jansky method or of the Landsteiner classification, which is supplanting both), that the Van Slyke method for hemoglobin is not mentioned. The monograph by Jerome Alexander on albuminoids is unusually complete, that on structural proteins by R. H. Marriot includes much valuable material. The succeeding section on vitamins, by Drummond and Coward, contains adequate data for assay, together with an appendix on the international standards, but, as admitted by the authors, it is unfortunately not up to date. The hormones are considered by Culhane and Underhill, their work is useful for reference, but several of the important newer methods and tests are not included. Although, for instance, the Allen-Dorsey method for assay of estrogenic substance is discussed one looks in vain for the Aschheim-Zondek pregnancy test. The methods of making suprarenal-cortical extracts proposed by Swingle and by Hartman are described, but the earlier and more satisfactory method of Rogoff is not given. The volume is completed by valuable sections on woods by J. Cecil Maby and on pectic substances by H. W. Buston.

Pediatric Nursing including the Nursing Care of the Well Infant and Child. By Gladys Sellev, M. A., B. S., R. N., Director Nursing Education, Chicago City Infant Hospital Affiliated with De Paul University. Third edition. Cloth Price \$2.50. Pp. 609 with 53 illustrations. Philadelphia: London: W. B. Saunders Company, 1933.

This edition explains and applies the newer developments in pediatrics and pediatric nursing. The changes in the section on communicable diseases are especially emphasized. There is a new section detailing the organization and special nursing procedures required in the Children's Clinic. Each chapter is now concluded with a series of questions for quiz work. This textbook is designed especially to help the student nurse to understand both well and sick children. Portions are devoted to practical considerations in caring for the normal child from birth on, and then sections to pediatric nursing, i. e., nursing procedures involved in routine ward work, procedures connected with the admission of the child to the hospital, and other procedures. Following these, the medical aspects of children's diseases are presented with detailed directions on the nursing care of every pediatric condition, including orthopedic nursing. Emphasis is placed on mental hygiene and development. A list of books for children of various ages on various subjects is appended. It is logical that a nurse is not qualified to discuss the medical aspects of diseases and infant feeding without the assistance of a physician. Realizing this Miss Sellev has had many of the portions of the book dealing with the description of diseases and infant feeding written by a qualified physician. It is a highly satisfactory book on pediatric nursing.

New Introductory Lectures on Psychoanalysis. By Sigmund Freud, M.D., LL.D. Translated by W. J. H. Sprott. Cloth Price \$3. Pp. 257. New York: W. W. Norton & Company, Inc., 1933.

Freud's first series of introductory lectures appeared in 1916. The present volume is a new work, constituting a series of lectures published in Vienna in 1933. The seven lectures cover a revision of the theory of dreams, dreams and the occult, the anatomy of the mental personality, anxiety and instinctual life, the psychology of women, orientations and a philosophy of life.

The chapter on the psychology of women presents the point of view that woman is a passive element, that her aggressiveness is constantly repressed and that the riddle of femininity will not be solved until there can be understanding of the differentiation of living creatures into two sexes. The author makes much of the point of view that the girl and woman constantly seeks development of those organs and tissues that will give her the position of the male.

Most interesting of all is, of course, the philosophy of life of a man who has devoted all his life to a better understanding of others. The author says: "At a time when great nations are declaring that they expect to find their salvation solely from a steadfast adherence to Christian piety the upheaval in Russia—in spite of all its distressing features—seems to bring a promise of a better future. Unfortunately, neither our own misgivings nor the fanatical belief of the other side give us any hint of how the experiment will turn out. The future will

teach us. Perhaps it will show that the attempt has been made prematurely and that a fundamental alteration of the social order will have little hope of success until new discoveries are made that will increase our control over the forces of nature and so make easier the satisfaction of our needs. It may be that only then will it be possible for a new order of society to emerge which will not only banish the material want of the masses but at the same time meet the cultural requirements of individual men. But even so we shall still have to struggle for an indefinite length of time with the difficulties which the intractable nature of man puts in the way of every kind of social community."

Thomas Young, F.R.S., Philosopher and Physician. By Frank Oldham, M.A., B.Sc., A.Inst.P. Cloth Price \$2.40. 1 p. 1-9 with 16 illustrations. New York: Longmans, Green & Company; London: Edward Arnold & Company, 1933.

An infant prodigy, born in England in 1773 of Quaker parentage, Thomas Young became an interesting contributor to many branches of medical science. He could read at the age of 2 and knew the "Deserted Village" by heart before he was 6. He burned with a thirst for learning and equipped himself to participate in the advancement of many branches of science. After a medical education in London and in Edinburgh he extended his studies in Germany, and there are numerous quotations from his writings depicting the young man's appreciation of life and learning in these places. In order to receive a medical degree he returned to Cambridge and took two years there graduating in 1797. After his graduation he inherited a fortune of £10,000, so that he was able to devote himself to medical practice, but perhaps by the very reason of his fortune he failed to develop a good bedside manner and thereby made little success as a popular physician. His fame in medicine rests on his work as a compiler, historian and publicist. He wrote an introduction to medical literature and an essay on consumptive diseases. He was, however, particularly interested in natural philosophy. His contributions in medicine include studies of sound and light, the establishment of the undulatory theory of light, studies of the mechanisms of the eye and of capillarity, and finally researches in Egyptian hieroglyphics. His translation of the second portion of the Rosetta stone was a notable performance. It is said of him that he was the first to grasp the idea of a phonetic principle in reading Egyptian hieroglyphics.

Children of Preschool Age. Studies in Socio-Economic Status, Social Adjustment and Mental Ability with Illustrative Cases. By Ethel Kewin, Research Psychologist, Behavior Research Fund and Institute for Juvenile Research. Cloth Price \$3.50. Pp. 340 with illustrations. Chicago: University of Chicago Press, 1933.

The exact value of this book is difficult to determine. It is a report of some of the work of the preschool department of the Illinois Institute for Juvenile Research. Only a few conclusions are presented. The mass of the material is taken up with case presentation, which at times is dull lengthy and accompanied by extraneous statements. Probably the most important conclusion that could be found in the book is that the constancy of the Merrill-Palmer scale remains an open question and that possibly the scale will be found more reliable on extensive study than it appears to be from the data in this study. Other conclusions are drawn, such as that there are a group of factors which appear to be related to the child's social adjustment, a conclusion that does not need substantiation by a large mass of research. If the book should be greatly shortened, its value might be increased.

Heredity and the Social Problem Group. By E. J. Liddbetter. Volume 1. Cloth Price \$7.50. Pp. 160 with illustrations. London: Edward Arnold & Company; New York: Longmans, Green & Co., 1933.

This volume includes essentially a series of family charts and pedigrees for families in which mental defect is apparently associated with poverty and the fact that the family becomes a charge on the community. Each of the pedigrees is supplemented by a brief analysis. The charts bring out the striking fact that families in which mental defects appear tend to intermarry. The exhibit is an impressive demonstration of the necessity for some sort of social control in order to prevent undue propagation of the unfit.

Contagious Diseases What They Are and How to Deal with Them By W W Bauer B.S. M.D. Director Bureau of Health and Public Instruction American Medical Association Cloth Price \$2 Pp 218 New York Alfred A Knopf 1934

In this volume Dr W W Bauer director of the Bureau of Health and Public Instruction of the American Medical Association, has assembled a series of articles, on the infectious diseases, many of them printed in *Hygiene*. The essential facts for every family that wants to be well informed are here provided in easily readable form. The material is up to date and intensely practical. Physicians may recommend this book without question to any family interested in the facts regarding the conditions commonly appearing among children. It has long since been recognized that intelligent lay cooperation with the medical profession is desirable for better control of infectious diseases. The purpose of this little book is to improve such cooperation.

A Text Book of Physiology for Medical Students and Physicians By William H Howell Ph.D. M.D. Sc.D. Twelfth edition Cloth Price \$7 Pp 1132 with 308 illustrations Philadelphia & London W B Saunders Company 1933

Because of the advance in our knowledge of the vitamins the hormones and the chemistry of muscle contraction the twelfth edition of this standard textbook of physiology first introduced in 1905 has been revised, reprinted and recopyrighted. The author has brought his book quite up to date and has presented a number of historical introductions to the discussions of some of the topics in order to give the student a proper perspective on the manner in which science advances. This textbook is one of the most widely used by American teachers of physiology.

The Great Doctors A Biographical History of Medicine By Dr Henry E Sigerist Professor of the History of Medicine the Johns Hopkins University Translated by Eden and Cedar Paul Cloth Price \$4 Pp 436 with illustrations New York W W Norton & Company Inc 1933

This volume, translated from the German offers a biographic approach to the history of medicine. It includes biographies of from eight to twenty pages each of epoch makers from the time of Hippocrates to that of William Osler. The literary style of Dr Sigerist his philosophical approach to his subject and his comprehensive grasp of medical affairs make the book of interest not only to the physician but also to the general reader. It is interesting to find in Dr Sigerist's sketch of William Osler his personal appreciation of Osler's humanism and Osler's deprecation of a fixed program for medicine.

A Text Book of Medicine By American Authors Edited by Russell L Cecil A.B. M.D. Sc.D. Professor of Clinical Medicine Cornell University Medical College Associate Editor for Diseases of the Nervous System Foster Kennedy M.D. F.R.S.E. Professor of Neurology Cornell University Medical College Third edition Cloth Price \$9 Pp 1664 with 30 illustrations Philadelphia & London W B Saunders Company 1933

Here is a one volume system of medicine in its third edition, the last one having appeared some three years ago. In that period of time as is pointed out in the preface there have been additions to our knowledge, particularly in the field of infectious diseases and of endocrinology. New articles have been added on many of the rarer infectious diseases, and some of the older articles have been rewritten by new contributors. Because of the numerous changes the publishers have reset the entire work, which incidentally shows the effects of repeated competent revision. The volume is one of the best available to the practitioner who wishes a succinct textbook of the practice of medicine.

Le poison des amanites mortelles Par B Dujarric de la Rivière Paper Price 60 francs Pp 182 with 24 illustrations Paris Masson & Cie 1933

This monograph on the most important group of poisonous mushrooms the deadly Amanitas is clearly written and well illustrated. There is a bibliography of twenty eight pages and also a list of pertinent articles and brief notes appearing in the *Bulletin de la société mycologique de France* from 1885 to 1931. The index is quite inadequate. The monograph discusses the botanic classification of the Amanitas the chemistry and physiologic action of the poison the gross and histologic lesions caused in man and laboratory animals scrotherapy medicolegal

considerations and prophylaxis. The author's own researches are included and the book is a real addition to the literature of mushroom poisoning. It is too bad that French writers and publishers do not pay more attention to the correct transcribing of quotations in English, English and American proper names and the titles of English and American periodicals.

Giants and Dwarfs A Study of the Anterior Lobe of the Hypophysis By Palmer Howard Fletcher Boards Price \$1.25 Pp 80 with 3 illustrations Cambridge Mass Harvard University Press 1933

This is an honors thesis in science of the class of 1932 at Harvard. It constitutes an adequate survey of our knowledge of the relationship of the pituitary gland to disturbances of growth. The book is nicely written and handsomely published.

Health Facts for College Students A Text Book of Individual and Community Health By Maude Lee Etheredge M.D. Dr.P.H. Professor of Hygiene and Medical Advisor for Women University of Illinois With a foreword by Ray Lyman Wilbur M.D. Cloth Price \$2 Pp 342 with 61 illustrations Philadelphia & London W B Saunders Company 1933

This book consists of the material formerly used in mimeographed form for the classes of women students at the University of Illinois. It is essentially a compilation in rather popular form of the well established facts of personal hygiene. The volume is a reliable guide to the minimum of knowledge that every college graduate ought to have on the care of the health and the leading of a hygienic life.

Voluntary Motherhood A Discussion of the Various Contraceptive Methods with Emphasis on Generally Approved Techniques By Antoinette F Konikow M.D. Fourth edition Paper Price 50 cents Pp 36 with 8 illustrations Boston Buchholz Publishing Company 1933

This pamphlet, now in its fourth edition, promotes the use of the intravaginal rubber pessary associated with antiseptic pastes and douches as the ideal method for widespread birth control. There are, however, innumerable physicians who are convinced that this method, strongly supported by the Margaret Sanger group, is unsatisfactory from the esthetic point of view as well as from the medical point of view.

Industrial Health Service By Leverett Dale Bristol M.D. Dr.P.H. Health Director American Telephone and Telegraph Company New York New York Cloth Price \$2 Pp 170 Philadelphia Lea & Febiger 1933

The author is health director of the American Telephone and Telegraph Company. He divides his book into sections depending on the use of the health service from the point of view of the management the supervisor and the worker. It is an exceedingly practical manual but so condensed as to offer little of importance to the experienced worker in this field.

Some Modern Extensions of Beaumont's Studies on Alexis St Martin By W B Cannon M.D. Sc.D. LL.D. George Higginson Professor of Physiology Harvard Medical School Beaumont Foundation Lectures Twelfth Series Reprinted from the Journal of the Michigan State Medical Society March May 1933 Cloth Pp 87 Detroit Lectureship Foundation Committee Wayne County Medical Society 1933

This is a reprint from the *Journal of the Michigan State Medical Society* of a series of lectures given by Dr W B Cannon to commemorate the one-hundredth anniversary of the publication of Beaumont's essay on digestion. These lectures deal with thirst and hunger the important relation of digestion and health, and digestive disturbances produced by pain and emotional excitement.

Lectures on the History of Medicine A Series of Lectures at the Mayo Foundation and the Universities of Minnesota Wisconsin Iowa North western and the Des Moines Academy of Medicine 1926 1932 Cloth Price \$5 Pp 516 with 26 illustrations Philadelphia & London W B Saunders Company 1933

The essays herein contained were given from 1926 to 1932 through a cooperative arrangement between the Mayo Foundation and a number of midwestern universities. The collection embraces contributions by many leading medical historians as well as some by practitioners with whom the history of medicine has been a hobby. All the essays will be appreciated by those interested in medical history. They reveal as is invariably the case an unevenness of literary quality and an unevenness of approach. Some of the essays represent condensations of longer works by the authors on the same subject. Of special

interest are the four contributions by Fielding H Garrison, the essay on the first American medical journals and Dr Willard Bartlett's sketch of the life and time of Virchow, a figure whose contribution to the advancement of medicine is almost always underestimated

Medicolegal

Narcotics Sale of Cigarets by Dealers in Narcotics Prohibited—The city of Reno passed an ordinance prohibiting the sale of cigarettes in any place of business where narcotic or poisonous drugs are kept for sale. A preamble to the ordinance set forth that cigarettes containing narcotic and poisonous drugs were being sold in Reno and that the handling of cigarettes in places where such drugs are dispensed makes readily possible the addition of them to cigarettes and thereby endangers the health, comfort, safety, life and welfare of the inhabitants of the city. Nash, the manager of a drug store, was charged in the justice's court in Reno with a violation of the ordinance. He was arrested and thereupon filed in the Supreme Court of Nevada a petition for a writ of habeas corpus, contending that the ordinance was unconstitutional. That a city ordinance or police regulation, said the Supreme Court, forbids acts theretofore innocent and lawful affords no ground for holding such legislation either void or unreasonable. The foundation for this ordinance was the sale and distribution in Reno of cigarettes containing narcotic and poisonous drugs. Assuming this to be a fact, reasonable legislation to suppress such a publicly notorious evil cannot be overthrown on the ground that it is arbitrary and capricious. The constitution does not limit the exercise of the police power to suppress and prevent the use of cigarettes or any article of trade as agencies to facilitate the sale and use of dangerous and habit-forming drugs.

The court could find no principle in the federal or state constitution violated by the enactment of the ordinance. It therefore ordered the writ of habeas corpus discharged and Nash remanded to the custody of the chief of police of the city of Reno.—*En route Nash (Nev)*, 26 P (2d) 353

Workmen's Compensation Acts Aggravation of Injury by Malpractice of Employer's Physician and Nurses Compensable—A particle of concrete became embedded in an employee's eye in the course of his employment. The employer's physician and nurses treated him in first aid rooms maintained by the employer, but he lost his eye. Instead of claiming compensation under the workmen's compensation act he brought an action at law against his employer. He contended that the loss of his eye was due to malpractice by the physician and nurses who treated him and that there was no causal relation between the industrial accident and the loss of his eye. Therefore, he argued, the injury from which he suffered was an independent injury for which he was entitled to recover damages in an action at law. The supreme court of New Jersey allowed the case to go to the jury on the theory that the injury, due to malpractice, was independent of the original injury, which arose out of and in the course of employment. Judgment was given in favor of the employee. The employer appealed to the Court of Errors and Appeals of New Jersey.

The employee, in the opinion of the Court of Errors and Appeals, could not recover damages from his employer in an action at law, even though the injury complained of did not arise out of and in the course of his employment and did not come within the purview of the workmen's compensation act. An employer is liable at common law, for the malpractice of a physician or nurse employed by him to treat or care for his employee, only if he has not used reasonable care in selecting that physician or nurse. In the present case nothing in the record shows that the defendant-employer was negligent in that respect.

But, in the opinion of the court, the injury complained of did arise out of and in the course of the plaintiff's employment, and therefore the workmen's compensation act furnished the only remedy. If a physician furnished by an employer is guilty of malpractice in treating an industrial injury, under the work-

men's compensation act the employer is liable, for there is a causal relation between the employment, the industrial accident and the injury. In the present case, without the employment there would have been no accident, without the accident there would have been no treatment of the plaintiff's eye by the defendant's physician and nurses, without such treatment the eye would not have been lost.

The court held therefore that the plaintiff employee should have proceeded under the workmen's compensation act and not at law, and entered judgment in favor of the employer.—*Tutino v Ford Motor Co (N J)*, 168 A 749

Society Proceedings

COMING MEETINGS

- American Medical Association Cleveland June 11 15 Dr Olin W. 535 North Dearborn Street Chicago Secretary
- American Academy of Pediatrics Cleveland June 11 12 Dr Clifford G. Grulee 636 Church Street Evanston Ill Secretary
- American Association for the Study of Gout Cleveland June 9 Dr J. R. Yung 670 Cherry Street Terre Haute Ind Secretary
- American Association for the Study of Neoplastic Diseases Baltimore June 21 23 Dr Eugene R. Whitmore 2139 Wyomington Avenue N W Washington D C Secretary
- American Association of Industrial Physicians and Surgeons Cleveland June 11 12 Dr Volney S. Cheney, Armour and Company Union Stock Yards Chicago Secretary
- American Association of Medical Milk Commis. Cleveland June 11 12 Dr Harris Moak 360 Park Place, Brooklyn Secretary
- American Association on Mental Deficiency New York May 26 29 Dr Groves B. Smith Beverly Farms Godfrey Ill Secretary
- American Bronchoscopic Society Cleveland June 11 Dr Louis H. Clerf 110 South 10th Street Philadelphia Acting Secretary
- American Dermatological Association New York June 7 9 Dr William H. Guy 500 Penn Avenue Pittsburgh Secretary
- American Heart Association Cleveland June 12 Dr Irl C. Riggs 50 West 50th Street New York Executive Secretary
- American Laryngological Association Cleveland June 7 9 Dr William V. Mullen 9204 Euclid Avenue Cleveland Secretary
- American Neurological Association Atlantic City June 4 6 Dr Henry Alsop Riley 117 East 72d Street New York Secretary
- American Ophthalmological Society, Lucerne in Quebec Canada July 9 11 Dr J. Milton Griscum 2213 Walnut Street Philadelphia Secretary
- American Orthopedic Association Rochester Minn June 6 9 Dr Ralph K. Ghormley, Mayo Clinic Rochester Minn Secretary
- American Physiotherapy Association Cleveland June 13 16 Mrs. Bess Searls 1430 West 77th Place Chicago Secretary
- American Proctologic Society Cleveland June 11 12 Dr Frank G. Runyon 1361 Perkiomen Avenue Reading Pa Secretary
- American Psychiatric Association New York May 26 June 9 Dr William C. Sandy State Education Building Harrisburg Pa Secretary
- American Society of Clinical Pathologists Cleveland June 8 11 Dr S. Giordano 531 North Main Street, South Bend Ind Secretary
- American Surgical Association Toronto Canada June 4 6 Dr Vernon C. David 59 East Madison Street Chicago Secretary
- American Therapeutic Society Cleveland June 8 9 Dr Oscar B. Hunter 1833 Eye Street N W Washington D C Secretary
- Arizona State Medical Association Prescott June 7 9 Dr D. F. Harbridge 822 Professional Building Phoenix Secretary
- Association for the Study of Allergy Cleveland June 11 12 Dr Warren T. Vaughan 808 Professional Building Richmond Va Secretary
- Association for the Study of Internal Secretions Cleveland June 11 13 Dr F. M. Pottenger Pottenger Sanatorium Monrovia Calif Secretary
- Conference of State and Provincial Health Authorities of North America Washington D C June 5 6 Mr A. J. Cheslev Minnesota State Office Building St Paul Secretary
- Maine Medical Association Bangor May 28 29 Miss Rebekah Gardner 23 Arsenal Street Portland, Secretary
- Massachusetts Medical Society Worcester June 4 6 Dr Walter L. Burrage 182 Walnut Street Brookline Secretary
- Medical Women's National Association Cleveland June 10 12 Dr Elizabeth Kittredge 3906 McKinley Street Washington D C, Secretary
- Minnesota State Medical Association Duluth July 16 18 Dr E. A. Meyerding 11 West Summit Avenue St Paul Secretary
- Montana Medical Association of Helena July 11 12 Dr E. G. Balsam Box 88 Billings Secretary
- New Jersey Medical Society of Atlantic City June 5 8 Dr J. B. Morrison 66 Milford Avenue Newark Secretary
- New Mexico Medical Society Las Vegas July 19 21 Dr L. B. Coburn 219 West Central Avenue Albuquerque Secretary
- North Dakota State Medical Association Fargo May 28 29 Dr Albert W. Skelsey 2034 Broadway Fargo Secretary
- North Pacific Pediatric Society Vancouver B C June 18 Dr R. H. Somers 1305 Fourth Avenue Seattle Secretary
- Pacific Coast Oto Ophthalmological Society Butte Mont July 16 18 Dr F. C. Cordes Fitzhugh Building San Francisco Secretary
- Pacific Northwest Medical Association Salt Lake City June 21 23 Dr C. W. Countryman 407 Riverside Avenue Spokane Wash Secretary
- Rhode Island Medical Society Providence June 7 Dr J. W. Leach 167 Angell Street Providence Secretary
- Utah State Medical Association Salt Lake City June 21 23 Dr Lehard K. Cowan 305 Medical Arts Building Salt Lake City Secretary
- Wyoming State Medical Society Casper July 16 17 Dr Earl Whedden 80 North Main Street Sheridan Secretary

SOCIETY FOR THE PREVENTION OF
ASPHYXIAL DEATH*Second Annual Conference held in New York Feb 19 20 1934*

The President, PALUEL J FLAGG, M D, New York, in the Chair

How Antiquity and Medieval Europe Looked upon
the Problems of Asphyxiation

DR JAMES J WALSH, New York. Hippocrates suggested that in inflammatory croup with difficulty of respiration a cannula should be carried into the throat so that the air could be drawn into the lungs past the obstruction. The use of the cannula or tube for the relief of asphyxiation is next heard of among a group of French surgeons during the first quarter of the nineteenth century. Early in the century Desault succeeded in placing a tube in the larynx apparently, restoring respiration and lengthening patients' lives. About 1820 Patisier, another French surgeon, suggested that some such mechanical procedure should be employed for edema of the glottis.

In spite of this interest in the procedure for intubation the practice died out, and it seemed to be a closed chapter in medicine and surgery. Here in New York, Dr Joseph O'Dwyer as attending physician to the Foundling Asylum had to witness a number of deaths from asphyxiation. He resolved to relieve these cases by mechanical means. It required a great deal of experiment to determine what sort of tube could be inserted without much difficulty and would be retained, but O'Dwyer gradually worked it out and proceeded to save a great many lives among the children and nurses at the Foundling Asylum.

O'Dwyer then read a paper before the New York Academy of Medicine in which he described his success with intubation. The pediatricians told him that intubation had been tried by the Greeks and given up and then had been studied by the French, who found it of no value. O'Dwyer took these specialists to the Foundling Asylum to show them what he was doing there. No doubt of his success was left in their minds.

Dr Trousseau, the distinguished French clinician about the middle of the nineteenth century reintroduced tracheotomy and in many cases of blocking of the rima glottidis this procedure afforded relief, but in diphtheria very few recovered. O'Dwyer said that he had been aroused to experimentation in this direction by the complete failure of tracheotomy for some ten years at the New York Foundling Asylum. As regards the early operations for tracheotomy, Colonel Garrison whom I consulted, suggests that there is the probability that prehistoric man may have slit open the gullet of a person suffocating from croup or diphtheria. The first successful case of tracheotomy in modern times, is the operation performed during the course of diphtheria by Bretonneau on Elizabeth de Puysegur, July 1, 1825. After five failures he succeeded in opening the trachea and affording relief. Trousseau was the first Parisian clinician to perform tracheotomy for diphtheria and his operation was done on Gustave de Marcelet, Nov 23, 1831.

Dr Joseph O'Dwyer—Pioneer in the Prevention of
Asphyxial Death

DR HENRY HALL FORBES, New York. Joseph O'Dwyer, the inventor of the O'Dwyer intubation tube and later of an instrument for artificial respiration, was my teacher. I served under him as an intern at the New York Foundling Hospital in 1892-1893, while he was perfecting his intubation tubes for the relief of children suffocating from laryngeal diphtheria. Dr O'Dwyer had in mind also the invention of an instrument to use in cases of asphyxia from other causes. The instrument was inserted into the larynx and held there. The rubber tube went to a foot pump on the floor. With the thumb covering the opening, and with gentle pressure the respiratory rate was maintained at the rate of from 18 to 20 movements to the minute.

Dr O'Dwyer had quite a general practice in addition to his specialty in children. He was a native American and his early training was in the office of a physician. In 1866 he was graduated from the College of Physicians and Surgeons. After graduation he served on the staff of the Charity Hospital. He passed through two epidemics of cholera, which he contracted

twice. In 1872 he was appointed to the staff of the New York Foundling Hospital. In those days a diphtheria epidemic there would have a mortality rate of from 40 to 50 per cent. I used to go over to the contagious building at the Foundling Hospital and see children grasping the sides of the crib, breathing that way, blue and suffering. After a tube had been inserted they would lie down and go to sleep. How many lives were saved is uncertain. In 1887 Dr O'Dwyer appeared in the autopsy room with a new tube adopted to fit the larynx and not easily coughed out. A search through the records of the New York Foundling Hospital reveals that Dr O'Dwyer first applied his "spring tube" in relieving severe dyspnea of a child suffering from diphtheria, Oct 24 1882. April 23, 1884, he first applied the "oval tube" in a baby of 3 months suffering from dyspnea caused by diphtheritic laryngitis. Dr O'Dwyer's first public presentation of his method appeared in the *New York Medical Journal* in 1885 under the title "Intubation of the Larynx." In 1892 before the American Pediatric Society he gave a talk on an improved method for performing artificial respiration. He refused to take much of the credit and described his apparatus as a modification of the method devised by Dr George E. Fell of Buffalo. In 1894 he was invited to talk before the British Medical Society. He urged Dr Northrup to make the trip and in three days Dr Northrup was on the high seas. The paper presented at that gathering was published in the *British Medical Journal* for that year.

For years Dr O'Dwyer was lecturing on intubation and allied problems at the Bellevue Hospital Medical College and at the Post-Graduate Hospital, yet he found time to take the presidency of the American Pediatric Society. He died, Jan 7 1898, of a brain condition at his home in New York, aged 57.

Differential Pressures in Resuscitation
and Thoracic Surgery

DR POL N CORYLLOS, New York. Anoxemia and acapnia are the two causes of asphyxial death. The importance of carbon dioxide should not be underestimated. No rational treatment of anoxemia can be carried on without an exact knowledge of the significance of carbon dioxide in respiration. In the diagnosis of asphyxia the presence of cyanosis is not compulsory. On the contrary, the most dangerous forms of anoxemia are accompanied by excessive elimination of carbon dioxide and consequently by absence of cyanosis. In these cases death occurs without any conspicuous symptoms. In thoracic surgery, the anesthetist is one of the most important members of the surgical group. The treatment of respiratory disturbances must be carried out by specially trained men. It is hoped that this work will be carried on in the future by the anesthetist, who, more than any one else is prepared for this task.

(The author showed a film representing the experimental production of atelectasis and measurement of gas changes behind the obstructed bronchus in the alveoli in an experiment carried on in the Cornell Medical College Surgical Research Laboratory in connection with Dr Birnbaum.)

The Problem of Electric Shock

DR HORATIO B WILLIAMS, New York. The first large industrial application of electricity was in the lighting of cities with carbon arc lamps, which took about 45 volts apiece. About 1880, I think, Edison introduced the carbon filament incandescent lamp, which was originally operated on 110 volts direct current. Later came the introduction of extended power circuits. It is impossible to transmit 110 volts direct current economically over any great distance. But alternating current can be transmitted at high tension. With the coming of the alternating current and high tension up to maybe 100,000 volts, when people got across those high voltages not only was the skin burned but sometimes the body was practically incinerated. The bones may be melted. It isn't an asphyxial death when the current kills by heating effects. If there is a good contact from the head to the feet enough heat may be generated in the head to throw the eyes out of the sockets.

There is another type of death by electricity. In the last fifteen years there have been reports about people who seem to die from touching low voltage alternating current circuits. At first nobody believed it. The whole thing is simple. For a 110 volt circuit to kill it is necessary that the skin be suffi-

ciently moist, that the contact be sufficiently large, and that the current pass through the chest in sufficient quantity to throw the ventricles into fibrillation. Not every case of ventricular fibrillation continues to death, but the usual outcome is death. In case of electric shock, artificial respiration will often maintain a sufficient circulation to keep the cellular elements of the central nervous system alive.

Alternating current, which is much more dangerous than direct current, is almost universal now. Numerous deaths from low voltage electric shock have occurred when people are in the act of taking baths. A typical accident happened on a day when there was a thunderstorm. It got dark. When a man got ready to dry himself after bathing, he reached to pull the chain. The wire in contact with the outside of the fixture was the wire that didn't connect to the ground, the other wire being connected with the ground. Standing in the bathtub, he made a connection with his wet hands from the outside of the fixture down to his body and got enough shock to the heart to start fibrillation. Artificial respiration is the treatment. It should be long continued. One never can tell how late it may be possible to resuscitate the patient. Another way to get hurt is in a laundry. Electric washing machines ought to be safe. They are when they come from the manufacturer. In the laundry the floor may be wet. The operator gets his hands in the water and gets them good and wet. The contact is on the live side and the damage is done.

All this suggests that designers should have their attention drawn to the necessity of taking particular care of appliances that are used in kitchens, laundries, laboratories, bathrooms, chemical factories, damp cellars, places where people sweat and where the body gets wet, and that the public should know there may be danger. In domestic establishments if grounding of either side of the circuit could be avoided one couldn't get a shock unless one came in contact with two wires. There are many ways to get in contact with one wire in the ground. The number of people killed in New York City by motor accidents vastly exceeds the number of people killed by shock on low voltage circuits all over the world. That is no reason why this matter should be neglected. It is a great deal easier to prevent these deaths than it is to prevent the motor deaths.

DISCUSSION

DR C. H. WATSON, New York. In the Bell System about 80,000 men are trained in first aid. The work has been carried on for about twelve years on this scale. I believe that, in the individual who has been in contact with electric energy and is apparently dead, the heart phenomena constitute the most important thing that is taking place. The heart has gone into a period known as ventricular fibrillation. For that reason, various ways of artificially pumping blood have been provided. I believe that the Schafer method provides the easier administration of the mechanical pressures necessary to force blood through an individual's body, while the fibrillating heart is just churning and not sending it out into the peripheral circulation. In the last year in the Bell System 8,000 men have been working on all kinds of wiring articles. There have been six instances of electric shock, and only one of them resulted fatally. Until some other device is more easily handled and more cheaply obtained, the Schafer method of artificial respiration should continue to be taught.

DR HORATIO B. WILLIAMS, New York. There is a treatment for ventricular fibrillation but at present it is not applicable to cases in the field. It consists in countershock applied to the heart. In the laboratory it will succeed in a good many cases. If the equipment was available and the personnel of the plant could be trained properly they might be able to make a resuscitation with it. On the other hand one has to know for sure that one is dealing with the fibrillation before one applies countershock, which in itself is not the safest thing in the world. I may say by way of encouragement that in experimenting on animals I find there is a tendency for the fibrillation to stop in the smaller animals after a sufficient length of time, if the heart and other structures are kept alive. It may happen in an accidental case even though it is a rather rare occurrence. But it always pays to keep up artificial respiration until the last minute. I particularly like the Schäfer method because of the fact that in doing it one massages the heart and helps to keep the circulation going.

The Problem of Submersion

DR CHARLES NORRIS, New York. Drowning is an asphyxial death. It is only essential that sufficient water be present to cover the nostrils and mouth. Sidney Smith states that a person falling into the water sinks immediately after the fall and with the force of gravity breathing stops immediately. Deaths occur from shock or injury or heart failure due to heart lesions or inhibitions. Usually the person rises to the surface, owing to the natural buoyancy of the body and tries to save himself. Violent attempts are made at reaching the surface, and if the head is under water a certain amount of water is inhaled and thus the dyspnea is increased. A person strikes cold water and swallows a certain amount of water, and some of this water reaches the laryngeal mucous membrane. This is really the first stage of drowning. It is known by the name of "respiration de surprise." Inhibition of respiration ensues. In other words, a person may die in water and if respiration does not start again he will not inhale water. Although he dies from asphyxia his body will not present the picture of a typical drowning case. When a person drowns in salt water and inhales a considerable amount of salt water, the blood of the left side of the heart on account of the absorption through the air vesicles, will be increased as to its salt content, for the reason that salt water contains more sodium chloride than does the blood.

Drowning in fresh water is the opposite. There will be less sodium chloride in the left side of the heart than in the right. The chemist who is not informed by the pathologist will report that the death is not due to drowning because there is no essential difference in chloride content of the left and right sides of the heart. This is, of course, a grievous error. There are also a number of instances in literature in fairly well proved cases in which perforated ear drums have caused syncope and the people naturally drowned, being in the water. The postmortem signs in the recently drowned are pronounced and they offer no difficulty in determination. The convulsive movements that occur in the stage of terminal asphyxia in which the automatic respiratory efforts cause water to be drawn into the bronchi and cause air to be drawn into the air vesicles constitute the stage that produces the characteristic ballooning in the lungs. The extent of ballooning of the lungs depends on the duration of the terminal stage and the extent of postmortem signs, which will vary with the struggle.

As in almost all asphyxial deaths the heart does not stop beating immediately, especially the right auricle which may continue to beat after respiration has ceased. This is known as the "ultimum moriens Halleri." The beating of the heart is favorable to attempts at resuscitation, and if this is not delayed too long will be successful. If delayed serious changes in nerve matter around respiratory vesicles will have occurred. One cannot determine on external inspection alone that a body has died from drowning. The characteristic foam at the nose is not typical of drowning, as it is present in all cases of pulmonary edema.

In 1932 the number of submersions in New York City was 377. An important sign of drowning is the presence of water in the stomach. It is characteristic of drowning, but it may be concealed when a person has been drinking before the accident or if the deceased has had a very large meal. In many cases the water extends into the duodenum. I have usually found an absence of fluid in the duodenum or small intestine. I do not know the reason for this. A dead person thrown into the river will not show signs of drowning. Deaths in water from natural causes are at times difficult of determination. When the death is due to laryngeal inhibition similar to the sudden deaths due to the choking of the larynx with a piece of meat or other foreign obstacle the determination may be of great difficulty and may be really undetermined unless the surrounding circumstances are ascertainable, through witnesses to give a clue.

DISCUSSION

DR HOWARD W. NEAL, New York. Two recent cases of drowning emphasize the importance of laboratory technique. Some children were playing in an excavation that had been made for a cellar many miles from the ocean. When the blood from both sides of the child's heart, who had broken through the ice and drowned was sent to the laboratory it was found that the left side contained 548.8 mg of sodium chloride per hundred

cubic centimeters and the right side of the heart 509.6, making a difference of 38.9. It was thought that the child had drowned in fresh water, but further investigation revealed that a grocer had emptied a barrel of salt brine a block away from the cellar on the side of a hull and perhaps the salt had been washed down by rains in the water.

MR ROBERT P. MACFADDEN, New York. The Volunteer Life Saving Corps received a charter in the state of New York in 1890. The purpose of this corps was to establish life-saving stations along the waterfronts of Greater New York, patrol the waterfront and protect the lives of people who happened to get into the water. The corps has sixty-two stations in Greater New York. There are 10,000 members of the corps of which about 5,000 are active at present. During 1932 there were 500 rescues involving the use of resuscitation. Assistance was rendered in 800 cases not necessitating resuscitation. There were about 8,000 first-aid cases. There are no paid members of the corps at present, the work being regarded as a hobby. During 1932 the volunteers gave to New York City 35,000 days' work which is quite a saving to the city. A good many other departments in the city sometimes take the credit or receive the credit for the work.

DR P. N. CORALLOS, New York. There are three periods in drowning. The first is the period of apnea during which the blood pressure goes up. The animal defends itself and tries not to breathe. The second is the period of irregular respiration, deep respiratory movement and the water going into the stomach and the lungs. The first and second periods last one minute each. During that time the blood pressure drops a little. In the third period there is apnea and at the same time a drop in blood pressure. An animal can always be resuscitated if respiration is started before a very marked drop of the blood pressure. But if the blood pressure has gone down to 20 mm it is absolutely impossible to save the animal. These three stages correspond to clinical facts: (1) when the man breathes and his heart beats; (2) when the man does not breathe and his heart beats; (3) when the man does not breathe and his heart does not beat. To make sure at once whether the heart beats or not a needle is put into the heart to make an injection of epinephrine. Another point is to insufflate oxygen. That is why I said in my paper that although the Schafer technique is very good there is something better in advanced cases. Two things are done. Water is displaced so that oxygen can come in contact with the alveoli. The partial pressure of oxygen is increased, so that even if water cannot be displaced the chance is afforded the patient of finding a slight amount of oxygen available. Besides the intracardiac injection of epinephrine, massage through the chest must be done in order to keep on as much as possible the coronary circulation of the heart.

DR ALEXANDER O. GETTLER, New York. The increased chloride content of the left side of the heart simply means that the person was afloat when he reached the water. In about 500 cases that we have had in the medical examiners' office, the chloride test failed to work in only two as far as I remember. In fresh water of course the left heart blood has a lower chloride content because it is diluted by the fresh water. But the big point here is that when we get fresh water cases we always try to tell the person who is to do the autopsy to have the police or the detectives get a sample of the water in which the person was drowned.

The Problem of Carbon Monoxide Poisoning

DR HARRISON S. MARTLAND, Newark, N. J. There are from 900 to 1,000 deaths a year in New York City in the five boroughs from carbon monoxide asphyxiation. In 1928 there were 567 accidental illuminating gas asphyxiations and in 1932 there were 262. Those are cases amenable to resuscitation by artificial respiration. Suicides have been increasing. From 1928 to 1932 inclusive there were 5,000 deaths or about 1,000 a year from carbon monoxide. Coal gas doesn't amount to much. 74. The deaths from all causes during this five-year period were nearly 400,000, deaths from carbon monoxide forming 1 per cent of the total number and forming in 31,000 violent deaths 17 per cent of the violent deaths. The situation is similar in every large city of the country. More than half of these deaths are accidental. I believe that New York in the quick resuscitation methods due to propaganda to publicity and to this Society is

ahead of most cities in resuscitation. During the last five years in New York since the introduction of the inhalation treatment and the elimination of bad plumbing fixtures and the like there has been a reduction in the number of accidental illuminating gas cases. In carbon monoxide asphyxiation the blood must be 20 per cent saturated to cause symptoms. In cases in which resuscitation has been accomplished so that respiration is restored the carbon monoxide has been eliminated but the victims remain unconscious and die in coma from one to three days or gradually recover. Often in these cases futile attempts are made by giving blood transfusions or methylene blue, which do not do any good. The latter is not an antidote for carbon monoxide. The correct diagnosis at autopsy in such a case rests, especially if the case is seen about the second or third day after asphyxiation, on finding bilateral degeneration in the globus pallidus of the lenticular nuclei.

The treatment of carbon monoxide poisoning is what Henderson has already outlined. First, artificial respiration immediately by the prone pressure method or any other form of producing breathing, or of restoring breathing if respiration has stopped. Second, the inhalator treatment with a mixture of oxygen, by rescue squads, keeping the patient warm, and preventing muscular exercise. No transfusions of blood should be given. Neither hypodermic, nor intravenous injections seem to have the slightest influence and may do harm.

DISCUSSION

DR ALEXANDER O. GETTLER, New York. Qualitative tests for carbon monoxide are very good such as diluting the blood and noticing the pink color, and adding a little alkali and noting that the pink color remains, whereas normal blood changes to a brown or a greenish brown. The spectroscope affords another test through identification of the carbon monoxide bands. Some people think that the spectroscopic method is highly sensitive, but it is not. Carbon monoxide if mixed with good blood cannot be detected if the carbon monoxide is less than 8 per cent. I was interested lately in the normal carbon monoxide content of individuals. I tried to get people who had no carbon monoxide in their blood. That is hard to do nowadays because of the smoking of tobacco, because of automobile exhausts, and because of gases produced in industry and in the home. The atmosphere always has some carbon monoxide present. In New York blood from laboratory workers, hospital patients, clerks, salesmen and stenographers has shown an average of about 1 per cent. In street cleaners the average was about 3 per cent.

MR L. T. WHITE, New York. The company with which I am connected is the operating agent for a large oil company. It is our function to sell gasoline. The public does not appreciate the extent to which an automobile will make exhaust gases and carbon monoxide. We developed an instrument which told the combustion efficiency of a gasoline engine. In the past two years we have analyzed the efficiency of more than 250,000 engines. We were interested to note the figures on the pronounced causes of carbon monoxide death. While the automobile is killing 30,000 people a year, it is nonfatally injuring a million. We find that virtually 85 per cent of all automobile accidents are unexplainable. What is it that makes a good driver do a foolish thing such as driving his car off the highway into a pole or into another car? The insurance people were tremendously interested in this. They are losing \$14,000,000 a year on automobile insurance. It now costs more to insure an automobile for all forms of risk than it does to provide it with gasoline or oil. We are all interested in this, not only from the angle of preventing asphyxial death but also from the angle of preventing accidents and prolonging the automobile and its useful existence. In fifteen cities last summer we were amazed to find that practically every motorist interviewed noticed something which we inferred was a trace of carbon monoxide poisoning. We went out on the highways of Connecticut and flagged forty-three automobiles. We put into the automobiles a continuous carbon monoxide recorder capable of reading one part of carbon monoxide in 10,000 parts of air. We found measurable traces in 50 per cent of those cars. We found absolutely dangerous concentration in 7 per cent of the cars. We found that the concentrations were heavy when the car had some particular defect such as a broken gasket between manifold and exhaust

pipe, an open seam in the muffler, the muffler pipe terminating ahead of the rear wheels, and leaky spaces around the pit. The manufacturer should build his automobile to prevent these dangerous conditions. The public should be told what the symptoms of carbon monoxide are. The service companies should educate the public to the need of keeping motors in efficient condition.

Asphyxiation—A Basic Problem in Medical Education

DR WENDELL C. PHILLIPS, New York. It has been common knowledge in medical circles that many lives are lost each year by drowning, by carbon monoxide poisoning, by asphyxia of the new-born, by electric shock, by accidents of anesthesia and by drug poisoning. The conviction, however, that these fatalities are practically all due to asphyxiation is by no means so generally understood. While the total deaths due to these causes were deduced from available records, the conservatism of these deductions, suggesting an annual total of 50,000 deaths in the United States, contained so much truth that asphyxia as a major medical problem is everywhere finding acceptance.

In presenting this problem to the medical student at school, one must view it first as a basic problem of medical education the solution of which will probably require from ten to fifteen years. Secondly, it is to be viewed as an emergency problem. A continuous loss of 1,000 lives each week in the United States cannot be regarded with equanimity.

As a basic problem in medical education asphyxiation may be dealt with in the curriculum of the medical school, first by a policy of segregation in which emphasis is placed on all matter in the departments of anatomy, physiology, therapeutics, thoracic surgery, pathology, electrodynamics and any other department which may have a bearing on asphyxiation, and, secondly, by pursuing a policy of integration in which a new department is organized for the specific study of all matter dealing with asphyxiation.

The foregoing is merely suggestive. The head of each department must be personally approached and his interests aroused before he can be expected to emphasize this matter. The chief resistance to the second approach to this problem by a process of integration is the objection that already there are too many departments. The treatment of asphyxiation in the many fields in which it occurs presents one common factor, and this is that gases are used as the major therapeutic measure. This view, suggested by Yandell Henderson in 1928 provides a common ground and deals with the closely related activities known as resuscitation, anesthesia and oxygen therapy. It would appear that the personnel must be trained and equipment provided from the vantage point of a new department organized for the purpose of meeting an actual need in the medical field. When an asphyxial accident occurs in the ward, a trained physician capable of applying modern methods of resuscitation should always be available. Trained personnel for this work is daily functioning in the department of anesthesia since the anesthetist is familiar with the care of the unconscious patient and has a substantial groundwork on which refinement of technique may easily be added. Such a functioning department would immediately lend protection to the now uncovered fields of resuscitation and oxygen therapy. The importance and the dignity of this office would promptly be recognized and authority that is now lacking would be conferred. The director of such a department would be interested to assemble facts relative to the scientific and technical treatment of resuscitation and the problems of internal medicine as they are now faced in oxygen therapy.

A policy of integration designed to reduce the present mortality from asphyxiation as applied to the curriculum of the medical school appears to offer the greatest hope of relief.

DISCUSSION

C. R. REYNOLDS, Colonel, M. C., U. S. Army. While the medical department of the army is spread out in stations in the United States, Alaska, the Philippine Islands and Puerto Rico, it is at the headquarters represented by the Surgeon General's Office and the Army Medical School that most can be done. It is there that the principles of training are formulated and passed out in the service. From the standpoint of therapy, medical officers go along with the medical profession. They come to the army as doctors. The training they get at the Army Medical School is in the nature of a postgraduate course.

I believe it is just there that greater emphasis can be given in the matter of anesthesia and oxygen therapy. I believe right there is where the greatest effect can be made in putting over the principles of this society in the military service. We in the medical corps are constantly training R. O. T. C. students at the medical schools. We get them in camp for about six weeks during their college course. There they are given training in first aid and principles that have been discussed here. We also train many thousands of the C. M. T. C., boys between the ages of 17 and 21. There again is a great opportunity of putting over a training program. We come in contact also with a large number of reserve officers. There are something like 17,000 men of the civil profession who come to the army from year to year to receive special training. It is among those that we try to emphasize the matter of first aid and the care of the injured. We come in contact with the national guard. It is in that field I think that the army medical corps can do its greatest work in emphasizing the matter of resuscitation. I believe a real step can be made by emphasizing the importance of the subject to the surgeon general and to the officials of the Army Medical School.

DR L. F. ANDERSON, Buffalo. In the hospital with which I am connected we have adopted a plan that no one but a legally qualified physician shall administer anesthetics. Each intern is put under the instruction of one of our anesthetists on the staff. Each year we are turning out interns capable of giving gas anesthesia and doing a certain amount of work in oxygen and in carbon dioxide therapy. It is regrettable to my mind that in the great teaching centers in some cities the instruction of physicians in anesthesia, in oxygen therapy, is left to the nurses. The time is at hand when it should be a legal measure that only qualified physicians should be allowed to administer anesthetics or do gas therapy.

The Sound Picture as a Medium of Instruction

F. L. DUFFREUX, New York. An educational talking picture must be the result of the preparation of scenarios that have stood the test of group discussion. It must grow out of production techniques that take advantage of the latest scientific developments and must be the result of tests and measurements that serve as guides to the best use of attention-directing and interest-arousing devices. Fortunately, for the past five or six years a serious development of standards for educational picture has resulted. Research procedures have been well established and methods of production are available today, so that a picture can be made with a reasonable certainty that it will accomplish the objective desired. As proof of that three experiments were conducted—one by Dr. Arnsperger of Teachers College, Columbia University and one by Dr. Rulon of the Graduate School of Harvard University, and one by Dr. Stoddard, superintendent of schools of Providence.

The Arnsperger experiment involved children in six, four schools, 3,600 children all told, with a controlled experimental group, one with the talking picture and one without the talking picture. Columbia University has published a book showing that the children with the picture gained 25 per cent more in the Arnsperger experiment than the children without the picture and that on a recall, a retention test of six months later, the children who had seen the picture retained two thirds more than the children who did not.

The experiment of Rulon at Harvard is a confirmatory experiment.

Dr. Stoddard at Providence took 200 junior high school students in an auditorium with a teacher and the talking picture. He had 200 children in an auditorium with a teacher and no talking picture. The result of the experiment was that the children in the auditorium with the picture gained probably 12 or 14 per cent more than even the best conducted class of thirty-five that was in the school.

There is no picture relating to asphyxia, but at Dr. Flag's suggestion I have put together four typical pictures, not one of which relates specifically to this field. One of the pictures shows how it is possible to deal with abstract problems in connection with asphyxiation such as the diffusion of gases taking place in the airway, the matter of partial pressures on which the percentage of oxygen depends, and the matter of vapor tension and the well known fact of atmospheric pressure. Also,

the effects of cold and heat on the behavior of gases and the effects of pressure. The prevention of asphyxial death, is a subject that demands the use of a medium that will dramatize the possibilities and compel people to think seriously about this important work of prevention. The problem calls for the use of a medium that will save time in the dissemination of the essential ideas. In this respect the educational talking picture presents an outstanding opportunity for a worthwhile contribution to the health and well being of millions of people.

Negative Pressure Cabinet (Respirator) Treatment of Asphyxia

DR DOUGLAS P. MURPHY, Philadelphia. I understand that the words "negative pressure" constitute a wrong term, because any pressure that is above zero isn't negative. But the terms used generally, so I will assume that it is any pressure subatmospheric.

Artificial respiration carried on by varying the air pressure on the surface of the body was described first by Doe in 1889. Devised for the treatment of asphyxia of the new-born his apparatus consisted of a box covered at one end with a piece of sheet rubber. The apparatus as used by Doe in the period of 1888 and 1889 was simply a wooden box and across it was a piece of sheet rubber with a hinge at one edge and a hook on the other edge. The infant was placed into a plaster mold and the mouth and nose were applied to the opening in the rubber and then the attending obstetrician would merely suck and blow on the piping connected with the box. With this apparatus it was stated that some fifty patients were treated.

Mechanically induced changes of pressure were employed clinically by Drinker and Shaw in 1929. Their apparatus differs in principle from that of Doe in that the head of the patient protrudes from the box through a snugly fitting rubber collar and the variations in air pressure are produced by an electrically driven pump and valve arrangement.

The mechanically operated negative pressure cabinet is limited either to the treatment of patients who are stricken with respiratory weakness or paralysis in institutions possessing such a machine or to patients who can reach a machine before death occurs. The respirator also should be limited to the treatment of individuals whose upper air passages are clear. The respirator as an instrument for initiating and maintaining artificial respiration operates primarily by producing a subatmospheric pressure on the thoracic walls. When this occurs, the lungs are inflated by the force of the normal or atmospheric pressure acting through the subject's nose and mouth which are outside the negative pressure cabinet. Release of the negative pressure in the cabinet with a return here to atmospheric pressure, permits the expanded respiratory muscles to contract and thereby to expel the air forced into the chest by the atmospheric pressure outside the cabinet. Repetition of these changes produces respiratory movements. To ascertain that death has occurred, it may be necessary to open the cabinet—which interrupts the treatment—and auscultate the heart. The difficulty encountered in getting at the body without interrupting treatment is a disadvantage of this method of artificial respiration. If the heart continues to beat, though spontaneous breathing does not take place treatment naturally should be continued indefinitely.

I observed an infant who was badly asphyxiated. During the first five minutes the child took no breath. During the second five minute period it took two breaths during the next five minute period approximately five, then six, then four and then eight, and so on, until at the end of an hour and a half the rate of breathing became too rapid to record and the respirator was stopped. The respirator has made this opportunity available to study the physiology of the return of the respiration in the asphyxiated infant.

It is not known how much damage the asphyxiated infant receives if it is asphyxiated for a long period. I refer to the damage that may or may not occur to the brain cells. In after life, many people show signs of deterioration or retardation in various things. As far as I know there are no studies that have carefully correlated the inadequacy of breathing or the damages that occur at birth with troubles which follow. It would seem to be wise not knowing what will happen, to try to supply to the new born infant as nearly as may be an ade-

quate aeration from the time the infant begins to gasp until the breathing activity has a normal rate or amplitude or both.

Whether Dr. Flagg's method or the respirator or whatever one uses, one should continue to use it during the period when it is possible that the breathing mechanism is not supplying an adequate amount of oxygen. Certain asphyxiated individuals, though their cardiac action continues, fail to develop spontaneous respiration in the negative pressure cabinet. Others possessing a small amount of respiratory power become progressively worse. In such cases the inexperienced attendant frequently feels called on to increase greatly the degree of negative pressure. Any great increase in this pressure is unwise. It is quite dangerous to do what one shouldn't do in the treatment of individuals who appear to be failing or who are not beginning to breathe. Extremely serious damage can be done by these high degrees of negative pressure. To the conscious individual or to the one with a certain amount of muscle tone, there is enough checking of the inspiratory movement to prevent that, but it is extremely exhausting to the individual. If a patient is unconscious and has no control, one can expand the chest to such degrees as to rupture every alveolus in the lung. It is important, therefore, that the use of so powerful an instrument as a respirator be operated only by a person familiar with its potential danger.

If asphyxia is caused or is aggravated by an unusual increase in intracranial pressure due to cerebral congestion or intracranial hemorrhage, the use of a respirator should tend to relieve the cerebral congestion and thereby reduce the intracranial pressure.

There seems to be no contra-indication to the use of the negative pressure cabinet in the treatment of any adult or infant suffering from respiratory embarrassment, except in the case of individuals whose upper air passages are obstructed. In its use the subject is exposed to no force that cannot be both controlled and measured.

DISCUSSION

DR PALUEL J. FLAGG, New York. Some years ago I became associated with Dr. Chevalier Jackson in the perfection of a technic for anesthesia for operations about the head and neck. This technic consisted in a simple equipment for laryngoscopy for apparatus designed to supply suction, and for especially designed tubes that might be intubated without trauma and with which oxygen and carbon dioxide could be delivered under measured pressure. It is unfortunate that this technic should have come to be associated with my name because all that I contributed was the construction of a pocket flashlight laryngoscope which does away with the resistance offered by the small-wired laryngoscope used for bronchoscopy, by the suggestion that it is essential to supply facilities for suction in all cases and by the assembling of a delicate water manometer. I would like to make it plain that no officer of this society is in any way interested in the sale of any equipment. When this society was organized we clearly emphasized that point and renounced all commercial connections with all equipment so that any reference I make to equipment which happens to bear my name has no strings to it. The question of suction is vital. I would suggest that when one wants suction that will work perfectly, one use the mouth suction with a bell tube under direct vision.

In submersion work it has been found that one of the most effective sources of suction is the suction supplied by the intake manifold of the engine which one can attach immediately through connecting with the windshield wiper. An ambulance at the Coney Island Hospital was equipped for one summer. We chased submersion cases every Sunday during that one summer. We had a bus equipped with a suction line to the intake manifold and we had a powerful suction always attached to the car and instantly available on an idel engine. Another form of suction consists of a suction produced by fluid falling from one bottle into another. The height of the drop and the speed of the volume flowing determines the amount of the suction. This suction is available on a beach where there are no facilities at all in the way of our ordinary equipment. It can be attached to a post on one of these observation stands, as one sees at Coney Island. When the contents of the bottle have fallen out it swings around and the bottom bottle comes at the top, and one has to continue suction.

The question of insufflation was one that we devised from the ground up. Nobody knew anything about the size of the tube or the length of the tubes what the baby would tolerate, or anything about it five years ago. The diameter of this tip is approximately 3 mm. The tube is velvetized, and repeated intubation in the same infant for long intubation, checked up postoperatively, post mortem, shows no irritation. We lubricate our instruments in all intubations with sterile oil or petrolatum and we have no postoperative intubation irritation. The adult tube is merely a shortened bronchoscope. Laryngoscopy of the asphyxiated patient the anesthetized patient is an entirely different procedure than laryngoscopy of a normal patient with cocainization.

The medical relief of asphyxiation turns on the pivot of prompt laryngoscopy and intubation. Furthermore, with such a procedure one can immediately introduce oxygen and carbon dioxide under measured pressure and get effects at once which one strives to get over a long period with the prone pressure Schaefer method or with the use of an inhalator.

DR JOHN D. KERRON, New York. I find that very few practitioners know how to use a laryngoscope. They regard it as sort of a piece of magic that is to be learned only by the especially gifted whereas almost any one having the amount of intelligence that an educated physician is supposed to have can learn to use a laryngoscope efficiently. In using the laryngoscope to find out what the trouble is one may find possible laryngeal abscess, abscess of the tongue, abscess of the lingual walls of the pharynx, and so on. At times in face of infection of the neck it isn't the best thing to do a tracheotomy on account of the danger of introducing septic material into the lungs. I have been an advocate of preceding tracheotomy by the use of the bronchoscope or by the use of one of these tubes because a tracheotomy in the face of impending asphyxiation is very difficult to do. I want to urge education of the profession to use the laryngoscope and to use the bronchoscope or the intubating tube for purposes of overcoming temporarily laryngeal obstruction and as a measure preceding tracheotomy.

DR ETHAN F. BUTLER, Elmira, N. Y. The point of a tracheotomy with the bronchoscope in position is important. I believe that if a few minutes of extra time has to be expended placing the bronchoscope in position there will be regained twice as much in the speed of accomplishing tracheotomy and preventing an undue flooding of the lower airways with blood and other secretions. This to some extent is pioneer work. All pioneers have a certain element of obstruction and inertia to overcome. To what extent communities are going to be prepared to meet the sudden, unforeseen emergencies of threatened or actual asphyxiation has got to depend largely on community reaction to these problems. There will be a tremendous inertia to overcome but as the years go on the community attitude will be 'Let us be prepared so that even the few asphyxial deaths that may be expected in our communities can be reduced.'

DR DOUGLAS P. MURPHY, Philadelphia. Every new-born child, whether one withdraws fluid from the trachea or from the pharynx or doesn't touch it at all, should be kept head down below the horizontal for perhaps the first twenty-four or forty-eight hours. I feel certain that if the group that is producing artificial respirations with submersion cases would add to the situation the keeping of the individuals head down for a considerable time so that the fluid will gravitate to the nasal pharynx, it will save more lives.

Neuropathology Attending Asphyxia from Carbon Monoxide and Atmospheres Deficient in Oxygen

DR R. R. SAYERS, Washington, D. C. DR JOHN CHORNYAK, Pittsburgh and W. P. YANT, Pittsburgh. The chemical and pathologic reaction of dogs to asphyxia by carbon monoxide and by atmospheres deficient in oxygen was studied recently by the U. S. Bureau of Mines and the U. S. Public Health Service. This study was conducted to obtain information on the response of the organism to asphyxial environment, with the idea of devising a procedure for treating moribund cases of carbon monoxide poisoning that do not respond satisfactorily to present methods. The scope of the investigation includes the reactions attending comparatively rapid asphyxia and comparatively slow, prolonged asphyxia. In some of the experiments

the exposure was continuous until death occurred, in others it was terminated when the first indication of terminal symptoms was observed. Some of the animals recovered from the acute effects and others died within from a few hours to three days. The ones that recovered were kept for observation for periods ranging from a week to five months. Autopsies on the animals were held immediately after death and the brains were removed. The brain in the gross was very edematous and markedly congested. The most striking finding was a severe perivascular and perineuronal edema, which was marked in the corpus striatum, the cortex, and the dorsal motor nucleus of the vagus nerve. The vessels were greatly dilated and tightly packed with red blood cells. This stasis was marked throughout. There were a few petechial hemorrhages, especially in the corpus striatum and cortex. Most of these were no larger than would occur by diapedesis through the dilated vessels. Occasionally a few leukocytes, both lymphocytes and polymorphonuclear leukocytes, were found in the perivascular spaces. The endothelium of the capillaries appeared to be swollen in some areas.

The neurons were extensively damaged. Many of the nerve cells seemed to have been ruptured. In some areas all that appeared to be left of the nerve cell was a swollen, distorted and vacuolated nucleus with a little Nissl material around it. A clear space marked the site of the original cytoplasm of the neuron. In other areas there was a marked central chromatolysis with distorted nuclei. Not all the cells in the same brain were equally damaged. There was a variation in the degree of damage with different animals exposed to 0.6 per cent carbon monoxide for from twenty to thirty minutes. With three of the four dogs studied the variation was not marked, but the fourth showed distinctly less damage. The foregoing conditions were, however, present to some degree in all the animals.

The lesions due to eight and fifteen hour exposures to from 0.18 to 0.22 per cent carbon monoxide differed in degree only from those described due to comparatively rapid carbon monoxide asphyxia or exposures that caused death in from twenty to thirty minutes. The circulatory changes, such as dilatation of the vessels, stasis and perivascular edema were marked in the long exposures. The hemorrhages were also more frequent and more extensive. In many of the hemorrhagic areas as well as in some of the extremely dilated vessels the red blood cells had undergone disintegration. The perivascular areas, especially in the meninges, were infiltrated to a greater degree with leukocytes. The edema in the medullary substance was much more severe in many areas giving the medullary substance a very loose mesh like appearance. There was an increase in number as well as in size and an occasional difference in shape of the neuroglia. Occasionally, very large clear spaces were found throughout the medullary substance. These were not observed in the animals that died after from twenty to thirty minutes of exposure or in unexposed controls.

The degenerative changes of the neurons in general were also more severe in the long exposures. There were areas, especially in the cerebral cortex and the corpus striatum that were apparently completely destroyed. The results of this study substantiate the belief that the damage incident to carbon monoxide is diffuse. It is not specific for any one area of the brain although not all types of cells in any particular area are equally affected.

The neuropathologic changes produced in six dogs by fatal exposures of from fourteen to thirty-five minutes and in four rats by fatal exposures of from twenty-eight to seventy-two minutes to atmospheres deficient in oxygen was studied. The circulatory changes in the dog were characterized by dilatation, stasis involving the entire capillary system, and perivascular hemorrhages.

There is a marked difference in the susceptibility of the nerve cells to oxygen deprivation. The cells of the cortex, especially those in the outer granular layer, thalamus, sensory centers and those in the outer granular layer, thalamus, sensory centers and the visceral correlation centers throughout the brain stem and the visceral efferent nuclei are the most sensitive. There was a marked difference in the reaction of the nerve cells of the rat as compared with those in the dog. There are two general types of degenerative changes in the nerve cells following asphyxia. Some become shrunken and stain diffusely, others show varying degrees of chromatolysis. These observations on the differences in the reaction of dogs and rats to atmospheres deficient in

oxygen are in general in line with the current neurologic views on cerebral mechanisms. They also reveal the serious difficulties that are encountered in formulating theories on cerebral mechanisms in human behavior from data on rats.

The Factor of Chemical Injury in Asphyxia

LEON A. FOX, Major, M. C. U. S. Army. The chemical agents used in war are not insidious, nonirritating agents like carbon monoxide and hydrocyanic acid. They are on the contrary violent respiratory irritants. A great many deaths listed as due to chemical injury are really asphyxial deaths. Exposure to concentrations of many chemicals for periods that produce unconsciousness and cessation of respiration can be very promptly recovered from if the patient is removed to an atmosphere free from the contaminating agent and given a brief period of artificial respiration. Fortunately, there are not a great number of agents that are so insidious and difficult to detect as carbon monoxide. However, the toxic chemicals that do give some warning, but insufficient to provide adequate protection are all too numerous. Hydrocyanic acid gas is such an agent. Hydrogen sulphide is another. There is a large group of anesthetizing hydrocarbons that may produce casualties. Some are used as anesthetics in medicine. Many more are required by industry. In addition there are the halogen substitution products of this great group. These halogen derivatives are also frequently encountered in industry. Carbon tetrachloride, tetrachlorethane and trichlorethylene are well known examples of this group.

A special group of agents has been added to the list of chemical hazards. I refer especially to the refrigerating agents that are employed in the circulating systems of modern refrigerating plants.

In a very few instances it is believed that airplane accidents have resulted from pilots being overcome by carbon monoxide. The army gas mask does not provide protection against carbon monoxide.

Carbon dioxide may be a most important factor in producing asphyxial death. It must be remembered that while 7 per cent of pure oxygen can be replaced with carbon dioxide with great advantage to the patient in some resuscitation work, 7 per cent of the oxygen present in air cannot be replaced with carbon dioxide. If the 20 per cent oxygen in air is replaced with any large part of carbon dioxide, symptoms of severe anoxemia are presented and asphyxia may ensue. This is not carbon dioxide injury. This is pure oxygen privation. The substitution of carbon dioxide for the oxygen in the atmosphere produces the chemical hazard.

Cyanide deaths are especially sad for in many instances they occur under conditions that are entirely preventable. The army gas mask, equipped with the regular canister, should not be used to provide protection against cyanide poisoning. A special canister is prepared for use with the mask to neutralize this toxic agent.

Many casualties are caused by exposure to the violent lung irritants such as chlorine phosgene, sulphur dioxide, nitrous fumes and other acid radicals as well as injury from ammonia and other respiratory irritants. Immediate asphyxia is not an extremely important factor in these injuries. These caustic agents actually unite with and destroy the respiratory tract by their direct chemical activity when heavy concentrations are encountered.

On exposure to concentrations of lung irritant gases that are less powerful, respiratory irritation and embarrassment immediately occur, but if the patient is removed from the contaminated atmosphere these symptoms promptly subside. Dangerous symptoms develop later. These patients often have a period of comparative freedom from all symptoms. Then from two to four hours later, possibly even twelve to twenty-four hours later, symptoms of severe lung edema develop. Ordinarily these patients are in the hands of medical attendants long before these symptoms ensue. These attendants should always remember the danger of delayed lung edema in such cases. Cases of this type of chemical injury have been prematurely discharged from the hospital with fatal results. One must never let enthusiasm for special agents have the effect of diverting attention from the proper general treatment of all cases that present symptoms of asphyxia. Cessation of respiration whatever the cause is a symptom incompatible with life. It must be remembered that

the first last and most important therapeutic step is to pump oxygen into these individuals—if only air is available, by means of artificial respiration.

Problems of Respiration in Naval Medicine

L. W. BROWN, Captain, M. C. U. S. Navy. There are situations peculiar to naval medicine which group themselves around the problems of respiration. These are illustrated in submarine ventilation, deep sea diving, altitude flying, naval gas warfare and accidental conditions in which oxygen deficiency or gas poisoning is encountered. In all these situations the limiting factor is human respiration and many have undergone recent developments of particular significance to the naval medical officer. During the past five years, ten persons have been killed and additional nonfatal casualties have resulted from entering compartments of naval vessels which have been sealed for prolonged periods and without prior ventilation. Additional cases have been reported within recent years from the British admiralty. In all these instances men had entered such spaces without taking the precautions laid down in the regulations.

Reports have been made in the literature of sudden death from men entering the holds of merchant ships that had been hermetically closed for long periods, but in these instances the atmospheric changes were due to decomposing fruit, grain or other vegetable matter. The recent cases in the U. S. Navy have occurred in connection with virtually empty spaces, notably in ship's blisters and submarine pontoons. The so-called blister is a characteristic of the modern battleship developed since the World War and designed for torpedo defense. It consists of a false hull overlying the original hull reinforced by transverse and longitudinal frames and conforming to the longitudinal lines of the ship. The maximum depth of the blister is about 40 feet from top to bottom. The blister is subdivided into twenty sections of two compartments each on either side of the ship, with manholes provided for communication. There are a total of eighty blister compartments. The interior is painted and kept hermetically closed to insure water-tight integrity except for inspection and possibly renovation at intervals of six months.

In a blister compartment on the U. S. S. *New York* in 1929 the manhole cover was removed and an officer and three men entered without the precaution of preliminary ventilation. Just as the officer entered the lower compartment of the blister he fell to the bottom, apparently overcome. The three men with him immediately descended the ladder to his assistance and all three collapsed. Two additional persons reaching the bottom were also incapacitated. Ultimately nine persons were incapacitated and the officer and one man died. The symptoms of those recovering were diagnosed as due to carbon monoxide. The blood of the two who died was positive for carboxyhemoglobin. Another disaster occurred incident to entering a compartment of a submarine pontoon in December, 1931. The pontoon is a metal drum designed for the raising of sunken submarines. The compartment had a capacity of about 1540 cubic feet and was ventilated for a very brief period but not adequately, as required by regulations. Three men descended and were immediately overcome. Three additional men were incapacitated in attempting to rescue their co-workers. The first three men were dead when finally removed.

Belli, by experiments in the Italian navy, showed that the oxygen in a ship's double bottom can be reduced to 3 per cent by the use of red lead paint.

Gardner pointed out that, when linseed oil or similar drying oils are spread in thin layers the absorption of oxygen which takes place on drying is accompanied by the evolution of carbon dioxide and organic substances, carbon monoxide also being evolved in small amounts.

A study of the vitiation of the air of confined spaces of naval vessels by different types of paint containing linseed oil has been in progress at the Puget Sound Navy Yard for the past two years. Additional studies are in progress with an experimental test tank fitted with sixteen removable plates of definite area for coating with different types of paint. It has been determined with a linseed oil paint that oxygen absorption and carbon monoxide emission no longer occur after an exposure of approximately eight days. A ventilating period of ten days after painting would therefore remove the hazard of dangerous vitiation on closing such a blister. As would naturally be anticipated,

the use of a bituminous paint free from linseed oil does not change the contained atmosphere. It has been calculated that a 15-inch gun with its charge of 400 pounds of smokeless powder will give off 2,500 cubic feet of carbon monoxide each time the gun is fired. If for any reason any portion of the gases are permitted to blow back into the turret in which the gun is mounted, the carbon monoxide will produce symptoms. This is normally prevented in the U. S. Navy by means of an automatic air blast, which instantly clears the barrel of all traces of explosion gases. However, aboard *H. M. S. Iron Duke* in 1930 three men were overcome by fumes blown back into a turret during the firing into a head wind of 6 pounder subcaliber guns after approximately eighty rounds. These cases were diagnosed as carbon monoxide poisoning. All the men recovered.

Fairlie has reported a study of powder gas casualties in the World War. Eleven casualties, two of which were fatal, resulted from nitrous fumes in the battle of Jutland. Seventeen cases, with fourteen fatalities occurred in 1916 aboard *H. M. S. Russell* as a result of fire and explosion incident to contact with mines. Fifty-six cases were reported from *H. M. S. Britannia*, with twelve fatalities, following torpedoing of the ship and a subsequent fire in one of the magazines. The clinical reports of these disasters emphasize the period of latency, which is an outstanding aspect of poisoning with nitrous fumes as after poisoning with phosgene a chemical warfare gas. The initial symptoms of irritation may be comparatively slight and pass off readily, to be followed by severe or even fatal pulmonary edema after a variable interval. Many of the patients from the *Britannia* were landed apparently in normal condition and carried on for many hours before serious signs developed. The latent period of these cases averaged from ten to twelve hours.

The *Mississippi* disaster in our navy in 1924 resulted from the accidental ignition and therefore burning of a powder charge in a turret mounted with 14-inch guns during target practice. Forty-eight men were killed only two persons in the turret surviving. The head and hands of practically all the dead showed signs of burns but in the majority of instances not sufficient to account for death. Evidences of asphyxiation were present, although no blood examinations for carboxyhemoglobin were conducted.

About four months later a similar accident with burning powder occurred aboard the *U. S. S. Trenton* involving the forward twin gun mount with a total loss of fourteen men only five of those exposed having survived. The blood was examined for carbon monoxide hemoglobin in all of these cases with negative results. This result with reference to the survivors did not appear consistent, although the period of exposure to the fumes was short. Death was generally ascribed to extensive burns and shock.

The question of the possible hazard of carbon monoxide in relation to aircraft was exhaustively studied by the Bureau of Medicine and Surgery in conjunction with the Bureau of Aeronautics. It was concluded that in some types of airplanes, depending on the arrangement of exhaust leads, fuselage, and so on, carbon monoxide is carried back to the cockpits in sufficient concentration to result in as much as 15 per cent saturation of the blood of the pilot and other occupants of the airplane. Although the highest saturation of blood obtained during the study would not be sufficient to render a person unconscious, the absorption of even minute amounts of carbon monoxide is highly undesirable, owing to the possible effect on the efficiency of the pilot. It was evident that a definite hazard existed in this regard. Immediate steps were taken to eliminate the carbon monoxide by a simple and inexpensive modification of the exhaust leads of those airplanes. The specifications now prescribe that all new airplanes in the future shall be tested at the factory for carbon monoxide and if present eliminated before final acceptance by the navy. The submarine is propelled on the surface by means of the Diesel engine and in the submerged condition by the electric motor. The electric current is furnished by 120 storage batteries to each vessel. Owing to limitations of weight and space air-purifying equipment must be reduced to a minimum. It is therefore impracticable to maintain the atmosphere of a submarine at the normal atmospheric concentration of 20.9 per cent oxygen and 0.03 per cent carbon dioxide. In the majority of submarines of the U. S. Navy the carbon dioxide will ordinarily not reach 3 per cent until the end of seventeen hours. Air

purification therefore is not used unless longer periods of submergence are contemplated. Under ordinary conditions the periods of submergence are so short that purification is not required. It is of course a comparatively simple matter to calculate the time of submergence required to reach the limiting figure of 3 per cent carbon dioxide on the basis of the average volume of carbon dioxide exhaled hourly per man and the cubical capacity of the contained air of the vessel. Under the conditions of a disaster such as that of the *S-4*, which sunk off Provincetown in 1927, the electric power is practically always out of commission and forced ventilation therefore stopped. In the *S-4* disaster, six persons were trapped in the torpedo compartment without provision for removal of carbon dioxide. The last signal received by divers from the survivors was seventy-five hours after the collision. It is estimated from the cubical air space of the compartment and the approximate hourly output of carbon dioxide at rest for six men that a concentration of approximately 9 per cent was reached. Life at least existed under these conditions.

The accidental access of salt water to the electric storage batteries of a submarine evolves chlorine gas. A special type of gas mask designed for the specific purpose of protecting against chlorine is provided for all personnel.

The submarine escape apparatus has been adopted for individual escape from submarines. The mechanism of action consists of a rubber bag of approximately the cubical capacity of the human lungs, connected above to a mouthpiece with inhalation and exhalation tubes, and provided below with an escape valve through which the expanding air escapes during ascent. A small canister of soda lime is included for the absorption of carbon dioxide. Preliminary to the donning of the appliance for escape the compartment of the sunken submarine is flooded with sea water, compressing the air therein to the pressure of the outside sea and thereby allowing for the opening of the hatch of the compartment. The breathing bag of the escape appliance is then filled with oxygen and the mouthpiece is inserted in place. The individual then ascends along a buoy line at a prescribed rate. If the rate of ascent is excessively rapid, particularly if the subject withholds his breath, there is a distinct hazard involved in that a dangerous rise of intrapulmonary pressure may develop. Thus far in training with the submarine 'lung' two fatalities and eight other cases of cardiovascular collapse have been reported under these conditions. It is concluded that these injuries were due to air embolism.

DISCUSSION

DR. M. H. FOSTER, New York. In our work in the Public Health Service we are chiefly concerned with deaths from hydrocyanic acid gas. In quarantine work the problem is to be certain that our ships are free from the gas before we allow the personnel to go back into the ship and go down into the hold. They use a test paper and simply throw sheets of this paper down into the hold and watch its behavior. It is a bright yellow copper, and if it turns pink rapidly it is a good thing to keep out of there. If it turns pink slowly it is safe for one of the disinfectors to go down. These men do not wear gas masks and they do not depend on anything else except their sense of smell. When they get down there if they don't smell too much of the hydrocyanic acid gas they feel free to go ahead with their work. It depends a great deal on the temperature and the humidity, on whether or not the ship is in motion, and on how much cargo there is in the hold. If one can get the ship under way and let it go for three or four miles against the wind it will blow out. We had one fatality, of a child who was placed on a bed and allowed to sleep on a pillow against our instructions.

DR. R. R. SAYERS, Surgeon, U. S. Public Health Service. There has been protective equipment developed gas masks and the oxygen breathing apparatus. Every one of these has its limitations. If you will put a rope onto a man if you are going to let him down you can pull him back out again, whether you are on board ship or whether you happen to be on a farm going down into a well. The first thing is to find out whether you can go in safely or not. Davis developed a safety lamp used in the mining industry which will tell when a flammable gas is available. One can use a bird, a mouse or a cat. Lower the animal into the compartment and

are going in. After it has been there a few minutes if it gets along all right it is probably safe for you to go in. Then if you are going to go in and are still not sure about it, you ought to have a rope around you, and you ought to have somebody on top big enough and strong enough to get you out again. That method is being used in industry quite regularly.

DR E W BROWN, Washington, D C. Answering Dr Foster's question in regard to the training in the use of the escape apparatus, we have a systematic course of training for submarine personnel. They must qualify in the use of the apparatus to remain in the submarine service. Some of our trained personnel have ascended 100 feet without the use of anything. They have simply gone down in the submarine bell in this tank and the ascent is made without any lung apparatus whatever. It involves of course a rather spectacular aspect of training. We don't advocate that of course as a means of escape but merely as an emergency.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

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- Study of Jaundice in Syphilis Its Relation to Therapy U J Wile and W M Sams Ann Arbor Mich—p 297
- Therapeutic Pneumothorax in Experimental Lobar Pneumonia in Dogs L M Lieberman and S S Leopold Philadelphia—p 315
- Pneumothorax Treatment of Pulmonary Tuberculosis E H Rubin, New York—p 331
- Behavior of Diaphragm After Phrenico Exeresis H Schwatt Spivak Colo—p 338
- Effect of Pregnancy on Insulin Requirement of the Diabetic G G Duncan and F Fetter Philadelphia—p 347
- Rheumatic Fever in Piedmont Virginia I Incidence and Clinical Manifestations A D Hart Jr, J E Wood Jr and A D Daughton University, Va—p 352
- Hemorrhagic Eruption of Mouth and Throat in Rheumatic State E Holtz and G Friedman New York—p 359
- Neuralgias of Head and Face F L Reichert San Francisco—p 362
- Simplified Apparatus for Direct Venous Pressure Determination Modified from Moritz and v Tabora G C Griffith C T Chamberlain and J R Kitchell Philadelphia—p 371
- Facts on Disease of Coronary Arteries Based on a Survey of Clinical and Pathologic Records of Seven Hundred and Sixty Two Cases R L Levy H G Bruenn and Dorothy Kurtz New York—p 376
- *Differentiation of Acute Coronary Artery Thrombosis from Pulmonary Embolization S H Averbuck New York—p 391
- *Renal Amyloidosis in Relation to Renal Insufficiency H M Dixon Philadelphia—p 401

Hemorrhagic Eruption of Mouth in Rheumatic State—Holtz and Friedman observed an enanthema consisting of an eruption of hemorrhagic spots in the mucous membranes of the mouth and throat of patients with rheumatic heart disease, also in other diseases included in the concept of the rheumatic state and in relatively few patients in whom there was no apparent rheumatic infection. It has been seen more frequently during the course of rheumatic heart disease than in any other condition and the seasonal peak of its frequency in this disease coincides with that of acute infections of the upper respiratory tract and carditis. In nineteen cases of rheumatic valvular disease of the mitral and aortic valves examined at biweekly intervals for four months hemorrhagic spots were found in nine cases at the initial examination and in a total of thirteen cases during the period of study. Of twenty-nine cases without rheumatic valvular disease, chosen at random for control, spots were found in only one case.

Differentiation of Coronary Thrombosis from Pulmonary Embolization—Averbuck observed six patients who were presumed to have had fatal attacks of coronary artery

thrombosis but in whom necropsy revealed that they had succumbed to pulmonary embolization. In two instances the diagnosis was difficult in that coronary artery disease had previously been present. Death was caused by a pulmonary embolus. In the other four cases no previous evidence of coronary disease had been present, but death was shown at necropsy to be due to pulmonary embolus. The author believes that, when the clinical picture suggesting coronary artery thrombosis occurs in a female patient who has neither arterial hypertension nor diabetes, a pulmonary embolus should be suspected. The high incidence of embolic phenomena in the female sex arising from abnormal pelvic conditions is an important factor. If the history suggests previous evidence of peripheral vascular involvement, i.e., phlebitis, unilateral leg edema, pelvic disease or abnormalities of the lower extremity, the likelihood of the coronary syndrome being caused by an embolus to the lungs is strengthened. Postoperatively, the clinical picture of pulmonary embolus readily simulates coronary thrombosis. When one recalls that pulmonary emboli are frequent after operation and that coronary thrombosis is comparatively rare because patients having coronary disease are spared any but emergency surgical procedures, such cases will be correctly analyzed. In a hyposensitive individual, when the diagnosis of coronary artery thrombosis is made in the absence of pain, and dyspnea is the principal sign, the possibility of a pulmonary embolus must be excluded. The conditions may coexist.

Renal Amyloidosis in Relation to Renal Insufficiency—Dixon found 100 cases of renal amyloidosis in 9,613 consecutive necropsies. Tuberculosis of the lungs (70 per cent) and bones (8 per cent) was the etiologic disease in 78 per cent of the cases. The highest incidence of renal amyloidosis occurred in the third decade of life. Twelve of the forty-six cases in which sufficient evidence was available were associated with renal insufficiency. Obstruction of the glomerular capillaries by amyloid deposits is a factor in the causation of renal insufficiency. Hypertension is relatively infrequent in amyloid disease of the kidney. Of thirty-five cases with blood pressure readings, the systolic pressure was above 150 mm of mercury in only four (12 per cent). In the cases of renal amyloidosis with renal insufficiency, the kidneys were either normal in size or somewhat enlarged. Renal amyloidosis may occasionally be associated with independent arteriolar nephrosclerosis. Albuminuria is a fairly constant observation in renal amyloidosis.

Archives of Dermatology and Syphilology, Chicago

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- Cutaneous Manifestations of Allergy C M Williams New York—p 333
- LXVI Lipids of the Skin Influence of Some Factors on the Albino Rat D J Kooyman St Louis—p 342
- Question of Bismuth Penetration of Nervous System Report of Clinical and Laboratory Study J A Klauder and H Brown Philadelphia—p 351
- *Epidermomycosis and Flatfoot D Lieberthal and E P Lieberthal Chicago—p 356
- Urticaria Etiologic Observations J G Hopkins and B M Kesten, New York—p 358
- *Acute Interstitial Myocarditis Report of Case Following a Severe Dermatitis Due to Sulphur Ointment E S Maxwell and C C Barrett Lexington Ky—p 382
- Sarcoid of Boeck L Hollander and Clara R Schlesinger, Pittsburgh—p 387
- Tuberculosis of the Skin Clinical Report J E Rauschkolb Cleveland—p 398
- *Multiple Epitheliomas and Pigmentary Dermatoses in a Negro Boy R Hopkins and M T Van Studdiford New Orleans—p 408
- Streptococcal Hypertrophic Gingivitis A R Woodburne and P Northrop Grand Rapids Mich—p 422

Epidermomycosis and Flatfoot—The Lieberthals noticed in a large series of cases of mycotic infection of the feet that a moderate to advanced degree of flatfoot was present also. Of their 195 patients, 90 per cent had flatfoot and 30 per cent also had hyperhidrosis. The authors believe that as a result of the changes of flatfoot the resistance of the skin itself is lowered and the soil thus prepared for the invasion and subsequent growth of the fungi in epidermomycosis. Ten advanced and five moderately advanced cases of vesiculopustular lesions on the soles as well as intertriginous changes, accompanied by flatfoot, responded more rapidly to the ordinary forms of treatment after orthopedic correction. Not only did the lesions of the skin clear up rapidly but the hyperhidrosis was also materially influenced. In three cases it disappeared completely.

The rapid response of these resistant cases to the ordinary therapeutic measures following the correction of the foot deformity justifies the conclusion that orthopedic corrective measures are a therapeutic adjunct in the cases of fungous infection of the feet associated with flatfoot.

Acute Interstitial Myocarditis—Maxwell and Barrett report a case of acute interstitial myocarditis in which there was an extensive infection of the skin and mucous membranes with *Staphylococcus haemolyticus*. Postmortem examination did not show any evidence of septicemia, so that if the myocarditis was related to the pyogenic infection it must have been through the absorption of bacterial toxins. The gross and microscopic appearance of the abdominal viscera supported this view. No case of acute interstitial myocarditis has ever been diagnosed before death, however, the authors believe that with the picture of progressive myocardial failure following a pyogenic infection of the skin and without septicemia, the cardiac lesion could be reasonably suspected.

Multiple Epitheliomas and Pigmentary Dermatoses—Hopkins and Van Studdiford describe an instance of cutaneous epitheliomas of the face in a Negro, in which the clinical and histopathologic diagnosis was that of multiple squamous cell epitheliomas. A more generalized dermatosis is diagnosed as arsenical pigmentation on the evidence of the histopathologic picture and on the presence in the skin of arsenic trisulphide crystals. The distribution of the lesions, however, was in conformity with that of *xeroderma pigmentosum*. The epitheliomas of the face were a sequence of the arsenical pigmentation in this region and, it is assumed, were caused by deposits of arsenic. The fact that arsenic presumably carried by the blood stream to the skin and there deposited resulted in this case in the development of epitheliomas suggests the possibility that Negro racial immunity to cutaneous epitheliomas is due to protection from external and not from internal sources of irritation and that the major part played by the pigment of the black skin, so far as immunity against epitheliomas is concerned, must be protection against actinic rays and similar natural external sources of irritation.

Archives of Neurology and Psychiatry, Chicago

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- Labyrinth and Cortex. Electroencephalogram of the Cortex in Stimulation of the Labyrinth. E. A. Spiegel. Philadelphia—p. 469.
- Use of Iodized Poppy Seed Oil in Differential Diagnosis Between Tumors of Conus Medullaris and of Crura Equina. H. N. Harkins. Chicago—p. 483.
- Progressive Necrosis of the Spinal Cord. F. P. Moersch and J. W. Kernohan. Rochester. Minn.—p. 504.
- Histologic Changes in the Brain in Cases of Fetal Injury to the Head. V. Changes in the Nerve Fibers. C. W. Rand and C. B. Courville. Los Angeles—p. 527.
- Photographic Study of Ocular Movements in Mental Disease. F. H. Couch and J. C. Fox Jr. New Haven. Conn.—p. 556.
- *Treatment of Dementia Paralytica with Typhoid H Antigen Vaccine. Report of Twenty Five Cases in Which Fever Therapy Combined with Administration of Tryparsamide Was Used. M. T. Schnitker. Philadelphia—p. 579.
- Sensory Threshold to Direct Current Stimulation in Schizophrenic and in Normal Subjects. P. E. Huston. Worcester. Mass.—p. 590.
- Chemical Changes in the Blood Induced by Hyperpyrexial Baths. Helen Hopkins. Los Angeles—p. 597.

Treatment of Dementia Paralytica with Typhoid H Antigen Vaccine—Schnitker treated twenty-five dementia paralytica patients physically unsuitable for treatment with malaria, whole typhoid vaccine or diathermy with typhoid H antigen (flagellar) vaccine alone and in combination with tryparsamide. The symptomatic and serologic improvement obtained by this method compares favorably with results obtained with other forms of fever therapy. Typhoid H antigen vaccine is indicated for persons who cannot withstand the rigors of other forms of therapy because (1) although the hyperpyrexia equals that obtained with whole typhoid vaccine the concomitant illness is far less severe, (2) it does not involve superimposing a second (and perhaps lethal) infection on an already existing one, as with malaria, (3) it does not involve the risk of burns and renal damage, as with diathermy, (4) its contraindications are severe cardiorenal disease, active pulmonary disease, severe cachexia and acute infection with a rapid sedimentation rate, (5) its administration and control are simple and its use in the hands of the general practitioner both in the hospital and in the home, is safe and (6) it has not, in

the author's experience, been associated with complications or sequelae. More attention should be directed to the total hours of fever produced in a patient than to a definite number of paroxysms. Tryparsamide can be given at the height of the fever with better clinical results and no increase in the dangers of complications.

Archives of Ophthalmology, Chicago

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- Color Photography of the Eye. H. M. Dekking. Nijmegen, Netherlands—p. 225.
- Prolonged Occlusion Test. Illustrative Cases. W. I. Hughes. New York—p. 229.
- Combined Treatment in Certain Diseases of the Eye. G. H. Burnham. Toronto—p. 237.
- Effect of Tryparsamide on the Eye. Experimental and Clinical Study and Report of Case. N. K. Lazar. Chicago—p. 240.
- Physiologic Lensless Spectacles. C. C. Guthrie. Pittsburgh—p. 254.
- Treatment of Retinal Detachment by Walker's Method of Electrocoagulation. Report of Cases. L. C. Peter. Philadelphia—p. 262.
- Eye Pad for Minkung Hot Applications. J. N. Evans. Brooklyn—p. 268.
- Pure Fibroma of the Orbit. Report of Case and Review of Literature. W. H. Stokes and W. F. Bowers. Omaha—p. 279.
- Angioid Streaks of the Retina. Report Concerning Two Cases Associated with Pseudoxanthoma Elasticum. A. B. Dykman, Portland. Ore.—p. 283.
- Interpretation of Stripe Formed Optic Papilla. G. L. Walls. Ann Arbor. Mich.—p. 292.

Arch. of Physical Therapy, X-Ray, Radium, Chicago

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- Irradiated Ergosterol. Clinical and Experimental Studies. C. I. Reed. Chicago—p. 69.
- Electrosurgery in Carcinoma of the Rectum. M. Thorek. Chicago—p. 76.
- Use of Surgical Diathermy in Relief of Cases of Inoperable Carcinoma. R. B. Bettman. Chicago—p. 80.
- Surgical Diathermy of Carcinoma of the Rectum. Further Observations and End Results. A. A. Strauss, S. F. Strauss, R. A. Crawford and H. A. Strauss. Chicago—p. 82.
- Physical Therapy in Infantile Paralysis. C. O. Molander. Chicago—p. 90.
- Physical Therapy of Sciatic Syndrome. H. F. Wolf. New York—p. 96.
- Physical Therapy in Skin Diseases. C. S. Wright and J. F. Guenier. Philadelphia—p. 99.
- Radium in Lesions of Cornea. H. L. Hilgartner and H. L. Hilgartner Jr. Austin. Texas—p. 103.
- Hydrotherapy in Arthritis. M. T. Lautman. Hot Springs. Ark.—p. 107.

Archives of Surgery, Chicago

28 425 616 (March) 1934

- Meckel's Diverticulum Containing Aberrant Pancreas. V. C. Hunt and H. T. S. Bone. Los Angeles—p. 425.
- *Meckel's Diverticulum. Report of Case of Hemorrhage in the Bowel Associated with a Meckel's Diverticulum That Presented an Adenoma Composed of Gastric and Duodenal Glands. R. N. Schullinger and A. P. Stout. New York—p. 440.
- Peptic Ulcer in Chronic Lesions of the Duodenum Following Experimentally Produced Pyloric Dysfunction. C. B. Morton. University. Va.—p. 467.
- *Significance of Anaerobic Organisms in Peritonitis Due to Liver Abscess. Bacterial Flora of the Liver and Muscle of Normal Dogs. H. M. Trusler and J. R. Reeves. Indianapolis—p. 479.
- Tumors of the Parotid Gland. I. Stein and C. T. Geschickter. Baltimore—p. 492.
- *Complete Removal of Two Tumors of the Third Ventricle with Recovery. C. B. Masson. New York—p. 527.
- *Supraperiosteal and Subcostal Pneumonolysis with Filling of Pectoral Muscles. J. Alexander. Ann Arbor. Mich.—p. 538.
- Nocturnal Incontinence in Women. J. T. Witherspoon. New Orleans—p. 548.
- Avulsion of Epiphysis of the Small Trochanter. D. King. Ann Arbor. Mich.—p. 561.
- Intramural Extension of Gastric Carcinoma. A. Verbruggen. Chicago—p. 566.
- Chronic Pancreatitis Associated with Peptic Ulcer. J. W. Hinton. New York—p. 580.
- Digestion of Bone by Larvae of *Phormia Regia*. Its Relationship to Bacteria. I. H. Vaseritz. Baltimore—p. 589.
- Fifty Second Report of Progress in Orthopedic Surgery. J. G. Kuhn, E. F. Cave, S. M. Roberts and J. S. Barr. Boston. J. A. Freiberg. Cincinnati. J. E. Milgram. New York. R. I. Stirling. Edinburgh. Scotland and P. D. Wilson. Boston—p. 608.

Meckel's Diverticulum—Schullinger and Stout report a case of Meckel's diverticulum in which the mucosal surface near the tip was the site of a nonulcerated pedunculated adenoma composed of gastric and duodenal glands. The case emphasizes that extremely severe acute symptoms including abdominal pain and bleeding from the rectum, unmixing with mucus, may occur

in persons with Meckel's diverticulum without any evidence of invagination intussusception or ulceration. Heterotopic tissue was present in the diverticulum, but the source of the bleeding could not be determined either at operation or microscopically. It is reasonable to suppose that it must have come from the diverticulum, since hemorrhage did not recur after its removal. Because their patient, together with other reported cases exhibited symptoms similar to those recorded for the group who had bleeding associated with ulcer of a Meckel's diverticulum the authors believe that the latter condition cannot be considered a clinical entity. The indication is to remove the diverticulum even though it may appear harmless because the mortality is high after perforation or after acute pathologic processes set in. A person with a lesion of Meckel's diverticulum, especially if the lesion is a bleeding peptic ulcer may pass from a state of relatively good health to one of acute illness collapse and shock with amazing rapidity. Sudden severe pain in the lower part of the abdomen with rigidity, signs of diffusing peritonitis, fever and leukocytosis especially in children should lead one to suspect a perforated Meckel's diverticulum. Cryptic intestinal bleeding should always constrain one to suspect a Meckel's diverticulum as a possible source.

Anaerobic Organisms in Peritonitis Due to Liver Autolysis—Trusler and Reeves attempted to ascertain whether toxic strains of *Clostridium welchii* regularly inhabit the liver of healthy dogs and if the same organisms are present and cause death in bodily autolysis of liver. They studied the livers of sixteen normal healthy dogs and the muscle tissue from six dogs. Toxic strains of *C. welchii* were not found. The livers of the sixteen dogs contained a strict anaerobic bacillus thermophilic in its reaction to heat, a member of the genus *Clostridium* and of the metabolic group of non sucrose-fermenting, putrefactive, gas-forming organisms. The muscles of five normal healthy dogs contained a less strict anaerobic bacillus, not thermophilic in heat reaction a member of the genus *Clostridium* and of the metabolic group of sucrose-fermenting putrefactive, gas-forming organisms. A sample of muscle from one dog was sterile. The organisms occupying the livers and muscles of the dogs studied do not produce an exotoxin. They are in this respect, nonpathogenic. These organisms are all large gram positive bacilli. Their morphology and gas production easily confuse them with pathogenic forms. On two occasions when large masses of liver were incubated, organisms were found which closely resembled *C. welchii* in morphology. They differ in sugar fermentation form no exotoxin and were not pathogenic when injected in young broth cultures intramuscularly into guinea-pigs. Livers of fetal dogs are uniformly sterile.

Removal of Tumors of Third Ventricle—Masson removed successfully the tumors of the third ventricle in two cases. Both were in the anterior part of the third ventricle. In retrospect it appears to him that a much smaller bone flap would answer, for only a limited extent of the dural exposure was used in each instance. It does not matter therefore, how wide a dural exposure is provided since the tumor and its attachment to the third ventricle are just as deeply situated and cannot be drawn to the surface until freed. It is imperative that one work carefully at a distance. Irrespective of the size of the craniotomy one finds oneself working at a distance from the root and one has to depend on careful technic to be successful. If the lesion is totally extirpated a decompression is not required since the cause of the increased intracranial pressure has been removed.

Supraperiosteal and Subcostal Pneumonolysis—Alexander describes the technic of supraperiosteal and subcostal pneumonolysis with a filling of the pectoral muscles. The procedure is chiefly indicated for cavernous tuberculous or non-tuberculous lesions that lie between the clavicle and the level of the third rib anteriorly. The operation is performed under gas anesthesia with the patient in about a 15 degree Trendelenburg position. One was a man of 53 having arteriosclerosis with a foul nontuberculous abscess. After operation improvement was rapid at first then gradual three years after operation the patient was apparently cured. On three of the six

tuberculous patients the operation was done successfully as preliminary to thoracoplasty in order to displace a large cavity backward so that the thoracoplasty would have a better chance of completely closing it. One of the three remaining patients died as a result of the operation. Another patient for whom the operation was used independently was 56 years old and had arteriosclerosis intestinal tuberculosis and an anal fistula dyspnea hemoptyses, fever and a rapid pulse. When discharged from the sanatorium seven months after operation, he had gained 20 pounds (9 Kg), and a roentgenogram showed great clearing in the tuberculous infiltration and apparent disappearance of the cavity. The sputum was reduced to 70 cc daily and was still positive for tubercle bacilli. The last patient, 24 years old had had pulmonary tuberculosis for seven years. Thirteen months after operation he had gained 35 pounds (15.9 Kg), his sputum was reduced to 10 cc daily and was repeatedly negative for tubercle bacilli during the last four months.

Arkansas Medical Society Journal, Fort Smith

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*Diabetic Coma Refractory to Insulin H C Jamieson Edmonton Alta.—p 277
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Clinical Observations on Kidney Stone Cases G S Foulds and J B Maxwell Toronto—p 290
*Method of Reducing Supracondylar Fractures of the Humerus D S Macnab Calgary Alta—p 293

Bilirubin Formation and the Reticulo-Endothelial System—Gotthieb made a comparative study of the Kupffer cells with other cells of the reticulo-endothelial system in rabbits guinea pigs and rats. The rabbits received daily injections of 10 cc of a 2.5 per cent lithium carmine suspension for from five to ten consecutive days the guinea-pigs 5 cc for

five days and the rats from 1 to 2 cc for from three to five days. All the injections were given intraperitoneally. The animals were killed by coal gas and sections made of the organs. With the exception of the bone marrow, which was fixed in Zenker's fluid, the tissues were hardened in formaldehyde, passed through alcohol and toluene, and petrolatum sections were cut. The carmine sections were slightly counterstained with hematoxylin and the trypan blue sections with bismarck brown. The author agrees with Zimmermann and others that the Kupffer cells are true independent cells which are suspended in the liver in such a manner that they are well surrounded by the blood stream. They are nucleated cells attached to the wall by protoplasmic processes only, functionally, they are able to store intravitaly like all the other cells of the reticulo-endothelial system. Even if the existence of the reticulo-endothelial system as such should be called in question, there remains the fact that a number of groups of cells of mesodermal origin are capable of storing carmine intravitaly. It does not appear reasonable to exclude the Kupffer cells alone and deny their cell nature, as it is assumed by Pfuhl and his followers. The proliferation of Kupffer cells after splenectomy is another fact of importance. One could hardly expect mere thickenings of the endothelial wall to proliferate on account of an increased functional demand.

Diabetic Coma Refractory to Insulin—Jameson reports the case of a woman of 58 having diabetes who was admitted to the hospital in deep coma after an abstinence from food and insulin for eighteen hours. There had been repeated vomiting during this period. Three years before she had been under the author's care, having then suffered for three years from diabetes. She left the hospital on a low fat, high carbohydrate maintenance diet, with 45 units of insulin daily. She had not reported in the interval, but her husband said that she had remained in good health as long as she adhered to her diet and insulin. A trip to the city resulted in a visit to an irregular practitioner who said he could do nothing for her until she stopped taking insulin. This resulted in coma. There was little change in the blood sugar throughout the duration of the coma. The carbon dioxide combining power rose from 11 volumes per cent to 37.5, but even with continued excessive dosage of insulin it fell again. The urine was never free of sugar or ketone bodies. No evidence of sepsis was found at necropsy. In fourteen hours 1,140 units of insulin was given. Histologic sections of the pancreas showed marked diminution in the number of islands of Langerhans. Those present were small and the cells atrophic in appearance. The case seems to belong to the fourth group as outlined by Thannhauser and Fuld.

Reducing Supracondylar Fractures of the Humerus—Macnab uses the following method in reducing supracondylar fractures of the humerus. The arm is grasped by the operator with both hands, the thumbs being placed vertically on the posterior surface at the line of fracture. The forearm under moderate extension is hyperextended by the assistant over the thumbs of the operator, at the same time being moderately abducted. The operator gradually works the lower fragments down until the fracture lines approximate as nearly as possible. The assistant then, increasing the extension, flexes the forearm, carrying it through an arc of a circle that brings it well inside the shoulder, the operator in the meantime retaining the alignment with his thumbs. The radial artery is palpated to ascertain the presence of a pulse. A small piece of cotton is placed in the angle of the elbow and adhesive straps are brought around the arm and forearm to hold a hyperflexed position. A roentgenogram is taken immediately after reduction. If the fracture is found to be satisfactorily reduced, the arm is held in a sling and the hand fastened to a collar around the neck. At the end of two weeks the straps are cut and a little passive motion is started. Radiant heat and gentle massage are advised at this time. The straps are reapplied for another week. At the end of three weeks the dressing is removed and the patient is encouraged to move the arm voluntarily. When the patient is not exercising under supervision the hand is fastened to the collar. At the end of the fourth week, weights may be carried and more vigorous methods adopted to secure extension of the forearm.

Colorado Medicine, Denver

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- Recurrent Dislocation of the Shoulder J S Normal Pueblo—p 83
- Posttraumatic Osteoporosis of Carpal Bones D Prey and J M Foster Jr Denver—p 86
- Protection of Employees Against Infection in Tuberculosis Hospitals and Sanatoriums I D Bronfin Denver—p 90
- Amebic Dysentery Diagnosis and Treatment P W Brown Roche ter Minn—p 96
- Relationship of Pharmacy to Medical Economics P G Stodghill Denver—p 100

Florida Medical Association Journal, Jacksonville

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- Some Problems of Medicine H C Dozier Ocala—p 389
- Common Cold Its Complications and Sequelae C G Coakley New York—p 393
- Intracranial Complications from Apparently Trivial Sources Case Reports S A Shoemaker, Orlando—p 399

Georgia Medical Association Journal, Atlanta

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- Neurosyphilis Effect of Modern Treatment on Its Incidence J W Brittingham, Augusta—p 87
- Acute Intestinal Obstruction J W Turner Atlanta—p 89
- Treatment of Amebic Dysentery T Johnson Atlanta—p 93
- Orchitis Due to Mumps Without Involvement of Parotid Submaxillary or Sublingual Glands Report of Case G J Dillard Columbia—p 95
- Gastric Mucin in Treatment of Peptic Ulcer E F Wahl Thomasville—p 97
- Acidosis O F Collins McRae—p 100
- Adequate Medical Care W D Gholston Danielsville—p 107
- Relation of Physiology to Clinical Medicine O S Gibbs, Washington D C—p 107

Johns Hopkins Hospital Bulletin, Baltimore

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- Agglutination of Hemolytic Streptococci by Plasma and Fibrinogen Comparison of Phenomenon to Serologic Reactions with the Same Organisms W S Tillett and R L Garner Baltimore—p 142
- The Hypophysis of the Human Castrate J H Biggart Baltimore—p 157
- Actinomycosis Graminis J H Biggart Baltimore—p 165
- Experimental Laws II Comparison of Infection with Experimental Syphilis T B Turner and A M Chesney Baltimore—p 174
- Investigation of Some Effects of Pregnancy Noted Six Weeks and One Year After Delivery C H Peckham Baltimore—p 186
- *Effect of Hemisection of Cochlear Branch of the Human Auditory Nerve Preliminary Report W E Dandy Baltimore—p 208

Hemisection of Cochlear Branch of Auditory Nerve—Dandy cites a case in which the audiogram thirteen days after hemisection of the sensory root of the fifth nerve showed that all the tones up to 6,144 were almost exactly the same as before the operation, only the higher tones, 8,192 and 12,288, were lost. The highest tone, 16,384, was absent both before and after the operation. An audiogram made the next day showed identical results. The immediate result, therefore, following section of one half, at least, of the cochlear branch of the acoustic nerve is loss of only two of the very high tones. This observation is seemingly in complete harmony with the results of partial division of the trigeminal and optic nerves.

Journal of Allergy, St. Louis

5 221 330 (March) 1934

- Studies on Relation of Adrenal Glands to Allergic Phenomena J Output of Epinephrine During Anaphylactic Shock in Dogs. M B Cohen J A Rudolph P Wasserman and J M Rogoff Cleveland—p 221
- Intravenous Pollen Therapy M R Lichtenstein Chicago—p 230
- Relation of Papular Urticaria and Prurigo Urticaria to Allergy A Walzer and M Grolnick Brooklyn—p 240
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- Studies of Anaphylactic Antibody Parts I II and III O Swineford Jr University Va—p 265
- Comparison of Pulmonary and Dermal Sensitivity to Inhaled Substances F A Stevens New York—p 285
- Venilia and Trichophyton Extracts Their Combined Use in Eczematous Ringworm (Dermatophytosis and Dermatophytids) Phyllis S Kerr Frances Pascher and Marion B Sulzberger New York—p 288
- Soy Bean as Possible Important Source of Allergy W W Dak Kansas City Mo—p 300
- Active Transmission of Urticaria by Blood Transfusion M B Tedstrom Santa Ana Calif—p 303
- Pollen Content of Air in Toronto Canada 1932 Florence LaRoc Toronto—p 306

Journal of Bacteriology, Baltimore

27 219 324 (March) 1934

- Irradiation of Plant Viruses and of Microorganisms with Monochromatic Light I The Virus of Typical Tobacco Mosaic and *Serratia Marcescens* as Influenced by Ultraviolet and Visible Light B M Duggar and A Hollender Madison Wis—p 219
- Id Resistance to Ultraviolet Radiation of a Plant Virus as Contrasted with Vegetative and Spore Stages of Certain Bacteria B M Duggar and A Hollender Madison Wis—p 241
- Morphologic Relationships of Soil Microbes S C Vandeeve and B R Villanueva Pullman Wash—p 257
- Studies on *Pneumococcus Variations* I Variants Characterized by Rapid Lysis and Absence of Normal Growth Under Routine Method of Cultivation M D Ertou Boston—p 271
- Studies on Leukocyte Content of Milk Drawn from Brucella Abortus Infected Udders C C Prouty Pullman Wash—p 293
- Physiologic Youth of a Bacterial Culture as Evidenced by Cell Metabolism H H Walker C E A Winslow Evelyn Huntington and M Grace Mooney, New Haven Conn—p 303

Journal of Biological Chemistry, Baltimore

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- Calcium Content of Aqueous and Vitreous Humors and Serum P W Salt Iowa City—p 275
- Glycolase I Applicability of Manometric Method to Study of Glycolase Muriel E Platt and E F Schroeder Philadelphia—p 281
- Basic Amino Acids of Serum Proteins II Effect of Heating to Fifty Eight Degrees R J Block New Haven Conn—p 343
- Preparation of a Crystalline Globulin from Albumin Fraction of Cows Milk A H Palmer New York—p 359
- Specific Gravity of Synthetic Solutions of Serum Albumin and Serum Globulin R L Nugent and L W Towle Tucson Ariz—p 395
- Contribution to Chemistry of *Lactobacillus Acidophilus* II Composition of Neutral Fat J A Crowder and R J Anderson New Haven Conn—p 399
- Iodometric Determination of Cystine in the Urine R W Virtue and H B Lewis Ann Arbor Mich—p 415
- Vitamin E I Some Chemical and Physiologic Properties H S Olcott and H A Mattill Iowa City—p 423

Journal of Clinical Investigation, New York

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- *Digestion of Beef Proteins in the Human Stomach E J Maltby Toronto—p 193
- *Cutaneous Reactions in Diagnosis of Undulant Fever J D Goldstein Rochester N Y—p 209
- Distribution of Blood Phosphorus After Suppression of Renal Function Alta Ashley and G M Guest Cincinnati—p 219
- Lipoids of Serum in Diabetic Acidosis Evelyn B Man and J P Peters, New Haven Conn—p 237
- *Kidney Function and Blood Pressure H C A Lassen and E Husfeldt Copenhagen Denmark—p 263
- Measurement of Intrapleural Pressure in Man and Its Significance R V Christie and C A McIntosh Montreal—p 279
- Elastic Properties of Emphysematous Lung and Their Clinical Significance R V Christie Montreal—p 295
- Intrapleural Pressure in Congestive Heart Failure and Its Clinical Significance R V Christie and J C Meakins Montreal—p 323
- Lapema of Pregnancy E M Boyd Rochester N Y—p 347

Digestion of Beef Proteins in the Human Stomach—Maltby studied the digestion of protein in the human stomach and reports the quantitative fractional analyses of the gastric digests. Considerable peptic hydrolysis of meat can occur in the stomach in a relatively short time. There is a wide variation in the extent of hydrolysis of beef muscle protein in the normal individual. This variation occurs not only in different normal subjects but also in the same person. Subjects having pernicious anemia accomplish little or no gastric digestion of meat. No pepsin was demonstrated in the gastric contents of achlorhydric cases without pernicious anemia or of patients suffering from pernicious anemia. Achlorhydric cases without pernicious anemia showed a small amount of gastric digestion. A somewhat smaller amount was found in pernicious anemia cases. Pepsin secretion and acid secretion appeared to parallel each other in amount. The pH of the gastric contents in persons having apparently normal gastro intestinal tracts ranges from 1.23 to 6.63. No pernicious anemia patients had a pH below 5.75 for the gastric contents. The titratable acidity ranged from 151 cc of tenth normal acid per hundred cubic centimeters of gastric contents to zero, varying in individual cases. Bile was present in the gastric contents in measurable amounts in about 25 per cent of the normal subjects tested and in 18 per cent of the subjects with pernicious anemia. These conclusions are based on observations of gastric digestion of meals consisting only of meat.

Cutaneous Reactions in Diagnosis of Undulant Fever—Goldstein tested the endermic reactions of 253 patients by the intradermal injection of whole *Alcaligenes abortus* organisms killed by heat. Twenty-six or 10.3 per cent, of the group reacted positively. The reactions of ninety-two patients were similarly tested with *Alcaligenes abortus* organisms which had been extracted with alcohol and ether. Nine, or 9.6 per cent, gave positive reactions to the "fat-free" antigen. The "fat-free" antigen produced fewer general reactions and less severe local reactions than did the "heat-killed" vaccine. It did not materially increase the antiabortus agglutinin titer of the serum. The author recommends the endermic reaction for use as a supplementary procedure for the diagnosis of undulant fever, not only in those patients who have an unexplained fever but also in those afebrile persons without antiabortus agglutinins in their serum who may be suspected of having symptoms referable to an *Alcaligenes* infection.

Kidney Function and Blood Pressure—Lassen and Husfeldt followed the course of the glomerular filtration ("creatinine clearance," Rehberg) in four young men, cardio-renal healthy, while they were under spinal anesthesia, during which the fall of blood pressure was not compensated. They observed that 1 During the rather considerable fall of blood pressure which appeared when the effect of the anesthesia was at its height, the glomerular filtration decreased markedly and to a degree that corresponded fairly well with the fall of blood pressure. 2 At the same time, the concentration index increased significantly and remained high, or rose even further during the subsequent gradual rise of blood pressure. Thus the tubular function was normal, as far as the reabsorption of water is concerned or even hypernormal at the same time that the effect of the spinal anesthesia was at its height and the filtration was lowered. 3 During the fall of blood pressure there was an enormous decrease in the volume of urine, partly on account of considerable reabsorption of water in the tubules, partly on account of the lowered filtration in the glomeruli. In three of the authors' control experiments the course of the glomerular filtration was followed under spinal anesthesia during which the fall of the blood pressure was counteracted by injection of ephedrine or ephedrine and caffeine. Ephedrine (or ephedrine and caffeine) was able under optimally effective spinal anesthesia to maintain at the same time both a normal blood pressure and a normal glomerular function. The function of the tubules was not affected by this. The relation that was found between the blood pressure and the kidney function under the experimental conditions can be readily explained in accordance with the filtration reabsorption theory.

Journal of Experimental Medicine, New York

59 251 392 (March 1) 1934

- Blood Plasma Protein Regeneration Controlled by Diet I Liver and Casein as Potent Diet Factors R L Holman, E B Mahoney and G H Whipple Rochester N Y—p 251
- Blood Plasma Protein Given by Vein Utilized in Body Metabolism II Dynamic Equilibrium Between Plasma and Tissue Proteins R L Holman, E B Mahoney and G H Whipple Rochester N Y—p 269
- Perivascular Reactions in Lung and Liver Following Intravenous Injection of Streptococci into Previously Sensitized Animals C H Hitchcock Syracuse N Y A R Camero Philadelphia and H F Swift New York—p 283
- Single Cell Inoculations with *Treponema Pallidum* C S Thomas and H J Morgan Nashville Tenn—p 297
- *Rift Valley Fever in Man Report of Fatal Laboratory Infection Complicated by Thrombophlebitis F F Schwenker and T M Rivers New York—p 305
- Vitamin B₁ and B₆ Content of Liver Extract and Brewers Yeast Concentrate D K Miller and C P Rhoads New York—p 315
- Effect of Hemoglobin Injections on Erythropoiesis and Erythrocyte Size in Rabbits Rendered Anemic by Bleeding D K Miller and C P Rhoads New York—p 333
- Studies on Experimental Hypertension I Production of Persistent Elevation of Systolic Blood Pressure by Means of Renal Ischemia H Goldblatt J Lynch R F Hanzal and W W Summerville Cleveland—p 347
- Bacterial Growth and Multiplication as Disclosed by Micromotion Pictures R W G Wyckoff New York—p 381

Rift Valley Fever—Schwenker and Rivers report a case of laboratory infection of Rift Valley fever which terminated in death. The course of the disease was characteristic with the exception that it was complicated by thrombophlebitis, the patient dying from a pulmonary embolus. The phlebitis which

appeared during convalescence, was an unexpected complication. It seems probable that should the number of cases of Rift Valley fever increase, phlebitis will again be seen as a complication in a certain proportion of them.

Journal of General Physiology, Baltimore

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- Time Curve of Facet Determination in an Ultrabare Stock of *Drosophila* Melanogaster A H Hersh Cleveland—p 487
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 Guaiacol Solutions I Electrical Conductivity of Sodium and Potassium Guaiacates in Guaiacol T Shedlovsky and H H Uhlig New York—p 549
 II Distribution of Sodium and Potassium Guaiacates Between Guaiacol and Water T Shedlovsky and H H Uhlig New York—p 563
 Influence of Death Criteria on X-Ray Survival Curves of Fungus *Neurospora* F M Uber and D R Goddard Berkeley Calif—p 577
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Journal of Immunology, Baltimore

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- Study of Smooth and Rough Forms of Typhoid Bacillus in Relation to Prophylactic Vaccination and Immunity in Typhoid Fever F Maltaner—p 161
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 Pneumococcus Leukocidin Florence Oram New York—p 233

Journal of Lab and Clinical Medicine, St Louis

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- The Combined Effects of Bile Salts and Oleic Acid on Choleresis F W Co Tui New York—p 567
 Relative Effects of Diathermy and Infection on Plasma Proteins Plasma Viscosity and Suspension Stability of the Blood in Dogs J K Moen Grace Medes and I Chalek Minneapolis—p 571
 Destruction of Pyogenic Bacteria in Alimentary Tract of Surgical Maggots Implanted in Infected Wounds W Robinson and V H Norwood Washington D C—p 581
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 Intracutaneous Reactions Induced in Guinea Pigs Inoculated with Brucella Abortus Preliminary Report H Gladys Dacey and N Korovin New York—p 589
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 Partition of Potassium Between Serum and Corpuseles in Health and Disease W S Hoffman and H R D Jacobs Chicago—p 633
 Schilling Differential Blood Count in Tropical Diseases Study of Seven Hundred and Ten Cases with Especial Reference to Malaria Pauline Beregoff Colombia South America—p 644

Journal of Nervous and Mental Disease, New York

79 249 376 (March) 1934

- Parent Child Relationship in Schizophrenia I Over Protection Rejection J Kasanin Elizabeth Knight and Priscilla Sage Howard R J—p 249
 *Lecithin Treatment of Some Multiple Sclerosis Syndromes M H Weinberg Pittsburgh—p 264
 Influence of Water on Bodily Increase and on the Origin of Gouters and Insufficient Thyroid Functions Second Communication Brief Summary R Colella Palermo Italy—p 281
 *Narcosustained Therapy with Diallylbarbituric Acid in Psychiatry A B Magnus Chicago—p 286
 A Few Remarks on Brain Function G Vercellini Fresno Calif—p 301

Lecithin in Treatment of Multiple Sclerosis—Weinberg treated twelve cases of multiple sclerosis with intraspinal injections of lecithin in accordance with the method of Minnea and Dragomir. Ten of the cases have been carefully studied

before and after treatment. Nine of the ten showed greater or lesser improvement. Among these were several severe cases. The method is harmless, though rather severe on the patients in certain respects. In its entirety it consists of intraspinal lecithin injections, the administration of cod liver oil over long periods of time, and the administration of quinine hydrochloride. The theoretical grounds for the success of the treatment from the author's standpoint are that lecithin neutralizes the lipolytic substance present in the spinal fluid, and he believes that the results are sufficiently good to justify its further use.

Sustained Sleep Therapy in Psychiatry—Magnus presents a study of thirty-eight cases of mental disorder in which eighty-five treatments of sustained sleep therapy were given for a period of nearly four years. He found that sustained sleep therapy is a valuable method in manic depressive psychosis, in certain types of schizophrenia and in psychoneurosis. Of the other groups, too few cases were available. The method that he employed was a modification of the one used in the Burgholzi clinic, consisting of administering diallylbarbituric acid rectally for a period of about ten days. In the prenarcoctic stage, diallylbarbituric acid is given by mouth and occasionally intramuscularly when indicated. During the narcoctic stage, morphine-scopolamine is given on the third day of the treatment and continued thereafter now and then, to lessen the possibilities of acquiring a tolerance to diallylbarbituric acid. Narcosustained therapy is not without danger. The dangers are lessened by carefully eliminating contraindications, by maintaining a light state of sleep and by employing a specially trained nursing personnel. The quality of sleep has no bearing on the ultimate clinical outcome, lightly narcotized patients with frequent periods of wakefulness having shown equally good results. In the postnarcoctic stage lasting for three days or more the patient is conscious but his memory for recent events remains clouded and retention is poor. Situational conflicts are often clearly revealed and confabulations are not infrequent. Most patients show beneficial effects in some manner. Long standing deteriorated cases respond slightly, if at all. Among the improved, some are able to resume their former occupations, at least in part, outside the institution. Involuntal cases responded poorly.

Journal of Nutrition, Philadelphia

7 1116 (Jan 10) 1934

- Biologic Value of Rations Containing Fish Meal J L St John J S Carver O Johnson S A Moore and H Gerritz Pullman Wash.—p 13
 Vitamin B and Vitamin G Content of Dose Pears Use of Munsell Method of Assaying Foods for Vitamin G Ruth Douglass Mae Halloway Jessamine C Williams and Alta Garrison Eugene Ore—p 27
 Fat Soluble Vitamins XXXV Ophthalmogenic Properties of Certain Rations Low in Vitamin A C Baumann and H Steenbock Madison Wis—p 41
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 Iron Content of Foods Used in Municipal Hospital V Toscani and P Reznikoff New York—p 79
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 Further Experiments with Cataract in Albino Rats Resulting from Withdrawal of Vitamin G (B) from the Diet P L Day and W C Langston Little Rock Ark—p 97
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 Studies in Human Physiology V Urine Chemistry Comparison of Twenty Four Hour and Short Period Basal Excretion Correlations Between Urine Constituents and Menstrual and Seasonal Variation G W Pucher F R Griffith Jr Katherine A Brownell Jennie D Klein and Mable E Carmer Buffalo—p 131
 VI Variations in Blood Chemistry Over Long Periods of Time Including Those Characteristic of Menstruation G W Pucher F R Griffith Jr Katherine A Brownell Jennie D Klein and Mable E Carmer Buffalo—p 169
 Nutritive Value of Animal Tissues in Growth Reproduction and Lactation I Alcohol Extracted Beef Liver H G Smith and W H Seegers Iowa City—p 195

- Id II Presence of New Dietary Principle in Liver H G Smith and W H Seegers Iowa City—p 209
- *Iron Metabolism Studies in Normal Subject and in a Polycythemic Patient P Reznikoff V Toscani and Ruth Fullerton New York—p 221
- Human Milk Studies VII Vitamin B and Vitamin C Content Before and During Maternal Consumption of Yeast Eva G Donelson and Icie G Macy Detroit—p 231

Iron Metabolism—Reznikoff and his associates observed that a normal subject stored iron when placed on an intake of 26 mg daily and was in balance when on an intake of 10 mg before any therapy was started. A parenteral liver extract, which is potent in causing a remission in pernicious anemia, appeared to cause a retention of iron when the subject was taking 10 mg, and an increase in iron storage when he was taking 17 mg. When he was put on a high iron intake approximately 80 mg, the administration of parenteral liver extract was followed by a marked increase of iron excretion. Copper sulphate seemed to decrease the iron loss. The administration of a liver fraction supposedly potent in secondary anemia was followed by a retention of iron above that obtained when iron in quantities present in the liver fraction alone was given. The administration of massive doses of iron (2 Gm) gave a marked retention of iron. During a remission stage a polycythemic patient was on a slightly positive iron balance when his intake varied from 14 to 18 mg. Even with a decrease of 50 per cent of his blood following phenylhydrazine no marked increase of iron excretion was obtained. This suggests that the great bulk of iron so liberated is stored in the body. Iron excretion in the urine is little and remarkably constant and cannot be increased by any method tried in these experiments. The amount of iron excreted per gram of dried stool is remarkably constant except when large amounts of iron are given. The red blood cell count and hemoglobin values had only an indirect relationship to iron intake and therapy in the normal or polycythemic subject because of the intermediation of the iron storage depots.

Journal of Pediatrics, St Louis

4 295 430 (March) 1934

- Obesity in Children N K Nixon Los Angeles—p 295
- Nonspecific Infectious Granuloma and Carcinoid of the Appendix Report of Case J Ireland Chicago—p 307
- Insulin in Undernourished Nondiabetic Children Attempt to Induce Gain in Weight L S Radwin and S S Brown Brooklyn—p 315
- Fatigue in School Children C G Kerley New York—p 322
- Use of Oxygen in Care of Feeble Premature Babies W P Buffum and G F Conde Providence R I—p 326
- Serum Treatment of Pneumonia in Children Camille Kereszturi and D Hauptman New York—p 331
- Calcinosis Universalis and Dermatomyositis C C Rudolph St Petersburg Fla—p 342
- Achondroplasia in a Twin E L Benjamin and A Brookner New York—p 352
- Effect of Small Quantities of Breast Milk Liver Extract Iron and Copper Respectively and in Combinations on the Iron Balance of Artificially Fed Infants S Maurer J Greengard W L Curtis and Cessa Kluver Chicago—p 356
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- Congenital Heart Block with a Resume of Literature to Date Report of Three Cases L Hays Ann Arbor Mich—p 380
- Lymphangiectasis with Chylorrhea H G Poncher and T P Saltiel Chicago—p 387
- Diagnostic Tuberculin Reaction Evaluation of Total Protein Tuberculin (Seibert) and Dermotubin (Lovenstein) J Greengard and S J Nichaman Chicago—p 393
- Brucella Infection in Children Agglutination Reactions and Intracutaneous Tests A McBryde N C Daniel and M A Poston Durham N C—p 401

Achondroplasia in a Twin—Benjamin and Brookner present a case of achondroplasia occurring in a twin. It is difficult sometimes in the early months of infancy especially in an obese child to make a diagnosis of micromelia the characteristic feature of achondroplasia. In the authors case the child was seen at 10 months and was presented at the clinic with its normal twin. The general puffed or bloated appearance of the child with its unusually large head made one think of cretinism. The short extremities the disproportion between the trunk and the extremities and the roentgen observations leave no doubt as to the diagnosis of achondroplasia.

Diagnostic Tuberculin Reaction—Greengard and Nichaman observed that the intradermal reaction is best suited for routine hospital use and should supplant other methods for this purpose. The total protein tuberculin reaction (Seibert) is

extremely sensitive and will detect a higher proportion of positive reactors than will old tuberculin in doses a hundred times as great. The dermatotuberculin test, less sensitive than the intradermal test, is extremely useful because of the ease and painlessness of its application. It is well suited to routine office use. The Pirquet scarification reaction is greatly inferior to either the intradermal or dermatotuberculin test. Either of the latter is therefore preferable for routine use. In a series of 647 consecutive children a positive reaction to one or more of the tests was obtained in 185 and 111 reacted positively to all tests.

Journal of Pharmacology & Experimental Therapeutics, Baltimore

50 241 346 (March) 1934

- Diuretic Antidiuretic Activity of Posterior Pituitary Extracts E E Nelson and G G Woods Ann Arbor Mich—p 241
- Effects of Morphine and Its Derivatives on Intestinal Movements I Morphine and Codeine Isomers H M Krueger Ann Arbor, Mich—p 254
- Heat Regulation and Water Exchange XVII Relation of Serum Osmotic Pressure to the Onset of Fever H G Barbour and A Gilman New Haven Conn—p 277
- *Action of Amyl Nitrite in Complete Heart Block A R Gilchrist, Edinburgh Scotland—p 286
- Maintenance Requirements of Myxedema Patients Clinical and Chemical Assay of Commercial Thyroid Preparations J Lerman and W T Salter Boston—p 298
- Investigation into Action of St Johns Wort C H Horsley Sydney Australia—p 310
- Toxicity and Anesthetic Efficiency of New Local Anesthetics L S Fosdick and H L Hansen Chicago—p 323
- Effect of Some Compounds of Barbituric Acid and of Urethane N Rakieten L H Nahum D DuBois E F Gildea and H E Himwich New Haven Conn—p 328
- Mechanism of Sudden Death in Experimental Acute Benzol Poisoning L H Nahum and H E Hoff New Haven Conn—p 336

Action of Amyl Nitrite in Complete Heart Block—Gilchrist recorded the response of seven cases of complete heart block to the inhalation of amyl nitrite by continuous electrocardiograms over the period of changing blood pressure. In two subjects a remarkable increase in ventricular rate was observed, the percentage acceleration amounting to 83 and 93, respectively. By contrast the corresponding auricular gain was in the neighborhood of 30 per cent in each of these cases. Amyl nitrite did not relieve the block. In the remaining five cases, while the auricles were accelerated by various amounts of the drug the ventricular gain was slight, ranging from 15 to 185 per cent of the resting rate. Employed as a rough and ready clinical test for the elucidation of the nature of bradycardia this would imply that, while a failure to accelerate after the inhalation of amyl nitrite is in favor of complete heart block, acceleration in itself is compatible with the presence of complete dissociation. In other words, a negative response favors complete block but a positive does not exclude it. No striking alterations were observed in the form of the electrocardiographic deflections except in one case and no untoward symptoms occurred even in the two cases complicated by free aortic regurgitation.

Journal of Thoracic Surgery, St Louis

3 221 332 (Feb) 1934

- Future Surgical Status of Collapse Therapy Patient T J Kinsella Oak Terrace, Minn—p 221
- Esophagectomy for Carcinoma of Upper Esophagus with Lessons Derived from Operative Failure P E Truesdale Fall River Mass—p 235
- Oidiodyscrosis of Lungs Report of Case Due to Species of Geotrichum D T Smith Durham N C—p 241
- Pathogenesis of Bronchiectasis J A Miller New York—p 246
- Exploration of Lesion and Pneumocaverticlosis in Operative Treatment of Pulmonary Tuberculosis H Neuhof New York—p 270
- Intrapleural Pneumolysis Critical Review J A Moore Asheville N C—p 276
- *New Principle of Pulmonary Collapse with Production of Extreme Atrophy and Cirrhosis of Lung Experimental Study J J Wolfe T T Wang and C M Van Allen Peiping China—p 300
- *Extra Intrapleural Supraclavicular Apicectomy New Method for Collapse of Adherent Apical Pulmonary Cavities M Joannides and P Shapiro Chicago—p 315
- Childbirth Following Thoracoplasty Case W Haymaker Wallum Lake R I—p 322
- Diaphragmatic Hernia in Rabbit J D Bisgard Omaha—p 325

New Principle of Pulmonary Collapse—Wolfe and his associates experimented on twenty dogs to test a method on normal lungs whereby one portion of the organ was afforded vigorous compression with such reduction in size and such cirrhotic change as to render it virtually extinct by causing its pleura to thicken and shrink. The lobe was enclosed as far

as the hilus in a loosely fitting envelop of thin rubber and then was left fully inflated. The foreign body produced an intense pleural reaction, so that free fluid accumulated and the pleura in contact with the rubber became thickened and fibrous. The fluid collapsed the lobe and soon afterward underwent absorption, while the fibrous capsule of the lobe maintained and furthered the collapse by shrinking progressively. The envelop relaxed in folds about the organ. Hyperemia and fibroblastic proliferation developed in all parts of the parenchyma, and the cirrhosis progressed until all respiratory structures except the largest bronchi were replaced with scar tissue. These tubes remained intact, although collapsed. The shrinkage was so extensive as to reduce the lobe in a few months to a small, firm mass. The space so left was filled mainly by the neighboring lobes, which were hypertrophied, and otherwise by the heart, hemidiaphragm and chest wall, which were slightly displaced. The pulmonary compression obtained by this method is unique because of its independence of mediastinal stability, as well as because of its superior forcefulness. It should have special advantage when used clinically for collapsing stiff walled cavities of the lung. Also, the cirrhosis may possibly prove advantageous for limiting and healing noncavernous lesions. However, further study of the meaning of the parenchymatous changes and much technical refinement are needed before application is made to man.

Extra-Intrapleural Supraclavicular Apicolysis—Joanides and Shapiro propose a method for the collapse of adherent apical pulmonary cavities, to be used especially in cases in which there are definite contraindications for thoracoplasty. This operation may be performed independently or at one sitting when either a scalenotomy or a phrenic neurectomy is done. It does not require a larger incision than that which is necessary for a scalenus muscle section or a phrenic nerve resection. The operation is comparatively safe when one keeps in mind the important anatomic structures in this region: the carotid sheath with its contents, the transverse cervical artery, the trunk of the cervical sympathetic, the brachial plexus and the subclavian vessels.

Journal of Urology, Baltimore

31 257-422 (March) 1934

- Papillomatous Tumor of Renal Pelvis Associated with Similar Tumors of the Ureter and Bladder. Review of Literature and Report of Two Cases. F. N. Kimball and H. W. Ferris. New York—p. 257.
 *Nephrostomy as a Preliminary Drainage in Preparation for Secondary Nephrectomy. R. Gutierrez. New York—p. 305.
 Anatomic and Functional Disturbances of Adrenal Gland in General Visceroplethosis. O. S. Fowler. Denver—p. 363.
 Exocrine and Endocrine Functions of Testicles. W. E. Lower. Cleveland—p. 391.
 Clinical Evaluation of Quantitative Excretion of Prolan A in Teratoma Testis. R. S. Ferguson. New York—p. 397.
 Sterility in the Male. Clinical Study. J. S. Reid. Brooklyn—p. 411.

Nephrostomy Preliminary to Nephrectomy—Gutierrez calls attention to the importance of a preliminary nephrostomy before carrying out nephrectomy in selected cases of pyonephrosis in which the condition of the patient does not warrant exposing him to the shock of the removal of the diseased organ. Nephrostomy as a preliminary drainage is not recommended in tuberculous pyonephrosis, when the kidney can be readily exposed and removed without any difficulty. The author states that irrespective of the surgical difficulties that may be encountered during the performance of a secondary nephrectomy, the final results in many instances of large and extensive pyonephrotic kidneys will justify the conservative method employed. The mortality is much lower after two-stage nephrectomy than after a hasty primary subcapsular nephrectomy. The author believes that the standardization of this surgical procedure will undoubtedly serve not only to relieve the temporary symptoms but also to bring about permanent cure in many grave cases.

Kansas Medical Society Journal, Topeka

35 81-120 (March) 1934

- Overweight. Its Cause and Treatment. E. H. Hainger. Kansas City. Mo.—p. 81.
 Obstetric Hemorrhage Ante Partum. E. A. Reeves. Kansas City—p. 84.
 Management of Occipitoposterior Position. H. C. Clark. Wichita—p. 87.
 Malignancies of the Skin. Report of One Hundred and Twenty Two Cases. J. G. Missidine and J. V. Van Cleave. Wichita—p. 90.

Kentucky Medical Journal, Bowling Green

32 137-182 (March) 1934

- Contagious Diseases. Scarlet Fever. J. W. Armstrong. Berea—p. 140.
 Id. Diphtheria. R. K. Galloway. Henderson—p. 142.
 Id. Anterior Poliomyelitis. T. Campbell. Somerset—p. 144.
 Saturation Irradiation by Deep X-Ray Treatment for Cancer of the Breast. W. J. Young. Louisville—p. 149.
 Some Problems in Traumatic Surgery. I. N. Kerns. Louisville—p. 151.
 Cancer of the Skin. R. L. Kelly, Louisville—p. 155.
 Meningovascular Syphilis. P. S. York. Glasgow—p. 158.
 Significance of Cardiac Pain. E. B. Houston. Murray—p. 161.
 Five Cardinal Signs of Danger in Pediatric Diagnosis. T. C. Smith. Louisville—p. 167.
 Hyperemesis Gravidarum. S. P. Oldham. Owensboro—p. 170.
 Postoperative Pulmonary and Circulatory Complications of Spinal Anesthesia and Ether. H. S. Frazier. Louisville—p. 174.

Laryngoscope, St. Louis

44 85-172 (Feb.) 1934

- Functional Ear Examinations in Patients with Meniere's Syndrome. Report of Cases. P. Northington. New York—p. 85.
 Consideration of Recurrent Mastoid. A. Fine. Brooklyn—p. 95.
 Neoplasm in External Auditory Canal. Report of Two Cases. Operation Recovery. H. B. Blackwell, New York—p. 105.
 Acute Mastoiditis Complicated with Septic Leukopenia and Local Lesions of the Lips. Nasal Orifices and Pharynx Resembling Those of Agranulocytosis. Report of Case. A. J. Herzog. New York—p. 109.
 Surgery and Dietetic Treatment in Its Relation to Nasal Pathology. E. V. Uhlmann. Portland, Ore.—p. 116.
 External Ethmoidectomy. E. D. Warren and G. E. Griffith. Tacoma, Wash.—p. 128.
 Rhinoscleroma. Report of a Probable Case. P. S. Stout. Philadelphia—p. 142.
 Roentgen Diagnosis and Treatment of Laryngeal Neoplasms. I. S. Hirsch and S. Baum. New York—p. 144.
 New Dilator for Pharyngeal Orifice of Eustachian Tube. L. K. Pitman. New York—p. 167.

Maine Medical Journal, Portland

25 21-42 (Feb.) 1934

- Caisson Sickness. A. A. Stott. Bath—p. 24.
 Effect of a 1 Per Cent Solution of Silver Nitrate on Growth of Gonorrheal Organism in Vitro. Its Clinical Significance with Respect to the Crede Technique. J. Gottlieb. Lewiston and W. Freeman. Bar Harbor—p. 28.
 The Patient. J. R. Garber. Birmingham, Ala.—p. 33.

Michigan State M. Society Journal, Grand Rapids

33 115-174 (March) 1934

- Blood Chemistry in Nephritis. W. E. Post. Chicago—p. 115.
 Cardiovascular Syphilis. J. L. Chester. Detroit—p. 131.
 Massive Hemorrhage from a Corpus Luteum Cyst. A. D. Allen and W. G. Gamble. Bay City—p. 139.
 Disease as a Factor Influencing History. J. H. Dempster. Detroit—p. 146.

Military Surgeon, Washington, D. C.

74 113-168 (March) 1934

- Gastro-Enterology and Military Medicine. Utilization of a Modern Specialty in Peace and War. J. L. Kantor—p. 113.
 Snake Bites and the Saving of Human Life. M. L. Crimmins—p. 123.
 Gangrene of Scrotum and Penis. B. G. P. Shafiroff—p. 133.
 Military Medicine as a Specialty. How Can a Knowledge of It Be Promoted in the Medical Profession in Civil Life and in the Reserves? J. A. Roddy—p. 135.
 Apparently Stillborn Infants Revived by Intracardiac Injections of Epinephrine. S. A. Cameron—p. 140.

Missouri State Medical Assn. Journal, St. Louis

31 89-132 (March) 1934

- Tuberculosis in Childhood. S. H. Snider. Kansas City—p. 89.
 Obstruction of Vena Cava Distal to Renal Veins. E. G. Wakefield and C. W. Mayo. Rochester, Minn.—p. 92.
 Neurologic Manifestations of Epidemic Encephalitis. Preliminary Report on the St. Louis 1933 Epidemic. J. F. McFadden. St. Louis—p. 96.
 *Pregnancy and Syphilis. Preliminary Report. S. D. Soule. St. Louis—p. 98.
 Stillbirth Problem in St. Joseph. Mo. W. T. Stacy. St. Joseph—p. 107.
 Unusual Anatomic Relation of Common Carotid Artery and Vein to Right Lobe of the Thyroid. Report of Case. F. J. Smith. St. Louis—p. 105.
 Mental Aspects of Crime. G. W. Robinson. Kansas City—p. 107.
 Psychiatric Aspects of Stammering. V. Satterfield. St. Louis—p. 117.

Pregnancy and Syphilis—Soule reviews the problem of pregnancy and syphilis. In his clinic an attempt is made to administer as vigorous treatment as the mother will tolerate safely. Prenatal care is given by the same observers at weekly intervals through the duration of treatment, the urine is examined carefully and the blood pressure taken weekly. Each case is individualized and treatment calculated for the remain-

ing duration of pregnancy Weekly injections of 0.3 Gm of arsphenamine are given for a period of twelve weeks Concurrently, in the last three weeks of this period, 15 cc bismocymol is given intramuscularly once a week After six weeks treatment with bismocymol given once a week, another series of arsphenamine injections is begun An attempt is made during the early calculation to complete the treatment (at term) under arsphenamine or neoarsphenamine alone on the basis that the arsenical preparations are less irritating to the kidney than compounds of bismuth or mercury An "adequate" course of treatment is at least eighteen weeks A preliminary survey of his own patients reveals that at least 80 per cent of the mothers who received six or more arsphenamine or neoarsphenamine injections delivered healthy children with negative blood Wassermann reactions at 3 months of age and without any of the physical stigmas of syphilis The best results are obtained with treatment from the beginning of pregnancy and pursued throughout the gestation

New England Journal of Medicine, Boston

210 457 506 (March 1) 1934

- Diagnosis of Chronic Ulcerative Colitis E D Kiefer Boston —p 468
Pathology of Gastrointestinal Tract in Pernicious Anemia and Subacute Combined Degeneration of the Spinal Cord Study of One Hundred and Fifty One Autopsies Madeline R Brown Boston —p 473
Medical Treatment of Gastrojejunal Ulcer Sara M Jordan Boston —p 477
Unusual Etiology of Femoral Fracture R Ulin Boston —p 480
Recent Progress in Physiology P G Stiles Boston —p 482

210 507 562 (March 8) 1934

- Cancer of the Prostate and Prostatic Diseases F L Hoffman Philadelphia —p 507
Peptic Ulcer Its Surgical Management J C McCann Worcester Mass —p 512
Some Problems Frequently Encountered in Treatment of Recent Fractures H E Connell Fairfield, Ala —p 522
Change in the Massachusetts Cancer Trend G H Bigelow and H L Lombard Boston —p 526
Pericardial Hemorrhage Complicating Scurvy Case Report W E Barton and W Freeman Worcester Mass —p 529

New Orleans Medical and Surgical Journal

86 599 650 (March) 1934

- Etiology and Pathology of Bacillary Dysentery C W Duval, New Orleans —p 599
Clinical Features of Bacillary Dysentery D N Silverman New Orleans —p 601
Distribution and Diagnosis of Amebic Enteritis in the Southern United States E C Faust New Orleans —p 605
Clinical Aspects of Amebiasis C F Craig New Orleans —p 609
Infection in the Innocent Looking Cervix as a Causative Factor in Pelvic Lymphangitis T B Sellers and J T Sanders New Orleans —p 613
Fracture of the Hip in the Aged G A Hendon Louisville Ky —p 619
Alum Poisoning Report of Case L Levy New Orleans —p 620

New York State Journal of Medicine, New York

34 175 220 (March 1) 1934

- Surgery on Patient with Diabetes Mellitus Beverly Chew Smith, New York —p 175
Surgery in Patient Presenting Thyroid Disease R V Grace and C Weeks New York —p 180
Surgery in Patients Presenting Pulmonary Disease F B Berry New York —p 183
Surgery of Infancy and Childhood E J Donovan New York —p 187
Clinical Study of Persistent Enuresis M F Campbell New York —p 190
New Intravenous Therapeutic Agent for Control of Peptic Ulcer H A Butman L J Schultz and L A Vankleeck Manhasset N Y —p 195

New Intravenous Agent for Control of Peptic Ulcer
Butman and his associates used a combination of sodium citrate and sodium chloride buffered to the correct hydrogen ion concentration with a buffer salt in treating twenty cases of duodenal and two of gastric ulcer Triply distilled water is used and it is sterilized (after the hydrogen ion concentration has been checked by titration) under pressure It is then transferred under absolutely aseptic conditions into sterile 20 cc nonsoluble Jena glass ampules The use of an ordinary 20 cc syringe is most practical and the dosage has been graduated in the following manner first dose 10 cc and for the remaining doses the contents of a 20 cc ampule The injection may be given two or three times a week or in severe cases, every twenty four hours They feel that, following the regular course

of twenty-four injections, it is advisable to continue giving one injection every two to four weeks for a year In no case have any untoward reactions other than a pleasant tingling sensation in the tongue and lips been experienced Hemorrhage, which is a common complication of peptic ulcer, is no contraindication This therapy permits regular well balanced and well chosen meals from the onset of treatment The authors believe that the intravenous injection of the solution appears to be more effective in the treatment of peptic ulcer than the classic regimens that have been tried in the past It approaches more accurately the supposed etiology of peptic ulcer It promotes healing by (1) improving the chemical or acid base balance of the blood (2) improving both the direct and collateral circulation to the ulcer bearing area of the stomach and duodenum, thereby lessening the tendency toward capillary stasis or venofibrosis with consequent malnutrition of gastroduodenal mucosa, (3) improving the tissue resistance to digestion of the same by the gastric secretions, and (4) improving the general circulatory system throughout the body with resulting increased resistance to systemic disease The authors obtained symptomatic cure in all their patients As yet they make no positive statement as to permanent cure

Northwest Medicine, Seattle

33 73 114 (March) 1934

- Individuality in Treatment of Fractures E L Eliason, Philadelphia —p 73
New Vaccine Treatment of Arthritis K K Sherwood Kirkland Wash —p 78
Giant Cell Tumor of the Vertebrae W E Grieve Spokane, Wash —p 81
Etiologic Factors in Disease of the Nasal Accessory Sinuses H M Bouvy and J B Flynn Portland Ore —p 84
Recent Trends in Treatment of Sinus Disease R A Fenton Portland, Ore —p 90
General Consideration of Vasomotor Rhinitis Reported Case of Flaxseed Sensitivity M W Moore, Portland Ore —p 95
Nutrient Broth Protein Treatment of Wounds W C Speidel Seattle —p 99

Nutrient Broth in Treatment of Wounds—Speidel employed nutrient broth made up of meat extract, peptone broth, it may or may not contain dextrose as desired and it has some sodium chloride and sodium hydroxide to bring it up to a nonirritating pH of 7, with the addition of a weak solution of procaine hydrochloride as required It is applied in the form of a saturated compress, a gauze wick drain, by infiltration into the margins and base of a wound and by irrigation The author cites the following cases in which this method of treatment was applied 1 A man having three suppurating wounds on the right elbow, one being three-fourths inch in diameter, another one-half inch in diameter and a third one-eighth inch in depth, that had been variously treated with indifferent results for four weeks following injury and infection Two days subsequent to injection with nutrient broth and application of a small compress under cellophane they were healed 2 An extensive and dissecting fistula-in ano in which, after complete dissection of the tract, the usual method of leaving it packed and open to granulate was replaced by infiltration with broth and primary closure This resulted in primary union 3 A patient having a diffuse right-sided, suppurative, perforative appendicitis, whose wound was closed without drainage after removal of the appendix and the injection intraperitoneally of 400 cc of broth Convalescence was strikingly normal in regard to the peritoneum The wound, however, healed with suppuration, the explanation being that broth had not been injected into the walls of the abdominal incision The author concludes that there have been many similar instances, for example carbuncles, furuncles and indolent ulcers, but that the foregoing cases serve to indicate the general utility of the treatment

Ohio State Medical Journal, Columbus

30 129 192 (March 1) 1934

- Newer Aspects of Management of Hyperthyroidism G M Curtis and F J Phillips Columbus —p 149
Statistical Study of Peptic Ulcer M E Blahd Cleveland —p 156
Vagaries of Venous Thrombosis W H Bunn Youngstown —p 159
A County Plan for the Control of Tuberculosis C L Hyde, Akron —p 162
Relationship of the Autopsy Surgeon and the Embalmer Preliminary Report J Forman Columbus —p 167

Philippine Islands Med Association Journal, Manila

14 37 80 (Feb) 1934

- Rupture of the Uterus Report of Cases in the Philippine General Hospital from 1910 to November 1933 B Roxas A Baens and J R Katigbak Manila—p 37
- Mortality from Tuberculosis of the Lungs in a Rural Community (Binangonan Rizal) M M Aycardo Manila—p 42
- Economic Problems of the Medical Practitioner O L Villacorta Manila—p 55

Public Health Reports, Washington, D C

49 183 220 (Feb 9) 1934

- Sensitivity in Vitro of Bacteria to the Beta and Gamma Rays of Radium R R Spencer—p 183
- Liquid Sulphur Dioxide as a Fumigant for Ships Part I Advantages, Methods Apparatus and Costs C I Williams—p 192

49 221 250 (Feb 16) 1934

- Effect of Flea Passage on Epidemic Typhus Virus R E Dyer—p 224
- Volume Changes of Tumor Cells in Vitro M J Shear and L C Fogg—p 225

49 251 288 (Feb 23) 1934

- Studies on Standardization of Vibrio Septique Antitoxin Ida A Bengtson—p 251

49 289 320 (March 2) 1934

- Mortality in the Native Races of the Territory of Alaska with Especial Reference to Tuberculosis F S Fellows—p 289
- Further Observations on Agglutination of Proteus X Strains in Rocky Mountain Spotted Fever (II) G E Davis R R Parker and Mary E Walker—p 298

Rhode Island Medical Journal, Providence

17 17 34 (Feb) 1934

- Abdominal Emergencies in Infancy and Childhood H W Hudson Jr Boston—p 18
- Diuretics in Treatment of Renal and Cardiac Edema M N Fulton Boston—p 26

South Carolina Medical Assn Journal, Greenville

30 29 48 (Feb) 1934

- Strabismus with Some Consideration of Methods for Its Correction J W Jervey Jr Greenville—p 32
- Pain Killers in Obstetric Patients A L Smethers Anderson—p 34

Southern Medical Journal, Birmingham, Ala

27 95 184 (Feb) 1934

- High Points in Thirty Six Years of Rhinology T W Moore Huntington W Va—p 95
- Nephritis and Pregnancy H J Stander and K Kuder New York—p 99
- Functional Uterine Bleeding F E Keene and F L Payne Philadelphia—p 108
- Treatment of Edema in Congestive Heart Failure C T Stone G Herrmann and E H Schwab Galveston Texas—p 113
- *Malaria Treatment of Dementia Paralytica Results in Two Hundred and Five Cases After Five to Eleven Years W Freeman W W Eldridge and R W Hall Washington D C—p 122
- Traumatic Shock and Hemorrhage A Blalock Nashville Tenn—p 126
- Some Therapeutic Procedures Based on Recent Advances in Biologic Chemistry W M Marriott St Louis—p 130
- Hypoglycemia Due to Adenoma of Islets of Langerhans N A Womack St Louis—p 135
- *Some New Developments in Renal Surgery O S Lowsley New York—p 139
- Clinical Observations on Redundant Colon (Dolichocolon) J Friedewald and M Feldman Baltimore—p 147
- Observations on Naturally Induced Malaria M F Boyd Tallahassee Fla—p 155
- Endemic Typhus of the United States L F Badger Washington D C—p 159
- Recent Outbreak of Encephalitis at St Louis H S Cumming Washington D C—p 161
- Treatment of Pellagra J H Smith Richmond Va—p 163
- Treatment of Tuberculosis in Childhood J W Bruce Louisville Ky—p 165
- Environmental Case Studies in Teaching of Preventive Medicine H E Meloney Nashville Tenn—p 167
- Arrest of Nutritional Cataract in the Albino Rat by the Use of Vitamin G (B) W C Langston and P L Day Little Rock Ark—p 170
- Eclampsia Report of Case M P Rucker Richmond Va—p 176

Malaria Treatment of Dementia Paralytica—Freeman and his associates present the results of 195 out of a total of 205 dementia paralytica patients whose progress was followed for a period of from five to eleven years after they received malarial treatment. Of these, 31 per cent were discharged from the hospital, 39 per cent remained hospitalized and 30 per cent

are known to be dead. The remissions obtained show indications of being permanent and the percentage of recoveries has not declined with the passage of years. Failures in malarial therapy are chargeable largely to delay in its administration and to restriction of the number of paroxysms. Persistently positive serologic responses after three years indicate the probability of failure, but negative responses are often found in deteriorated patients.

Some Developments in Renal Surgery—Lowsley points out that animal experimentation and clinical experience based on observation at the operating table, functional tests after operations, and pyelographic and microscopic studies prove that (1) hemostasis is most satisfactorily accomplished by tying ribbon gut round kidneys subjected to nephrotomy, (2) there is perfect healing and apposition of the parts, (3) there is the slightest amount of distortion of the kidney pelvis and (4) there is little if any diminution of function in kidneys thus treated. Nephropexy accomplished by the use of chronic ribbon gut as described by the author is a perfectly satisfactory method of operation in suitable cases. Experimental studies and clinical observation of rupture of the kidney convince the author that 1 Every patient having renal traumatism of sufficient severity to cause hematuria or pain in the kidney should be hospitalized. 2 Examination should be instituted within twenty-four hours if the hematuria continues. 3 Rarely does renal traumatism cause primary rupture of the fibrous capsule, although this structure may be digested by the ferments released by traumatism to the cortical substance resulting in perinephritis, infiltration of urine and pus and in many cases complete destruction of the kidney and menace to the life of the patient. 4 The operation of choice in rupture of the kidney is control of hemorrhage and repair of the lacerated portion of the cortex by means of ribbon gut properly applied. Drainage is accomplished by means of soft rubber tubes. Fat is much superior to muscle or any other bodily tissue as an aid to the control of hemorrhage of the cortex of the kidney.

Surgery, Gynecology and Obstetrics, Chicago

58 551 678 (March) 1934

- Acute Circulatory Failure as Exemplified by Shock and Hemorrhage A Blalock Nashville Tenn—p 551
- Oxygen Pneumoperitoneum in Diagnosis and Treatment of Tuberculosis of the Genitalia Intestine and Peritoneum I F Stein Chicago—p 567
- The X Ray in the Study of the Catgut Ligature P F Ziegler and G L Clark Urbana Ill—p 578
- Prevention of Persistent and Recurrent Hyperthyroidism Based on a Study of Seven Hundred and Sixty Nine Cases of Exophthalmic Goiter A S Jackson Madison Wis—p 590
- *Relaxation of Pelvic Joints in Pregnancy D Abramson S V Roberts and P D Wilson Boston—p 595
- Chronic Follicular Gastritis C R K Johnston Cleveland—p 614
- Severing Adhesions in Artificial Pneumothorax by Electrosurgical Method R C Matson Portland Ore—p 619
- Preoperative Treatment of Prostatic Obstruction A B Cecil Los Angeles—p 630
- Cancer Treatment Results as Shown in Twelve Year Survey at Evanson Hospital W R Parkes Evanston Ill—p 634
- *Automatic Method of Treatment for Fractures of the Tibia and the Fibula R Anderson Seattle—p 639
- Surgical Aspects of Polycystic Kidney Report of Eighty Five Surgical Cases W Walters and W F Braasch Rochester Minn—p 641
- *Two Stage Operation for Fistula in Ano J H Allen and B Haskell Philadelphia—p 651
- Diagnosis and Treatment of Circulatory Disturbances of Extremities G de Takats and W D Mackenzie Chicago—p 655

Relaxation of Pelvic Joints in Pregnancy—Abramson and his associates believe that relaxation of the pelvic joints and particularly of the symphysis pubis is a normal accompaniment of pregnancy. Relaxation of the symphysis begins in the first half of pregnancy, progresses but slightly in the last three months, and is but little affected by parturition. Retrogression begins immediately following delivery and is usually complete by the end of from three to five months. The process of relaxation is physiologic and is probably the result of hormone activity. Abnormal separation of the symphysis pubis occurs in about 25 per cent and probably results simply from an exaggeration of the normal physiologic process, only exceptionally does trauma play any part. Symphyseal relaxation is accompanied by an increase of pubic mobility and is frequently associated with characteristic symptoms resulting from instability of the pelvic joints. Treatment is indicated to relieve symptoms and

to prevent the development of a condition of chronic relaxation of the pelvic joints, which is frequently responsible for a great deal of later discomfort among women who have borne children. The key to the situation lies in the prompt recognition of abnormal separation of the symphysis when present, and in order to detect this the obstetrician should include the symphysis pubis in his regular routine of examination of the pregnant patient both before and at the time of delivery.

Treatment for Fractures of Tibia and Fibula—Anderson presents a method of treating fractures of the tibia and fibula with an automatic splint in which fragments are automatically aligned and immobilized. The preparation of the leg includes shaving and cleansing with soap and water, and then sterilization with ether and iodine, followed by alcohol if the iodine is strong. An injection of from 5 to 20 cc of a 2 per cent solution of procaine hydrochloride is made into the skin and down into the periosteum on each side of the tibia at both sites of transfixion, while from 20 to 60 cc is injected into the hematoma and round the end of each fragment. The distal pin is put straight through the center of the tibia at a point two fingerbreadths superior to the tip of the internal malleolus. Recently the author has changed the site of the superior insertion to transfix the condyles of the tibia at their widest part midway between the anterior and posterior surfaces, just distal to the knee joint. Without incising of the skin or preliminary drilling of the bone, each stainless steel Steinmann pin is forced through by rotary hand pressure alone. Sterile dry dressings, about 3 inches square, spiked over each pin-end, safeguard infection, they are held close to the wound by a bandage of nonsterile sheet wadding. By grasping the foot and pulling on it the assistant raises the leg while the splint is placed beneath and the pins are clamped to their respective horseshoes. The foot and ankle are padded with sheet wadding special attention being given to protection of the heel. All malposition is now controllable, traction and rotation are adjusted, angulation is corrected and the adjustable foot rest is set. When the reduction is complete it is roentgenographically checked. Separation of fragments due to overtraction must be assiduously avoided because, notwithstanding perfect alignment, usually no result can be considered satisfactory without end-to-end pressure contact. Immobilization of satisfactory reduction is completed by the application of a cast, which firmly incorporates the pins and generally extends from midtigh downward over the foot plate to slightly beyond the toes. The sole of the foot should be reinforced with a 4 inch plaster bandage. When the plaster is set, the pin clamps are loosened and the leg in its cast is lifted free from the horseshoes and from the foot plate. Ordinary corks are placed on the ends of the pins which are then covered and fastened to the cast by a plaster bandage. A window cut over the patella serves for subsequent mobilization of the cap, allowing freedom of movement.

Two Stage Operation for Fistula-in-Ano—Allen and Haskell describe a modification of Pennington's two stage seton method for anorectal fistulas. They obtained good union of the ends of the muscles without deformity and good function of the sphincters with their modified method in 119 cases. The severity of the fistulous process varied widely. Twenty-four were of the "horseshoe type," bilateral tracts communicating either anteriorly or posteriorly to the anal canal. One patient presented fourteen external openings. Sixty-two had two or more external openings. Eight gave both clinical and histologic evidence of tuberculous infection. In one case in which the blood Wassermann reaction was positive histologic examination of the tissue strongly suggested a syphilitic process. In another, the fistulous tract communicated with a postanal dermoid cyst.

Texas State Journal of Medicine, Fort Worth

29 671 714 (March) 1934

- Surgical Aspects of Lesions in the Optic Chiasmal Region A D Errieo Dallas—p 675
Care and Feeding of the Premature Infant F M Martin San Antonio—p 680
Diagnosis and Treatment of Bronchiectasis R B Homan R H Homan and R B Homan Jr El Paso—p 685
Extra Uterine Pregnancy J V Sessums San Angelo—p 688
Texas Capitalizes on CWA Funds to Aid Public Health J W Brown, Austin—p 693
Acute Conditions of the Abdomen T D Frizzell Quanah—p 695

Western J Surg, Obst & Gynecology, Portland, Ore

42 67 126 (Feb) 1934

- Chorio Epithelioma R J O Shea Seattle—p 67
Induction of Labor J Vruwink Los Angeles—p 78
Painful Menstruation with Especial Reference to Posture as an Etiologic Factor T W Adams Portland Ore—p 88
Ankylosis of the Shoulder Joint in Adults Report of Four Cases D G Leavitt Seattle—p 99
Inverted T Shaped Incision with Block Anesthesia in Radical Surgery of Maxillary Sinus E F Ziegelman San Francisco—p 103
Krukenberg Tumor R W Binkley, Selma, Calif—p 110
Spinal Anesthesia in General Practice A W Hoaglund Minneapolis—p 115

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- Status of Fractures in the Field of Surgery Presidential Address S C Plummer Chicago—p 127
Vaginal Calculi J C Masson and A A Appell, Rochester Minn—p 132
Treatment and Results of Severe Fractures of the Elbow E M Miller Chicago—p 139
Surgical Approach to and Resection of the Splanchnic Nerves for Relief of Hypertension and Abdominal Pain W M Craig Rochester Minn—p 146
*Radical Operation for Traumatic Arteriovenous Fistula of Femoral Vessels Case Report R H Jackson Madison Wis—p 152
Resume of Ten Years of Surgery for Cancer of the Breast W A Coventry and R J Moe Duluth Minn—p 163
Treatment of Acute Empyema A Brown, Omaha—p 170
Neck Dissection for Secondary Malignancy of the Neck Glands E D Twyman Kansas City Mo—p 175

Operation for Traumatic Arteriovenous Fistula—Jackson overcame the danger of hemorrhage and the use of a local anesthetic when completely excising a traumatic femoral arteriovenous fistula of a duration of six years by administering a low spinal anesthesia, completely exsanguinating the limb by applying an Esmarch bandage from the foot to the groin, placing Wyeth pins as for amputation at the hip applying a tourniquet proximal to the Wyeth pins, and removing the Esmarch bandage. The institution of these measures not only greatly facilitated the technical performance of the operation, which was carried out in a perfectly dry field of uninfiltated tissues, but also minimized the time required for its performance. The authors patient sought aid because of dyspnea on exertion, due to a dilated and hypertrophied heart ensuing from the establishment of a double circulatory system incident to the establishment of the fistula. The author believes that the decision as to what particular operative procedure—endoaneurysmorrhaphy, transvenous suture or radical excision—should be made only at the time of operation by direct inspection of the lesion. No operation should be undertaken until the collateral circulation test of Matas is positive. The development of a traumatic arteriovenous fistula of the femoral vessels should be prevented at least to some extent by the recognition on the part of the general practitioner and surgeon that every penetrating injury in the vicinity of the femoral vessels which is followed by swelling and ecchymosis of the thigh deserves immediate hospital and competent surgical attention. He suggests that by the use of preparatory and postoperative blood transfusions such patients could be operated on soon after the injury, under spinal anesthesia, and that, by the utilization of Wyeth pins and a tourniquet at the hip ready access to and repair of the incisional injury to the vessels could be reasonably assured.

Wisconsin Medical Journal, Madison

33 169 252 (March) 1934

- Differential Diagnosis of Hyperthyroidism and Neurosis A L Mayfield Kenosha—p 181
The Pros and Cons of Biopsy P F Doege Marshfield—p 184
Treatment of Intestinal Obstruction Involving Problems in Abnormal Physiology and Chemistry E H Mensing Milwaukee—p 187
Amebiasis Its Clinical Aspects and Control M Fernan Nunez Milwaukee—p 191
Prophylaxis of Birth Trauma Some Commonly Neglected Factors J W McGill Superior—p 196
Double Intussusception of the Bowel S M Welsh and A R Coyne La Crosse—p 199
Endothelioma of the Pleura Case Report J P Zohlen Sheboygan—p 202
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Primary Carcinoma of the Lung W M Jermain Milwaukee—p 205
The Physician of Yesterday Today and Tomorrow J F Bennett Burlington—p 210

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

15 170 (Feb.) 1934

- *Changes in Esterase and Fat Content of Serum Induced by Cancer and Cancer Producing Agents H N Green—p 1
- Studies on Protein Free Suspensions of Viruses V Further Observations on Nature and Antigenic Properties of a Highly Purified Phage I J Kligler and I Olitzki—p 14
- Optimal Agglutination Significance of Different Ratios of Serum to Bacteria J T Duncan—p 23
- Question of Pressor Bodies in Blood of Hypertensive Subjects O L V S de Wesselow and W J Griffiths—p 45
- Propagation of Virus of Infectious Laryngotracheitis on Chorio Allantoic Membrane of the Developing Egg F M Burnet—p 52
- Differentiation of Viruses of Fowl Plague and Newcastle Disease Experiments Using the Technic of Chorio Allantoic Membrane Inoculation of the Developing Egg F M Burnet and J D Ferry—p 56
- Attempts to Locate the Site of Antibody Production G A H Buttle—p 64

Changes in Esterase and Fat Content of Serum Induced by Cancer—Green observed that during the growth of the rat Jensen sarcoma the esterase content of the serum falls progressively, ultimately reaching a low level. The esterase content of the liver, lung and kidney is much diminished. The phosphatase content of the serum falls, but the average fall is less than half that of the esterase. In rats resistant to inoculation of the Jensen sarcoma the esterase content of the serum tends to rise. The fatty acid content of the serum rises in many and possibly in all rats during the growth of the Jensen sarcoma. It may reach a maximal level approaching 2 per cent, and then falls during the terminal stages of tumor growth. There is an associated rise in the cholesterol, but of a much less degree. In rat epitheliomas of mice and in localized human carcinomas the serum esterase content ranges round normal, with a tendency to rise slightly. Evidence was obtained that the application of tar or the inoculation of tar or 1,2,5,6-dibenzanthracene produces a rise in the esterase content of the serum of rabbits in a proportion of cases. The author discusses the possible significance of these observations.

British Journal of Physical Medicine, London

8 149 168 (Feb.) 1934

- Some Experiences in Treatment of Mental Cases by Physical Methods A MacGregor—p 130
- Ultraviolet Radiation in Mental Disease L C F Chevens—p 153
- Treatment of General Paresis by Hyperpyrexia Produced by Diathermy N B Graham—p 157
- Colonic Stasis in Mental Disease N W Kaiser—p 160

Journal Obst and Gynec of Brit Empire, Manchester

41 1 164 (Feb.) 1934

- *Vulvoperineorrhaphy A L Robinson—p 1
- Study of Immunity to Hemolytic Streptococci in Puerperal Infection C G Paine—p 12
- Significance of Recurrence in Late Toxemias of Pregnancy G F Gibberd—p 23
- *Experimental Study of a Rare Case of Hypothyroidism in a Woman A L Mudahar, K Venkatachalam and A N Raghaviswaran—p 35
- Early Fetopic Gestation Case A L Robinson and M M Datnow—p 46
- Some Unusual Cases of Extra Uterine Pregnancy R E Tottenham—p 56
- Endometriosis of Round Ligament L Kaulich and G Gomori—p 63
- Commentary on Operative Treatment of Prolapse with Report of Death from Intestinal Obstruction After Ventral Fixation W N Searle—p 69
- Preternatural Patulousness of Fallopian Tubes Menace to the Peritoneal Cavity J R Goodall—p 78
- Spontaneous Rupture of Uterus at Six and a Half Months H Banks—p 82
- *Artificial Production of Menstruation with Ovarian Hormones in Cases of Primary and Secondary Amenorrhea A Loeser—p 86

Vulvoperineorrhaphy—Robinson believes that since it is difficult to obtain and impossible to preserve an aseptic field of operation in the presence of an open intestine a 1:80 phenol lotion should be employed as an antiseptic throughout the operation. A deliberate attempt should be made to eliminate all actual and potential spaces in the new perineum because a blood-tight wound reduces the risk of infection and promotes good healing. Special effort should be made to secure hemostasis. The date of operation should be arranged with due regard to the menstrual cycle so as to avoid, as far as possible, the onset of menstruation during early convalescence. In forty-

eight of fifty consecutive operations the author obtained a satisfactory functional result, as shown by the capacity of the patient to retain flatus. The wound in two patients did not heal satisfactorily, both patients had been operated on elsewhere and in one patient, suffering from lupus of the nose, there was a marked suggestion of local tubercle.

Study of Hypothyroidism—Mudahar and his associates describe a rare case of thyroid deficiency in a woman giving rise, in addition to the other symptoms of hypothyroidism to repeated abortions (but going to term when put on 0.032 Gm. of desiccated thyroid three times a day), to spontaneous flow of milk and to vesical troubles in the baby. Experimentally, it has been shown that the milk of the hypothyroid woman contains a substance capable of inducing contractions of a guinea pig's uterus at a period of lactation when the milk of normal women does not show evidence of its presence. This substance has been found to be identical with solution of pituitary. This substance is also found in normal women till a few days after delivery, probably to help involution of the uterus. The authors discuss the probability of hypothyroidism being one of the causes of frequent abortion, and the effect of solution of pituitary on the volume of the bladder and its contraction.

Artificial Production of Menstruation with Ovarian Hormones—During the last year Loeser has treated five cases of primary amenorrhea in which he tried not only to prove histologically the development of menstrual endometrium but to produce menstrual bleeding as well. In three out of these five cases he succeeded in producing normal menstruation with doses of 300,000 mouse units of a preparation of follicular hormone, followed by injections of a luteum hormone. The menstruation was normal, in the sense that the mucous membrane of the uterus curetted on the second or third day of menstruation showed all the distinct histologic indications of an efficiently functioning endometrium on the twenty-eighth day of the menstrual cycle. These women, who were aged respectively 25, 30 and 38 years had previously never menstruated and had not had any genital bleeding. The uteri of the three patients were hardly palpable and as a result of the treatment the uterus in each case increased in length to 5 and 7 cm respectively. On the first and seventh day, 1 cc of the follicular hormone containing 100,000 mouse units was given intramuscularly. On the fourteenth day another injection of 1 cc (50,000 units) was given, on the nineteenth day 1 cc (50,000 units), and from the twenty-second to the twenty-sixth day (inclusive) 1 cc of corpus luteum hormone (10 rabbit units) was given. On the twenty-eighth day menstruation ensued. It is possible, however, by administering stronger doses, and more quickly, to produce menstruation a few days earlier. The treatment not only resulted in menstruation, but also the feminine attributes of the patients, heretofore not strongly marked, were changed physically and psychically. A positive result could not be attained in two cases. Curettings revealed tuberculosis in one, the other one showed that the mucous membrane of the uterus was entirely absent.

Journal of Physiology, London

80 329 508 (Feb 28) 1934

- Influence of Vagal Stimulation on Conduction Through Branches of Auriculoventricular Bundle in the Dog A N Drury and D W Mackenzie—p 329
- Biologic Significance of Linkages in Adenosin Triphosphoric Acid J H Gillespie—p 345
- Effect of Insulin and Other Factors on Iodoacetate Hyperglycemia J T Irving—p 360
- Carbohydrate Metabolism of the Kidney A Hemingway and H J Phelps—p 369
- Occurrence of Two Kinds of Hemoglobin in Normal Human Blood R Brinkman, A Wildschut and A Wittermans—p 377
- Some Forms of Apparatus for Equilibration of Blood J Barcroft—p 388
- Effect of Duration of Work on Efficiency of Muscular Work in Man G P Crowder—p 394
- Action of Acetylcholine on Brain and Its Occurrence Therein B B Dikshit—p 409
- Estimation of Fibrinogen and Thrombin J O W Barratt—p 422
- Vasodilator Action of Adrenalin G A Clark—p 429
- Inhibition in Medullated Nerve L Bugnard—p 441
- Anaerobic Breakdown of Carbohydrate in Isolated Ventricle of the Frog R Gaddie and C P Stewart—p 457
- Glycogen Storage and Levulose Tolerance P F Meyer—p 480
- Carbon Dioxide Balance Between Maternal and Fetal Bloods in the Goat A B Keys—p 491
- Spectroscopic Method for Study of Hemoglobin in Dilute Solutions F G Hall—p 502

Journal of State Medicine, London

42 63 124 (Feb.) 1934

- Medical Education and the Public Health E Graham Little —p 63
Citizenship in Relation to Social Hygiene T D Shells —p 76
Citizenship and Parentcraft D H Geffen —p 84
Some Psychophysics of Climate W F Tyler —p 98

Journal of Tropical Medicine and Hygiene, London

37 33 48 (Feb 1) 1934

- Comments on Blackwater Fever and a Group of Special Cases G R Hall —p 33
Critical Diagnosis of Infection by *Trypanosoma Gambiense* A Communication to the Edinburgh Branch of the Royal Society of Tropical Medicine and Hygiene Nov 3 1933 A MacPherson —p 37

Lancet, London

1 221 274 (Feb 3) 1934

- Diverticula of Colon and Vermiform Appendix H C Edwards —p 221
Whooping Cough Eelampsia J B Ellison —p 227
*Simple Method of Controlling a Valvular Pneumothorax E R Boland —p 231
Experimental Production of Cancer by Dust Obtained from Tarred Roads Note J A Campbell —p 233
Richter's Hernia and Carcinoma of the Colon R G Paul —p 234
Infra Red Photography of the Superficial Venous System R T Payne —p 235
Congenital Stenosis of the Aortic Orifice J Brown —p 236
Paratyphoid B in a Child Aged Four Months H B Hodson —p 237

Method of Controlling a Valvular Pneumothorax—According to Boland, if a spontaneous pneumothorax occurs air should be aspirated if there is distress, especially if it is progressive. If the recurrence of the symptoms or rising manometer pressure shows that the perforation is a valvular one, a blunt pneumothorax needle should be left in with a rubber tube attached to it, and inserted with its end just submerged in an open bottle. If this treatment does not relieve the patient and there are any signs of anoxemia, a negative pressure should be produced in the aspirating bottle without delay. A small self retaining catheter inserted between the ribs with a trocar might be preferable if the patient's condition permits, but the needle is quite sufficient is more likely to be at hand at times of emergency, and is less likely to introduce sepsis from without. The author presents a case that illustrates the necessity of controlling the treatment with a manometer, and this is always at hand in the artificial pneumothorax apparatus. This method of treatment may be disputed in that the maintenance of the negative pressure means that the perforation will remain patent and will not heal. This might be valid if it were not of primary importance to tide the patient over the effects of the pulmonary disaster. When the patient's life is saved and he has been allowed time to recover from the effects of the initial anoxemia, one can think with deliberation of the methods to be adopted to heal the original perforation. It should not be the aim to produce low negative pressures, only such a pressure as will produce complete relief should be established and if this is done the perforation which is of necessity a small one, will soon heal over.

1 275 332 (Feb 10) 1934

- Clinical Data in Asthma L J Wits —p 275
Right Sided Duodenum Inversum Record of Eleven Cases M Weinren with an account of the development of the duodenum by A L McGregor —p 280
*Dry Air for Removal of Fluid from Bronchioles and Alveoli G de M Rudolf —p 284
Prevention of Mineral Oil and Tar Dermatitis and Cancer C C Twort and J M Twort —p 286
*New Method of Local Anesthesia for Abdominal Operations G Bankoff —p 287
Splanchnostaxis Case H Hartley and D M MacKechmie —p 289

Right-Sided Inversion of the Duodenum—Weinren discusses eleven cases of right-sided inversion of the duodenum. Four of the patients were women, ranging in age from 40 to 70. All of these were asthenic and three of them gave a history of recurrent attacks of diarrhea. One had gallstones. The other were men, ranging in age from 26 to 54. Their habitus varied more than that of the women, one of them being 6 feet 2 inches (188 cm) in height. The others however were of the short hyposthenic type. Two of them complained of attacks of diarrhea. All the patients gave histories of dyspepsia which had persisted for considerable periods and in two cases the history was suggestive of duodenal ulcer. In the one patient operated on there was no sign of any ulcer nor was there any sign of any

ulcer roentgenographically. The existence of the duodenal abnormality was confirmed at the operation. Two of the patients had had the appendix removed, and in another three the appendix appeared to be pathologic roentgenographically. It is doubtful whether the condition could be diagnosed with certainty clinically. Roentgenographically it will be missed unless the duodenum is traced to the duodenojejunal junction. The appearances once seen on the screen cannot be mistaken. The inverted duodenum may return to normal when the patient is put into the supine or prone positions. A complete examination of the full length of the duodenum during the course of barium meal examination would doubtless reveal many more of these cases. The normal duodenum is divided into four parts: superior, descending, horizontal and ascending. In the case of an inverted duodenum the stomach is generally farther to the left of the spine than usual, and the cap occupies a more transverse position. At the inferior flexure the third part, instead of going to the left of the second part, turns up to the right of the second part and goes on to join or form the duodenojejunal junction, which likewise may be situated abnormally.

Dry Air for Removal of Fluid from Bronchioles—Rudolf administered dry air to patients in whom signs of excessive pulmonary moisture could be found. Air was given in preference to oxygen, as it is the natural gas to which the body mechanism is adapted. He points out that, although the funnel method of administering dry air is more comfortable for the patient than the catheter method it should be used only when the catheter method is impracticable, as the air is likely to absorb moisture in passing through the mouth. The quantity of dry air required for each patient is, at present, indefinite, although the author has used a total quantity of more than 400 cubic feet for one patient. His results indicate that dry air is capable of removing signs of fluid from the bronchioles and alveoli. This action reduces the pressure in the lungs and thus relieves the cardiac musculature. The dry air does not, however, prevent further fluid from passing into the air passages after the termination of the treatment. The treatment can be of permanent benefit only by giving the cardiac muscle periods of comparative rest in which to recuperate. In consequence, dry air should be administered frequently over a prolonged period perhaps of days or weeks. The duration of each administration should be some hours, and at least one tenth cubic foot of dry air per minute should be given.

New Method of Local Anesthesia for Abdominal Operations—Bankoff employs the following procedure in abdominal surgery. The patient is prepared in the usual way and one hour before the operation an injection of one-fourth grain (0.016 Gm) of morphine and $\frac{1}{1000}$ gram (0.00065 Gm) of scopolamine is given. The operative field is injected with a 1 per cent solution of procaine hydrochloride forming a rhomb. The injection of the fluid is made through two opposite points equidistant from the line of the incision and radiating over all the field of operation. The needle is then introduced vertically at two points on the line of incision itself, until it pierces the internal muscle fascia. At each of these points 20 cc of the fluid is injected. The fascia is not difficult to feel because it offers a resistance to the needle which gives a special sensation to the fingers. Ten minutes after this procedure is completed the field is completely insensible. When the skin and muscle have been cut and the peritoneum is exposed, instead of an opening being made the whole length of the wound a small incision is made about 2 inches long through which 200 cc of a 0.25 to 0.5 per cent solution of procaine hydrochloride is poured into the abdominal cavity. It is now necessary to wait for five or ten minutes before proceeding with the operation. After this the peritoneum is opened and the necessary operation performed. This completed, the superfluous fluid is taken from the abdominal cavity by means of swabs or a suction pump. For hysterectomy it is advisable to inject a little of the fluid on both sides of the uterus between the two folds of the large ligament. The author is of the opinion that this type of anesthesia should be adopted in all patients who, for some reason or other, cannot stand a general anesthetic. [NOTE—A method of this kind was described by Baruch in the *Zentralblatt für Chirurgie* 1921, No 23. Baruch reviewed the literature on the subject in the same journal in 1931, No 19.—ED.]

Presse Medicale, Paris

42 449 472 (March 21) 1934

- Necroptic Observations in Diagnosis of Multiple Lesions of Skeleton C Lenormant P Wilmoth and J Pergola—p 449
- Addison's Disease with Larval Symptomatology and Prolonged Development Value of Roentgenologic Diagnosis M Faure Beaulieu L Von Caen and M Brunel—p 453
- *Value of Encephalography in Diagnosis Prognosis and Evaluation of Results of Craniocerebral Traumatisms A Lippens and L Dejardin—p 455
- Contribution to Study of Roentgen Diagnosis of Malignant Tumors of Larynx and Hypopharynx M R Mathey Cornut—p 457
- *Absorbable Metallic Material in Bone Surgery J Verbrugge—p 460
- Lead Poisoning Due to Lead Bullet G Londres—p 465
- Neighboring Pneumothorax in Course of Technic of Artificial Pneumothorax G Derscheid and P Toussaint—p 468
- Calcification and Circulatory Disturbances of Bone Tissue After Roentgen Irradiation B Dahl—p 471

Encephalography in Craniocerebral Traumatisms—Lippens and Dejardin state that encephalography is generally performed by the spinal route although in certain cases they did direct ventricular puncture. The patient on a fasting stomach, receives an injection of a preparation containing papaverine one hour before intervention. He is placed in a sitting position and the puncture is made between the third and fourth spinal vertebrae. The skin is anesthetized by means of ethyl chloride. A Collin needle, 9 cm in length, to which a manometer is attached is progressively pushed in until the displacement of the manometer needle indicates the presence of fluid. About 12 cc of the cerebrospinal fluid is removed and 10 cc of air filtered through absorbent cotton is insufflated by means of a syringe. This operation is repeated five or six times. The amount used varies from 50 to 60 cc. A clear encephalography necessitates a large amount of air. The cranial cavities must be completely filled. Five minutes after the intervention, roentgenograms are taken in four different positions: face down anteroposterior face and right and left profile. These indicate the form and symmetry of the ventricles whose contours have been outlined by the air. The test of lateral transit consists in making the patient lie down for fifteen minutes alternating from right to left. If Munro's hiatus is free the air leaves the lower ventricle. In case of total impermeability, the transit is not effected. This method is harmless in the diagnosis of cranial trauma and its concussion syndrome if the patient fasts if the operation is performed slowly and not too soon after the trauma and if there are no changes in the circulatory system due to advanced sclerosis. The large ventricles normally appear symmetrical according to the amount of air injected they are at an equal distance from the median line. On the median line the third ventricle lies below and parallel to them. Sometimes there is a difference in the size of the lateral ventricles. The largest size is often observed on the traumatized side. The negatives are generally made in stereoscopic exposure. Through this process the images are clearer and more demonstrative than those furnished by direct examination. In seventy-five cases presenting craniocerebral traumatism observed by the authors from one to twenty years after the accident, ventriculography offered a positive diagnostic result.

Absorbable Metallic Material in Bone Surgery—Verbrugge treated twenty-one cases presenting fractures immobilized by magnesium. Of these cases ten were fractures of the elbow in children, two Bennett fractures, one a fracture of the lower epiphysis of the forearm, one a fracture of the humeral diaphysis, one a pseudarthrosis of the clavicle, two fractures of the calcaneum, one a complicated fracture of the instep, one a pseudarthrosis of the internal malleolus, one a spiral fracture of the tibia, one a fracture of the tibial plateau and one an arthrodesis of the knee. The author found that magnesium becomes completely absorbed from the tissues. Its absorption is sufficiently slow to permit the formation of a callus. The metal is neither toxic nor irritating. It does not produce pain but, on the contrary, produces anesthesia. The patients operated on did not develop a febrile reaction. No evident reaction was observed in the soft tissues, the skin, the bone and the joints. The periosteum did not show any more reaction than in the cases in which nonabsorbable material was used and not more than is present in cases of nonoperative treatment. In the course of its resorption which begins from the time of its

introduction, the magnesium owing to its chemical transformation causes the formation of hydrogen without apparently causing unfavorable symptoms. The maximum amount of magnesium introduced was 5 Gm and this was well tolerated. The formation of a callus seems to be accelerated by the use of magnesium.

42 473 496 (March 24) 1934

- Classification of Nephritides T Rathery and P Froment—p 473
- Surgical Treatment and Radium Therapy of Malignant Tumors of Maxilla G Maurel and R Weil—p 476
- *Nervous Symptoms of Aurotherapy Pain Anxiety and Insomnia Syndrome with Presence of Almost Generalized Fibrillations J A Chavany and A Chaignot—p 478

Nervous Symptoms of Aurotherapy—Chavany and Chaignot observed two tuberculous patients with identical nervous symptoms during treatment with gold salts. After several injections of a total dose inferior to the smallest toxic dose, the following symptoms appeared: diffuse and sharp pain, a state of anxiety, insomnia, almost generalized fibrillations and hyperhidrosis due to lesions of the nervous system. Insomnia, emaciation and slight fever are indirect symptoms. The sharp and continuous pains were especially present in the limbs and were often accompanied by painful cutaneous hyperesthesia especially through contact. The anxiety syndrome occurred toward evening and during the night and consisted in fear of death, anguish and nocturnal agitation, with a constant desire to walk. The fibrillations were rapid arrhythmic contractions of isolated fibers of the muscles of the limbs, waist and trunk to the exclusion of those of the cephalic extremity. The muscular tic is not painful, is accentuated by cold, does not disappear during sleep and is not soothed by nerve sedatives. The hyperhidrosis in the limbs indicated disturbances of the vegetative nervous system. The objective neurologic symptomatology was vague and there were no localized amyotrophic disturbances. Unaffected by various medicaments employed, these neuropsychic symptoms disappeared without leaving a trace after three months. In both cases the tuberculosis was temporarily aggravated by the appearance of the syndrome. The seat of the lesions serving as an anatomic basis for the syndrome are the cells of the spinal cord, and sensory and motor cells. The pains observed are characteristic of pains of the cellular type. Fibrillations are generally attributed to an irritative or destructive lesion of the cells of the anterior horn of the spinal cord. The author maintains that since these fibrillations began and ended with the pains and since neither paralysis nor consecutive atrophy was apparent, there was no evidence of cellular destruction.

Minerva Medica, Turin

1 273 304 (March 3) 1934

- Significance of Early Infiltrate C Gamma—p 273
- *Reticuloeytic Formula and Tuberculous Infection L Severi—p 275
- *Keloid Scar Formation in Pulmonary Tuberculosis G Molinis—p 281
- Aptecolysis in Pulmonary Collapse Therapy R Mariana—p 287
- Exogenous Tuberculous Reinfection Possible in Majority of Cases Only Through Pathologically Open Ways A Campani—p 294

Reticuloeytic Formula and Tuberculous Infection—While studying the behavior of reticulocytes in tuberculous infection Severi found that the reticuloeytic formula presents a shift to the left. In tuberculosis there is a constant and marked reticulocytosis. In an attempt to determine the normal reticuloeytic formula the author studied ten normal and healthy persons of both sexes. The values observed varied from a minimum of 18 per thousand to a maximum of 14 per thousand and the average value being 108 per thousand, a comparatively higher proportion than that obtained by other authors. If in tuberculous diseases the diminution of the erythrocytes is proportional to the evolution of the disease process and the anemia is only to a slight degree secondary, important deductions may be made from the reticulocytes. The author studied the reticuloeytic formula of twenty tuberculous patients and found that there was a constant increase from a minimum of 16 per thousand to a maximum of 18 per thousand. In the reticuloeytic formula there was the usual progression of values with a predominance of the granulocytes, but the proportion between the values of the filamentous forms and the granular forms which go from a minimum of 2 per cent to a maximum of 21 per cent with a medium value of 8.5 per cent presented a marked diminution.

Keloid Scar Formation in Pulmonary Tuberculosis—Molins made a study of six cases of keloid appearing in the course of pulmonary tuberculosis on the operative scar of phrenicectomy. The keloid growth in these cases was made up essentially of connective tissue rich in capillaries, it also presented abundant cellular elements which later on became fully functioning fibrocytes. Thus the histologic structure of the keloid tissue is different from the common sclerosed cicatricial tissue poor in cells and with few capillaries. There was a hypercalcemia of the keloid tissue probably attributable to hyperfunction of the parathyroids. Of six patients affected with keloid, four presented unilateral pulmonary lesions and two small contralateral lesions. In four the disease dated from ten to sixteen months before operation and there were symptoms of fever, copious expectoration, profuse sweating and general decline in the condition of the patients. The other two who were ill seven and nine months respectively, showed an analogous symptomatology. A regional skin reaction to tuberculin in the scar area gave positive results in these cases, whereas in nineteen cases of tuberculosis not showing keloid scar formations allergic manifestations were not demonstrable. The increase in reticulocytes was thought to be an indication of alterations of the erythropoietic tissues. The skin reaction has clearly demonstrated that keloid neoformations respond to particular local conditions of cutaneous allergy. In conclusion the author states that the origin of the keloid scar formation was attributable in his cases to a predisposing tuberculous condition with the necessary presence of a marked demonstrable cutaneous allergy.

Policlínico, Rome

41 363-402 (March 12) 1934 Practical Section

- *Alleged Peristaltogenic Action of Colloidal Silver Introduced into Peritoneal Cavity During Laparotomy R Galli—p 363
- Protozoan Intestinal Parasites of Man in Five Hundred Consecutive Examinations of Feces in Institute of Medical Parasitology of Rome A Panagia—p 368
- Relative Value of Endopleural Pressure by Hemostatic Pneumothorax G Regoli—p 372
- Chloride Metabolism G Lolli—p 374

Action of Colloidal Silver in Peritoneal Cavity During Laparotomy—Galli made a study of the effects of electrolyzed colloidal silver (electrocollargol) when introduced into the peritoneal cavity of 105 patients on whom laparotomies were performed. By means of a syringe the author introduced the contents of from 2 to 5 ampules of electrolyzed colloidal silver, each containing 5 cc. Administration of other medications whose action might weaken or hamper the colloidal silver was abstained from. Thirty-two of the patients thus treated had acute abdominal conditions, such as acute appendicitis, circumscribed or diffuse peritonitis due to appendicitis and gastroduodenal perforations, cholecystitis, peritoneal inflammation due to disease of the adnexa, and rupture of tubal pregnancy with an infected hematocele. Aseptic laparotomies were performed on seventy-three of the patients. The post-operative course of these patients was satisfactory and no disturbances due to the introduction of the colloidal silver were observed in any case. The electrolyzed colloidal silver had no modifying effect in any case on general organic conditions, on the course of temperature, heart action and pulse and on postanesthetic vomiting. In only six cases was there any stimulation of the intestinal peristalsis observed which could be attributed to the electrolyzed colloidal silver. Of the six, three were cases of chronic appendicitis and the other three were cases of peritonitis of appendicular origin. In these cases, bowel movements occurred before the administration of enemas the third day after operation. In two cases the peristalsis was reestablished by the first day in a form of several diarrheal attacks with abundant passage of gas, temporary pains and some rectal tenesmus. In the others, one or two regular evacuations occurred without disturbances before the third day. The peristaltic action was never violent or accompanied or preceded by severe abdominal pains or by gastric cramps with severe vomiting. Six cases are insufficient to establish that spontaneous activity of the enteric tract is attributable to colloidal silver introduced into the peritoneal cavity. Colloidal silver has been shown to possess a definite value in the field of abdominal surgery. On the basis of his clinical observations the author states that colloidal silver introduced into the

abdomen, the seat of acute peritoneal processes, does not have any effect on the intestinal peristalsis which others have attributed to it. He admits the prophylactic and curative properties of colloidal silver due to a stimulation of the defensive powers of the peritoneal serous membrane.

Archiv fur Gynakologie, Berlin

155 311 524 (Feb 28) 1934

- *Hypophysis and Castration Obesity K W Schultze—p 327
- Occurrence and Role of Epinephrine in Follicular Fluid of Ovary O Macchiarulo—p 335
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Hypophysis and Castration Obesity—Schultze calls attention to the fact that Anselmino and Hoffmann extracted from the anterior lobe of the hypophysis a substance that produces ketonemia and is identical with one that appears in the blood after meals with a high fat content. Anselmino and Hoffmann ascribe to it a regulatory function in the fat metabolism and designate it as the anterior hypophyseal hormone of the fat metabolism. The author duplicated the studies of those two investigators. He found that under the influence of the anterior lobe of the hypophysis the ketone bodies in the blood increase, and that a substance which appears in the blood during the digestion of fat has the same effect on the ketone body content of the blood. He expresses the opinion that the anterior lobe of the hypophysis is involved in the pathogenesis of the so called castration obesity. He made fat tolerance tests on normally menstruating women and on patients with castration obesity. He did not find essential differences in the ketone body content of the blood in these two types of women, and thus these tests did not prove a direct connection between the elimination of the hypophyseal substance, producing an increase in the ketone bodies, and castration obesity. In spite of the negativity of these tests, it is possible that the anterior hypophysis plays a part in castration obesity. However, it is probable that the mechanism of the interrelation is more involved than is known at present.

Creatine-Creatinine Metabolism in Gestation—Kessler and Albers determined the amount of preformed creatinine and of creatine (expressed in creatinine) in the serum of normal, nonpregnant women and also reexamined their elimination in the urine. The amount of the preformed creatinine is constant and the creatinine value fluctuates only within narrow limits (45 mg per hundred cubic centimeters). In healthy pregnant women the creatine curve shows greater fluctuations. In the elimination of creatine the pregnant women more often show a positive value. The serum creatine and the urine creatinine show a slight decrease during pregnancy. In the last months of pregnancy the serum creatine shows strong individual fluctuations. At the onset of delivery the serum creatine value increases again and reaches its maximum at the time of expulsion. The urine creatinine curve reaches its maximum somewhat later, and during the early puerperium it decreases just like the normal creatine curve. The early puerperium is characterized by considerable fluctuations in the different values. After the third week of the puerperium the blood creatine content sinks below that of the nonpregnant women. This decrease during the later puerperium is still greater in the creatinine values of the urine. During early and late toxemia, as could be shown in some cases of hyperemesis, an increase in the total creatinine values could be observed but a decrease

in the creatine values partly compensates for the increase in the serum creatinine, that is, an increase in the serum creatinine is frequently accompanied by a decrease in the serum creatine. There is not in every case a parallelism between the height of the blood curve and the elimination values and the severity of the toxæmia.

Edema of Endometrium—Derichsweiler states that the curettage material of fifty women (aged 40 or over), who asked advice because of irregularities in menstruation, indicated the presence of edema without simultaneous hyperplasia of the glands. The edema was nearly always accompanied by hyperemia and often by hemorrhages into the mucous membrane. The author thinks that disturbances in the hormonal equilibrium at the beginning of the menopausal period are the cause of these disorders. In the increased filling of the vessels of the mucous membrane he sees the main cause of the edema of the endometrium. The greater blood supply, caused either by increased inflow or by inhibition of the outflow in turn causes an increased transudation and a decreased retrotransudation. Thus the edema of the endometrium is the result of a disturbance in the hydrostatic equilibrium between the vascular system and the tissue pressure.

Archiv für klinische Chirurgie, Berlin

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- Faulty Estimation of Renal Function with Iopax Contribution to Subject of Hydronephrosis H. Nahrath—p. 222
- Peritonitis Serum F. Prochnow—p. 229
- Dangers of Laminectomies and of Paravertebral Operations B. Schlesinger—p. 243
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- Fracture of First Rib P. Huber—p. 280
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- Gas Edema Clinical Diagnosis and Serologic Treatment (As Well As Contribution to Cod Liver Oil Treatment of Wounds) W. Lohr—p. 312

Multiplicity of Duodenal Ulcerations—Just opened the lumen of the duodenum and carefully inspected the duodenal mucosa in a consecutive series of sixty patients operated on for duodenal ulcer. He found that incidence of multiple ulcerations and corresponding multiplicity of pathologic states is greater than was formerly believed. Twin ulcers ("kissing ulcers" of Moynihan) were observed in forty-six, or 76 per cent, of the cases. Scars in the vicinity of ulcers were found in eight cases. These were radiating or starlike. In the rest of the cases the author found large ulcerations involving both the anterior and the posterior wall. These he believes, were the result of coalition of an anterior wall and a posterior wall ulceration. Consideration of this group of cases suggests that multiplicity of lesions is present in 100 per cent of all cases of duodenal ulceration. These observations lend support to von Haberer's opinion that recurrent ulcers after gastric resection are overlooked ulcers. While observations on so small a group of cases do not rule out the existence of a single duodenal ulcer, they emphasize the great frequency of multiple lesions and the necessity for awareness of this fact on the part of the surgeon.

Delayed Healing of Fractures—Bankoff states that delayed healing of fractures has become more frequent and that it was observed with particular frequency in fractures the fragments of which were well placed and maintained by means of modern mechanical methods. Various biologic states were cited as the cause, stress being laid on vitamin sufficiency as well as on the disturbance in the correlation of the glands of internal secretion. No investigations of the effect of sexual hormones on the healing of fractures were made so far. Previously the author demonstrated the remarkable influence of sexual hormones on the blood picture. Enormous fall in the number of thrombocytes took place in castrated animals, while hyperhormonization in another series of animals resulted in a rise of thrombocytes to three times the original number. In the present experiment the author used healthy young guinea-pigs weighing from 250 to 300 Gm. One group was kept as a control, in another group the sexual organs were removed

and were transplanted into the third group of animals. The tibia was fractured in all the animals. The following results were observed. Satisfactory healing and a thick callus were present at the end of twenty-five days in the control group. Roentgenograms demonstrated that the fracture was not healed in the animals of the second group at the end of three weeks. The callus here was irregular and not compact. The animals of the third group on roentgenologic examination exhibited complete healing of the fracture and a thick callus at the end of two weeks. The author believes that the influence of sexual hormones is to be ascribed to its effect on the blood picture as well as to a direct effect of stimulation of the metabolism. In his treatment of patients with pseudarthrosis, the author combined the mechanical method of multiple percutaneous boring of the fractured ends with injection of an organic preparation of sexual hormones on the tenth day after the operation. The results were exceptionally favorable. Pseudarthroses of months' standing healed in a few weeks.

Studies of Cortical and Subcortical Areas—Sattler observed the cortical and subcortical areas in men in the course of brain operations carried out under local anesthesia. He found that stimulation of the cortex with a faradic current resulted in an initial hyperemia, which was succeeded by anemia. Repeated stimulation produced anemia without the initial hyperemia. The author demonstrated that the late traumatic epilepsy was caused by the loss of function of the center that regulated inhibitory stimuli, in which case a more deeply located center, whose function it is to release inhibitions became activated. When the diseased inhibitory center is extirpated, its function is taken over by an adjacent normal center with a resulting recovery. The author found that cooling of the cortex with carbon dioxide snow effected the subcortical ganglions as well, resulting in abolition of tonic and clonic states the extremities becoming flaccid. The author made the observation that in cases of epilepsy a cooled muscle group (through application of carbon dioxide snow to the corresponding point in the cortex) did not participate in tonic convulsions but went through irregular swinging movements. Isolated electrical stimulation of the subcortical layers produced tonic contractions only. It was found possible to increase the complementary activity of the adjacent tissue described by Monakow by the extirpation of the injured or diseased cortical or subcortical tissue. He found that ligation of the venous plexus lying just below the gyrus centralis posterior resulted rather promptly two hours or, at the latest, twenty-four hours later, in disappearance of the vasomotor and sensory disturbances in the spastic extremities with a return of the color and warmth similar to that of the opposite healthy extremity. In contradistinction to Forster's method of sectioning posterior roots, the author believes that his method of operating on the brain is more efficient in cases of spastic contractures with severe sensory and vasomotor disturbances.

Beiträge zur Klinik der Tuberkulose, Berlin

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- Bronchial Asthma and Tuberculosis A. Kupper—p. 255
- *Practical Value of Weltmann's Coagulation Band for Diagnosis and Prognosis of Tuberculosis A. Makitra and M. Tyndel—p. 265
- *Value of Weltmann's Reaction in Estimation of Pulmonary Tuberculosis E. Dissmann—p. 270
- Case of Traumatic Pulmonary Tuberculosis Luise Rickers—p. 278
- Influence of Diaphragm on Ventilation of Pulmonary Apexes F. R. de Partearroy and B. Rodriguez—p. 280
- Influence of Position of Arms on Normal Capacity of Lungs While Reclining C. Zobel—p. 288
- Tryptophan Content of Blood Serum in Pulmonary Tuberculosis E. Adler—p. 291
- *Prognostic Evaluation of Sedimentation Reaction in Stationary and Progressive Cases of Pulmonary Tuberculosis H. Müller—p. 299
- Allergy and Immunity in Tuberculosis J. Siegl—p. 311
- Permeability of Pleura for Hydrogen in Artificial Pneumothorax B. Besta—p. 330
- Growth of Acid Fast Microcultures A. Mayer—p. 335
- *Treatment of Large Apical Cavities F. Michelsson—p. 358

Value of Coagulation Band in Tuberculosis—Makitra and Tyndel made Weltmann's coagulation test on 200 patients with tuberculosis. They think that in incipient cases of exudative tuberculosis Weltmann's coagulation band gives more reliable diagnostic results than does the sedimentation speed of the erythrocytes. In chronic tuberculosis, Weltmann's test has prognostic value.

Weltmann's Reaction in Estimation of Pulmonary Tuberculosis—Dissmann performed Weltmann's test 605 times on 274 patients with tuberculosis, on 9 patients with nonspecific pulmonary disorders and on 24 normal persons. He observed a shortening of the coagulation band or a deviation to the left in nearly all cases of exudative inflammatory disturbances, and the extent of the shortening usually corresponded to the severity of the inflammation. Fibrocavous tuberculosis during the interval and fibrocavernous tuberculosis frequently showed a normal coagulation band. A widening of the coagulation band was noted almost exclusively in purely productive tuberculosis and in the originally open but at the time of examination already closed and healing tuberculosis. The sedimentation reaction and the coagulation band did not always run parallel. The coagulation band seems to be more valuable for the estimation of the inflammatory process than is the sedimentation reaction.

Sedimentation Reaction in Pulmonary Tuberculosis—Muller believes that the prognosis is generally favorable when in serial examinations the values decrease slowly. High and increasing values give an unfavorable prognosis. Rest, pneumothorax treatment and specific and nonspecific therapy usually lead, together with the clinical improvement, to a reduction of the sedimentation values toward the normal. An increase in the sedimentation speed indicates complications or exacerbation of the tuberculous process, and it makes interruption of the treatment or a reduced dosage advisable. In collapse therapy (pneumothorax and phrenic exeresis), an acceleration of the sedimentation may set in at first. It is the result of the increased resorption of disintegration products, and as the improvement progresses, it disappears again. In vaccine therapy there is a slightly increased sedimentation after every vaccination, but it disappears again together with the local irritation. Noticeable fluctuations of the sedimentation speed are caused by menstruation, and for this reason the test should be made only during the intermenstrual period. To avoid prognostic errors, one should not overlook that the sedimentation reaction is influenced by the pleuritis and enteritis, which so frequently accompany tuberculosis. The author concludes that the sedimentation reaction is an important aid in the diagnosis and prognosis of tuberculosis, but he also warns against over-evaluation.

Treatment of Large Apical Cavities—Michelson stresses the advantages of apicolysis. He recommends it not only as a complementary measure to an incomplete pneumothorax but also as a preliminary operation of thoracoplasty. He points out that after thoracoplasty patients often die as the result of a caseous aspiration pneumonia of the other side, owing to the fact that, following the resection of the bones of the thorax, the patient's cough is not strong enough to expel the profuse and generally tough sputum. Frequently the sputum reaches only the trachea from which it flows into the other lung. The author thinks that this danger can be eliminated by reducing the cavity and with it the amount of sputum by an extrapleural apicolysis. The real thoracoplasty may be done later, but it may be postponed until the patient's general condition and heart have gained sufficient strength. Moreover, since apicolysis does not tax the resistance and the energy of the patients too highly, they more readily give their consent to the later thoracoplasty than is the case in a two time thoracoplasty.

Deutsche medizinische Wochenschrift, Leipzig

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- Phylogenic Development of Nervous Mechanism of Secretion of Intestinal Juice by Means of Added Reflexes. A. Bickel—p. 345
Abnormal Position of Abdominal Viscera as Cause of Erroneous Diagnoses. F. Berner—p. 350
Obscure Abdominal Disturbances and Their Symptomatology Significance. A. Voegel—p. 353
Symptomatology of Atrophy of Gastric Mucous Membrane. R. Korbach—p. 356
Roentgenologic Control Tests of Solubility Conditions of Hardened Gelatin Capsules. K. Kramer and R. Rose—p. 359

Obscure Abdominal Disturbances and Their Significance—Voegel followed Libman's suggestion and tested the individual sensitivity to pain by exerting pressure on the mastoid process and then proceeding to press in the direction of the styloid process. He concludes that abdominal disturbances

have a normal symptomatology only in sensitive patients, while in hyposensitive persons there are only rudimentary symptoms or none at all. Thus it is of the greatest significance for the estimation of the subjective symptoms whether a patient belongs to the sensitive or the hyposensitive group. This knowledge is also helpful in differentiating patients with organic disorders from those in whom the symptoms are of nervous origin.

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- Superindividual Uniform Basis of Therapy. H. Koeniger—p. 383
New Methods of Hormone Therapy in Gynecology. H. Buschbeck—p. 389
Treatment of Hemorrhages of Ovarian Origin by Means of Corpus Luteum Preparation. Kaute—p. 393
Bactericidal Property of Several Chrysoidin Derivatives and Contribution to Combination of Disinfectants. G. Lockemann and W. Ulrich—p. 395
*Sulphur Therapy in Psychoses. A. Langeluddeke—p. 398
Pathogenesis and Treatment of Sympathetic Neurosis. Helmy—p. 400
*Is Short Wave Therapy of Gastric Ulcer Advisable? Mahlo—p. 403

Sulphur Therapy in Psychoses—Langeluddeke commenced sulphur treatment of schizophrenia in 1927. At first he used a 1 per cent only suspension of sulphur for the intramuscular injections but, because of pain, he abandoned it and now is using a 0.5 per cent sulphur preparation, which in addition to the sulphur also contains an anesthetic. He begins the injections with 2 cc and repeats the treatment every second day. At the second and third injections the same dose often produced a higher temperature, but in cases in which the temperature had a tendency to decrease with successive injections the dose was increased by 1 or 2 cc. The treatment was considered completed only after at least six injections had been given. The general reactions are comparatively mild and the dangers are much less than in malaria therapy. In order to be able to determine the value of this sulphur therapy, the author compared the thirty-five schizophrenic patients he treated with sulphur with sixty who had not been treated. He found that among the treated ones the number of those who showed improvement was more than 20 per cent higher than among those who had not been treated.

Short Wave Therapy of Gastric Ulcer—Mahlo employed short wave therapy in the treatment of chronic gastric ulcer. In twenty-five persons who were treated with short waves under identical conditions, a considerable increase in the gastric motility was noted. Observations before the roentgen screen revealed a considerably increased peristalsis during the short wave treatment, but with the cessation of the irradiation there was a gradual decrease in the peristalsis. The secretion of the gastric juice likewise was increased under the influence of the short waves, but the effects on the acidity were quite different, for it was reduced in nearly all cases. The author concludes that in the majority of cases of chronic ulcer the short wave therapy produces effects that promote cure. He cites one case in which prolonged treatment with the short waves led to gastric hemorrhage, and for this reason he advises caution. The treatment should begin gradually. Most patients find the treatment pleasant and state that it alleviates the pain.

Deutsches Archiv für klinische Medizin, Berlin

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- Studies on Clinical Acoustics. Bronchopony. A. Pierach—p. 231
Possibility of Utilization of Ingested Sugar in Glycogen Storage Disease. H. Biedermann and W. Hertz—p. 267
*Influence of Epinephrine and Insulin on Carbohydrate Metabolism in Glycogen Storage Disease. H. Biedermann and W. Hertz—p. 272
Familial Dwarfism. H. Paal and P. Scholz—p. 281
Etiopathogenesis of Prolonged Subfebrile Conditions. I. G. Gelmann—p. 290
Prolonged Elimination in Essential Hypertension. Etiology of Hypertension. E. Klyn—p. 301
Fruit as Carbohydrate Equivalent in Food of Patients with Diabetes. Liver Disease and Obesity. A. Deindl—p. 311
*Complement Titer of Human Serum and Its Changes Following Rheumatic Infections. B. Buchholz—p. 330

Glycogen Storage Disease—Biedermann and Hertz observed in a child with glycogen storage disease and dwarfism that the hypoglycemia is hardly at all influenced by epinephrine and that this slight reaction to epinephrine is dependent on the time elapsed since eating and on the time of day. They consider the possibility of a connection with the insulin secretion. The acetonuria during the fasting period is increased by epinephrine. Patients with glycogen storage disease are highly susceptible to insulin.

Complement Titer of Human Serum—Buchholz shows that the complement titer represents normally a rather constant value. The ordinary infectious diseases cause hardly any changes, but acute rheumatic infections, which include acute polyarthritis, endocarditis, diffuse glomerular nephritis, chondritis, pleurisy and some other organic diseases, produce a reduction in the complement titer that may lead to a complete abolition of this function of the serum. The duration of the reduction differs. An especially severe antigen-antibody reaction in an organism that has been sensitized by an infectious focus is considered the cause of the reduction in the complement titer. On this basis, the rheumatic infection presupposes the presence of an infectious focus that causes the sensitization. Horses, which for the production of a potent antitoxic serum are injected with increasing doses of a pathogenic organism, finally develop arthritis and endocarditic processes of the rheumatic type. This observation supports those investigators who tried to show that as the result of focal infections the organism becomes allergic, so that it reacts to new infections with organic reactions that resemble the changes in rheumatic infections. The focal infections sensitize the organism and lead to immunization. At the time when larger quantities of antigen enter the organism, the increase in antibodies prevents the development of a true sepsis. An extraordinarily active antigen-antibody reaction sets in and the complement is reduced. This reduction is generally of a temporary nature for the antigen is destroyed and the complement is quickly replaced. There is a second possibility. The complement function may suffer so under the shock of infection that it is not equal to the requirements. There may be a prolonged deficiency in the complement and as a result the disease process does not definitely terminate. Moreover in the absence of the protective function of the organism, other infectious foci may become active. Thus it is not surprising that in the blood of patients with rheumatism there appear pathogenic organisms such as tubercle bacilli (Lowenstein) which have no etiologic connection with the disorder.

Klinische Wochenschrift, Berlin

13 361 392 (March 10) 1934

- Formation of Intercellular Substance and Meaning of Term Mesenchyma K. Bauer—p. 361
 *Neuroregulation of Human Thyroid and Its Disturbances in Exophthalmic Goiter P. Sunder-Plassmann—p. 364
 Edema of Ovarian Genesis Connected with Menstruation S. Molnar and Z. Friber—p. 369
 Intravenous Eripan Anesthesia in Treatment of Lupus with Diathermy Loop and in Treatment with Carbon Dioxide Snow K. Hovelborn—p. 372
 Blood Groups Among Population of Berlin F. Schiff and A. Hien—p. 375
 Duty to Report Diabetes Mellitus F. Meythaler—p. 378
 Continuous Registration of Oxygen Saturation of Blood in Unopened Vessels K. Kramer—p. 379
 Modification of State of Calcium by Copper H. Hauser—p. 380
 Victoria Blue for Staining of Filtrable Viruses K. Herzberg—p. 381
 Treatment of Chronic Arsenic Intoxication (Polyneuritis) with Sodium Thiosulphate A. Werner—p. 381
 Pulmonary Tumors E. Hamitz—p. 382

Neuroregulation of Thyroid—Sunder-Plassmann studied the innervation of the thyroid. In spite of the great number of sympathetic nerves it is highly probable that the thyroid does not have a single peripheral ganglion cell. The latter factor makes peripheral automatism by nervous autoregulation impossible, and, since every normal thyroid cell is under the influence of an intraplasmatic, sympathetic terminal reticulum, the normal activity of the thyroid is entirely dependent on the central nervous system (including the sinus caroticus) from which it receives regulatory impulses by way of the sympathetic nerves. If these central nervous impulses become abnormally strong as the result of psychic trauma, of continuous psychic alterations or of chemical or hormone changes (iodine intake or hypophyseal disturbances), a hyperfunction or a dysfunction of every thyroidal cell develops. Up to this stage at which the condition is still reversible, the term *hyperthyroidism* (to be differentiated from *exophthalmic goiter*) can be employed. However if the harmony is not reestablished the disorder progresses. It appears as if the pathologic secretion that develops as the result of the dysfunction of the thyroid cell has an injurious effect on the terminal sympathetic reticulum and that it may cause its complete degeneration. By this the

thyroid cells are cut off from the nervous system, so that they do not receive regulatory impulses, and thus the irreversible *exophthalmic goiter* develops. In addition to destroying the terminal sympathetic reticulum, the abnormal secretion of the thyroid irritates the entire sympathetic nervous system and causes disastrous increases in the tonus. The circulatory regulation becomes impaired and this in turn leads to an involvement of the heart and the blood supply of the brain, because on account of the impaired nervous apparatus of the thyroid the regulatory nervous impulses from the carotid sinus have either no effect or only an abnormal one on the vasculatory system of the thyroid and a normal regulation of the cephalic blood stream became impossible.

13 393 432 (March 17) 1934

- Role of Liver in Water Exchange D. Adlersberg—p. 393
 Anaphylactic Metabolic Reaction of Isolated Tissues G. Bostrom—p. 399
 *Action of Insulin on Permeability of Kidneys to Sugar M. Bufano—p. 403
 Local and Peripheral Examinations of Blood in Several Infectious Diseases K. Schulze and K. Steuer—p. 407
 Accident Caused by Strong Electric Current as Cause of Angina Pectoris P. Jullström—p. 409
 Octaverin A New Substance with Paralyzing Action on Smooth Muscles P. Ellinger, W. Koschka and H. Seeger—p. 411
 When Should Digitalis Be Given in Diphtheria? P. von Koss—p. 411
 Increased Antianemic Action of Liver by Influence of Gastric Juice on Liver F. Reimann—p. 413
 Occurrence of Qualitatively Degenerating (Toxic Granular) Eosinophil Leukocytes K. Gläser—p. 414
 Forms of Diabetes Insipidus with Excessive Colloid Osmotic Pressure E. Barath and P. Weiner—p. 414
 Demonstration of Estrin Inhibiting Substance in Pineal Body of Young Female Rats W. Fleischmann and Helene Goldhammer—p. 415
 Newer Points of View on Epidemiology of Tuberculosis A. Hofbauer Flitzsch—p. 415

Insulin and Permeability of Kidneys to Sugar—Bufano reports eleven series of experiments on dogs and draws the following conclusions. 1. In hyperglycemia, the increased permeability of the kidneys to dextrose depends largely on the autonomous increase of the activity of the kidneys and partly on the stimulation of the vagus, which is produced by the hyperglycemia and most probably to a certain extent also on the hypersecretion of insulin which can be observed in experimental hyperglycemia. 2. Insulin does not reduce the permeability of the kidneys to dextrose, for in none of the author's experiments was even the slightest reduction in the permeability noticeable after treatment with insulin. 3. In renal diabetes and in experimental phlorizin diabetes, insulin increases the permeability of the kidneys to dextrose. 4. The author's experiments do not furnish definite proof that insulin increases the dextrose permeability of normal kidneys. If it is taken into consideration that insulin reestablishes the insulin increase in the sugar permeability of the kidneys of atropinized dogs and also that insulin, which is injected directly into the renal artery occasionally increases the sugar permeability and then again does not, the conclusion is justified that insulin increases the permeability inconstantly and moderately and that consequently it decreases the sugar threshold of the healthy kidney only slightly.

Munchener medizinische Wochenschrift, Munich

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- History of Ergot W. Straub—p. 349
 Diagnosis and Specific Therapy of Laryngeal Scleroma E. Neuber and J. Adam—p. 351
 *Protein Consumption and Protein Requirements of Human Beings W. Heupke—p. 353
 Argycrosis of Skin A. Reuter—p. 355
 New Medicinal Aids in Psychiatry J. Schottky—p. 356
 Present Status of Foundations of Science of Race W. Jankowsky—p. 359
 Significance of Bacteriologic Serologic Investigations for Diagnosis and Treatment of Gonorrhea K. Schürf—p. 364
 Disease of Civilization E. Benjamin—p. 368

Protein Consumption and Requirements—Heupke shows that the protein minimum of most diets lies between 30 and 40 Gm a day. Millions of human beings fill their protein requirements with an intake of from 50 to 70 Gm without suffering an impairment of their health, 80 Gm of protein a day must be considered entirely adequate. Impairments traceable to a deficient protein intake are unknown today. More over in a freely chosen diet the protein never goes below the minimum requirements. The author thinks that the fixing of

an optimal amount of protein can be abandoned the more so since the knowledge about this problem is not yet sufficiently exact to decide on a definite quantity. He thinks that the consumption of unusually large amounts of protein is not advisable. He calls attention to the fact that monks who live on a purely vegetarian diet rarely have hypertension while monks who take a mixed diet have hypertension about as frequently as do other population groups.

Wiener klinische Wochenschrift, Vienna

47 321 352 (March 16) 1934

- Dispute About Iodized Salt Wagner Jauregg—p 321
Abortion Statistics in Austria Its Social Hygienic Significance and Its Effect on Population Policies R Stiglbauer—p 323
Significance of Sedimentation Speed for Diagnosis of Acute Coronary Occlusion M Burik—p 327
Occurrence of Alcaligenes Abortus Infection in Hungary L von Berkessy and Iren B Simon—p 330
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Conservative Treatment of Varicose Veins C Nobl—p 337
Various Types of Primary and Secondary Cystitis and Their Treatment P Blatt—p 339

Conservative Treatment of Varicose Veins—Nobl discusses mainly the obliteration treatment by means of injection of hypertonic dextrose or salt solutions. He points out that in the varicose syndrome embolism is not as dangerous as it is in surgery, and he emphasizes that in the obliteration treatment of varicose veins the danger of embolism is much less than in other forms of treatment. Another advantage of the obliteration treatment is that it can be done irrespective of the presence of ulcerations and of severe cutaneous changes, while such conditions contraindicate surgical treatment. Obliteration treatment may be resorted to even during the first half of pregnancy, but it should be avoided during the second half not only because of the extreme dilatation of the vessels but also because of hormonal changes in the coagulability of the blood. Obliteration treatment is contraindicated in case of profuse congenital, neviform venous convolutions after recent spontaneous thrombophlebitides and after severe disturbances in the circulatory apparatus. The treatment should not be begun until the patency of the deeper veins has been established.

Zentralblatt fur Chirurgie, Leipzig

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- Rare Forms of Postoperative and Posttraumatic Gas Formation in Tissues H Jensen—p 674
Disturbance of Blood Coagulability as Result of Insufficient Fibrinogen O Timpe—p 679
Late Results of Operations for Cholecystitis Without Stones A Schmechel—p 685
Etiology and Treatment of Priapism H R Paas—p 687
Thrombophlebitis of Deep Venous Volar Arch Resulting from a Paratendon of a Tendon W Rieder—p 691
Eighteen Operations for Perforated Gastric Ulcer Without Death I Philipowicz—p 693
Operative Treatment of Idiopathic Varicocele H Henninger—p 695

Operations for Cholecystitis Without Stones—Schmechel states that the prognosis of a cholecystectomy as far as permanent cure is concerned is worse in proportion to the amount of pathologic alteration present at the time of the operation. The less pathologic alteration in the gallbladder the poorer the result. He reports a follow-up study of sixty patients on whom cholecystectomy was performed in the absence of stones. Only fourteen patients (23.4 per cent) were completely relieved of the symptoms for which they were operated on. Fourteen were improved only after one or two years of Karlsbad treatment, and five of the remaining thirty-two were not improved in any sense. Their subsequent cure resulted only after other therapeutic measures, in one case after appendectomy, in two after passage of renal stones, in one after operation for peptic ulcer, and in one after treatment of adenitis. Two patients were rendered symptom free after treatment of a disclosed latent syphilis. General nervous and functional symptoms were found in eight patients who came to examination. In fifteen patients who continued to have the same symptoms as before the operation namely periodic attacks of colics and pain in the back and in the shoulder region there were found years after the operation typical Head zones involving the area from the tenth to the twelfth thoracic nerve. These patients were again treated medically from time to time. The

figures presented correspond with those of Stanton, who in a study of 113 patients found 53 per cent improved and 43 unimproved as well as with those of Gosset, who reported ten cures in a group of thirty-two. The author quotes his chief, von Haberer, as being opposed to the removal of the gallbladder in the absence of stones even if signs of stasis are present. If operated on at all the stasis should be relieved not by a cholecystectomy but by a cholecystoduodenostomy. This operation was performed in von Haberer's clinic with good results in exceptional cases of stasis of the gallbladder.

Zentralblatt fur Gynakologie, Leipzig

58 545 608 (March 10) 1934

- Hormonic Content of Cysts and Neoplasms of Ovaries E Philipp—p 555
Treatment of Dermatoses of Pregnancy A Lysander—p 562
Peculiar Case of Bleeding Breast B Kaminsky—p 567
Treatment of Menstrual Abnormalities by Means of Parathyroid Extracts and Calcium G Bakacs—p 568
Table for Examination and Operation with Arm Support for New Apparatus for Intravenous Injection G von Bud—p 572

Treatment of Dermatoses of Pregnancy—Lysander resorted to autohemotherapy in the treatment of thirty-one pregnant women with various cutaneous disorders. Erythema urticaria and pruritus were predominating (twenty-nine cases) but two women had eczema. The pruritus was particularly annoying. In the majority of women the dermal disturbances developed during the last two months of pregnancy and only in a few cases already during the fifth or sixth months. The technic of the autohemotherapy is the following. The blood is withdrawn from the cubital vein is kept in the syringe for several minutes until coagulation has set in and is injected into the gluteal muscle. At first the author employed comparatively large doses (from 15 to 20 cc), but later he used small gradually increasing doses, usually beginning with 1 cc. Experience so far seems to indicate that the small doses give the same favorable results. The intervals between the injections should be two or three days. The results of autohemotherapy were highly satisfactory. In the majority of cases a single injection was sufficient, but some required two and others three, four or five. In six cases the pruritus was localized on the vulva and in three of these there was sugar in the urine. Formerly such cases were treated with a diet deficient in carbohydrates and occasionally this was effective. The author combined the dietary measures with the autohemotherapy and gained the impression that this combined treatment is superior to the dietary measures. He emphasizes that autohemotherapy is simple, inexpensive and effective and that it involves no danger.

Parathyroid Extract and Calcium in Treatment of Menstrual Abnormalities—At first Bakacs resorted to the application of parathyroid extract and calcium during the menstrual period of women with abnormalities of this function, but later he tried the prophylactic application and found it more effective. Beginning from four to six days before the expected menstruation the women are given daily intragluteal injections of a preparation containing 50 Collip units of parathyroid extract and a quantity of calcium gluconate corresponding to 0.1 Gm of calcium. The result of this prophylactic treatment was that 70 per cent of the cases were favorably influenced. The author thinks that the curative effects produced with this medicament are due not merely to the action of calcium but also to the direct or indirect action of the hormone on the hemostatic mechanism.

Novy Khirurgicheskiy Arkhiv, Dnepropetrovsk

29 1 192 (No 113) 1933 Partial Index

- Treatment of Fractures of Diaphyses of Bones of Leg G Ya Epshteyn—p 39
Reduction of Compression Fractures of Vertebrae B A Petrov—p 56
Systematic Operation in Acute Appendicitis in Every Stage A I Kogon—p 84
Acute Appendicitis M V Krasnoselskiy—p 101
Typical Form of Gynecologic Ileus Ya M Voloshin—p 115
Tumors of Bony Cranium O M Rudenko—p 137

Operation in Acute Appendicitis—Kogon presents an analysis of 150 cases of acute appendicitis in which operation was performed without delay and without regard to the stage of the disease. The results convinced him that systematic operating in every stage of acute appendicitis is more rational.

than watchful expectancy after the forty-eight hour period adopted by many surgeons. Watchful expectancy is only relatively safe in mild catarrhal cases after the twenty-four or forty-eight hour period. In the more destructive form of the disease, this policy, owing to the progression of pathologic alterations, is decidedly hazardous. In view of the impossibility of establishing an exact pathologic diagnosis before the operation, the method of waiting appears to be both purposeless and dangerous. The presence of an induration or of resistance in the right lower abdominal quadrant is an important sign of a grave destructive process and therefore constitutes a clear indication for operative intervention. The subsidence of the acute symptoms in the first three days, as well as in a later period, is no guaranty of safety and must not be regarded as a contraindication to the operation. An interim operation is not always a safe operation. The existence of an induration, even if diminished in the process of waiting, constitutes a constant danger of flare up of a dormant latent infection in the tissues. Furthermore, operation in the late cases frequently develops into an extensive and damaging procedure because of the firmness of the adhesions, endangering the life of the patient. The removal of a purulent, gangrenous or perforated appendix results in the disappearance in a few hours of the pain and the other symptoms of peritoneal inflammation, regardless of the time of intervention. The evaluation of the question of the time of intervention must be based not alone on the mortality statistics but on the evaluation of the character of the entire material as well.

Nederlandsch Tijdschrift voor Geneeskunde, Haarlem

78 1509 1600 (April 7) 1934

- Laryngeal Diphtheria. A. Brester—p. 1513
- *Investigations on Urobilin Excretion and Blood Destruction Index. A. Lichtenstein—p. 1522
- Diabetes and External Secretion of Pancreas. P. B. van Steenis—p. 1529
- Xylopropine Treatment of Patient Presenting Chronic Encephalitis. W. W. de Regt—p. 1537
- Full Term Pregnancy in Woman with Sinus Urogenitalis Persistens. T. A. B. van Dijk—p. 1540

Urobilin Excretion and Blood Destruction Index.—Lichtenstein studied the urobilin excretion of a number of Europeans on a normal mixed food diet, ten European vegetarians and fifteen Javanese natives. He found that the average excretion of urobilin from the fecal matter of an average European weighing 154 pounds (70 Kg.), amounts to from 135 to 150 mg daily, whereas that of an average Javanese, weighing approximately 121 pounds (55 Kg.) comes to only 75 or 80 mg. The author attributes this lower rate of excretion in the Javanese to a consumption of foods poor in animal protein. The average daily excretion of urobilin in ten healthy vegetarians in Amsterdam was estimated to be about 75.4 mg. Persons suffering from constipation evinced a marked diminution in the excretion of urobilin. As a consequence of these investigations the author discards the assumption that by estimating the urobilin excretion one should be able to calculate the average time of survival of the erythrocytes in an absolute number of days. He found the blood destruction index, as proposed by Lichtenstein and Terwen, still of great value.

Norsk Magasin for Lægevidenskapen, Oslo

95 241 352 (March) 1934

- Prophylaxis and Therapy in Congenital Syphilis. E. Hval—p. 241
- Operative Treatment of Elephantiasis. I. Moene—p. 264
- *Remarks on Internal Anesthesia in Cauterization of Pleural Adhesions. O. Haave—p. 275
- *Elimination of Leptra Bacilli in Lepers. A. A. Stein and M. I. Steperin—p. 278
- *Roentgenokymography of Heart and Diagnostic Value of This Examination. J. Frimann Dahl—p. 281
- Pearl Like Formations in Renal Cysts. E. Langfeldt—p. 289
- Compass Faint Test in Normal Persons. G. H. Monrad Krohn and A. Tellefsen—p. 292
- Acute Appendicitis in Young Children. E. Pettersen—p. 296

Operative Treatment of Elephantiasis.—Moene reports two cases of massive elephantiasis in which wedge-shaped excision done with the electric knife and removal of the underlying fascia according to Kondoleon gave good results. The first patient was a woman, aged 66, with elephantiasis of the left leg which had developed slowly during the course of thirty-nine years, and the leg became practically normal. The

second patient was a woman, aged 47, with elephantiasis of the left lower extremity of twenty-eight years' duration. The excision was done in three stages, and Handley's operation was performed on the thigh. Considerable reduction in size resulted.

Internal Anesthesia in Cauterization of Pleural Adhesions.—Haave says that as cauterization of pleural adhesions has become more frequent and more complicated anesthesia has more often become necessary. To overcome the difficulties in this connection he has devised a stiff cannula of the form and size of the cautery and ending in a point 3 cm long and at the handle end in a 5 cc syringe. If anesthetization is called for, the cautery is readily replaced by this cannula, the same field of vision is kept, and certain anesthesia is attained.

Elimination of Leptra Bacilli in Lepers.—Stein and Steperin succeeded in finding lepra bacilli in the nasal mucus in eleven patients without macroscopic changes in the mucous membrane. They also obtained positive results in 'healthy,' apparently normal portions of the skin on examination of lymph from the tissue and of contents of blisters produced by freezing, the latter is the preferred method. By it lepra bacilli were demonstrated in three patients who no longer showed symptoms of leprosy and in whom, even after use of potassium iodide, bacilli could not be found in the nasal mucus.

Roentgenokymography of the Heart.—Frimann Dahl asserts that the plane kymogram is of great help to the roentgenologist in the determination of the form of the heart and the strength, frequency and rhythm of the different pulsations. The method is perhaps of the greatest value in topographic examinations, especially in cases of tumors and tumor-like changes near the heart. Here the plane kymogram is far superior to the ordinary teleroentgenogram.

Ugeskrift for Læger, Copenhagen

96 237 262 (March 1) 1934

- *Lecture on Recurrent Agranulocytosis with Note on Dosage of Amidopyrine. M. S. Andersen—p. 237
- *Amidopyrine as Etiologic Factor in Agranulocytosis. H. Seemann—p. 241
- New Nosocomial Cases of Agranulocytosis. C. Holten, H. E. Nielsen and K. Transbøl—p. 245
- Anesthetization of Brachial Plexus According to Kulenkampff. A. Næraa—p. 246
- Treatment of Pariarticular Disorders with Petrolatum Packs. E. Nyrop—p. 248

Agranulocytosis.—In the case described, in a woman aged 42, with obesity, chronic polyarthritis climacteric disturbances and slight hypothyreosis, one tablet of lealgin (0.22 Gm of amidopyrine plus 0.03 Gm of diallylbarbituric acid) was given from one to three times daily for five months in 1930-1931, without apparent injury. In 1932 one tablet was given three times daily for one and one half months before definite symptoms of agranulocytosis were seen. Although the dosage was increased to one tablet four times daily, recovery from this attack of agranulocytosis occurred. The first recurrence appeared six weeks later and a repeated recurrence in two months. After administration of twenty five barbituric tablets, begun one month later, when the blood picture was about normal, and distributed over six weeks the granulocyte count fell to 8 per cent, and after a subsequent twenty five tablets, distributed over sixteen days, the granulocyte count was 7 per cent, a value possibly increased because of administration of pentnucleotide. Amidopyrine was discontinued. The granulocyte count rose to 25 per cent. Andersen says that the case agrees with the five nosocomial cases reported by Holten and his associates but he is inclined to ascribe the injurious effect to the pyrazol ring rather than to the benzene ring. The patient's improvement under the present thyroid therapy is seen as an indication for continuation in the hope of influencing endogenous factors, which may perhaps bear a relation to her agranulocytosis.

Amidopyrine in Agranulocytosis.—Seemann found that amidopyrine or its combinations had been used in thirteen of thirty-six cases of agranulocytosis from 1928 to 1933 and had not been given in fifteen cases, in the remaining eight cases the information was incomplete. In most of the thirteen cases the dosage of amidopyrine to some extent supports the possibility that this medicament played a part in the origin of the agranulocytosis.

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POTENCY OF MILKS FORTIFIED WITH RESPECT TO ANTIRACHITIC PROPERTIES

CLINICAL TESTS AND A PROPOSED METHOD
OF PROCEDURE

MARTHA M ELIOT M D
AND
GROVER I POWERS M D
NEW HAVEN, CONN

During the past few years there has been developing increasing pressure from various sources to "fortify" natural foods in one way or another, but notably with certain vitamins and mineral salts. There are many aspects of this subject which require the most careful consideration of physicians, nutritionists, health officers and manufacturers of food products, but it is certainly true that, before commercial interests enter largely into this field, many more carefully controlled clinical studies should be made than are now available. It needs to be widely recognized that while the fundamental facts in respect to the role of the vitamins and mineral salts in nutrition have been established largely by the use of experimental animals, the accurate application of these facts to man must be determined by clinical studies.¹ Furthermore, it is imperative that an adequate and uniform procedure in investigation be adopted in each field of study by those who may attempt to evaluate clinically the role of "fortified" food substances in human nutrition.

The present paper has to do with a proposed standard procedure for the appraisal by clinical tests of milks "fortified" with respect to their antirachitic properties. Largely because of the widespread need throughout a large section of the United States for some measure to prevent rickets and its associated disorders and because of the numerous antirachitic agents and the various methods of giving to foods antirachitic properties, the activity of nutritionists and representatives of food companies and dairies has been especially great in this vitamin D field of food "fortification."

Since rickets is principally a disorder of infancy and since the natural food of infants is milk, the chief concern of the various interested groups is in conferring antirachitic properties on this food. Milk may be used dry, evaporated or in its usual form and may be put on the market in each of these states after having been "fortified" with antirachitic properties. This may be accomplished either by irradiation with ultraviolet

energy, by the addition of vitamin D concentrate from cod liver oil or of viosterol (irradiated ergosterol) and by feeding irradiated yeast to cows. Obviously, in this matter many problems—medical, public health and commercial—present themselves, notably, these are the existence and degree of antirachitic potency conferred on the milk, the method of expressing potency in international, Steenbock or other units, the relative biologic merit of the various processes, the effect on other properties of the milk the practicability and cost of commercial production, and the possibility and feasibility of routine assay and public health control. However, to establish the existence and degree of antirachitic potency for infants of any given "fortified" milk is surely the first and sine qua non requirement in this ever enlarging domain.

Clinical studies may be designed to test the antirachitic value of a given "fortified" milk either by the prevention or by the cure of rickets. Both methods must be used if the antirachitic properties of the milk are to be understood. The preventive type of study has certain advantages and a method of procedure for such is here outlined. Today it is easier to obtain in any one locus a group of normal infants in the period of most active growth—the first few months of life—for a preventive test than to obtain a group of infants each of whom has active rickets of approximately the same degree of severity for a curative test. Roentgenograms must be taken in both "curative" and "preventive" methods of testing potency. In a "curative" test, calcium and phosphorus determinations on the blood serum are also required, since vitamin D curative effect is thereby most delicately and promptly demonstrated. On wide-scale investigations that must be conducted over a considerable period of time, such chemical determinations offer obvious practical difficulties. In "curative" tests, fewer children per group might be required than in "preventive" tests, but to insure a carefully controlled investigation it might be desirable to institutionalize the children in a "curative" study. Such a procedure is not only very costly but may be difficult to carry out. Lastly, the "preventive" test is in line with the fundamental ideal back of the use of a "fortified" vitamin D milk, namely, the routine prevention of rickets in a simple, natural manner which requires no special attention or disturbance on the part of either mother or infant.

PROPOSED METHOD OF PROCEDURE

The proposed method of procedure for making clinical tests of the preventive potency of milks "fortified" with antirachitic properties is as follows:

The studies must be carried out, of course, on artificially fed infants. Groups both of normal and of premature infants must be studied.

From the Department of Pediatrics Yale University School of Medicine.
1 Hess A F and Lewis J M. An Appraisal of Antirachitics in Terms of Rat and Clinical Units. J A M A 101 181 184 (July 15) 1931.

At least one half of the normal children should belong to the races especially susceptible to rickets, e g, Italians and Negroes

At the time the infants are enrolled in the study group they should be, preferably, under 6 weeks of age—certainly not over 8 weeks—since the first months of life constitute the period of most active growth and the one when rickets most readily develops. The prevention of rickets in children of this age period, next to prevention of the disease in premature infants, is the most rigorous clinical requirement for testing a vitamin D fortified milk, it is by such a test, however, that a milk to be used for the routine prevention of rickets must be judged

The children should be under observation until they are at least 6 months of age, in some cases longer

The infants must live in the north temperate zone and the study should be conducted preferably from October to May, infants should not be enrolled who were born prior to the middle of September. This requirement is necessary in order that ultraviolet radiation from sunlight may not enter into the investigation as an important additional antirachitic factor. The mothers of children in the study group should not be instructed to give their infants sun baths, but they cannot reasonably be expected to keep their children continuously indoors. The investigations should be conducted in the winter, since then the factor of sunlight as a contributory antirachitic measure is thus reduced to minimal importance.

No infant should be enrolled who has had previous antirachitic treatment

No other antirachitic should be given during the investigation than the "fortified" milk under study and the possible unprescribed outdoor ultraviolet irradiation of winter months

At least fifty infants should be studied in each experimental group, more than this number should be enrolled at the beginning, because a certain number, for one reason or another, will not be followed throughout the duration of the study period

It is desirable that the infants studied be chosen from well-baby clinics. Infants in institutions such as hospitals or orphanages bring in too often the large factor of infections or slow growth

The infants must be carefully examined and roentgenograms of wrists and forearms must be taken at intervals of four weeks according to a uniform standardized technic.² The primary basis for appraisal in these tests should be changes in the roentgenographic picture, clinical observations are only contributory and supplementary. It is essential that the roentgenograms be interpreted by some person with special experience in this field

There must be accurate measurements at each examination of the growth of each child in respect to length and weight

There must be adequate follow-up visits of each infant in its home by a specially instructed nurse. Records must be made of pertinent incidents in the life of each subject, notably the occurrence of infection and other illness. Special attention must be directed toward the care used in preparing the milk mixture given the infant. Accurate record of the amounts of milk taken must be made, for only in this way can the amount of

antirachitic substance ingested be determined. It is obvious that this matter of careful follow-up visits by a well trained nurse is of the greatest importance, since failure to prevent rickets might be due to the use of some "unfortified" milk or other food rather than to lack of potency of the antirachitic milk which the child was supposedly taking. In order to minimize errors of this type an adequate amount of the "fortified" milk should be supplied for the entire household of the infant under investigation and strong effort made to have this milk the only kind used by the family

There must be as great a degree of uniformity in the type of feeding which is prescribed for the infants being studied as is compatible with their well being. The milk mixtures should, if possible, contain the same added carbohydrate in approximately the same relative amounts, likewise the mixtures should contain approximately the same relative amounts of fat. All infants should receive the same antiscorbutic substance, and extraneous vitamin D containing foods, such as egg yolk, must be excluded

Careful record of all data must be kept

Each study should be carried out under the direction of an experienced pediatrician with such other assistants as may be required. This director must be able not only to correlate and appraise data but also to inspire assistants and mothers with enthusiastic and intelligent interest. Only in this way can a degree of accuracy be achieved which, while not comparable to that of many laboratory biologic tests, is nevertheless acceptable from a clinical standpoint in the light of our present knowledge

330 Cedar Street

PREVENTION OF RICKETS BY MILK FORTIFIED WITH VITAMIN D FROM COD LIVER OIL

(150 STEENBOCK UNITS OF VITAMIN D PER QUART)

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The present study was undertaken for the purpose of testing the antirachitic value for infants of vitamin D concentrate from cod liver oil when it was incorporated in milk at the dairy. Though the concentrate was known to be effective in the treatment of rickets in rats,¹ its efficacy in the prevention and treatment of that disorder in infants as compared with that of cod liver oil was not known. Furthermore, the investigation was considered of special value since it offered an opportunity to elaborate a method of making clinical tests of various substances that contain vitamin D, with a view to comparing their relative efficacy in the prevention of rickets in infants.²

The early studies of Barnes, Brady and James³ showed that viosterol was less effective in infants than

From the Department of Pediatrics Yale University School of Medicine and the Visiting Nurse Association of New Haven
The cost of this investigation was defrayed in part by a grant from the National Oil Products Company of Harrison N J. The milk was supplied by the Brock Hall Dairy Company of New Haven Conn.
Some of the material reported in this paper formed the basis for a thesis submitted to the Faculty of the Yale University School of Medicine by T V Hynes in candidacy for the degree of Doctor of Medicine
1 Zucker T F Further Observations on the Chemistry of Cod Liver Oil Proc Soc Exper Biol & Med 20 136 1922
2 Eliot Martha M and Powers G F Potency of Milks Fortified with Respect to Antirachitic Properties this issue p 1823
3 Barnes D J Brady M J and James E M Comparative Value of Irradiated Ergosterol and Cod Liver Oil as Prophylactic Antirachitic Agent When Given in Equivalent Dosage According to Rat Units of Vitamin D Am J Dis Child 39 45 58 (Jan) 1930

2 A roentgen technic that has been found to be satisfactory for examinations of infants bones is given as appendix C in a report of "The Effect of Tropical Sunlight on the Development of Bones of Children in Puerto Rico" Publication 217, U S Department of Labor Children's Bureau

TABLE 1—*Ages of Infants*

	Number
Over 2 weeks and under 6 weeks	23
Over 6 weeks and under 7 weeks	6
Over 7 weeks and under 8 weeks	2
Over 10 weeks and under 11 weeks	1
Over 12 weeks and under 13 weeks	1

PLAN OF STUDY

The feeding was substantially uniform for all infants—undiluted whole milk containing the cod liver oil concentrate and from 8 to 10 per cent of added carbo-

TABLE 2—Amounts of Milk Reported to Have Been Taken Daily During Specified Age Periods*

Age Periods	Amount of Milk Taken Daily in Ounces							
	Total Group of 33 Infants		14 Infants Showing No Rickets		17 Infants Showing Slight Rickets		2 Infants Showing Moderate Rickets	
	Average	Range	Average	Range	Average	Range	A A Average	F C Average
6 weeks	22 oz	17-26 oz	23 oz	17-26 oz	21 oz	18-23 oz		
7-10 weeks	23 oz	18-27 oz	24 oz	18-27 oz	23 oz	19-26 oz	19 oz	21 oz
11-14 weeks	24 oz	19-29 oz	25 oz	21-28 oz	26 oz	20-29 oz	19 oz	23 oz
15-18 weeks	27 oz	21-32 oz	27 oz	22-32 oz	27 oz	21-32 oz	21 oz	25 oz
19-22 weeks	28 oz	21-32 oz	28 oz	23-32 oz	28 oz	21-32 oz	22 oz	27 oz
23-26 weeks	29 oz	22-32 oz	29 oz	27-32 oz	29 oz	22-32 oz	26 oz	30 oz
27-30 weeks	29 oz	24-32 oz	30 oz		29 oz	24-32 oz	28 oz	

hydrate. Cane sugar was the carbohydrate used as a rule. Six babies were given dark corn syrup instead of cane sugar. For two weeks in January through a misunderstanding 200 units of cod liver oil concentrate was added to each quart of milk used instead of the 150 units originally decided on. Table 2 shows the average amounts of milk reported to have been taken daily at different age levels by the total group studied and by subgroups divided according to the maximum degree of rickets found at roentgen examination during the period of observation. It may be seen that the infants who did not develop rickets and those that developed only slight rickets received on the average about the same amount of milk and consequently about the same number of units of vitamin D at corresponding ages. Comparison shows, however, that in general

4 Hess A F and Lewis J M Milk Irradiated by Carbon Arc
Lamp Clinical and Laboratory Study of Rickets J A M A 99 647
653 (Aug 20) 1932

somewhat less milk was taken by the two infants who developed a moderate degree of rickets than by the group as a whole. This is of considerable significance, as will be pointed out later.

The milk mixtures were cooked in a double boiler twenty minutes. Orange juice or tomato juice was given from the time of the first visit and cereal added to the diet when the infants were 4 months old. The cereal used was farina and each infant received gruel made from about 20 Gm of dry cereal daily. Vegetable puree was given when the infants were 5 or 6 months old. The diet offered met all the known nutritional requirements of the infant, with the exception of vitamin D. The only appreciable source of vitamin D in the diet was the cod liver oil concentrate in the milk. There were two instances in which infants received additional amounts of antirachitic substance in the hospital by mistake (U B and E B, table 9).

Goldblatt⁵ is of the opinion that the absence of vitamin D is the only important factor in the production of rickets in the infant. Though a diet of low calcium and phosphorus content is essential for production of rickets in the rat, infants develop rickets readily on an adequate mineral intake in the absence of vitamin D. Computation showed that the diet recommended in this study contained what was believed to be an adequate amount of both calcium and phosphorus.

RESULTS OF STUDY

As has been pointed out, evidences of rickets were sought by physical examinations and through roentgenograms of the bones of the forearm repeated at monthly intervals. All of the thirty-three infants had four examinations each, twenty-three had five examinations and eight had six examinations. The infants that did not have the fifth or sixth examination were those enrolled in January or February.

Clinical Signs of Rickets—Clinical signs of rickets were found in six infants and are given in table 3. In no instance were the clinical signs marked, and all disappeared spontaneously before the end of the study.

Roentgenographic Evidence—For an investigation of the sort here described it is believed that roentgeno-

TABLE 3—Clinical Signs of Rickets in Six Infants

Name	Clinical Signs of Rickets	Maximum Degree of Rickets Found by Roentgen Ray	Age
J A	Parietal bossing	Normal	6 22 weeks
V B	Slight enlargement of costochondral junction	Normal	14 weeks
F C	Enlargement of wrists	Moderate rickets	10 19 weeks
R H	? Enlargement of wrists	Normal	9 weeks
H J	? Craniotabes ? enlargement of costochondral junctions	Slight rickets	13 weeks
L T	Craniotabes	Slight rickets	15 weeks

graphic evidence of the condition of the infant's bones is of much greater value than the clinical evidence obtained at physical examination, since the former is an objective record of progress that can be referred to again and again, whereas the latter is largely a subjective estimate that permits a wide range of error. The evaluation⁶ of the condition of the bones shown by roentgenogram was based on standards established

during earlier studies in New Haven.⁷ The scheme of diagnosis differentiated between bones that showed evidence of active rickets with no visible fresh lime salt deposit—the so-called A type of rickets, bones that showed evidence of active rickets with a greater or less degree of healing indicating that the process was “under control,” the so-called B type of rickets, and bones that showed advanced healing, the C type. In addition, the scheme allowed for classification of those

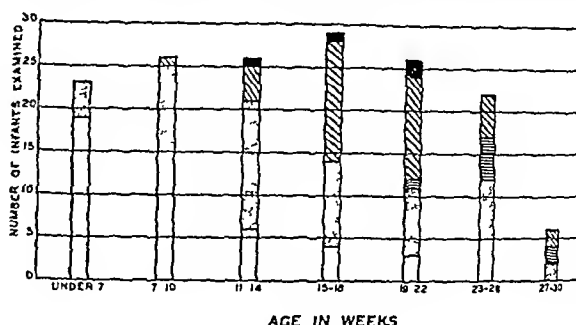


Chart 1—Number of infants examined at each specified age period and roentgen diagnosis made

bones which were thought to be normal, E, and those which, though probably normal, raised some question or doubt in the examiner's mind, D. The severity or degree of the rachitic process was indicated in the diagnosis as slight or first degree, moderate or second degree and so on.

Each film taken in the series was studied independently and, after a diagnosis had been arrived at, comparisons were made with the films taken previously. It was believed that the success of the antirachitic treatment should be based on the presence or absence of evidence of rickets in any one of the films in each individual series, on the severity of the process at any time and on the tendency for the process to recede without change in the daily regimen. Study of the roentgenograms for the thirty-three infants showed that the maximum degree of rickets found at any time during the period of investigation was as follows: no rickets, one, doubtful diagnosis (considered normal), thirteen, slight rickets, seventeen, moderate rickets, two.

Chart 1 shows the number of infants examined at certain specified age levels and the roentgen diagnoses at each age. The shift in the majority of diagnoses with advancing age from normal to doubtful and then to slight or moderate rickets and the ultimate receding of the disease can be seen.

The course of the rachitic process has been plotted for each of the nineteen infants who at some time during the period of observation developed roentgenographic evidence of rickets and is shown in chart 2. It will be seen that during the period of observation healing occurred in the case of the two infants who developed moderate rickets (F C and A A), demonstrating that they were in no sense “refractory” cases. Of the seventeen infants with slight rickets, ten showed advanced healing or normal bones at the last observation, four were definitely under control, and three were still too young at the last examination to determine whether the process was still active or adequately con-

5 Goldblatt H. Die neue Richtung der experimentellen Rachitis forschung. *Ergebn. d. allg. Path. u. path. Anat.* 25: 58-491, 1931.

6 Interpretations of the roentgenograms were made with the assistance of Dr. Martha M. Eliot of the Pediatric Department, Yale University School of Medicine and the Children's Bureau of the United States Department of Labor.

7 Eliot Martha M. The Control of Rickets. Preliminary Discussion of the Demonstration in New Haven. *J. A. M. A.* 85: 656-663 (Aug. 29) 1925.

trolled The case histories of the two infants who developed moderate rickets were as follows

F C was a normal, full term, rapidly growing male infant whose mother was Polish. He was first seen at 5 weeks of age and not again until 11 weeks, at which time a roentgenographic diagnosis of moderate rickets was made. During this interval he had gained 1,840 Gm on an average of 21 ounces of milk daily⁸ (111 rat units of vitamin D). From the eleventh

nosis and the average number of rat units of vitamin D received daily in the periods between roentgen examinations

All the infants had attained at least the average length and weight for their ages before the end of the study

Table 4 shows the average weekly gain in weight and growth in length during periods of about four to

TABLE 4—Average Weekly Gain in Weight and Length*

Age in Weeks at Second and Subsequent Examinations	Maximum Degree of Rickets Found by Roentgen Ray During Period of Observation																
	Total Group (33 Infants)		No Rickets (14 Infants)				Slight Rickets (17 Infants)				Moderate Rickets (2 Infants)						
			Average Weekly Growth in		Average Weekly Growth in		Average Weekly Growth in		A A Average Weekly Growth in		F C Average Weekly Growth in						
	No of Child	dren	Weight	Length	No of Child	dren	Weight	Length	No of Child	dren	Weight	Length	Weight	Length	Weight	Length	
2-6	5	229 Gm	9 mm	2	215 Gm	9 mm	3	238 Gm	9 mm								
7-10	17	243 Gm	8 mm	8	245 Gm	7 mm	9	249 Gm	8 mm								
11-14	28	214 Gm	8 mm	13	175 Gm	8 mm	13	237 Gm	8 mm								
15-18	32	189 Gm	6 mm	13	146 Gm	5 mm	17	194 Gm	7 mm	333 Gm †	†	307 Gm †	12 mm				
19-22	22	137 Gm	6 mm	6	59 Gm	6 mm	14	160 Gm	5 mm	242 Gm	7 mm	188 Gm	†				
23-26	20	140 Gm	4 mm	7	133 Gm	4 mm	11	141 Gm	4 mm	150 Gm	13 mm	50 Gm	6 mm				
27-30	6	123 Gm	3 mm	1	130 Gm	3 mm	4	111 Gm	4 mm	167 Gm	8 mm	150 Gm	2 mm				
										164 Gm	3 mm						

* Figured for periods of approximately four to six weeks immediately preceding the second and each subsequent roentgen examination, infants arranged according to maximum degree of rickets found by roentgen examination during period of observation
† Second examination was at 11 weeks the average gain for A A covered a period of four weeks that for F C a period of six weeks
‡ Length not reported

to the fifteenth week he gained 750 Gm in weight on 23 ounces of milk daily (108 units). The rapidity of gain of this infant was, however, no greater than that of certain other infants who did not show more than a slight degree of rickets, but the quantity of milk taken daily was less. F C was an illegitimate child and soon after the third roentgen examination was removed from his home to an institution. Almost at once he developed acute otitis media. Furthermore, from the fifteenth to the nineteenth week, though he was receiving 25 ounces of milk daily (118 units) he gained only 200 Gm. From the nineteenth to the twenty-fourth week he again gained 750 Gm and was receiving 30 ounces of milk daily (141 units). As will be pointed out later, it is believed that the simultaneous decrease in rate of growth after the fifteenth week and the increase in the amount of milk taken at this time together so increased the number of units of vitamin D consumed daily per unit of growth that healing of the rachitic process was brought about.

A A, the other infant who developed a moderate degree of rickets, was of Italian parentage and, though he looked like a premature infant, was said to have weighed 2,600 Gm at birth. At the first examination at 7 weeks of age, he weighed 2,500 Gm. He gained in weight rapidly and consistently, reaching 6,300 Gm at 21 weeks of age, when the diagnosis of moderate rickets was made. As he was smaller than the average the total amount of milk taken and consequently the total amount of antirachitic vitamin was less than that taken by others in the group. Later not only was his growth somewhat slower but he also received more milk as can be seen from table 2.

Growth and Development—The progress and general development of the infants on the regimen described was apparently normal and satisfactory. Table 9 gives the data obtained at each examination, showing age, weight, length, roentgenographic diag-

nosis and the average number of rat units of vitamin D received daily in the periods between roentgen examinations. Each figure represents the average gain taking place during the four to six weeks period just preceding those examinations that fell within the specified age range. The average gains for the total group are shown and for subgroups divided according to the maximum degree of rickets found during the period of observation. It will be seen that the infants who were found to have slight rickets gained weight more rapidly on the average than did those who showed no rickets and also grew on the whole somewhat faster in length. Of the two infants who developed moderate rickets, one (A A) gained weight throughout the period of obser-

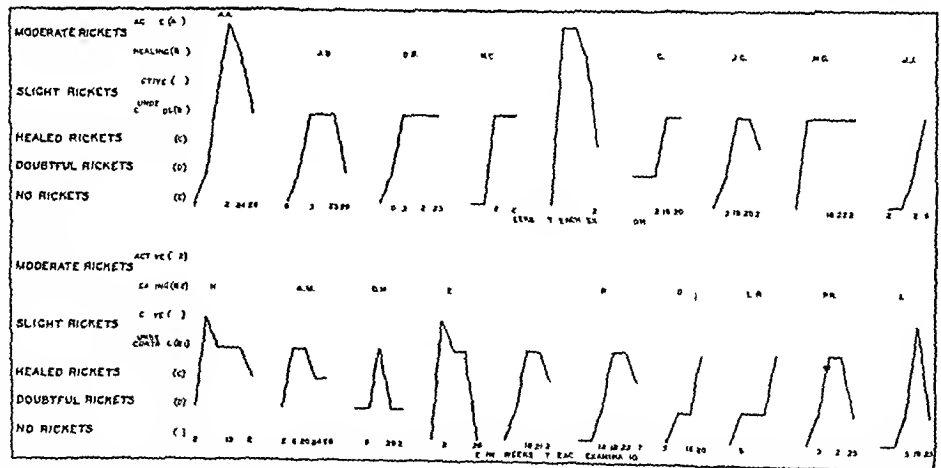


Chart 2—Roentgen diagnosis at specified age periods for nineteen infants who developed rickets during the period of observation

vation considerably faster than the average for the group as a whole and also grew faster in length. The other infant (F C) gained in weight rapidly up to the fifteenth week and then, coincident with otitis media, gained very slowly for a month. Between the nineteenth and twenty-fourth weeks the gain in weight was again more rapid. The growth in length made by this child (F C) was greater during the early weeks than that of the total group.

⁸ For two weeks during this period milk containing 200 units per quart was given by mistake.

The musculature and general appearance of all the infants was excellent at the end of the study. Of the fourteen infants who reached an age of 26 weeks or more at the last examination, nine sat alone well and five sat with support, four had two or more teeth, ten had none. The fontanels diminished in size in each case and the heads increased in circumference at the normal rate.

The incidence of infections between January and May, while apparently high, did not seem excessive for children from homes with poor hygienic conditions. On the whole the infants with infections did as well as other children in the hospital and dispensary service at the time, and recovery in every case was complete and uneventful. During the five months of the study, infections occurred among the thirty-three infants as shown in table 5.

Relation of Amount of Vitamin D Taken and of Growth to Development of Rickets—The average number of units of vitamin D taken daily during successive periods of approximately four to six weeks each has been calculated from the quantity of milk consumed and the figures are given in table 6 for the total group of infants and for the three subgroups, arranged according to roentgen diagnoses. As in table 4, the periods used for calculation are those occurring between successive roentgen examinations. There was practically no difference in the average total amount of vita-

higher than the average number of units per weekly gain taken by those who showed slight rickets. Furthermore, it is considerably higher than the number of units taken per weekly gain in weight by the two infants who developed moderate rickets, with the one exception of the amount taken by F. C. in the period preceding the examination at 19 weeks of age. The abrupt slowing in gain in weight that occurred at that time (as mentioned in the case history) accounts for the large number of units of vitamin D taken per hundred grams gain in weight and, in all probability, for the fact that healing of the rachitic process also began at this time. In each group of infants, as would be expected, the amount of vitamin D taken per unit of gain in weight increased with increase in age. This is explained not only by an increase in the amount of milk consumed but also by the fact that gain in weight had become slower.

Table 8 shows similar data except that the units of vitamin D are calculated per millimeter of weekly growth in length. A similar relationship is shown between the amount of vitamin D received per millimeter of growth in length and the maximum degree of rickets found during the period of observation, but it is somewhat less striking than that shown in table 7.

COMMENT

Bills, Honeywell, Wirick and Nussmeier⁹ have analyzed the roentgenograms of approximately 5,000 rats treated in routine assays of material that contained vitamin D. By estimating the amount of healing indicated by the line test and comparing it with a photographic standard graduated in degrees 1 to 8, they worked out a quantitative relationship between the degree of healing and the number of units of vitamin D administered. Hume, Pickersgill and Gaffikin¹⁰ compared the ash content of the bones of rats with the amount of vitamin D administered in a curative test and were also able to demonstrate a relationship between the number of units administered and the amount of healing produced. In the study of infants here reported no attempt has been made to arrive at any such numerical relationship, because of the small number of cases. The development of more than a mild degree of rickets in two infants is not, in our opinion, a wholly satisfactory result under the rigorous conditions necessary for testing a rickets preventing substance that is being considered for widespread general use. Because of the spontaneous healing that occurred in these two cases when the rate of growth became slower and the amount of milk increased, it is believed that a larger amount of the vitamin D concentrate would in all probability have kept the rachitic process from advancing to a moderate degree. How much more vitamin D in the form of vitamin D concentrate of cod liver oil would be needed to prevent the development of rickets—at least that of a moderate degree—can be determined only by further clinical tests.

SUMMARY

1. A clinical study was made of the rickets-preventing efficacy of milk fortified with 150 Steenbock units of vitamin D per quart in the form of a cod liver oil concentrate.

TABLE 5—Occurrence of Infections

	Number of Cases
Chickenpox (in April and May)	3
Infections of upper respiratory tract with broncho pneumonia, one complicated by erysipelas	4
Infections of upper respiratory tract with otitis media	3
Diarrhea (one in February, one in May)	2
Prolonged rhinopharyngitis (in March)	1
Acute bronchitis (in March)	1
Whooping cough	1
Scabies	1

min D taken daily by infants with no rickets and by those with a slight degree. The two infants with moderate rickets apparently took less than the average, though the differences are not striking. Since, however, the amount of vitamin D needed to prevent rickets depends, in all probability, on the rate of growth, further analysis of the data has been made to determine whether a relationship existed between the growth in weight and in height, the degree of rickets observed and the amount of vitamin D received. Calculations were made of the number of units taken by each infant between the first and second roentgen examinations per hundred grams of weekly gain in weight and per millimeter of weekly growth in length. Average figures were then obtained for the number of units of vitamin D taken per weekly gain in weight and growth in length by the total group of thirty-three infants and by the three subgroups arranged according to the roentgen diagnoses. Similar calculations were made of the number of units taken by each infant between subsequent examinations and the number related to age, the gain in weight, the growth in length and the diagnosis of rickets.

Table 7 shows the average number of units of vitamin D taken daily per hundred grams weekly gain in weight between successive roentgen examinations. It will be seen that in general the average number of units per hundred grams weekly gain in weight taken by those children who showed no rickets is somewhat

⁹ Bills, C. E., Honeywell, Edna M., Wirick, Alice M. and Nussmeier, Mildred A. Critique of Line Test for Vitamin D. *J. Biol. Chem.* **90**: 619-636 (Feb.) 1931.
¹⁰ Hume, Eleanor M., Pickersgill, Margaret and Gaffikin, Mary M. The Determination of Vitamin D Relationship Between Graded Doses of Standard Solution of Vitamin D Administered to Young Rats on Rachitic Diet and Ash Content of Their Bones. *Biochem. J.* **26**: 488-505 (No. 2) 1932.

2 Thirty-three artificially fed infants, most of whom were under 8 weeks of age at the beginning of the study in December 1932 and two thirds of whom were Negroes or Italians, were selected for the study and were given this milk as the sole source of vitamin D. They were observed over periods of from three to six months, the last examination having been made in May

received showed that, though the infants who developed slight rickets grew somewhat faster than did those who remained normal, they nevertheless did not receive on the average more milk daily or more vitamin D. Moreover, the two infants who developed moderate rickets not only took less milk daily than did the group as a whole but also grew considerably faster. Further-

TABLE 6—Average Number of Units of Vitamin D Taken Daily*

Age in Weeks at Second and Subsequent Examinations	Total Group (33 Infants)		Maximum Degree of Rickets Found by Roentgen Ray					
			No Rickets (14 Infants)		Slight Rickets (17 Infants)		Moderate Rickets (2 Infants)	
	Number of Children	Average Number of Units of Vitamin D	Number of Children	Average Number of Units of Vitamin D	Number of Children	Average Number of Units of Vitamin D	Average Number of Units of Vitamin D	Average Number of Units of Vitamin D
2-6	5	103	2	105	3	101		
7-10	17	102	8	103	9	106		
11-14	28	123	13	122	13	127		
15-18	32	126	13	123	17	126	90	111
19-22	22	131	6	125	14	133	120	120
23-26	20	135	7	137	11	135	122	141
27-30	0	136	1	140	4	136	132	

* Figured for periods of approximately four to six weeks immediately preceding the second and each subsequent roentgen examination. Infants arranged according to maximum degree of rickets found by roentgen examination during period of observation.

TABLE 7—Average Number of Units of Vitamin D Taken Daily per Hundred Grams of Weekly Gain in Weight*

Age in Weeks at Second and Subsequent Examinations	Total Group (33 Infants)		Maximum Degree of Rickets Found by Roentgen Ray During the Period of Observation					
			No Rickets (14 Infants)		Slight Rickets (17 Infants)		Moderate Rickets (2 Infants)	
	Number of Children	Average Number of Units of Vitamin D Taken Daily per 100 Grams Weekly Gain in Weight	Number of Children	Average Number of Units of Vitamin D Taken Daily per 100 Grams Weekly Gain in Weight	Number of Children	Average Number of Units of Vitamin D Taken Daily per 100 Grams Weekly Gain in Weight	A A Average Number of Units of Vitamin D Taken Daily per 100 Grams Weekly Gain in Weight	F C, Average Number of Units of Vitamin D Taken Daily per 100 Grams Weekly Gain in Weight
2-6	5	50 units	2	49 units	3	51 units		
7-10	17	42 units	8	44 units	9	41 units		
11-14	28	68 units	13	86 units	13	56 units	27 units	36 units
15-18	32	87 units	13	97 units	17	83 units	46 units	59 units
19-22	21†	110 units	5‡	147 units	14	92 units	47 units	240 units
23-26	20	119 units	7	140 units	11	113 units	73 units	94 units
27-30	0†	97 units	1	103 units	3‡	99 units	81 units	

* Figured for periods of approximately four to six weeks immediately preceding the second and each subsequent roentgen examination. Infants arranged according to maximum degree of rickets found by roentgen examination during period of observation.
† One child did not gain.
‡ Child developed otitis media at 15 weeks and ceased gaining rapidly.

TABLE 8—Average Number of Units of Vitamin D Taken Daily per Millimeter of Weekly Growth in Length*

Age in Weeks at Second and Subsequent Examinations	Total Group (33 Infants)		Maximum Degree of Rickets Found by Roentgen Ray During the Period of Observation					
			No Rickets (14 Infants)		Slight Rickets (17 Infants)		Moderate Rickets (2 Infants)	
	Number of Children	Average Number of Units of Vitamin D Taken Daily per Mm Growth in Length	Number of Children	Average Number of Units of Vitamin D Taken Daily per Mm Growth in Length	Number of Children	Average Number of Units of Vitamin D Taken Daily per Mm Growth in Length	A A Average Number of Units of Vitamin D Taken Daily per Mm Growth in Length	F C, Average Number of Units of Vitamin D Taken Daily per Mm Growth in Length
2-6	5	16 units	2	15 units	3	17 units		
7-10	17	24 units	8	25 units	9	23 units		
11-14	27	18 units	13	21 units	13	16 units		
15-18	31†	25 units	12‡	31 units	17	21 units		10 units
19-22	20	25 units	5‡	20 units	13‡	30 units	17 units	19 units
23-26	18‡	43 units	5‡	52 units	11	39 units	15 units	71 units
27-30	6	47 units	1	56 units	4	45 units	44 units	

* Figured for periods of approximately four to six weeks immediately preceding the second and each subsequent roentgen examination. Infants arranged according to maximum degree of rickets found by roentgen examination during period of observation.
† One child did not gain.
‡ Two children did not gain.

3 Of the thirty-three infants fourteen remained normal, seventeen developed slight rickets during the period of observation and two a moderate degree of rickets. These diagnoses were made from roentgenograms taken at monthly intervals during the study.

4 Analysis of the data that had to do with the degree of rickets observed, the growth in weight and length and the amount of milk and hence of vitamin D

more, when the number of units of vitamin D taken daily per hundred grams of weekly gain in weight was correlated with the degree of rickets, it was found that the average number of units taken by the nonrachitic infants was somewhat greater than the average number taken by those who showed slight rickets and considerably greater than the number taken daily by the two infants who developed moderate rickets.

TABLE 9—Data Obtained at Time of Roentgen Examination for Each Child Included in the Study

Child	First Examination			Second Examination			Third Examination			Fourth Examination			Fifth Examination			Sixth Examination			Comments													
	Birth Weight Gm	Age Weeks	Length Cm	Weight Gm	Vitamin D Units Daily	X Ray Diagnosis	Age Weeks	Length Cm	Weight Gm	Vitamin D Units Daily	X Ray Diagnosis	Age Weeks	Length Cm	Weight Gm	Vitamin D Units Daily	X Ray Diagnosis	Age Weeks	Length Cm		Weight Gm	Vitamin D Units Daily	X Ray Diagnosis										
I A White ♀	3 800	10	60.5	5 140	E	X	14	62.0	5 600	113	E	13	64.0	6 400	108	D	22	67.0	6 900	108	D	26	68.0	7 400	123	D	30	69.0	7 920	140	D	Parietal bossing 10 to 22 weeks
A A Italian ♂	2 000	7	50.4	2 500	E		11	57.0	3 830	90	D	17	57.0	5 250	111	A 1	21	62.0	0 300	120	A 2	24	64.5	0 800	122	B 2	29	66.0	7 620	132	B 1	Offered cod liver oil 1 teaspoon b d 10 days before admission most of it lost
J B White ♂	3 150	5	51.5	3 400	E		9	52.0	3 450	108	D	13	59.0	4 040	109	B 1	18	60.0	5 860	141	B 1	23	63.0	6 990	141	B 1	29	63.0	0 900	141	D	Probably premature
U B Italian ♂		5	51.5	3 400	E		10	53.5	4 100	77	D	14	58.0	5 010	123	E	23	63.0	6 740	135	E	23	63.0	6 990	141	B 1	29	63.0	0 900	141	D	Chickenpox at 20 weeks
E B White ♂	2 700	6	59.0	3 300	F		10	61.0	4 250	101	D	12	63.0	4 780	110	D	17	60.0	0 800	140	D	17	60.0	0 800	140	D	23	63.0	0 900	141	D	In hospital 2 weeks for dorsal silt at 6 to 8 weeks no vitals at 18 weeks pneumonia at 18 weeks received 1 ounce of cod liver oil in 4 days
R B White ♂	4 370	4	58.5	5 040	E		10	63.0	6 200	109	D	14	64.0	0 850	114	E	18	67.0	7 060	131	E	22	67.0	7 450	130	E	29	66.0	7 620	132	B 1	Otitis media 10 to 18 weeks received 1 1/2 ounces of cod liver oil and 60 drops of viosterol in 0 days
D B White ♂	5 000	6	62.0	5 920	E		10	63.0	0 450	105	D	13	66.0	7 090	108	B	17	68.0	7 640	170	B 1	21	63.0	8 160	130	B 1	25	70.0	8 510	130	B 1	Otitis media for 2 weeks at 12 weeks
N C Italian ♂		7	53.0	4 700	E		12	58.0	5 840	120	E	10	60.0	0 400	170	B	21	64.0	7 270	141	B 1	24	63.0	7 400	141	B 1	24	63.0	0 900	141	D	Otitis media at 16 weeks transferred to nursery because of poor home
F C Italian ♂		5	51.0	3 300	F		11	58.0	5 200	111	A 2	13	60.0	5 950	110	A 2	19	63.0	6 140	120	B 2	24	64.0	6 900	141	C 2	29	66.0	7 620	132	B 1	Diarrhea 2 days at 9 weeks
W D White ♂	3 740	8	60.0	4 900	E		14	64.0	0 850	114	E	18	67.0	0 850	120	D	22	67.0	7 060	131	E	23	68.0	7 450	130	E	29	66.0	7 620	132	B 1	Congenital clubfoot
J G Italian ♀	2 760	7	52.0	4 330	F		12	58.0	4 090	90	D	12	57.0	5 450	122	D	10	60.0	7 300	133	B 1	20	63.0	7 450	130	E	24	64.0	7 310	140	B 1	Wrist enlarged at 15 weeks normal at 24 weeks
Y G Italian ♀	2 600	7	54.0	4 300	F		12	58.0	5 860	128	D	10	61.0	0 700	122	B	20	63.0	7 420	140	B 1	24	64.0	8 070	150	C 1	29	66.0	7 620	132	B 1	
D H White ♀	3 380	4	52.0	3 700	F		11	56.5	4 950	108	B 1	14	58.5	5 010	122	B	18	61.0	6 310	105	B 1	22	62.0	0 600	122	B 1	26	64.5	7 310	140	B 1	
R H Negro ♀	3 320	4	50.0	3 450	D		8	49.0	4 850	113	D	13	62.0	0 680	117	F	18	60.5	6 950	141	D	20	62.0	0 600	122	B 1	26	64.5	7 310	140	B 1	
J J White ♀	2 000	2	48.0	2 700	E		0	53.0	3 590	106	F	0	53.0	3 590	106	F	10	60.0	7 940	131	E	20	62.0	0 600	122	B 1	26	64.5	7 310	140	B 1	
J J White ♀	2 700	2	50.0	3 940	E		0	52.0	3 870	106	D	12	57.0	4 070	123	D	10	60.0	7 150	128	B	10	60.0	7 150	128	B	17	60.0	7 310	140	B 1	
H J Italian ♀		2	48.0	2 700	D		0	52.5	3 640	92	A 1	12	57.0	4 070	123	D	10	60.0	7 150	128	B	10	60.0	7 150	128	B	17	60.0	7 310	140	B 1	
A M Italian ♀	2 340	12	53.5	4 600	D		10	59.0	5 700	110	B 1	20	63.0	0 530	100	B	24	64.0	7 700	100	C 1	28	64.0	7 060	110	C 1	29	66.0	7 620	132	B 1	
L M Italian ♀	2 780	4	51.5	3 340	E		8	53.0	4 890	112	E	12	61.0	5 210	133	D	17	63.0	6 090	150	D	22	67.0	7 450	130	E	29	66.0	7 620	132	B 1	
D M Negro ♀	2 870	8	50.2	4 300	E		9	50.5	5 010	113	D	15	60.0	5 770	122	B 1	20	62.0	6 220	122	D	24	64.0	6 950	131	D	29	66.0	7 620	132	B 1	
F F White ♀	3 520	7	53.5	4 180	E		11	57.0	5 040	142	A 1	17	64.0	6 050	133	B 1	22	66.0	7 000	141	B 1	28	69.0	8 620	141	E	29	66.0	7 620	132	B 1	
D R Negro ♀		9	54.5	4 640	E		11	58.5	5 380	138	F	16	60.0	5 900	131	B 1	21	63.5	6 700	131	B 1	24	63.0	6 740	131	C 1	29	66.0	7 620	132	B 1	
D R Negro ♀	2 010	5	51.0	3 340	L		9	51.5	4 240	110	J	14	57.0	5 000	142	D	21	63.5	6 700	131	B 1	24	63.0	6 740	131	C 1	29	66.0	7 620	132	B 1	
D R Negro ♀	3 140	3	49.0	3 900	L		9	55.0	4 440	93	D	10	60.0	4 230	125	D	18	62.0	6 860	131	B 1	21	63.0	6 740	131	C 1	29	66.0	7 620	132	B 1	
L R Italian ♀	2 600	2	47.5	2 950	F		5	48.5	2 070	100	D	0	43.0	3 340	115	D	10	59.0	5 700	130	D	20	61.0	6 240	140	B 1	27	61.5	6 840	140	C 1	
L R Italian ♀	4 870	6	56.0	4 300	E		11	58.0	5 010	108	E	10	60.0	5 640	131	F	21	64.0	6 000	125	E	24	63.0	6 750	131	E	29	66.0	7 620	132	B 1	
V R Italian ♀	2 700	4	51.7	2 980	E		8	53.0	3 750	107	D	15	59.0	4 920	107	D	10	61.0	5 470	131	E	22	63.0	6 750	131	E	29	66.0	7 620	132	B 1	
P R Italian ♂		7	49.0	3 400	E		13	57.0	5 000	139	D	17	59.0	5 770	150	B 1	21	62.0	6 380	160	B 1	23	63.0	6 950	140	E	29	66.0	7 620	132	B 1	
M T Negro ♀	3 150	2	40.0	3 960	F		7	45.0	4 200	80	D	12	49.0	4 580	100	D	17	63.0	6 400	120	D	23	63.0	6 950	140	E	29	66.0	7 620	132	B 1	
P T Polish ♀	2 900	2	40.5	3 500	F		0	54.5	4 100	102	F	13	60.5	5 240	140	D	17	63.0	6 400	120	D	23	63.0	6 950	140	E	29	66.0	7 620	132	B 1	
I T Italian ♀	3 150	7	40.7	3 030	F		11	47.0	3 070	113	E	15	59.0	4 110	117	D	10	63.0	6 160	128	A 1	23	61.5	6 840	140	D	29	66.0	7 620	132	B 1	
																																Craniotabes 16 weeks
																																Scabies 22 weeks

5 Coincident with a slowing in the rate of growth and an increase in the amount of milk consumed by these two infants there occurred an increase in the number of units of vitamin D taken daily per hundred grams of weekly gain in weight and, as a result, healing of the rachitic process took place

CONCLUSIONS

Since the amount of vitamin D necessary to prevent rickets is probably dependent to a great extent on rate of growth and since the growth of young infants does not necessarily conform to the amount of milk consumed daily, it is clear that infants who gain rapidly on relatively small amounts of milk will not receive an adequate amount of vitamin D from a fortified milk unless the amount of vitamin incorporated per quart is such that protection will be afforded when considerably less than a quart is consumed. If, therefore, milk is to be relied on for the sole supply of vitamin D during the period of most rapid growth, it would appear that the minimum amount likely to be consumed during the first four months of life—approximately a pint—should contain an amount of vitamin D adequate to protect the normal rapidly growing infant. It would appear from the data here presented that the addition to one quart of milk of 150 Steenbock units of the vitamin D concentrate used did not furnish enough vitamin D to prevent the development of a moderate degree of rickets in two out of the thirty-three infants studied. How many units of this vitamin D concentrate per quart would be required to protect completely all normal infants can be determined only by further study

DETERMINATION WHETHER KETONURINE HAS BACTERICIDAL ACTION

A SIMPLE TECHNIC FOR CLINICAL USE

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In a previous paper we reported, from chemical and bacteriologic data, that a minimal standard of p_H and concentration of beta-hydroxybutyric acid could be set up for a ketonurine, and that if ketonurine met this standard it might be expected that it would prove to be bactericidal. These standards are a p_H of 5.5 or less and a concentration of beta-hydroxybutyric acid of 0.5 per cent or greater. If these conditions are fulfilled, the urine is bactericidal to numerous strains of colon bacilli. If this standard is exceeded by a decrease in p_H value or an increase in concentration of beta-hydroxybutyric acid, or both, it may be expected that the bactericidal action will be greater and the urine will be rendered sterile in a shorter length of time. The previous work involved the determination of the p_H value of urine by ordinary colorimetric procedures and the determination of beta-hydroxybutyric acid by the somewhat tedious, van Slyke, gravimetric procedure. Obviously, it is to be desired that a simple procedure be made available whereby the clinician can determine easily whether or not this standard has been reached or exceeded. A technic by which one can determine this is presented

The colorimetric determination of the p_H is simple and perhaps needs no further simplification, since this determination is commonly used. However, it can be determined whether or not the p_H of the urine is 5.5 or less even more simply by the use of chlorphenol red paper. Filter paper of good grade that has been soaked in an aqueous solution of chlorphenol red of a concentration of 0.04 per cent, and then dried, becomes yellow. Such a test paper will turn red at a p_H above 5.5. Hence, for determining whether the p_H of the urine is less than 5.5, it is necessary only to see that

TABLE 1—Relationship of Concentration of Acetone and Diacetic Acid to Concentration of Beta-Hydroxybutyric Acid in Ketonurine (Series 1)

Case	Beta Hydroxybutyric Acid per Cent (van Slyke Method)	Acetone Bodies Present as Beta Hydroxybutyric Acid per Cent (Calculated as Acetone)
1	0.31	90.3
2	0.36	79.5
3	0.73	91.2
4	0.79	80.6
5	0.87	91.2
6	0.99	85.5
7	1.58	88.6
8	1.62	88.6
9	1.97	90.4
Average		87.3

such paper, when wetted with the urine, retains its yellow color. At the borderline of p_H 5.5 a slight orange tint may be present, but if the p_H is greater than this a distinct red is produced. Consequently it is necessary only that the urine shall not be capable of turning the test paper red, thus will insure that the standard of p_H has been reached and that the p_H of the urine is sufficiently low for bactericidal action, if the concentration of beta-hydroxybutyric acid is 0.5 per cent or more.

There is no easy, satisfactory specific colorimetric reaction for beta-hydroxybutyric acid. Hence, like Fuller, we deemed it necessary to adapt a simple procedure for determining the concentration of diacetic acid and, indirectly, of beta-hydroxybutyric acid. That there is a fairly constant ratio between the concentration of diacetic acid and beta-hydroxybutyric acid in ketonurine, over a fairly wide degree of ketosis, is shown in the tables.

In table 1 it may be noted that, for concentrations of beta-hydroxybutyric acid ranging from 0.31 to 1.97 per cent, the percentage of total acetone bodies present as beta-hydroxybutyric acid remains at the fairly constant value of from 80 to 90 per cent. Likewise, another series of cases (table 2) demonstrates that a concentration of acetone and diacetic acid of approximately 0.1 per cent accompanies a concentration of beta-hydroxybutyric acid of 0.5 per cent. Also, determinations of acetone bodies, other than beta-hydroxybutyric acid, which are present in ketonurine that contains 0.5 per cent beta-hydroxybutyric acid, demonstrate that acetone and diacetic acid are present in a concentration of 0.1 per cent, of which 75 per cent is present as diacetic acid.

In the Rothera test, diacetic acid develops approximately five times the depth of color developed by acetone, hence, the amount of color developed by ketonurine that contains 0.5 per cent beta-hydroxybutyric acid will approximate the color produced by a 0.5 per cent solution of acetone. The problem arises then, to adapt the nitroprusside reaction so that it may be performed simply and quickly. Fuller has used, as

a standard, a combination of dyes that give a color approximating that produced by acetone and sodium nitroprusside. The procedure to be described here utilizes the fact that a phosphate buffer of p_H 8.0, when treated with a mixture of phenol red and bromthymol blue in the proper concentration, produces a stable color identical with that produced by ketonurine, which contains 0.5 per cent beta-hydroxybutyric acid when treated with sodium nitroprusside.

METHOD

To 800 mg of ammonium sulphate in the ordinary Nessler comparison tube¹ graduated at 50 cc is added 3 drops of concentrated ammonium hydroxide (0.15 cc), 2 drops (0.10 cc) of a 5 per cent solution of sodium nitroprusside, and 1 cc of the urine to be examined. This is allowed to stand six minutes at a room temperature of approximately 25 C (77 F). The reaction product is then quickly diluted with water to the 50 cc mark and mixed. This solution is immediately compared with the standard. If the color of the unknown is deeper than that of the standard, the concentration of beta-hydroxybutyric acid is greater

TABLE 2—Relationship of Concentration of Acetone and Diacetic Acid to Concentration of Beta-Hydroxybutyric Acid in Ketonurine (Series 2)

Case	Beta Hydroxybutyric Acid per Cent (van Slyke Method)	Acetone and Diacetic Acid Calculated as Acetone (per Cent)
1	0.14	0.03
2	0.19	0.07
3	0.26	0.06
4	0.31	0.07
5	0.34	0.05
6	0.35	0.07
7	0.49	0.09
8	0.50	0.09
9	1.33	0.14
10	1.64	0.17

than 0.5 per cent. If the color is lighter, the reverse is true. The standard is prepared by adding 40 cc of a solution, containing 2 parts of 0.04 per cent solution of phenol red and 14 part of a 0.04 per cent solution of bromthymol blue, to 46 cc of phosphate buffer at p_H 8.0. The standard retains its color for a considerable time, but a fresh standard may be prepared very easily if only an occasional determination is to be made. If one desires to estimate the percentage of the beta-hydroxybutyric acid, rather than simply to determine whether or not the percentage of beta-hydroxybutyric acid is greater or less than 0.5, a series of standards can be made by adding more or less solution of dye. These standards may correspond, for example, to solutions of beta-hydroxybutyric acid of 0.4 per cent, 0.5 per cent, 0.6 per cent and so on, or the unknown may be matched in a colorimeter against the standard and the concentration of beta-hydroxybutyric acid determined by simple calculation. The color produced by acetone and diacetic acid, with sodium nitroprusside, is transient, hence, it is necessary that the color comparison with the standard be made immediately following the six minutes given for the development of color and subsequent dilution. This fact militates against the employment of a comparison in a colorimeter. If many specimens of urine are to be examined, it is necessary that a time sequence be followed, so that the diluted nitroprusside solution is not allowed to stand. Six minutes has been determined as an optimal time for the

development of color at room temperature. Only a certain maximal depth of color can be developed under the conditions of this test. This color corresponds to a concentration of beta-hydroxybutyric acid slightly greater than 0.5 per cent. Hence, when a ketonurine is obtained in which a color develops that approximately corresponds to the standard or that is slightly deeper, it is best to repeat the test on a specimen of the urine which has been diluted with an equal amount of water. If the color developed by 1 cc of urine that has been diluted 1:1 with water is again approximately as deep as the standard, it is certain that the concentration of beta-hydroxybutyric acid is about 1 per cent. Similarly, a dilution of urine 1:2 and 1:3 would indicate concentrations of 1.5 and 2 per cent if the color developed still approximated that of the standard. The highest percentage of beta-hydroxybutyric acid obtained so far was 2.57 per cent. More recent experiments have shown that many of various organisms found in urinary infection are resistant to the bactericidal action of ketonurine. Further work is being carried out to determine the concentration of beta-hydroxybutyric acid necessary for therapeutic action in such infections.

SOLUTIONS

The solutions required are (1) sodium nitroprusside, 5 per cent (this solution is not particularly stable in air, although in a well stoppered bottle it will keep for several days), (2) concentrated ammonium hydroxide, with a specific gravity of 0.88, (3) indicator, which is made by adding 28 cc of 0.04 per cent solution of bromthymol blue to 4 cc of a 0.04 per cent solution of phenol red (the solutions of dye are prepared according to the procedure given by Clark for indicator solutions), and (4) phosphate buffer solution of p_H 8.0, which is prepared according to the procedure given by Clark. 5 cc of fifteenth-molecular secondary sodium phosphate ($Na_2HPO_4 \cdot 2H_2O$) and 95 cc of fifteenth molecular primary potassium phosphate (KH_2PO_4).

SUMMARY

The fact has previously been established that ketonurine with a p_H value of 5.5, or less, and a concentration of beta-hydroxybutyric acid of 0.5 per cent, or greater, will have a bactericidal action to the commonly encountered strains of *Escherichia coli* found in infections of the urinary tract. By the utilization of chlorophenol red test paper it can easily be determined that the p_H value of urine is greater or less than 5.5. The conditions have been described for determining, by a simple qualitative procedure, whether or not ketonurine possesses a concentration of beta-hydroxybutyric acid greater or less than 0.5 per cent. This procedure utilizes the nitroprusside test for acetone and diacetic acid and the fact that a fairly constant ratio exists between the concentration of total acetone bodies and beta-hydroxybutyric acid in ketonurine.

Graham Lusk's Student Days—The first summer that I spent there (Munich) I lived on the Karlstrasse, having taken a room above a beer hall at five dollars a month. The good frau who rented the room gave me a roll without butter and a cup of coffee in the morning for five cents. I well remember the ceremony of moving from one lodging to another. A dienstman brought a small hand cart. On this were placed my worldly goods, including my books and my beer mugs. While escorting this picturesque vehicle I met Mr. and Mrs. Henry Holt, old family friends, who had a hearty laugh over the scene.—Quoted by Light, A. E. *Yale J. Biol. & Med.* 6:487 (May) 1934.

1 Tall form

PREGNANCY AFTER PARALYSIS

REPORT OF THREE CASES

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Paralysis occurring late in pregnancy is not infrequent, but a fairly comprehensive review of the current literature revealed the reports of only three cases. I have found no report of pregnancy occurring in a patient with paralysis of long standing.

Pregnancy occurring after paraplegia is rare. Because of the infrequency of pregnancy in this type of patient, three cases are herewith reported.

A case of spinal cord tumor simulating acute myelitis associated with optic neuritis and painless labor was reported by Dr E W Taylor¹ of Boston in 1906. This patient's symptoms occurred during pregnancy. She was delivered at term from below instrumentally because of weak uterine contractions. The delivery was painless and the convalescence normal, but death occurred a few months later.

The case of a woman seven months pregnant, paralyzed by a bullet wound of the spinal cord at the level of the fourth dorsal vertebra, was reported by Good² in 1924. He also reviewed the literature on the subject. In the case reported the patient was wounded during the seventh month of pregnancy but did not go into labor until the ninth month. She had no pains, scarcely any warning, and a precipitate delivery of a 4 pound 3 ounce (1,900 Gm) baby. Eight days later phlebitis of the left leg developed and sixteen days post partum a rash appeared on the body which was diagnosed scarlet fever. She died about five weeks after delivery.

Another case presenting pachymeningitis and painless delivery from below was reported by Lewis.³ Later, a laminectomy was performed on this woman. She recovered, with no paralysis, and has since had children and normal labor pains.

Warren⁴ determined experimentally in guinea-pigs that a uterine incision heals normally after the cord has been severed in the region of the second and third thoracic vertebrae.

REPORT OF CASES

In the following three cases delivery was done by me.

CASE 1—Mrs M V S, a white woman, aged 30, a primigravida, was admitted to the Memorial Hospital, Jan 17, 1933. She was referred by Dr Phipps of Hopewell, Va, because of pregnancy of thirty-seven weeks' duration occurring three years after complete motor and sensory paralysis below the nipple line.

She had the usual diseases of childhood. The past history was otherwise essentially negative until the occurrence of paralysis in 1930, three years before pregnancy.

The menses commenced at the age of 15 years and occurred every twenty-eight days, of from four to six days' duration with severe pain until paralysis in 1930, after which the periods were regular but painless. Her last menstrual period began May 4, 1932.

Early in February 1930 she had 'influenza' and remained in bed about two weeks. One week later she noticed a weakness in the lower extremities, which gradually ascended, and

seven days later the paralysis involved her arms and she was blind in both eyes. She gradually improved, and three months later her vision was good and she had regained the use of her arms and hands. Her condition has otherwise remained unchanged, with complete motor and sensory paralysis below the second dorsal segment of the cord. There was incontinence of urine and feces, and the patient stated that sexual intercourse caused no sensation.

The patient stated that she had no discomfort during pregnancy and did not realize her condition until several months after her last menstrual period.

On physical examination the abdomen was enlarged to the size of an eight months' pregnancy. The abdominal muscles were flabby. There was no abnormal tenderness or rigidity. The fundus of the uterus measured 35 cm. The fetus presented as a frank breech in the left sacro-anterior position. Fetal heart sounds were present.

There was marked atrophy of the muscles of both lower extremities.

Pelvic measurements were within normal limits. The cervix was closed and the buttocks of the baby presented above the pelvic inlet.

The patient was examined by Dr Lysterly of the neuro-surgical department, who reported complete flaccid paralysis of both lower extremities, with complete loss of sensation below the first or second dorsal segment of the cord and loss of reflexes in both lower extremities. A lumbar puncture showed spinal fluid pressure of 100 mm of water.

The Queckenstedt test was done with the patient quiet and relaxed. The spinal fluid pressure rose to 200 mm of water in ten seconds and fell immediately to 110 mm of water after release of the jugular compression.

Roentgen examination showed no evidence of pathologic changes except a congenital fusion of the second and third cervical vertebrae.

The laboratory examination showed erythrocytes, 4,800,000, hemoglobin, 80 per cent, leukocytes, 8,800. The Wassermann reaction was negative. A catheterized specimen of urine contained 1 plus albumin, many bacteria and an occasional pus cell but otherwise it was normal.

Because of the marked atrophy of the abdominal muscles and the size and position of the fetus, it was decided to deliver the patient by cesarean section and to sterilize her by excision of the cornual ends of both fallopian tubes.

The patient was delivered by elective low cesarean section January 28. No anesthesia was necessary and the patient had no discomfort at any time during the operation. The baby a girl, weighed 7 pounds and 5 ounces (3,317 Gm), it was normal and in good condition.

There was no abdominal distention or discomfort after the operation. The temperature remained normal until seven days post partum, when it gradually became elevated and at one reading on the tenth day was 101.8 F, after the twelfth day it was below 100, after the sixteenth it remained normal.

At the onset of the septic temperature, slight edema of the left foot and leg was noticed. The edema disappeared after ten days, and no other evidence of phlebitis was observed.

The lochia was normal for a post cesarean section case. The patient's breasts never became engorged or showed evidence of lactation. The baby was artificially fed.

The abdominal incision healed by primary union and both mother and child were discharged from the hospital, February 23, in good condition.

CASE 2—Mrs M C, a white woman aged 27, was attended at home. She was seen by me Feb 17, 1933, when about seven months pregnant. Her last menstrual period commenced July 6, 1932, and lasted five days.

She had had the usual diseases of childhood but the past history was otherwise negative until 1929, when she was injured in an automobile accident, suffering a fracture dislocation of the first lumbar vertebra. A laminectomy of the eleventh and twelfth thoracic and first and second dorsal vertebrae was done to relieve the pressure on the cord. There was a septic temperature during the first two weeks after operation probably caused by 'cystitis.' The operative incision healed by primary union but the paralysis remained approximately the same.

From the Department of Obstetrics, Medical College of Virginia.
Read before Medical College of Virginia Staff Meeting Dec 14, 1933.
1 Taylor E W. Spinal Cord Tumor Simulating Acute Myelitis Associated with Optic Neuritis and Painless Labor. J Nerv & Ment Dis 33: 383, 1906.

2 Good F L. Pregnancy and Labor Complicated by Diseases and Injuries of the Spinal Cord. J A M A 83: 416 (Aug 9) 1924.

3 Lewis. Dean in discussion on Good. J A M A 83: 418 (Aug 9) 1924.

4 Warren. Shield quoted by Good.

The menses commenced at the age of 13 years and occurred regularly every twenty-eight days, lasting five days, with no pain. She became pregnant in July 1932, about three years after being paralyzed. The pregnancy had been uneventful except for slight nausea and occasional vomiting during the first three months.

The patient stated that she had no sensation from intercourse. She was incontinent for both urine and feces, but at times she could retain small amounts of urine in the bladder temporarily. Usually she used an indwelling catheter connected to a tube and bottle. A catheterized specimen of urine contained numerous pus cells and a trace of albumin. It was otherwise normal.

The head and neck were normal. The teeth were in fair condition. The heart and lungs were normal. The pulse was 80 and the blood pressure was 100 systolic 60 diastolic.

The abdominal muscles were flaccid. The patient was not sensitive to pin pricks below a level approximately 2 inches above the upper border of the symphysis. The abdominal muscles were relaxed and there was considerable atrophy of the muscles of the lower extremities.

The abdomen contained a tumor the size of a seven months pregnant uterus. Fetal heart sounds were loudest in the lower left quadrant of the abdomen. The vertex presented in the left occipital transverse position with the head entering the pelvis. The pelvic measurements were within normal limits.

Vaginal examination showed the perineum relaxed with loss of tone of the pelvic muscles. The cervix was closed, partially effaced and at the normal level.

The pregnancy progressed uneventfully until 9 p. m., April 7, when the membranes ruptured spontaneously and a considerable amount of fluid was lost. Weak uterine contractions commenced one hour later and occurred at fifteen minute intervals throughout the night. During the last twelve hours of labor the uterine contractions remained weak but occurred regularly every ten minutes. The patient had no pain and stated that uterine contractions caused a feeling similar to that experienced when there was gas in the intestine.

At 11 p. m., April 8 the patient had been in labor twenty-five hours. The uterine contractions which had occurred at ten minute intervals became infrequent during the last hour. The cervix had been fully dilated two hours, and the head engaged with the vertex 1 cm below the ischial spines. Delivery was completed with forceps (midforceps). No anesthesia was necessary and the patient experienced no pain but was uncomfortable from the pressure exerted on the abdominal wall when the placenta was delivered by the Crede method fifteen minutes after the baby. There was no laceration of the perineum but a slight abrasion of the posterior portion of the remaining hymenal ring. The uterus contracted normally after the third stage of labor.

The baby weighed 6 pounds and 4 ounces (2835 Gm). It was alive and apparently normal except for shortening of the bitemporal diameter, 7 cm., the biparietal diameter measured 10 cm. The shape of the head may have been due to pressure, as the fetal head entered the pelvic inlet about the seventh month as a vertex left occipital transverse presentation.

The mother made an attempt to nurse the baby, but it was unsuccessful because the breasts never filled. Convalescence was normal.

CASE 3—Mrs. I. K. M., a white woman aged 29, a sextipara, quintipara, was admitted to Memorial Hospital, June 23, 1933. Her last menstrual period commenced Nov. 13, 1932 of two days' duration.

She was referred by Dr. Carter of Boynton Va. because of pregnancy of thirty-seven weeks in a woman with paralysis of four years' duration.

During childhood she had chickenpox, measles, pertussis and erysipelas, her early history was otherwise negative.

The menstrual periods commenced at the age of 14 years, occurred every twenty-eight days and usually lasted three days. After the patient's injury in 1929 the menses were irregular for one year, but during the three years preceding the present pregnancy the periods were regular.

She was married in 1918 and had five pregnancies during the next ten years, all terminated spontaneously after normal labors. The babies all lived.

The present paralysis resulted when the patient fell from a tree in June 1929. A roentgen examination at that time showed a compressed fracture of the first lumbar vertebra and a fracture of the transverse process.

An operation was performed, June 5, 1929, by Dr. Lyster, and the laminae of the twelfth thoracic and first lumbar vertebrae were removed to relieve the pressure. There was some posterior dislocation of the body of the first lumbar vertebra and there was a spicule of bone in the spinal canal almost completely severing the cord. The rest of the cord was badly bruised and injured.

The operation was performed under local anesthesia with no pain. The incision healed by primary union. June 20, fifteen days after operation, an acute pyelitis developed which was controlled by conservative treatment.

Several weeks after she left the hospital a bed sore developed, but this later healed and, except for the paralysis below the first lumbar vertebra, her condition had been good. She states that she has had no sensation from intercourse since the onset of paralysis. She has also been incontinent for urine and feces during this time.

Physical examination revealed that she was well nourished but unable to move the hips and lower extremities.

Abdominal examination revealed sensation to pain above the symphysis and showed the uterus enlarged to the size of a thirty-six weeks pregnancy. The fundus measured 33 cm., fetal heart sounds were heard in the left lower quadrant at a rate of 160 per minute. The baby presented as a vertex left occipito anterior position, with the head not engaged.

Vaginal examination showed a relaxed perineum with loss of muscle tone, the cervix 1 cm. dilated but not effaced.

Examination of the lower extremities showed definite atrophy of the muscles.

A catheterized specimen of urine was cloudy, with a specific gravity of 1.019. It contained a trace of albumin and from 5 to 7 pus cells per high power field. It was otherwise normal. Blood examination revealed erythrocytes, 3,920,000, leukocytes, 10,200, and hemoglobin, 80 per cent. The Wassermann reaction was negative.

June 30, she was prepared for an operative delivery. A spinal puncture was made in the second lumbar interspace. Spinal fluid was obtained, and procaine crystals, 150 mg., were dissolved and injected, but the patient had anesthesia only 2 inches above the symphysis and the operation was completed under nitrous oxide and oxygen anesthesia. Evidently there was a partial obstruction of the spinal canal at the level of the injury. A low cesarean section was performed and the patient was delivered of a normal male baby that weighed 6 pounds and 2 ounces (2778 Gm). Following delivery of the placenta the uterine tone was poor, and there was free hemorrhage from the uterus. The uterine cavity was packed with gauze, which was removed from the vagina twenty-four hours later.

The temperature was 101.8 at one reading the day after operation. Thereafter it remained below 100.2, and was 98.6 most of the time. The lochia was considered normal for a postoperative patient.

The mother made an attempt to nurse the baby during the first twelve days after delivery, and the baby was put to the breast regularly, but usually it got no milk. After one period at the breast there was a gain of 1 ounce (30 Gm.), but usually there was no increase in weight and the baby was bottle fed after the twelfth day.

There was no abdominal distention but the patient was incontinent for urine and feces as she had been before operation. The abdominal incision healed by primary union and both mother and baby were discharged, July 16, sixteen days after operation.

SUMMARY AND CONCLUSIONS⁵

The following points are of interest in these cases:

1. Pregnancy can occur in paralytic women.
2. Labor is painless.

⁵ The author is indebted for valuable information to Curtis A. H. Gynecology and Obstetrics, Philadelphia W. B. Saunders Company 3-1118-1933.

3 There is absence of any instinctive use of the accessory muscles during labor

4 Uterine contractions were weak in the patient delivered from below

5 Cesarean section and sterilization should be resorted to frequently in these patients

6 Cesarean section may be performed in some cases without an anesthetic

7 The uterine and abdominal incisions heal normally

8 My patients were unable to nurse their babies

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DISLOCATION OF THE SHOULDER

ACCOMPANIED BY FRACTURE OF THE GREATER TUBEROSITY AND COMPLICATED BY SPINATUS TENDON INJURY

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In our experience, fracture of the greater tuberosity of the humerus associated with dislocation of the head from the glenoid cavity is relatively rare. An inquiry among our colleagues appears to bear out this fact. An investigation of the literature, however, brings forth many diversified opinions. Eliason,¹ quoting Graessner, states that this type was found in twenty-four out of forty-eight cases of dislocation, and the percentage probably would be even higher if x-ray films were taken always before an attempt is made to reduce a dislocated shoulder. Roberts² collected eight cases that were seen in the Massachusetts General Hospital between 1923 and 1931. However, he does not tell how frequently fracture is associated with dislocation. Cubbins and Scuderi³ found ten instances in 500 fractures of the humerus. Gratz⁴ and Fruhmunn⁵ each report one case. Rixford⁶ states that fracture of the greater tuberosity as a complication of dislocations of the shoulder is due commonly to impingement on the edge of the glenoid, and its points of attachment of the dorsal scapular muscles often are pulled away. Moreover, he points out the fact that stereoscopic x-ray films are invaluable in diagnosis of such fractures. In discussing fractures of the greater tuberosity, Park⁷ states that it may occur in conjunction with dislocation of the shoulder. Murray⁸ reports also that fracture of the greater tuberosity sometimes occurs as a complication following dislocation of the shoulder. Nicod⁹ reports a case that was not diagnosed correctly until three months after the acci-

dent. At this time it was found necessary to do an open operation to bring about relief. McWhorter¹⁰ reports two cases of his own and quotes figures from the following authors: (1) Schlaepfer¹¹ found fracture of the greater tuberosity in eight of 120 dislocations of the shoulder; (2) Gubler¹² found this fracture to occur eighteen times in 252 dislocations. It will be noted that the last two quotations are in marked contrast with the proportions mentioned by Eliason.¹ Two more cases are reported by Csillag,¹³ which were not diagnosed until several weeks following the injury. These cases both came to open operation. One case is reported by Hodgson,¹⁴ but it was not diagnosed until after reduction of the dislocation. Meyerding,¹⁵ in a series of twenty-four shoulder dislocations, found the greater tuberosity fractured in two of them. Such figures as shown here seem to point out, with the exception of one author, that dislocation of the shoulder complicated by fracture of the greater tuberosity of the humerus is a relatively rare condition. It does occur frequently enough, however, so that it should be considered every time a dislocated shoulder is seen.

Complicating this type of fracture dislocation of the shoulder is injury to one or both of the spinatus tendons. Probably most of the existing knowledge of this condition is the result of work done by Codman. He makes first mention of theoretical injury to the spinatus tendons in a paper¹⁶ published in 1906. He has more recently stated¹⁷ that he has seen this injury 122 times and has operated in thirty-eight of these cases. He states that it occurs especially with dislocation, but he does not mention its occurrence with dislocation fracture of the greater tuberosity. In a recent study of 340 anatomic dissections, Fowler¹⁸ found complete rupture of the supraspinatus tendon in one out of every twenty-eight shoulders examined, and incomplete rupture in one out of every six shoulders.

ANATOMY AND PATHOLOGY

It will be remembered that the tendons of the supraspinatus and infraspinatus and teres minor muscles are inserted in the greater tuberosity, and these muscles as a group often are called the external rotators of the arm¹⁹ (fig 1). It is also necessary to remember²⁰ that the capsule of the shoulder joint in its superior and posterior portion blends with and becomes indistinguishable from the flat expanded tendons of the supraspinatus, infraspinatus and teres minor muscles as they pass to their points of insertion in the greater tuberosity of the humerus. These tendons blend with one another and can be differentiated only in an arbitrary manner.

- 1 Eliason E L. Nelson Loose Leaf Living Surgery 3 206
- 2 Roberts S M. Fractures of the Upper End of the Humerus J A M A 98 367 373 (Jan 30) 1932
- 3 Cubbins W R and Scuderi C S. Fractures of the Humerus J A M A 100 1576 1579 (May 20) 1933
- 4 Gratz C M. Anterior Subglenoid Dislocation with Fracture of the Greater Tuberosity of the Humerus S Clin North America 10 549 551 (June) 1930
- 5 Fruhmunn P. Dislocation of the Shoulder Complicated by Fracture of the Greater Tuberosity. Zentralbl f Chir 58 1815 (July 18) 1931
- 6 Rixford E. Dislocations of the Shoulder Am J Surg 8 268 272 (Feb) 1930
- 7 Park B S. Complications of Dislocation of the Shoulder Joint Internat J Med & Surg 44 457-463 (Oct) 1931
- 8 Murray C R. Active Mobilization Following Reduction of Fracture Dislocation of the Shoulder S Clin North America 8 1069 1074 (Oct) 1928
- 9 Nicod P. Luxation ancienne de l'épaule gauche avec parcellaire du ma if tuberositaire Arch franco belges de chir 32 163 166 (Feb) 1930

- 10 McWhorter G L. Fractures of the Greater Tuberosity of the Humerus with Displacement. Report of Two Cases Operated with the Author's Technic of Shoulder Incision S Clin North America 5 1005 1017 (Aug) 1925
- 11 Schlaepfer. Uncomplicated Dislocations of Shoulder. Their Rational Treatment and Late Results Am J M Sc 167 244 (Feb) 1924
- 12 Gubler. Zur Prognose der Schultergelenkluxation Schweiz med Wehnschr 52 960 985 (Sept 28) 1922
- 13 Csillag J. Die Therapie der veralteten Schultergelenkluxations frakturen Zentralbl f Chir 57 2976 1930
- 14 Hodgson A. An Unusual Type of Dislocation of the Shoulder Brit M J 2 622 (Oct 5) 1929
- 15 Meyerding H W. Fracture of the Humerus Minnesota Med 14 963 (Nov) 1931
- 16 Codman E A. Boston M & S J 154 750 (May 31) 1906
- 17 Codman E A. Surg Gynec & Obst 52 579 586 (Feb 15) 1921
- 18 Fowler E B. Stiff Painful Shoulders Exclusive of Tuberculous and Other Infections J A M A 101 2106 2109 (Dec 30) 1933
- 19 Spalteholz W. Hand Atlas of Human Anatomy 2 322 323 Davis G G. Applied Anatomy ed 5 Philadelphia J B Lippincott Company p 245 Magnuson P B. Fractures Philadelphia J B Lippincott Company 1933 pp 75 79
- 20 Codman E A. Complete Rupture of the Supraspinatus Tendon Operative Treatment with Report of Two Successful Cases Boston M & S J 164 708 710 1911

The supraspinatus tendon lies superiorly and forms the roof of the shoulder joint. It also forms a part of the floor of the subacromial bursa, which is interposed between it and the acromial process and extends nearly an inch between the greater tuberosity and the deltoid muscle.

The spinatus tendon commonly ruptures close to the greater tuberosity. Retraction of the muscle enlarges the gap and creates an opening through which there is direct communication between the bursa and shoulder joint. In a series of ten cases of complete rupture studied by Wilson,²¹ this gap measured from 1 to 2½ inches in diameter, with the average measuring about 1½ inches. In addition to gross ruptures, oftentimes a small tear involving a few fibers of the tendon may occur. This lesion is probably the most common cause of traumatic subdeltoid bursitis. Calcification²² of the tendon is thought to be due to partial ruptures following which nature attempts to repair a tissue with little blood supply.

SYMPTOMS AND DIAGNOSIS

The earliest symptoms are similar to those of subluxation of the head of the humerus from the glenoid

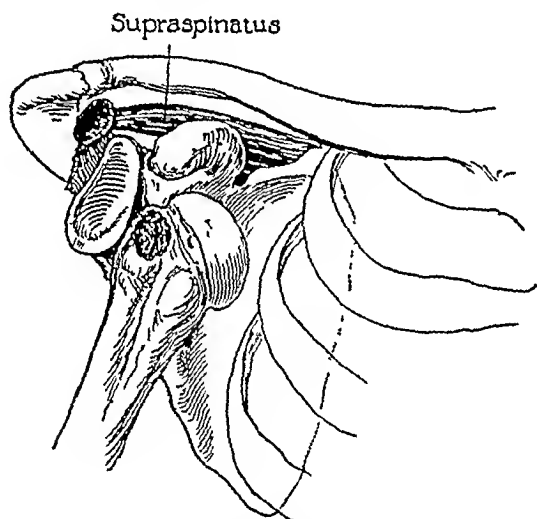


Fig 1—Relationship of structures around shoulder joint in which there is a dislocation of the head of the humerus complicated by fracture of the greater tuberosity. (From Magnuson's *Fractures*.)

cavity. The arm hangs a little away from the side. The roundness of the shoulder has disappeared. The glenoid fossa can usually be palpated and the head of the humerus may be felt in the axilla. There is marked tenderness over the greater tuberosity, which is not found in simple dislocation. Furthermore, the patient will nearly always give a history of a direct blow against the shoulder at the time of injury.

Before one attempts any manipulation, x-ray films of the shoulder should be made, not only will these show the dislocation of the head of the humerus from the glenoid cavity, but the greater tuberosity will be found lying above and medial to its normal position.

Diagnosis of tendon injury may be quite difficult at this time, in fact it is unwise to test for its continuity now because, if it is not ruptured tension on it will tend to pull the greater tuberosity still farther out of place. Later, when bony union has occurred, the fol-

lowing picture may present itself. The patient will have difficulty in raising the arm from the side to complete abduction unless he does it with the arm in either complete internal or external rotation. There may be a tender spot over the greater tuberosity. By passively pulling the arm downward and then abducting it, the patient will complain of pain and crepitus when the greater tuberosity slides beneath the acromial process. Active external rotation may be impossible or diminished. X-ray films taken of old cases frequently reveal a hypertrophy or roughening of the greater tuberosity. If sufficient time has elapsed, atrophy of the suprascapular muscles may be seen. Fowler²³ describes his test for rupture of the supraspinatus tendon as follows:

The patient rests his shoulder on a crutch or upon a comfortable high back chair so that the shoulder is elevated 2 to 3 inches thus relaxing the trapezius muscle. The patient is asked to abduct the dependent arm a number of times with the examiner's fingers resting on the relaxed trapezius directly over the supraspinatus muscle. If the tendon is ruptured there will be an absence of palpable contraction of the supraspinatus muscle on the affected side. The infraspinatus can be felt and even seen in most cases without special position of the shoulder. Snapping or crepitation is often heard and felt by the patient, and sometimes all those present at the examination, when the greater tuberosity passes beneath the acromion process.

TREATMENT

The treatment of dislocation of the shoulder with fracture of the greater tuberosity is usually quite simple. The dislocation is readily reduced by the Kocher method, preferable under general anesthesia. As the shoulder is replaced in the glenoid cavity, it slides against the fragment of the greater tuberosity and it too falls into perfect position. In view of the anatomy involved, the arm should then be put up in abduction and external rotation so that there may be no tension on the greater tuberosity. It should be kept in this position for from three to four weeks, after which it may be let down to the side and some type of physical therapy carried out until the function has well returned. It is doubtful whether open reduction for replacement of the tuberosity is ever necessary. To illustrate this point, Roberts² tells of one case in his series. The attending physician was dissatisfied with the postreduction x-ray films, so he decided to do an open operation with the idea in mind to fix the greater tuberosity with fascia or a bone peg. However when the region was exposed the tuberosity was found to be in such good position that the wound was closed and he stopped looking at the x-ray films. Cubbins and Scuderi³ found "much to their amusement" that in some of their cases the greater tuberosity remained in good position even though the arm was placed along the thorax in a Velpeau bandage. This may be adequate in selected cases but we feel that there is no definite criteria on which to base selection except an x-ray film. Of course, this shows only the bony injury and does not give one any conception of how much or how extensive the associated capsule injury may be. Hence we feel that it is better to err on the side of safety and treat all these injuries as more than a simple fracture. This is, of course, best carried out by placing the arm in abduction and external rotation.

The treatment of the tendon injuries is much more complicated. If the rupture has been only partial, the relaxation of the muscles incident to the treatment of

21. Wilson P. D. Complete Rupture of the Spinatus Tendon. *J. A. M. A.* 96: 433-439 (Feb. 7) 1931.

22. Dollinger J. Anatomic Localization and Treatment of Painful Shoulder Erroneously Designated as Chronic Subacromial Bursitis. *Zentralbl. f. Chir.* 59: 579 (March 5) 1932.

23. Fowler E. B. Rupture of Spinatus Tendons and Capsule Repaired by a New Operation. *Illinois M. J.* 61: 332-334 (April) 1933.

the bone injury by abduction and external rotation usually will be adequate to permit complete healing of the tear. If, however, a complete rupture of one or more tendons can be diagnosed, early open operation should be done. It is also wise in case of doubt to make a small exploratory incision to make sure that some injury is not overlooked. The operation itself consists

no limitation of motion, pain, tenderness or crepitation following, so a diagnosis of tendon injury was impossible. At the present time, two and one-half years later, he has a perfect result.

CASE 2—Mrs. P. E., aged 58, was seen shortly after falling against her right shoulder on a recently waxed floor. There was immediate pain, deformity, and marked tenderness over the outer border of the head of the humerus. X-ray films showed a downward dislocation of the head of the humerus with fracture of the greater tuberosity. The patient was anesthetized with nitrous oxide gas, which was changed to drop ether in order to gain satisfactory muscle relaxation. The shoulder was then replaced by the Kocher maneuvers. Post reduction roentgenograms revealed perfect reduction of the head and replacement of the greater tuberosity. The patient was then placed in an airplane splint with the arm in 90-degree abduction and complete external rotation.

The patient did not tolerate the airplane splint at all well because of the fact that she was short in height and weighed over 200 pounds. After two days the splint was removed and the patient put to bed on her back. The arm was held in abduction and external rotation by light sand bags. This position was maintained for two weeks, after which the patient was allowed up wearing a sling. Gentle physical therapy followed and three weeks from the time of injury all support was discontinued. External heat and massage were continued for six weeks more. The patient then had perfect use of the shoulder, without pain. At the present writing, nearly three years after the accident, the injured shoulder appears in all respects to be as good as the other.

CASE 3—Mrs. E. K., aged 36, was thrown from a horse. She struck against her left shoulder and had immediate pain, disability and deformity. X-ray films showed a downward and forward dislocation of the head of the humerus and a comminuted fracture of the greater tuberosity. Under nitrous oxide gas, the shoulder was reduced by the Kocher method without difficulty. Roentgenograms taken immediately afterward showed a perfect reduction of the head and also the fragments of the greater tuberosity. An airplane splint was applied with the arm in complete abduction and external rotation. This splint was worn for three weeks, after which a sling was worn for one week more.

RESULTS

Cases in which operation is performed relatively early result in perfectly useful joints. However, the old cases may present so much muscle atrophy and tendon shortening that there may be some limitation of internal rotation and abduction of the humerus. The latter may also be accompanied by some pain.

REPORT OF CASES

To illustrate the foregoing discussion, the following cases taken from our experience may serve well as examples.

CASE 1—E. T., a man aged 22, was seen within half an hour after an accident. He had been playing tennis and, while running for a ball, he tripped and fell with his shoulder against the net post. Immediate pain, deformity and disability of the shoulder resulted. Roentgenograms taken soon afterward revealed a subglenoid dislocation of the head of the humerus with a displaced fracture of the greater tuberosity (fig. 2). The patient was anesthetized with nitrous oxide gas and the dislocation reduced by the Kocher method. A film after reduction (fig. 3) showed the head in the glenoid fossa and the greater tuberosity back in perfect place on the humerus. The arm was placed in an airplane splint in 90 degree abduction and complete external rotation for three weeks following which it was let down and a sling worn for four days. Following the removal of the splint, external heat, massage and passive motion were carried out daily for one week after which it was done three times weekly for the next two weeks. There was



Fig. 2 (case 1)—Subglenoid dislocation of head of humerus with displaced fracture of greater tuberosity.



Fig. 3 (case 1)—After reduction head in glenoid fossa and greater tuberosity in place.

The patient had far more shoulder pain after the reduction than the other two patients, enough so that further injury should have been suspected. Beginning two weeks after the accident, diathermy treatments were given to the shoulder every other day. Other forms of physical therapy were continued for nearly three months because of pain and limitation of motion. By this time it was obvious that there was still some other derangement of the joint present. There was ten-

derness on pressure over the greater tuberosity. As the patient was very slender, there was no apparent atrophy of the suprascapular muscles. She could not have the arm abducted actively or passively more than 45 degrees from her side because of an apparent blocking of the greater tuberosity against the acromion. If, however, the arm was rotated either internally or externally it could then be abducted to 90 degrees but only with pain and crepitation when the edge of the greater tuberosity passed beneath the acromion process. The arm could also be completely abducted from the side if it was pulled downward during the maneuver so as to overcome the upward pull of the deltoid muscle. Roentgenograms at this time showed some enlargement of the greater tuberosity, otherwise the bones of the shoulder were normal. In view of the continued pain and disability and the presence of the conditions noted it was decided to explore the region of the greater tuberosity.

Under ethylene anesthesia the shoulder was opened. Both the supraspinatus and infraspinatus tendons were found to be pulled from their normal attachment and the ends were located attached three-fourths inch posteriorly. With the arm held in complete abduction and external rotation the tendon ends were loosened and pulled down and sutured to the posterior border of the distal end of the subscapularis tendon with chromic catgut. The wound was then closed and the patient put in bed with her arm fastened down in 90-degree abduction and complete external rotation. This position was maintained in bed for two weeks after which she was allowed up and an airplane splint was applied still maintaining the same position. This brace was worn for four weeks. Physical therapy was begun three weeks after the operation and continued for two months.

At present over two years after the original injury the patient has perfect use of the shoulder. There is no pain except that sometimes in certain positions a slight click is felt when the greater tuberosity passes beneath the acromion. This click is occasionally accompanied by a slight wincing pain.

CASE 4—A woman had a subglenoid dislocation of the head of the humerus which was already properly reduced when she came under our care. She presented a marked swelling of the shoulder joint much more than one would usually see accompanying a dislocation. The first x-ray film taken with the arm in abduction and internal rotation gave normal results. Another film was then taken with the arm in external rotation to show the trochanter in profile. We found the greater tuberosity to be roughened and to be irregular on the tip and finally managed to make out the thin shell of bone from the torn tendinous attachments lying above it, between the head of the humerus and the acromion. The arm was put up in 75-degree abduction with the elbow forward level with the anterior chest wall, and the arm in external rotation. There was a complete recovery in three months.

CASE 5—This was the result of a fall on the outstretched arm to the side with a continuation of the force so that the hand traveled above the head and backward. In other words this patient pitched toward the right side and the hand was carried upward and backward by the continuing force. There was a dislocation of the humerus but it seems likely that in this case there was direct violence to the greater tuberosity by the end of the acromion before the head was dislocated. This point is, of course, theoretical. There was no difficulty in maintaining this fragment in position with 60 degrees of abduction. The patient made a good recovery.

CONCLUSIONS

1 Fracture of the greater tuberosity sometimes occurs when the head of the humerus is dislocated from the glenoid fossa. These fractures may be overlooked unless roentgenograms are taken with the arm in external rotation so as to show the trochanter in profile.

2 Since fracture of the greater tuberosity may accompany dislocations of the shoulder, it is imperative that x-ray films be made before an attempt is made to reduce any such injury. If a fracture exists, post-reduction roentgenograms should follow.

3 Tearing of one or both spinatus tendons may accompany dislocation of the shoulder when the greater

tuberosity is simultaneously fractured. One should attempt to diagnose this complication as soon as possible so as to institute an early repair if a good end result is to be expected.

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GASTRO-ENTEROSTOMY WITH EXCLUSION OF INOPERABLE CANCER OF PYLORUS AND ANTRUM

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Gastro-enterostomy with exclusion of cancer of the pylorus and antrum may be the first step in a two stage resection or may be indicated as a palliative measure for inoperable cancers of this location. The advantages and technique of this operation are presented here, with a review of the evolution of this procedure.

The treatment of choice for operable gastric carcinoma is resection of the stomach. This procedure is not tolerated well by patients in poor general condition with tumors of questionable operability because of fixation, surrounding inflammatory reaction and enlarged perigastric nodes. We have previously explained the advantages and indications for using two stages in resections under these conditions.¹ The first stage, consisting of exclusion of the carcinomatous segment of the stomach with gastro-enterostomy, may be done under a local anesthetic and requires little more time than gastro-enterostomy alone. The patient receives a liberal postoperative diet so that he is better able to tolerate the second stage of the operation or removal of the tumor, which is quickly and safely done with a functioning gastro-enterostomy. The second operation is less often complicated by infection, as the peritoneum seems to acquire an immunity through the contamination of the first operation. The danger of infection extending by way of the lymphatics through the diaphragm has been mentioned as more imminent in carcinoma than in ulcer of the stomach. We have found that the inflammatory reaction about the tumor will subside after it has been freed from contact with the gastric contents so that this segment of the stomach may be more easily dissected from the surrounding organs. The perigastric nodes may also diminish markedly in size, proving their inflammatory nature. During the entire management there is no interruption in feeding the patient. Balfour² advised the selective use of this two-stage operation in 1928. The first stage may be gastro-enterostomy alone or gastro-enterostomy with exclusion of the cancer-bearing pyloric segment of the stomach.

The latter procedure has had frequent application in our hands as a palliative measure for inoperable cancers of the pylorus and antrum, in which the second stage or removal of the tumor is not planned. Gastro-enterostomy alone has been the procedure in these cases previously. Gastro-enterostomy for cancer is attended

From the Gastric Service of Memorial Hospital.
Read before the Society for the Advancement of Gastro-Enterology, New York, Feb. 28, 1934.
1 Pack, G. T. Indications for Two Stage Resection of Carcinoma of the Stomach. S. Clin. North America 13: 517-523 (April) 1933.
2 Balfour, D. C. A Method of Carrying Out a Two Stage Operation for Carcinoma of the Stomach. J. A. M. A. 90: 1936 (June 16) 1913.

by a mortality rate that is almost as high as for gastric resection and in addition has many other disadvantages, which we shall summarize briefly. W H Mayo has aptly said that gastro-enterostomy for cancer enables the patient to live longer and suffer more. The symptomatic relief from this operation is not great, as the patients continue to experience some pain, anorexia, nausea and frequent eructation of gas and foul liquid. The food is contaminated by contact with the ulcerated infected lesion. The tumor is irritated by the food and products of digestion resulting in continued bleeding and progressive anemia. The infected cancer may delay the healing of the wound of anastomosis and lead to perforation. The carcinoma after gastro-enterostomy frequently grows upward to involve and obstruct the stoma, unless a very high anastomosis is done, in which case it is not of great aid in emptying the stomach. Even with a gastro-enterostomy, the peristaltic waves attempt to force the food through the pylorus and past the obstructing cancer. Kelling³ has shown that, after gastro-enterostomy, 235 of 250 cc of fluid introduced into the stomach passed through the unobstructed pylorus, while only 11 cc passed through the gastro-enterostomy stoma. This work was verified by

The advantages of gastro-enterostomy are greatly enhanced by permanent exclusion of the carcinoma of the pylorus, antrum and occasionally pars media, from the uninvolved proximal segment. The first case in which we employed this procedure was an inoperable carcinoma of the first part of the duodenum. This operation is done in one stage for inoperable cancers only. Its chief indication is when the carcinoma is so fixed and adherent that partial gastrectomy is not feasible. We employ partial gastrectomy for palliation even in the presence of metastases to the liver or

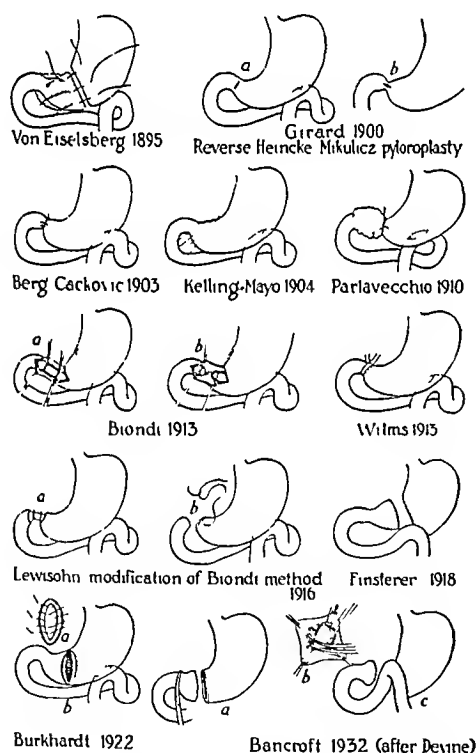


Fig 1—Evolution of methods of excluding pylorus for ulcer and carcinoma. The technical details are described in the text.

Lewisohn⁴ who derived his opinion through the use of a dye, thionine blue, which has an affinity for mucus. Pyloric obstruction will deflect more of the gastric contents through the gastro-enterostomy stoma, nevertheless the carcinoma in this segment of the stomach continues to be traumatized so long as it remains in the gastro intestinal channel.

³ Kelling. Studien zur Chirurgie des Magens. Arch f Klin Chir 62:142, 1900.

⁴ Lewisohn, Richard. The Value of Pyloric Exclusion in the Treatment of Pyloric and Duodenal Ulcers. Ann Surg 67:560-564 (May) 1918.

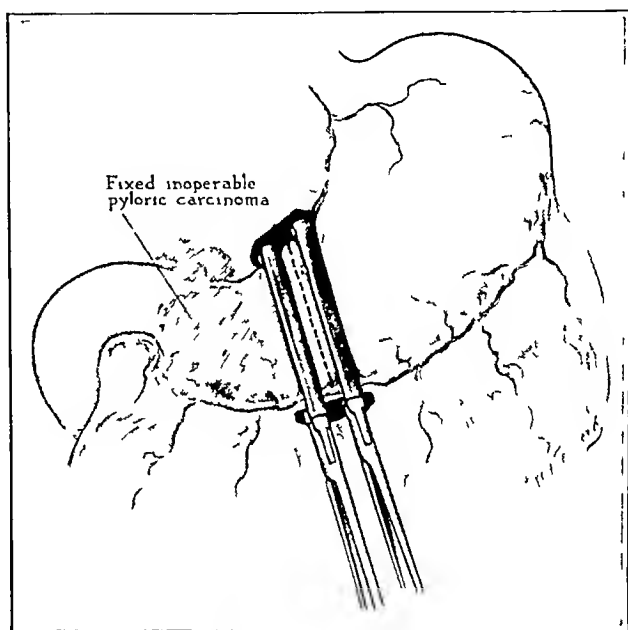


Fig 2—First step in the exclusion of an inoperable carcinoma of the pylorus.

supraclavicular nodes if the patient is in good condition and the stomach is sufficiently mobile.

The operation we are describing in this communication is not to be generally used, but it is helpful in indicated cases. Its purpose is to prolong life and to make the patient more comfortable. It may also precede palliative irradiation when there is retention of the barium ingesta at the end of six hours, external and interstitial irradiation may be more safely employed, as there is less danger of infection and perforation of the cancer as well as injury to contiguous mucous membrane. This operation has a lower mortality rate than gastro-enterostomy alone, as has been proved statistically by several authors, who used various methods of exclusion for gastric and duodenal ulcer. The excluded distal segment of the stomach is put at complete rest, which greatly relieves pain and discomfort. The appetite and digestion improve as soon as the proximal gastric mucosa becomes clean and free from infection. The tumor itself becomes smaller, presumably because of the subsidence of infection and surrounding inflammatory reaction. This is beneficial in three different ways. Irradiation is not handicapped by the diminished radiosensitivity of the cancer which infection entails, the rate of growth of the tumor is no longer increased by the stimulation through infection, the exclusion of digestive ferments renders the danger of autodigestion and perforation of the cancer less imminent. Hemorrhage is then an infrequent com-

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plication and the anemia less fulminating. Exclusion of the tumor prevents its extension to involve the new stoma and occasionally the cardia.

Exclusion of the pylorus or distal third of the stomach for gastric and duodenal ulcers has been advocated by innumerable surgeons during the past forty years. We have not attempted to cull a complete bibliography from the literature on this subject but have shown diagrammatically the salient features of these operations in figure 1. The majority of these authors have applied this operation only in the treatment of peptic ulcers, Parlavacchio⁵ in 1910 being the only one we discovered who used it for carcinoma. We claim no originality for this procedure. It is presented here because its advantages are not well recognized.

The first operation for exclusion of the pylorus was described by Doyen in 1892 and was accomplished by means of a transverse section of the stomach with blind closure of the ends. Three years later, von Eiselsberg⁶ described a similar procedure which he advised for the surgical treatment of peptic ulcers in preference to simple gastro-enterostomy. His technic will later be described in full. This operation in the hands of its originator required about ninety minutes. Its value in the treatment of selected cases with ulcers of the duodenum and pylorus as well as some situated high on the lesser curvature was recognized and stimulated surgeons to seek simpler methods for obtaining the same benefits. We shall describe a few of these procedures to illustrate the evolution of the operation.

Girard⁷ in 1900 devised a plastic operation for constricting the pylorus, which was a reversal of the Hemcke-Mikulicz pyloroplasty. The Hemcke-Mikulicz pyloroplasty, which is used to relieve pyloric obstruction due to cicatricial narrowing, is performed by making a longitudinal incision through the anterior gastric wall directly over the pylorus, extending 1 inch onto

anterior wall of the antrum proximal to the ulcer or pylorus (if duodenal ulcer) and approximated the ends and sides of the incised wall in a longitudinal direction. This method never became popular. Kelling and Mayo⁸ in 1904 attempted to close the lumen of the pyloric segment by means of four ligatures of silver wire, each of which was stitched twice

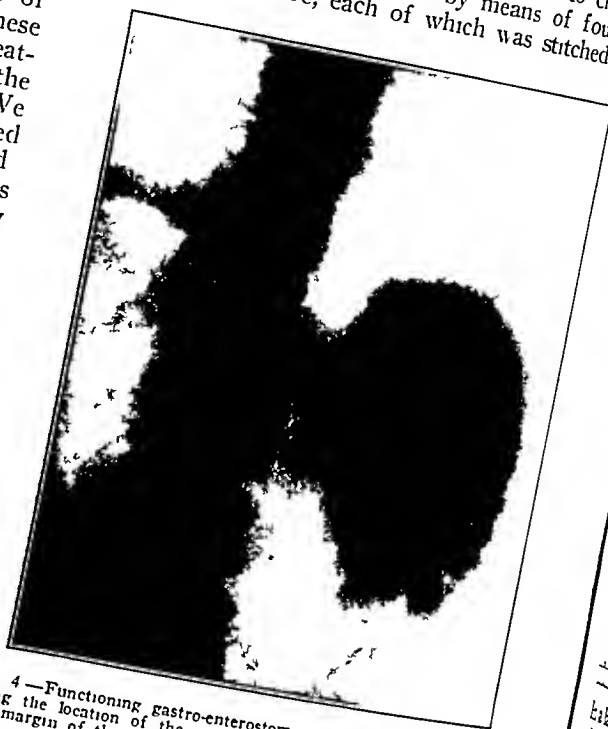


Fig. 4.—Functioning gastro-enterostomy. The silver clips (von Pets) marking the location of the severed distal segment of the stomach are at the margin of the vertebral shadow.

through the wall and then tied so as to produce an infolding of the wall. This method did not give permanent results, as proved by the postmortem examination of a patient so treated.

Kelling in 1899, Berg⁹ in 1903 and Cackovic¹⁰ in 1903 described simple methods of ligating the pylorus with Pagenstecher sutures. Wilms used a free autoplasmic transplant, usually of fascia lata, for a constricting band. Parlavacchio in 1910, evidently without knowledge of the previous methods, attempted to ligate either near the pylorus or higher by means of a constricting band of cotton tape. He advised this procedure for pyloric or prepyloric cancer, giving excellent reasons for its use. He first tried animal experiments and did not report its use in human beings until 1913. Wynen¹¹ in 1927 reported the use of a mattress suture to exclude the pylorus experimentally but concluded that it did not produce a permanent obstruction. This is true of all ligation methods.

Biondi in 1913 devised a method intermediate in degree between the simple ligation technic and the more extensive operative procedure of von Eiselsberg. He made a longitudinal incision including only the seromuscular layers of the anterior wall of the antrum and extending to the pylorus. The mucosa was then

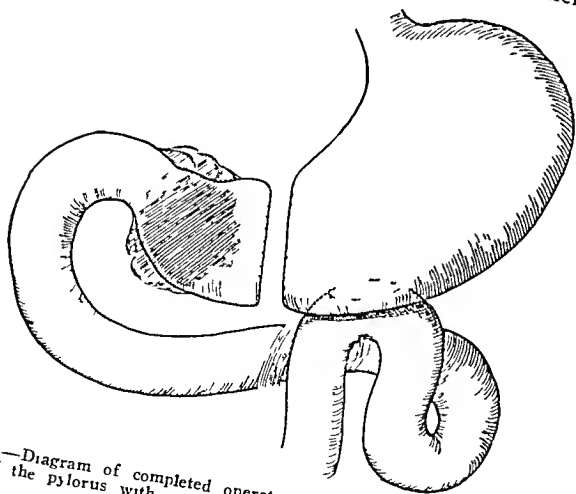


Fig. 5.—Diagram of completed operation for exclusion of inoperable cancer of the pylorus with isoperistaltic gastro-enterostomy.

the antrum and duodenum. The oral and aboral ends are then approximated and a transverse closure is made in two layers. Girard made a transverse incision in the

- 5 Parlavacchio G. Nuovo metodo per l'esclusione del piloro. *Poli clinico (sez. prat.)* 17: 515-517, 1910.
- 6 von Eiselsberg Anton. Ueber Ausschaltung inoperabler Pylorus stricturen nebst Bemerkungen ueber die Jejunostomie. *Arch. f. klin. Chir.* 50: 919, 1895.
- 7 Girard. Zur Technik der Pylorusexclusion. *Arch. f. klin. Chir.* 95: 573, 1911.
- 8 Mayo W. J. Duodenal Ulcer. *Ann. Surg.* 40: 900, 1904.
- 9 Berg A. A. Einseitige Ausschaltung des Duodenum bei per forierender Geschwulstbildung an der hinteren Wand des absteigenden Duodenalastes. *Zentralbl. f. Chir.* 30: 556, 1903.
- 10 Cackovic M. Einseitige Ausschaltung des Duodenum bei per forierender Geschwulstbildung an der hinteren Wand des absteigenden Duodenalastes. *Zentralbl. f. Chir.* 30: 649, 1903.
- 11 Wynen W. Experimenteller Beitrag zur Frage der Absteppung von ulcuskranken Magentellen durch die Naht nach Sattler. *Deutsche Ztschr. f. Chir.* 201: 252-255, 1927.

dissected free, ligated twice and severed between the ligatures. The incised layers were sutured, leaving an exclusion which was permanent.

In 1914 Bartlett¹² described a similar method, which did not require a complete transverse section of the stomach. This procedure, also known as "Hammersfahr's subserous method," was modified by Burkhardt¹³ in 1922. Its object was to build a septum above the pylorus. The transverse incision was made through the entire thickness of the anterior gastric wall but only through the posterior mucosa. In other words the mucosal layer was completely severed with only the posterior seromuscular layer of the stomach intact. The proximal anterior and posterior mucosal layers were inverted and sutured, as were the distal layers. The anterior seromuscular layers were then sutured to the intact posterior layer.

Lewisohn¹⁴ classified and summarized these methods concluding that simpler measures were as satisfactory for peptic ulcer as the more complicated procedures.

Finsterer¹⁵ used a technic which does not seem to differ from that of von Eiselsberg except in the variation of the level for section of the stomach and the completion of the operation in one case by a terminolateral anastomosis between the proximal segment and the duodenum. Devine¹⁶ used a similar procedure, always establishing continuity of the lumen by means of a terminolateral anastomosis. He also made a deep incision into the gastrohepatic omentum, into which he sutured the closed pyloric end in order to aid drainage. In a later article he¹⁷ reported a case in which a jejunal ulcer, developing after a gastro-enterostomy, was isolated by division of the stomach above the stoma and anastomosis of the jejunum to the proximal segment side to end, thus eliminating the jejunal ulcer in the segment between the two sutured portions. A lateral entero-anastomosis was done to drain the distal closed loop of duodenum and pylorus.

Bancroft¹⁸ sectioned the stomach without a clamp on the distal portion, dissected the mucosa free in the segment of the stomach, then ligated it at the pylorus and removed the excess to prevent stasis in the blind pouch. Cunningham¹⁹ showed by animal experiments that this procedure was unnecessary. He performed partial and subtotal pyloric exclusion operations on dogs and found that the excluded portion contracted to form a tube with the cut surface lying horizontally and the mucosa degenerated. The parietal cells degenerated to a greater extent than the chief cells and were replaced by fibrous tissue.

The technical procedure that we have employed most often for inoperable carcinoma of the antrum and pylorus is the method devised by von Eiselsberg.²⁰ This embodies a complete transverse severance of the

stomach above the limits of the tumor and entero-anastomosis of the jejunum and the proximal uninvolved segment of the stomach. The gastrocolic and gastro-hepatic ligaments are perforated close to the stomach proximal to the tumor. The gastric and gastro-epiploic vessels are doubly clamped, severed and ligated thereby freeing the lesser and greater curvatures of the stomach for a distance of from 3 to 4 cm. Two Payr clamps are then placed above the palpable limit of the tumor and the stomach is sectioned transversely either by cautery or by scalpel with sterilization by iodine. Although this incision should be well above the discernible margin of the carcinoma, it should not be so liberal as to permit the accumulation of secretion in this blind distal pouch. The mucosal and seromuscular layers are then closed by any of the conventional methods, thereby causing a complete division of the proximal and distal segments. After this closure was effected, von Eiselsberg anchored the distal stump to the proximal one to keep it in good position. We have never found this precaution to be necessary, since we cover the defect with omentum and have never seen the complication of herniation of the small intestine through the opening into the lesser omental sac.

The type of anastomosis selected depends on the local conditions within the abdomen and should be selected to afford the best functional result. The isoperistaltic posterior gastrojejunostomy is most commonly employed, although we have several times found the anterior method more readily done, in which case a lateral anastomosis is effected between the ascending and the descending limb of the jejunal loop. In other cases the posterior Polya or anterior Balfour end-to-side methods may be substituted.

This operation can be performed quickly and most efficiently with the use of the von Petz clamp. The application of this clamp across the stomach leaves two rows of closed silver clips, they are hemostatic and also give a watertight closure. A quick incision between the two rows of clips and continuous seromuscular sutures for the severed ends lessens the time consumed in this operation.

SUMMARY

The advantages of gastro-enterostomy for inoperable stenosing carcinomas are greatly enhanced by permanent exclusion of the involved pylorus, antrum and occasionally pars media, from the uninvolved proximal segment.

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The Sense of Continuity—In the continual remembrance of a glorious past, individuals and nations find their noblest inspiration and if today this inspiration so valuable for its own sake, so important in its association, is weakened, is it not because in the strong dominance of the individual, so characteristic of a democracy, we have lost the sense of continuity? As we read in Roman history of the scrupulous care with which even at such private festivals as the Ambarvalia, the dead were invoked and remembered we appreciate, though feebly the part which this sense of continuity played in the lives of their successors—an ennobling influence through which the cold routine of the present received a flow of energy from the touch divine of noble natures tone. In our modern lives no equivalent to this feeling exists, and the sweet and gracious sense of an ever-present immortality, recognized so keenly and so closely in the religion of Numa, has lost all value to us. We are even impatient of those who would recall the past, and who would insist upon the importance of its recognition impatient as we are of everything save the present with its prospects the future with its possibility.—Sir William Osler. Address delivered at Wistar Institute, 1894.

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16 Devine H B. Basic Principles and Supreme Difficulties in Gastric Surgery. *Surg Gynec & Obst* 40 116 (Jan) 1925.
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VALUE OF GORDON'S TEST IN DIAGNOSIS OF MEDIASTINAL HODGKIN'S DISEASE

REPORT OF TWO ILLUSTRATIVE CASES

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Recently we¹ reported a case in which the clinical and postmortem naked-eye observations were not conclusive of Hodgkin's disease. The efficacy of Gordon's² test (1932-1933) as a means of diagnosing lymphadenoma was tried out with postmortem material obtained from this case. The test gave a positive result in favor of lymphadenoma and this was corroborated shortly after by microscopic examination of the tissues. The first case to be described here is similar but even more instructive, since it demonstrates the value of the new test as a diagnostic procedure in circumstances in which not only the clinical and naked-eye observations but even histologic examination of the tissues left an element of doubt in the diagnosis. This case is also interesting in that it illustrates the change in cell structure which the Hodgkin's lesion may undergo in the course of two or three years. Finally there is appended a note on a case of bronchial carcinoma together with the result of Gordon's test in that condition. This note is added, since bronchial carcinoma is a lesion that must sometimes be considered in the differential diagnosis of mediastinal Hodgkin's disease.

REPORT OF CASES

CASE 1 — Clinical History — A man, aged 59, a miner, admitted to the Royal Infirmary, Edinburgh, Nov. 15, 1933, under the care of Prof. Edwin Bramwell complained of weakness and loss of weight (with a duration of nine weeks), dyspnea and cough (six weeks), anorexia and sweating (three weeks). The patient was well until about nine weeks before admission, when one day he had an attack of shivering and went home to bed. He did not stay in bed and during the next three weeks he had repeated slight shivers sometimes two or three in a day. He felt himself getting weaker and people remarked that he was not looking well. Six weeks before admission he was compelled to take to bed because of weakness and about the same time he began to have a cough and to be short of breath. He never saw any blood in his sputum, which was yellowish, scanty and difficult to expectorate. The bowels were constipated and during this time he lost weight rapidly. His appetite was poor. During the three weeks prior to admission he sweated profusely when asleep and latterly his sleep had been disturbed.

Two years before he had a swelling removed from the left side of the neck. This swelling had been present for four years during which time it had enlarged slowly and latterly it had been red. About a year before admission he had noticed further swellings in the right side of the neck but he did not think these had grown much lately. They had never been painful or tender.

Previous illnesses included typhoid and rheumatic fever. There was no family history of tuberculosis but the patient lived in a small insanitary and overcrowded house. He used to take a fair amount of alcohol.

Physical Examination — The man looked ill, pale and emaciated but was cheerful and optimistic. There was considerable myotatic irritability. The skin was loose and atonic and the hair shabby and dry. The temperature was 101.4 F. The breathing was mainly abdominal and at the rate of 32 per minute. The chest was well formed but poorly clothed and moved equally on the two sides. There was no definite impairment of the percussion note, but a suggestive area of dullness was present over the middle zone of the right lung. The breath sounds on both sides were harsh and vesicular, with sibilant rhonchi toward the end of inspiration and some during expiration. Sputum was negative for the tubercle bacillus. A roentgenogram of the chest revealed a slight deviation of the heart and mediastinum to the right side, with infiltration of the medial part of the upper, middle and lower zones of the right lung, there was also thickening of the pleura in the lesser and greater fissures. The pulse was 136 per minute and regular in time and force. The blood pressure was 119 systolic 65 diastolic. The heart sounds were pure but feeble. The abdomen was rather prominent. On the skin of the abdomen and lower part of the chest there was a yellow scaly lesion, which had been present since the Boer War. There was no abdominal rigidity or tenderness. No abnormal swellings were present and there was no enlargement of the liver or spleen. Many enlarged glands were present in the neck and axillae. The Wassermann reaction was negative. There was nothing to note in the nervous system.

Clinical Diagnosis and Termination of Illness — In view of the clinical and radiologic evidence a diagnosis of pulmonary tuberculosis was made. The patient unfortunately went rapidly downhill and died six days after admission.

Postmortem Examination — **Macroscopic** The body was somewhat emaciated. The pericardial sac contained a small quantity of clear serous fluid. The left pleural sac contained half a pint of slightly blood-stained fluid, the right contained a few ounces of similar fluid. The peritoneal cavity was healthy. In the right bronchus just beyond the bifurcation of the trachea there was a new growth in the shape of firm, whitish slightly raised plaques. The growth extended down into the main branch of the right lower lobe and had actually spread for a short distance into the substance of this lobe. It extended upward into the trachea for 2 or 3 inches and also down the left bronchus and its larger branches. Both lungs were voluminous and emphysematous and showed marked carbon pigmentation. Numerous deposits of white tissue were scattered over the surfaces of both lungs. Patches of bronchopneumonia were present in the upper lobe of the right lung. The rest of the lung and also the left lung showed congestion and the bases of both lungs were edematous. Large masses of glands were found at the roots of the lungs. These extended up the trachea and communicated with similar large glands in the anterior triangles of the neck. Masses of glands were found in both axillae along the aorta and the common iliac vessels, at the porta hepatis and along the superior border of the pancreas. In all these situations the glands were discrete firm and elastic in consistency, and on section showed a whitish marbled surface. The heart was of globular, owing to dilatation of all chambers. The myocardium was very pale and soft. The coronary vessels and the aorta showed slight atheroma. The esophagus, stomach and intestine were free from pathologic change. The liver was of average size but pale. It was dotted throughout by small white deposits, the largest of which was a centimeter in diameter. The spleen was three times its normal size and nodular on the surface. On section it presented a dark red surface, throughout which were scattered nodules of white tissue. The pancreas showed nothing of interest. The genito-urinary system, beyond the abnormal pallor of the kidneys, was normal. A large deposit about 2.5 cm in diameter was found in the left parietal bone toward the vertex. It was similar in appearance and consistency to the glandular masses elsewhere. It involved the whole thickness of the skull but not the underlying dura. Other deposits were seen in several vertebrae (third fourth tenth and twelfth thoracic and first and second lumbar). The brain and its meninges were healthy, but the cerebral vessels were markedly atheromatous. The yellow marrow at the middle of the femur was replaced by whitish tissue.

¹ Ogilvie R. F. and van Rooyen C. E. *Lancet* 2: 641 (Sept. 16) 1933.

² Gordon M. H. in *Order Thomas Rose Research on Lymphadenoma*. Baltimore: William Wood & Company, 1932. Gordon M. H. *Brit. M. J.* 1: 641 (April 15) 1933.

Microscopic Tracheal and pulmonary growths consisted of polyhedral cells with a moderate amount of clear cytoplasm and a nucleus varying in size and chromatin content. These cells were for the most part distributed indiscriminately, but occasionally, especially in the pulmonary growth, they tended to assume a palisade arrangement, though no actual acini were formed. In the tracheal growth, cells were occasionally seen that were larger than the others with a single lobulated nucleus or with from two to six nuclei irregularly arranged toward the center of the cell. No such cells were observed in the pulmonary growth. Special staining revealed the presence between the cells of a fine supporting reticulum. This malignant looking tissue was actively invading the mucosa of the trachea on the one hand and the alveoli of the lung on the other. Many mitotic figures were present throughout the tissue of both lesions.

In one of the lymph glands examined only a few small foci of lymphoid tissue were left. The remainder of the tissue presented appearances similar to those of the tracheal lesion though small giant cells with single lobulated or several nuclei were rather more numerous, and there was no palisade arrangement. Between the cells was a very definite fine reticulum. In another gland widespread necrosis had occurred with hemorrhage and the formation of hemosiderin.

In the liver small foci of new growth had developed in relation to some of the portal tracts. The microscopic appearance of these and also of the growths in the spleen, marrow, skull and vertebrae was similar to that of the trachea and lymph glands already described.

Biologic Test—A large gland removed from the left axilla was freed from superficial contamination by flaming with absolute alcohol, immersion in boiling water for two seconds and subsequent removal of loose surrounding tissue. The gland was then divided with a knife and a portion (about 1 Gm.) was removed from the center. This was finely divided and thereafter emulsified with pestle and mortar in 20 cc of broth of pH 7.1. The emulsion was divided into two parts, one of these was used for the immediate intracerebral inoculation of three rabbits, the other was allowed to stand for seven days in a refrigerator at $-4^{\circ}C$ and then was used for the inoculation of three additional rabbits. Inoculation consisted in the injection of 0.35 cc of the suspension into the occipital lobe of each animal to a depth of 3 mm. This was accompanied by the administration of an intravenous dose of 0.5 cc into the auricular marginal vein.

The three animals that were inoculated immediately with gland emulsion showed after four days signs of only slight ataxia, from which they rapidly recovered. The other three rabbits injected with emulsion which had been refrigerated for a week showed signs of gross nervous damage. These signs consisted of ataxia and incoordination setting in on the third day and progressing rapidly during the next few days to complete paralysis of the hind quarters with retraction of the head and nystagmus. On examination by aerobic and anaerobic methods of cultivation the brain and meninges of these animals yielded no growth. The test was therefore regarded as positive in favor of Hodgkin's disease.

COMMENT

The diagnosis of this case remained in doubt even after a naked-eye study of the organs and histologic examination of the various lesions. The main interest centers round the biologic test and the help it gave in determining the diagnosis.

The clinical diagnosis was pulmonary tuberculosis. Post mortem the diagnosis lay between (1) bronchial carcinoma and (2) Hodgkin's disease. The former was favored by (a) the age of the patient (59 years), (b) the presence of tracheal and bronchial lesions invading the right lung, (c) the presence in the pulmonary growth (right lung) of more or less columnar cells arranged in rows in the midst of an otherwise spheroidal-cell tissue, and (d) the indeterminate histology of the lesions in other organs. Points in favor of lymphadenoma were (a) a history of cervical glandular swellings for six years, (b) widespread lymphatic involvement (post mortem) and the character of the glandular masses, (c) involvement of the liver and spleen, (d) the presence in all the lesions of a fine but definite supporting reticulum, and (e) the occurrence in most lesions of cells like Hodgkin giant cells.

Although the weight of evidence was undoubtedly in favor of lymphadenoma, there yet remained an element of doubt. Consequently the result of Gordon's test was anticipated with interest and, as already indicated, it was positive. Since, moreover, bronchial carcinoma yields a negative biologic test (case 2) the lymphadenomatous character of this case seemed definitely established.

To complete the history, it should be stated that the gland which had been removed from the neck two years before death (1931) and examined elsewhere was later traced. It showed lymphoid hyperplasia with loss of gland architecture and in places proliferation of the endothelial cells among which were a few giant cells with a single lobulated nucleus or two or three nuclei. The condition was histologically one of early Hodgkin's disease. The case is thus also noteworthy as illustrating how the lymphadenomatous lesion, from being more or less characteristic, may in the course of time develop very atypical features and assume malignant characters.

CASE 2—Clinical History—A man, aged 61, a railway porter admitted to the Royal Infirmary, Edinburgh, under the care of Prof W T Ritchie, Oct 17, 1933, had had pain in the upper part of the left chest anteriorly for the past six months. For the past two months there had been a painful, tender swelling about 3.5 cm in diameter over the second left costal cartilage. Until a fortnight before admission he had been in good health except for the painful swelling, but since then he had felt weak and breathless on exertion and had noticed that his ankles were swollen, particularly in the evening. He had had a slight cough for years.

Physical Examination—The patient had an ashen complexion with a cyanotic tinge. Two firm tender lumps, each about 3 cm in diameter were present under the skin over the second left rib. The chest expansion was diminished. In the lower part of the right lung there were areas of low-pitched bronchial breathing with moist accompaniments, and in the left lung there was dullness with high-pitched bronchial breathing and whispering pectoriloquy. The cardiovascular, alimentary, genito-urinary and nervous systems showed nothing of interest. There was a slight degree of secondary anemia.

Postmortem Examination—The lungs were moderately emphysematous and showed some basal congestion. The right lung was otherwise healthy. In the left bronchus just beyond the bifurcation of the trachea there was a nodule of neoplastic tissue in the process of invading the adjacent lung substance. The nodule was continuous in the anterior mediastinum with a large, firm, creamy yellow new growth consisting apparently of enlarged lymphatic glands. The upper part of the left lung was collapsed and heavily infected, owing to bronchial obstruction. The mediastinal mass also extended through the intercostal spaces to form two nodules below the left pectoralis major. The right kidney contained a single large mass of tumor tissue similar to that described. The left lobe of the prostate gland had in it a nodule which superficially resembled the tumors elsewhere. The liver showed marked chronic venous congestion. The spleen exhibited no noteworthy abnormality. The abdominal lymphatic glands, with the exception of one on the right renal vein, showed no malignant involvement.

Microscopic examination of the thoracic mass proved it to consist of adenocarcinomatous tissue. Much of the tumor was very undifferentiated, but acini occurred here and there. The neoplasm had induced the formation of fairly abundant stroma. The lymph glands and right kidney showed invasion by similar tissue. A prostatic nodule was adenomatous in character and microscopically did not resemble the other neoplasms.

Macroscopic and microscopic observations together indicated a bronchial carcinoma

Biologic Test—Three rabbits were inoculated after the manner already described with tissue taken from the enlarged lymph glands—one immediately, October 19 (the day of the autopsy), a second on November 1, and a third on November 8. The material used to inoculate the last two rabbits was kept in a refrigerator at -4°C . All the animals remained normal, and the test was therefore regarded as negative.

SUMMARY

In case 1 the clinical and postmortem (macroscopic and microscopic) observations, while favoring Hodgkin's disease, did not conclusively support such a diagnosis. Gordon's biologic test was applied. The test gave a positive result, thus supporting a diagnosis of lymphadenoma. Case 2 is one which macroscopically resembled Hodgkin's disease. It yielded a negative biologic test and was ultimately proved by histologic examination to be a typical bronchial carcinoma.

These cases illustrate the value of Gordon's test as a diagnostic procedure in circumstances in which Hodgkin's disease is suspected.

Teviot Place

Clinical Notes, Suggestions and New Instruments

DINITROPHENOL POISONING REPORT OF A CASE

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History—J. M., a white woman, aged 42, married, a housewife, who weighed 70 Kg (154 pounds), was advised by her physician to take dinitrophenol, 0.1 Gm, three times a day. Thirty capsules of sodium dinitrophenol 2-4 (Eastman Kodak Company) were taken with a weight loss of 4 pounds (1.8 Kg) during ten days. There was no excessive sweating or other untoward symptoms, and with the telephonic consent of her physician the druggist supplied sixty more capsules. On the morning of the eleventh day, a slight rash, which itched moderately, appeared on the chest. On the night of the fourteenth day, a generalized erythematous papular eruption appeared over the whole body, including the scalp. These papules were hard and shotty, about 6 mm in diameter, and raised 3 mm. There was considerable discomfort from itching. The use of the drug was discontinued and the usual measures of diet and therapy were instituted to obtain relief. Sixteen ounces (475 cc) of magnesium citrate solution was immediately ordered, sodium bicarbonate baths, and alkaline mineral water in large quantities. Only sugar (candy), milk and water were taken in the diet, as the patient's appetite had disappeared. Calcium gluconate, small doses of mild mercurous chloride and atropine were ordered four times daily but had little effect, and the atropine was stopped after twenty-four hours. The itching became intolerable and the patient scratched her skin until blood appeared. She was restless, showed a marked trembling which was almost constant, and exhibited great anxiety. The temperature was raised and the pulse rapid. Ephedrine, three-eighths grain (0.024 Gm), and epinephrine hydrochloride, 10 minims (0.6 cc) by hypodermic injection relieved these symptoms for one to two hours. Later codeine, one-fourth grain (0.016 Gm), and amidopyrine, 5 grains (0.3 Gm), was given for pain.

On the fifteenth day, both hands and feet swelled to twice their normal thickness and the palms and soles were especially painful and itching. A wedding ring had to be clipped from the finger at 5 a. m. The papular eruption changed to large yellowish white wheals with reddish areas of skin between. The eyelids were swollen shut and the ears, neck and face distorted by swelling. The fingers could not be flexed, and it was impossible to grasp a water glass because of their stiffness. The patient was in great agony and had to be removed to a hospital for continuous nursing care. The trembling per-

sisted to a marked degree. The skin was hot and dry, although the patient felt chilly. She continued anxious and weak. The pulse range was between 120 and 140, the temperature, from 102°F to 103°F , the respiration rate, 24 to 30. The blood pressure was 128 systolic, 58 diastolic. The urine was scant (300 cc in twenty-four hours) despite forced fluids. The Derrien test for dinitrophenol was positive in the urine. Smell and taste had disappeared. There was marked pain in the region of the antral and frontal sinuses. There was yellowish discoloration of the sclerae, and the urine and blood serum were stained a deep yellow.

The pruritus and edema of the skin reached their height on the fourth day following the onset of the toxic symptoms, and during these four days the patient had slept but one hour at long intervals, usually following injections of pantopon, one-third grain (0.02 Gm), or morphine, one-fourth grain (0.016 Gm), given for pain and restlessness, and epinephrine and ephedrine for the pruritus. These were given as often as every four hours on the fourth day and less often on the other days. On the fifth day the eyes could be opened and the skin lesions were less pronounced, but these still recurred in waves. The mucous membranes now became affected, and there was intolerable vaginal pruritus, burning on micturition, and soreness of the mouth and esophagus. The lips suddenly began to burn and smart, and swelled greatly. These symptoms continued for thirty-six hours. On the sixth day there were isolated patches of urticaria on the dorsum of the hands and feet, about the joints and in the lumbar region. The sinus pain had disappeared and the urine was light, natural colored and abundant (2,000 cc). The patient fell into a sound sleep. Twice daily a gallon of sodium bicarbonate solution was used as a colonic irrigation, and hot boric packs were applied continuously to the region of the kidneys until there was abundant elimination. Daily cathartics were given. Local applications of calamine lotion, aluminum acetate solutions, and alkaline pastes had no effect on the pruritus. Olive oil rubs to soften the dense induration of the skin gave some relief. On the seventh day the Derrien test was negative in the urine. The temperature and pulse had returned to normal, and there was moderate pruritus, trembling and erythema, which was controlled by ephedrine. The skin was covered with scratch marks and showed desquamation. Appetite, taste and smell were normal and the patient was discharged from the hospital. There was a further loss of 4 pounds after the onset of the toxic symptoms, while the patient was on a sugar, milk and water diet.

Previous History—The patient had diphtheria at 8 years of age, for which antitoxin was administered. A tonsillectomy at 28 years required hemostatic serum for the control of hemorrhage. A marked urticaria followed this injection.

Laboratory Examination—Miss Isaacs of Highland Park Hospital made the following observations:

Fourth Day The urine was yellow and alkaline with a specific gravity of 1.023. It was positive for albumin, sugar and acetone and was negative for diacetic acid. Phosphates were present. The Derrien test was positive.

Fifth Day The urine was yellow and neutral, with a specific gravity of 1.007. Albumin was present and sugar was absent. Dinitrophenol was present by the Derrien test.

Sixth Day The urine was yellow and neutral with a specific gravity of 1.009. There was a trace of albumin. The reaction for dinitrophenol was negative.

Blood examination revealed hemoglobin, 102 (Sahl), leukocytes, 11,500, red blood cells, 4,090,000, polymorphonuclears, 84 per cent, polymorphonuclear eosinophils, 0, lymphocytes, 11 per cent, monocytes 2 per cent, 3 irritation cells.

Chemical examination revealed icterus index, 20, Van den Bergh, direct test negative, indirect test, faintly positive, sugar, 90, nonprotein nitrogen 27, uric acid, 3.5, Fouchet's test, negative. Three days later the icterus index was 5.3.

An electrocardiogram was negative.

COMMENT

There was a history of allergic reaction to horse serum only. As there was no history of chronic rheumatism, alcoholism, tuberculosis, renal disease or hepatic disease in this patient, or other forms of allergy, there were no contraindications to

its use as prescribed by Cutting, Mehrtens and Tainter¹ It might be asserted that the dose of 0.3 Gm daily was too large for a woman of 70 Kg, but this seems to be the dose generally prescribed in the cases I have since investigated in this vicinity

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UMBILICAL ENDOMETRIOMA

ATTILIO GALASSO MD BYRON G SHERMAN MD, AND
VICTOR E BURN MD MORRISTOWN, N J

Attention was called by Babes as early as 1882 to the occurrence of ectopic endometrial tissue in a myoma uteri In 1883 and 1896 Diesterweg and von Recklinghausen, respectively, wrote on similar observations These reports were the first of a series by authors who found endometriosis (Sampson) to involve the female adnexa, peritoneum, broad ligaments, abdominal muscles, umbilicus and other viscera

The following is a brief review of the various theories concerning the origin of ectopic endometrial tissue

1 The wolffian theory Origin from the mesonephros was supported by von Recklinghausen This theory held sway until 1903 when Cullen demonstrated that the glandular inclusions in adenomyoma uteri were due to direct invasion of the uterine muscle from the mucosa



Fig 1—Compact stroma surrounding the gland on the left There is some mucin and cellular debris in the lumen

2 The muellerian theory This conception has been utilized to explain the presence of endometrial tissue in such locations as the umbilicus, inguinal region and rectovaginal septum on the basis of embryologic misplacement of muellerian tissue As yet, no satisfactory explanation of the mechanism involved has appeared in the literature

3 Serosal heterotopy Practically all German writers appear to support this theory on the ground that the peritoneum and the germinal epithelium of the ovary are capable of undergoing a metaplasia secondary to an inflammatory stimulus or, as Novak contends, secondary to an endocrine stimulus

4 Theory of implantation Many in America and England support Sampson's theory of endometrial regurgitation through the fallopian tubes at the time of menstruation There are others, however, who object to this theory on the ground that the viability of menstrual epithelium has never been proved This explanation is correct, would account for the presence of endometrial tissue in the umbilicus on the basis of lymphatic dissemination

Cases of endometrioma of the umbilicus are not frequently encountered Only thirty cases were reported up to 1926 and Spitz¹ succeeded in collecting the reports of only fifty-four cases up to 1932 Of the latter fifteen were reported in the

United States The *Quarterly Cumulative Index Medicus* notes the report of another in France in February 1933

This type of tumor occurs exclusively in women, usually during the fourth decade, although it has been found in a girl, aged 18 years The symptoms of pain and swelling referable to the mass, which at the time of the menstrual cycle may appear cyanotic, are most frequently complained of Vicarious



Fig 2—The same features are to be noted here as in figure 1

menstruation from sinuses has been reported in many cases Natural or artificial inhibition of the menses has relieved the symptoms permanently in many cases

REPORT OF CASE

Mrs L R, aged 36, white, admitted as a private patient of B G S, Jan 5, 1934, complained chiefly of pain and swelling and purple discoloration of the umbilicus since August 1933 The pain became more marked over a period of weeks and more so at the time of menstruation, when the umbilicus seemed to take on a darker purplish hue It never discharged The familial history and that of previous illness were negative Her periods started at the age of 14, occurring every twenty-eight days and lasting from five to six days, although, during the past four months, they persisted for eight or nine days There was no history of abdominal pain at the time of any

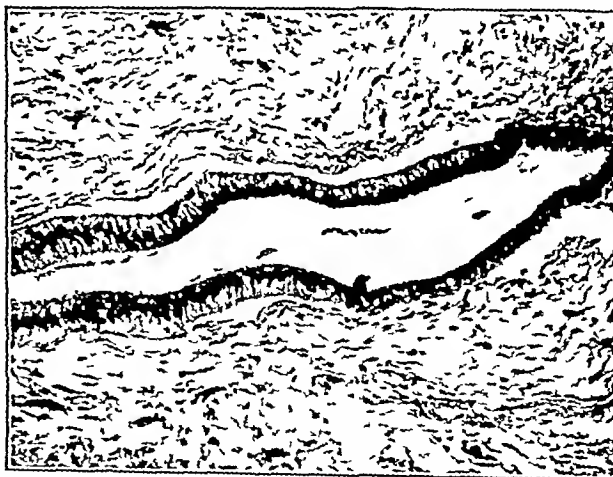


Fig 3—The type of epithelium is more clearly portrayed in this field

menstrual cycle The patient has a 9 year old child living and well and had one miscarriage at six and a half months

The physical examination was irrelevant except for the umbilicus, which appeared bluish measured 1 by 1 by 2 cm, was tender and nonfluctuating and seemed freely movable

At operation we excised the mass without opening the peritoneal cavity with which it did not communicate The wound healed by primary union

¹ Cutting W C Mehrtens H G and Tainter M I Actions and Uses of Dinitrophenol J A M A 101 193 (July 15) 1933

From the Morristown Memorial Hospital

¹ Spitz Herman Adenomyoma (Endometrioma) of Umbilicus Am J Clin Path 2 15, (Mar) 1932

On section the gross appearance of the cut surfaces was that of fibrous tissue containing several small cysts, from which a viscid brown fluid exuded. Microscopically there were seen many glands of varying size. Some of these glands were cystic in appearance and were lined by columnar or cuboidal epithelium. There was also evident a small quantity of mucin

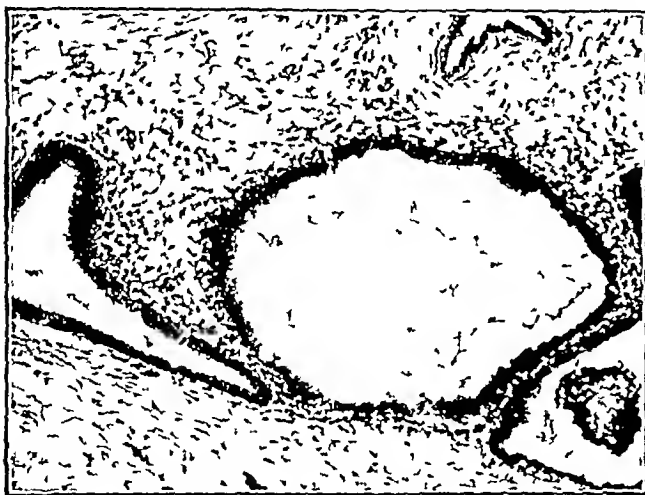


Fig. 4—Cystic dilatation

and cellular debris in the lumens. The glands were surrounded by a cytogenic compact stroma, which resembled that of uterine mucosa. There was present in various parts of the section blood pigment, which occurred also in some of the phagocytes.

The pathologic diagnosis was umbilical endometrioma.

Therapeutics

THE THERAPY OF THE COOK COUNTY HOSPITAL

EDITED BY BERNARD FANTUS, M.D.
CHICAGO

NOTE.—This series of articles constitutes the therapy recommended by the chiefs of staff and their associates in the Cook County Hospital. In the preparation of these articles the copy is submitted to the various members of the staff by the director of therapeutics, Dr. Bernard Fantus. The views of the various members are summarized, after which a final draft is prepared for publication. Thus, in the article on insomnia which follows, fifteen physicians presented their views, and in others anywhere from five upward. The series of articles will be continued from time to time in these columns.—Ed

THERAPY OF INSOMNIA

Sleep is even more necessary for the maintenance of life than is food, for one cannot live as long without sleep as one can without food. Sleep is generally more important than medicine. Hence the patient's sleep should not be disturbed for medicinal treatment, unless continued effect is extremely important, when it should be definitely stated in the written order.

1 Comfort—The patient should be made comfortable as he understands comfort. The patient's sleeping habits as regards the number and size of pillows and the bed covering should be respected. A patient who has not slept well during the night and has just fallen asleep in the early morning hours should not be disturbed for the morning toilet. Better that the patient eat unwashed than die from exhaustion induced by insomnia.

2 Psychotherapy—As worry is one of the most potent causes of insomnia, the worry about insomnia constitutes a vicious circle that must be broken by whatever means may be required. The patient should understand that the time he sleeps seems short, that the time he lies awake seems long, and that a very few hours of sleep (possibly two) suffice to maintain life, the rest being more or less of a luxury. Reading and, better still, being read to, may take one's mind off worry and thus be sleep inducing. Suggestion plays an important part in the induction of sleep, and many an innocent and yet effective measure, such as "counting sheep" or focusing one's eyes at the tip of one's nose, depends on it. Suggestion, occasionally even in the "hypnotic" state, is the hypnotic to be used in hysteria, in which the medicinal hypnotics, even morphine, often fail. Reasoning and persuasion should be employed in neurasthenia as well as psychoanalysis which, even in its nontechnical sense, is often of value in sleep-preventing phobias, and mental hygiene as well as physical hygiene in any case of "nervousness" as, for example, elimination of excessive nerve tire produced maybe by a fifty mile ride to a suburban home or working at home after hours.

3 Physical Measures—The proper balance between rest and exercise holds the secret of sleep. Insufficient as well as excessive fatigue may make sleep impossible. Physical exertion may help one person's insomnia while aggravating that of another. In the latter case, rest treatment is indicated. Many a bed patient sleeps better for slow gentle massage or even a back rub at bedtime, sedative hydrotherapy, as a prolonged (one fourth to one-half hour) warm (96 F.) bath or cold wet pack of three quarters to one hour's duration, or even an abdominal or leg compress (a moistened stocking covered by a dry one). In cases of insanity the neutral bath for two or three hours or even applied continuously is a useful calmative measure, especially when combined with an ice cap. Appropriate antipyretic hydrotherapy is one of the best means of quieting the restless fever patient, the ice cap to lessen febrile delirium. A night cap should be used for the bald. Coldness of the feet may be antagonized by a hot foot bath, followed by brief cold affusions and a dry rub or by a hot water bottle to the feet (care being taken against burns). Warm blankets to the legs or woolen socks to the feet may suffice. The hypnotic value of the air bath deserves consideration, walking about in one's bedroom naked (except possibly for stockings and slippers) or even throwing off the covers while one is in bed and exposing the body to cool air for a short time may on subsequent covering, induce as the "reaction" the skin hyperemia requisite for sleep.

4 Diet—Avoiding large evening meals is especially important for those with poor digestion or circulatory debility, for whom the evening meal should be the lightest of the day. For those distressed by flatulence, the amount of starchy foods, fruits and vegetables should be reduced. Tea or coffee should be interdicted, especially at or near bedtime. On the other hand hunger may keep one awake, and a glass of hot milk with a cracker has hypnotic potency in such cases and might be a standing order against insomnia, unless of course the milk interferes with the fundamental dietary plan of treatment.

5 Relief of Distresses That Tend to Disturb Sleep—Rapid heart beat may be combated by a cold precordial compress or an ice bag wrapped in flannel,

dyspnea by elevation of the trunk to almost a sitting posture (see also dyspnea), cerebral congestion by cold to the head, heat to the feet, and magnesium sulphate (30 Gm) taken in concentrated solution during the day. To one distressed by a "heavy" meal, lemon juice may give relief. Flatulence may be antagonized by valerian (anionomiated tincture from one-half to

PRESCRIPTION 1—Sodium Bromide

R Sodium bromide	30 00 Gm
Water	30 00 cc
Syrup of glycyrrhiza	to make 120 00 cc

One teaspoonful in water (or milk) after meals and two teaspoonfuls at bedtime (Watch for bromoderma). If there is a tendency to rene the addition of solution of potassium arsenite (prescription 2) may lessen it (Price index 1 the approximate price per dose as compared with chloral 1)

PRESCRIPTION 2—Sodium Bromide and Solution of Potassium Arsenite

R Sodium bromide	30 00 Gm
Solution of potassium arsenite	10 00 cc
Water	30 00 cc
Syrup of raspberry	to make 120 00 cc

A teaspoonful or two in water (or milk) at bedtime (Watch for bromoderma) (Price index 1)

PRESCRIPTION 3—Valerian

R Elixir of ammonium valerate	60 00 cc
Elixir of sodium bromide	60 00 cc

From two to four teaspoonfuls in water at bedtime (Watch for bromoderma)

PRESCRIPTION 4—Carbromol

R 25 Carbromal tablets each	0 30 Gm
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One or two at bedtime (May cause bromoderma) (Price index 20)

PRESCRIPTION 5—Barbital

R Barbital	2 50 Gm
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Divide into ten capsules

Two with hot fluid two hours before bedtime and a third capsule may be given in two hours if required (Price index 5)

PRESCRIPTION 6—Phenobarbital

R 10 Phenobarbital tablets each	0 10 Gm
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One or two one hour before bedtime (three should not be exceeded) (Price index 7)

PRESCRIPTION 7—Elixir of Phenobarbital

R Elixir of phenobarbital	60 00 cc
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From one teaspoonful to one tablespoonful at bedtime (each teaspoonful contains 0.03 Gm of phenobarbital)

1 teaspoonful) if gastric or by asafetida (0.3 Gm capsules) if intestinal, or a turpentine enema. Against nycturia, ingestion of fluid in the afternoon and evening should be restricted. For pain, analgesics should be prescribed, against cough, expectorants.

6 Sedatives—In conditions of exaggerated nervous irritability, bromide (prescription 1 or 2), though not a hypnotic, often favors sleep. It is perhaps best given at first in divided doses after meals and at bedtime and when improvement has set in, at bedtime only. Bromide should not be used in the insomnia of profound nutritional exhaustion of the brain or for those with acne. Valerian (prescription 3), especially when combined with bromide may be useful in insomnia accompanied by flatulence or palpitation, or when due to hysteria or dissimulation. Somewhat more powerful is carbromal (adalin, prescription 4), a sedative intermediate in potency between bromide and the true hypnotics. Acetylsalicylic acid and amidopyrine (either of them as a 0.3 Gm tablet) are sedative besides having analgesic, antipruritic and antipyretic value and they favor sleep, especially when given with bromide.

7 Hypnotics—These should be given only when other measures including sedatives have failed or probably will fail, and even then only temporarily to break in on the vicious circle of excessive fatigue-insomnia. In milder cases of insomnia partial sleeplessness is better than hypnotics with their frequently disagreeable after-effects and habit-producing tendency. They must nevertheless not be withheld when they are

actually needed. They may be life saving for a patient, fighting a serious disease such as pneumonia, who may succumb from lack of sleep, when the skilful use of hypnotics and letting him sleep as much as possible day or night may tide him over the crisis. Hypnotics are indispensable in conditions of great excitement, as in the psychoses and in febrile delirium. In these, 0.5 mg of scopolamine (hyoscine) hydrobromide hypodermically often acts best. At present barbital (veronal, prescription 5) in milder cases and phenobarbital (luminal, prescription 6 or 7) in more severe cases are the most popular. The barbiturates are useful when there is great restlessness in conditions of circulatory excitement, also in the presence of pain (especially when combined with coal tar analgesics). They are somewhat slow in acting, and hence had better be given one or two hours before the desired effect, and with hot fluid. As there may be sufficient residual sedative effect for one dose to favor sleep on the next night, it is good policy to order the hypnotic taken only if necessary on a night succeeding a sleepless night. In the presence of vomiting, phenobarbital sodium (prescription 8) may be given intramuscularly.

PRESCRIPTION 8—Phenobarbital Sodium

R Phenobarbital sodium	0 12 Gm ampule
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Dissolve in 1 cc of sterile distilled water and inject intramuscularly

PRESCRIPTION 9—Chloral Hydrate

R Chloral hydrate	15 00 Gm
Fluidextract of glycyrrhiza	30 00 cc
Syrup of orange	to make 60 00 cc

One teaspoonful in water (or milk) at bedtime. Repeat hourly—not more than twice—if patient is not asleep (Price index 1)

PRESCRIPTION 10—Chloral Hydrate Rectally for Children

Children's dosage of chloral hydrate given in starch water as retention enema

From 1 to 2 months	0 10 to 0 15 Gm
From 1 to 2 years	0 50 to 0 80 Gm
6 years	1 00 Gm
From 10 to 14 years	1 50 to 2 00 Gm

Contraindicated by cyanosis or impairment of circulation

PRESCRIPTION 11—Paraldehyde

R Paraldehyde	30 00 cc
Compound spirit of orange	30 00 cc

A teaspoonful or two in sweetened iced tea every hour until patient is asleep (Price index 3)

PRESCRIPTION 12—Paraldehyde for Rectal Administration

R Paraldehyde	30 00 cc
Alcohol	30 00 cc

Two teaspoonfuls in two tablespoonfuls of warm water as a retention enema

PRESCRIPTION 13—Sulphonethylmethane

R Sulphonethylmethane	5 00 Gm
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Divide into ten capsules. One or two with hot fluid at bedtime (when patient awakens too early) required. (By replacing each dose taken from the bottle with an equal amount of water the medicine may continue to have a satisfactory effect even though its strength becomes gradually less.) (Price index 8)

PRESCRIPTION 14—Codeine

R Codeine phosphate	0 50 Gm
Syrup of eucalyptol	60 00 cc

A teaspoonful or two in water at bedtime (Price index 12)

PRESCRIPTION 15—Morphine and Chloral

R Morphine sulphate	0 15 Gm
Chloral hydrate	15 00 Gm
Fluidextract of glycyrrhiza	30 00 cc
Syrup of orange	to make 60 00 cc

One teaspoonful in water at bedtime. Repeat once in an hour if required. (By replacing each dose taken from the bottle with an equal amount of water the medicine may continue to have a satisfactory effect even though its strength becomes gradually less.)

A differentiation must be made between sleep-inducing and sleep-maintaining hypnotics. Among the rapidly acting sleep-inducing hypnotics, especially indicated when the patient has difficulty in falling asleep, chloral hydrate (prescription 9) is the most potent. It is especially beneficial in sleeplessness accompanying high blood pressure. It must be used with caution.

when the circulation is enfeebled. It offers the greatest amount of hypnotic power per unit price. For children, its rectal administration (prescription 10) is the sovereign remedy, to be preferred to an opiate, even in the presence of pain, and to be shunned only in marasmus and if there is cyanosis. In cases in which chloral is prohibited, paraldehyde (prescription 11) acts rapidly and causes less depression to the circulation than any other hypnotic as powerful, but it has a most disagreeable odor, which it also imparts to the breath during elimination. In maniacal and delirious conditions it is best given by rectum in doses of from 4 to 8 cc mixed with an equal amount of olive oil or, when most rapid action is desired, with an equal volume of alcohol in 10 per cent aqueous solution (prescription 12). When the patient awakens too early, sulphonethylmethane (trional, prescription 13) may receive preference. The opiates are particularly valuable when pain or respiratory distresses interfere with sleep. Codeine (prescription 14) should be preferred whenever possible, but in severe conditions nothing does as well as morphine sulphate (from 0.010 to 0.015 Gm) hypodermically. Morphine should be avoided when there is pruritus or a tendency to urinary retention, and paraldehyde should be used. In obstinate insomnia, as that of delirium tremens, that resists these agents in safe doses given singly, results may be secured by combination of differently acting hypnotics, as morphine and chloral (prescription 15), which may, in a desperate case, be reinforced by scopolamine hydrobromide (0.5 mg) given hypodermically and by paraldehyde given by rectum. In the insomnia of psychoneurosis, euphorics, such as alcohol, opium, morphine, diacetylmorphine or cocaine, are strictly contraindicated. On the other hand, the hypnotics of the barbitol series (barbitol, phenobarbital) are often usefully prescribed even at the outset to break in on the vicious circle of neurosis-insomnia, in addition to appropriate psychotherapy and physical therapy. When the patient has had a fair number of nights of sound sleep, the medicine may be progressively reduced in strength to nothing, and this may be concealed from the patient until after the medicine has been discontinued, or, better, the patient's cooperation may be secured by having a dose of the drug within easy reach so that he might take it if required. The knowledge of having a positive remedy available will often give the patient the assurance necessary for repose, and he may not need the hypnotic. In any case, the use of hypnotics should not be continued for more than two or three weeks without endeavoring gradually to reduce the dose or to change the remedy. "Do not refill" should be written on every such prescription, and a supply for only a few days at a time should be ordered. The patient should be seen frequently enough during this period so that one can check up on the condition of sleeplessness, the existence of any toxic effects, or the advisability of decreasing or of increasing the dose or changing the drug.

8 Use of Stimulants—Such stimulants as caffeine or ephedrine, which ordinarily keep most persons awake, may relieve the insomnia of patients with hypertension, disturbed by cramps in the legs. Such agents are similarly valuable for patients unable to sleep by reason of Cheyne-Stokes breathing, which is generally made worse by the hypnotics mentioned. Strychnine also favors sleep in such cases, as well as in cases in which there is deficient aeration of the blood, as in emphysema with chronic bronchitis.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING ARTICLE AND REPORT H. A. CARTER, Secretary

THE TEACHING OF PHYSICAL THERAPY TO UNDERGRADUATE MEDICAL STUDENTS

IRVING S. CUTTER, M.D.

AND

JOHN S. COULTER, M.D.
CHICAGO

No matter how vigorously the medical profession may deny utilitarian objectives in medicine, the physician, after all, to his patients in general is a healer, and his duty to the individual who is ill involves the use and application of all therapeutic measures conducive to the restoration of that patient to health. Many graduates are handicapped because of inadequate emphasis on therapeutic resourcefulness. Too often the clinical teacher gives the impression that, if a correct diagnosis is made, the treatment is easy. The patient desires to get well, hence, in the practice of medicine, therapy requires attention at least equal to that devoted to diagnosis.

There is, we believe, a growing consciousness on the part of the medical profession of the great value of the numerous procedures known as physical therapy. Realization of this has been aided by the establishment of the Council on Physical Therapy of the American Medical Association, and its publication of conservative articles on this subject, which have recently been collected in the Handbook of Physical Therapy.

Needless to say, physical therapy is probably one of the most misunderstood subjects in medicine. Its place in treatment is a matter of controversy, and, in the minds of many, the very mention of physical therapy recalls the picture of a room filled with a large assortment of brassy, shiny, complicated, electrical machines and lights. Certain physicians feel that some physical therapeutic procedures may be of value, but they mistrust them for their patients because of inability to advise the correct treatment. This is due, in some measure, to the high powered sales organizations of certain manufacturing concerns which have flooded the market with physical therapy equipment, and the conscientious physician, anxious to serve his patients, is too often driven to the purchase of equipment the use of which he does not understand, the application of which he knows but little about, and of the dangers of which he is unaware. It is essential, therefore, that students should know that it is not necessary to possess elaborate apparatus in order to apply physical therapy, the best physical agents to use are usually the cheapest, the simplest and the easiest obtained—heat, massage, exercise and water. These can be used by any physician in any place if he has had proper instruction in their application.

The present generation has witnessed an abrupt swing from polypharmacy to the use of a few drugs—that use based on sound physiologic principles. The coming generation will witness a swing away from the use of elaborate machines in physical therapy to the use of simple agents applied by physicians with a knowledge

of their physiologic action, the pharmacology of physical therapy

If the medical student can be taught to use simple physical agents, and, if he knows how to instruct his patient in their use in the home, substantial progress will have been made. The "chronic" is the bugbear of medical practice and but few physicians have devoted real study to the plight of this distressing group, the members of which furnish the irregular cultist with most of his patients.

The time must soon come when as intensive study will be directed toward the amelioration of chronic ailments as has been devoted to diabetes, pernicious anemia and thyrotoxicosis. With the development of a program of treatment for chronic cases, such as a group of patients with arthritis, home agents being used for prolonged periods, as much may be accomplished as could be accomplished by means of prolonged sanatorium management, if not more.

The value of physical therapy is evidenced in the reports of its use in all branches of medicine. A prominent surgeon recently stated, "I look to the more general and intelligent use of physical therapy, not by physical therapists but by physicians, as the means of making the next great advance in the treatment of fractures." A distinguished internist has recently stated that physical therapy must take its place at the head of the various forms of treatment directed toward arresting the progress of cardiovascular disease. He says

There are two main reasons why, in the treatment of cardiovascular disease, physical therapy has been practically ignored in this country

First, that from lack of training or interest or both, the average American physician knows little of the types of physical therapy that may help cardiovascular patients and still less concerning the effective, detailed manner of applying treatment. Lack of interest usually accompanies lack of knowledge concerning a given subject.

Second, that following the usual rule of supply and demand, since there has been no demand for thermal stations, spas or establishments in which physical therapy is properly given in this country, relatively few such establishments are available.

Lewinsky-Corwin says

The problem of chronic disease is an important social problem which the medical profession will some day be forced to realize and meet in an adequate manner. There is no doubt that the failure on the part of the medical profession at large to employ all the means at its disposal to deal with chronic disease has been responsible for the growth of cults. The relief which many patients receive from the administration of the various kinds of physical and psychic therapy practiced by the exponents of these cults has resulted in the development of spurious practices which often are as injurious to the individual and inimical to the public health as they are lucrative.

In a recent analysis of fifty hospitalized cases of chronic arthritis in the Mayo Clinic the following facts appear. Although the average duration of these cases was 57 years, only sixteen patients had been advised by their regular physician to have massage, only eight had been given exercises, corrective or preventive, and only four had been given supervised applications of heat for a period longer than two months. About half of this group had been sent to spas or other sanatoriums, which would indicate that the importance of physical therapy had been partially recognized.

The foregoing would seem to indicate that every medical graduate should have received some instruction

in physical therapy. At Northwestern University Medical School, in the eleven lectures allotted to physical therapy two are given to a review of physics of electrical and radiant energy.

The subject must then be approached not as a specialty but as a part of general medicine—not, as some one has said, by a fragment of an educator addressing himself to a fragment of a student on a fragment of a subject. Furthermore, physical therapy must be coordinated so that it will not be independent but correlated with the regular course in therapeutics.

To demonstrate the beneficial role of physical therapy, clinical dispensary and hospital physical therapy departments must be established. These departments should be reference departments. All cases would come from other clinical departments, the necessary laboratory and clinical examinations having been made. The patient would be accompanied by a request for treatment, to be prescribed by the referring physicians or the physicians of the physical therapy department, and executed by technicians who should be graduates of a school approved by the American Physiotherapy Association.

This department would be under the division of medicine with the director a member of that division and having the qualifications suitable for the rank of associate or assistant professor.

As the clinical departments of the medical school become familiar with the activities of the physical therapy department, the medical student will be taught physical therapy in all the clinical departments with the burden on the department of physical therapy proper to demonstrate the technique and detailed administration of physical agents.

It is also desirable to have a physicist in this department or have some direct connection with the department of physics. In the physical therapy department of Northwestern University Medical School we have a lecturer on applied physics, who gives two lectures on these subjects each year to the undergraduates. He also aids in the solution of research problems that are submitted to the physical therapy department by other clinical departments. In the last year some of these have been a method of measuring dosage of ultraviolet radiation in skin diseases, the method and amount of high frequency current to be used in an eye operation, the method for the use of high frequency currents in nose and throat cases, and an electrical cutting device for the genito-urinary department and for the neurologic division.

The dispensary clerks come in contact with these problems also and thus appreciate the value of a knowledge of the physics of these subjects.

After much experimenting at the Northwestern University Medical School, extending over six years, we believe that this subject can be taught only with a minimum of eleven lectures. This does not mean that a recommendation of this number of hours has been adopted as a requisite by the Council on Physical Therapy. This should be given to the junior class. The subjects of these lectures cannot be given in detail in this paper, but the Council on Physical Therapy will furnish a synopsis of these lectures on request. It is a required course for the whole junior class. The textbook is the Handbook of Physical Therapy, edited by the Council on Physical Therapy and published by the American Medical Association.

The object of these lectures is to impress the medical student with the use of simple agents of physical therapy and to prescribe these as he would drugs. In order to make this prescribing possible, we have directions mimeographed for the home use of heat, massage and exercises. The importance of a program of treatment is outlined, where instructions in the use of these physical agents are given to the patient and some member of his family. The medical student is also taught the physics of electricity and radiation. As these topics are each the subject also of a clinical lecture, the medical student will be enabled to judge the value of these machines and lamps himself and not have to take instruction from the manufacturers of such apparatus.

In the senior year, students in groups of two or four spend eight periods of two hours each in the physical therapy department of our dispensary. Here forty patients are treated daily. The medical students here actually observe the uses of these physical agents.

MODEL "C" KROMAYER LAMP ACCEPTABLE

The Hanovia Chemical and Manufacturing Company has submitted for the Council's consideration a recent addition to its line called the Model "C" Kromayer Lamp. The company claims that this lamp is designed especially for irradiation of various body cavities. Several sizes and shapes of burners are available (CR-2, CN-3, CS-4 and CU-5). The burners are of transparent fused quartz shaped in the form of applicators



Model C Kromayer Lamp with
Lowsley Wang Burner (CU-5)

closed at one end, and contain mercury and certain rare gases such as krypton, neon and xenon. At the other end they terminate in hard rubber holders $6\frac{1}{2}$ inches long and $1\frac{1}{4}$ inches in diameter. The electrodes and lead-in terminals are enclosed in the holders, and each burner and holder has its own flexible connector with terminal pins attached to the electrical control box. The box contains a step up transformer and regulating choke coil.

The light from the mercury glow completely fills the quartz tubes of the burners and, of course, the energy is emitted from the sides of the tube as well as the ends. The electrical characteristics are as follows:

110 volt 60-cycle alternating current				
Electrical current to controls				0.6 ampere
Maximum wattage				200 watts
Voltage delivered to burner				1500.0 volts
Maximum wattage in burner				100 watts
Erythema Time on Untanned	Skin (in seconds)			
Burner	CR 2	CN 3	CS 4 (Lowsley)	CU 5
First intensity	60	20	30 (Wang)	25
Second intensity	38	12	17	15

One unit was examined in a physical laboratory acceptable to the Council. The report reads:

"We have examined the spectral radiation from the tip of the Lowsley-Wang burner (CU-5) and have found that 94% of the total radiation of wavelengths shorter than, and including 3,130 Å, is concentrated in the wavelength at 2,537 Å. This is in agreement with the manufacturer's claims that 'about 90% of the therapeutic ultraviolet is concentrated in the wavelength at 2,537 Å'."

One unit was also investigated in a clinic acceptable to the Council. The clinical claims made for it by the Hanovia Chemical and Manufacturing Company were in agreement with the Council's findings. Furthermore, the advertising matter apparently conforms with the Official Rules of the Council. Therefore, the Model "C" Kromayer Lamp (including burners CR-2, CN-3, CS-4 and CU-5—Lowsley-Wang) is included in the Council's list of accepted devices.

Committee on Foods

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING
AMENDED GENERAL DECISION

RAYMOND HERTWIG.

VITAMIN CLAIMS IN FOOD ADVERTISING

Indefinite or general vitamin claims are vague, noninformative and misleading and do not permit a distinction between foods as sources of the respective vitamins. Vitamin claims shall stipulate the specific vitamin or vitamins present. Vitamins present in a food in insufficient quantity to contribute in any significant manner to the respective vitamin values of the diet do not warrant mention. It is desirable that warranted vitamin claims be expressed in appropriate terms indicative of the relative potency of the food as a source of the vitamins in the dietary schedule. Foods may be considered relatively as fair, good and excellent or rich sources of vitamins. State-ments of vitamin unitage in numerical quantities per gram (and per ounce if desired), where established, are to be encouraged on container labels and in advertising. The type of unit used should be specified. These statements shall be so expressed as not to be misleading.

Relative distribution of the vitamins in the various foods is presented in tables by Sherman (Chemistry of Food and Nutrition, fourth edition, 1932), by Rose (Foundations of Nutrition revised edition, 1933) and by a committee appointed jointly by the Lister Institute and the Medical Research Council of England (Vitamins: A Survey of Present Knowledge, 1932). These tables should serve as a guide for comparative vitamin claims for foods in advertising.

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG Secretary

JELKE GOOD LUCK THOUSAND ISLAND DRESSING

Manufacturer—John F. Jelke Company, Chicago

Description—Salad dressing containing cottonseed (or corn) oil, water, sweet pickle relish, sucrose, distilled vinegar, chili sauce, eggs, corn starch, salt, tapioca flour, mustard and paprika.

Manufacture—The ingredients in definite proportions are prepared and admixed as described for Jelke Good Luck Salad Dressing (THE JOURNAL, May 5, 1934, p. 1472).

Analysis (submitted by manufacturer) —

	per cent
Moisture	37.0
Total ash	5.3
Sodium chloride	4.6
Fat (ether extract)	42.5
Protein (N X 6.25)	1.1
Reducing sugar as invert sugar	5.1
Sucrose (copper reduction method)	4.3
Crude fiber	0.6
Carbohydrates other than crude fiber (by difference)	12.5
Titratable acidity as acetic acid	1.0
Lipoid phosphoric acid as P ₂ O ₅	0.047
Total phosphoric acid as P ₂ O ₅	0.043

Calories—4.4 per gram 125 per ounce

YEAST-RICH ARTAB

Manufacturer—Kitchen Art Foods, Inc., Chicago

Description—Mixture of cornstarch, dried yeast, sucrose, hydrogenated cottonseed oil, skim milk powder, glycerin oil of orange, and vanilla in tablet form.

Manufacture—The cane sugar, cornstarch, skim milk powder, yeast and vanilla in formula proportions are thoroughly mixed. The hydrogenated cottonseed oil, glycerin and oil of orange are

kneaded in, one half ounce portions of the dough are compressed into tablet form by means of punches and dies, the tablets are allowed to stand for twenty-four hours, wrapped in cellophane paper and packed in pasteboard boxes

Analysis (submitted by manufacturer) —

	per cent
Moisture	4.3
Ash	1.9
Fat (ether extract)	20.6
Protein (N X 6.25)	13.4
Reducing sugars as dextrose	9.8
Sucrose (copper reduction method)	12.8
Crude fiber	0.2
Carbohydrates other than crude fiber (by difference)	59.6

Calories—4.8 per gram 136 per ounce

Vitamins—By vitamin assay, the yeast ingredient contains at least 45 B units and 35 G units (Sherman) per gram

Claims of Manufacturer—One Artab block contains 3.25 Gm of dried yeast, equivalent in vitamins B and G to three moist yeast cakes, approximately 140 units of vitamin B and 110 units of vitamin G (Sherman)

SUPERB BRAND WHITE SYRUP

GOLDEN RULE BRAND WHITE SYRUP

Distributor—Tolerton & Warfield Co, Sioux City, Iowa

Packer—Penick and Ford Sales Company, Cedar Rapids, Iowa

Description—Table syrup, corn syrup base (85 per cent) with rock candy syrup (15 per cent), the same as Penick Syrup Crystal White (THE JOURNAL, April 9, 1932 p 1268) except that rock candy syrup is used in the packing of this brand instead of cane sugar syrup, as is used for packing Penick Syrup Crystal White

STOKELY'S FOR BABY SPECIALLY PREPARED STRAINED VEGETABLE SOUP

SEASONED WITH SALT

Manufacturer—Stokely Brothers & Company, Inc, Indianapolis

Description—Blend of sieved carrots, peas, spinach, celery, potatoes, lima beans and tomato juice with beef broth, rice and barley flours, slightly seasoned with salt, largely retains the natural minerals and vitamins

Manufacture—Good quality carrots and potatoes are washed, peeled, finely cut and sieved in a steam atmosphere through a screen with openings of a size to produce the desired fineness and texture. Medium size canned peas and small green canned lima beans are similarly sieved. Fresh spinach whenever available, is inspected, trimmed, washed, cut and sieved. If fresh spinach of high quality is not available, Stokely's Specially Prepared Strained Spinach is used. Celery stalks are cleaned and ground to medium fineness. The tomato juice is prepared to retain largely its natural vitamin content. The beef broth per pint contains approximately the meat extractives from a pound of lean beef and a portion of bone. The beef broth, vegetables barley and rice flours, and salt in definite proportions are thoroughly mixed, heated and filled into enamel lined cans, which are sealed and processed

Analysis (submitted by manufacturer) —

	per cent
Moisture	85.0
Total solids	15.0
Ash	1.4
Sodium chloride	0.8
Fat (ether extract)	0.1
Protein (N X 6.25)	3.0
Reducing sugars as dextrose	1.0
Sucrose (copper reduction method)	0.5
Crude fiber	0.4
Carbohydrates other than crude fiber (by difference)	10.0
Alkalinity of ash (cc normal acid per gram ash)	1.8
pu	5.7

Calories—0.5 per gram 14 per ounce

Vitamins—The natural vitamin content is retained in large measure in the manufacturing process by the use of equipment and procedure which exclude incorporation of air. The vegetable material is exposed to steam only.

Claims of Manufacturer—Supplementary to the infant milk diet, and valuable for children and adults on soft diets. Has smooth consistency and supplies desirable bulk without rough-

ness. The straining renders the nutrient content readily available for digestion. Scientifically prepared to retain in high degree the natural flavor, mineral and vitamin values. Seasoned to bring out full flavor and packed in enamel lined cans. Requires only warming for serving.

CAREY-IZED SALT IODIZED PIONEER SALT IODIZED

Manufacturer—The Carey Salt Company, Winnfield, La

Description—Table salt containing 1 per cent carbonate of magnesia and 0.02 per cent potassium iodide

Manufacture—Carey's Free Running Salt (THE JOURNAL, Aug 26, 1933, p 676) is admixed with 1 per cent magnesium carbonate and 0.02 per cent potassium iodide

Claims of Manufacturer—This iodized salt is for all table and cooking uses of salt. The magnesium carbonate tends to preserve its free running qualities. The iodine in the salt aids in preventing goiter caused by insufficient iodine in the diet. Used daily as the only salt on the table and in cooking, it richly supplements the iodine of diets deficient in that element. Does not cake or harden in the package.

FIVE-O CHOCOLATE FLAVORED DRINK BASE KRIM-KO CHOCOLATE FLAVORED DRINK BASE

Manufacturer—Krim-Ko Company, Chicago

Description—Drink base for preparing special beverages containing sucrose, water, chocolate and cocoa, tapioca flour, salt, agar, tartaric acid, flavored with imitation vanilla

Manufacture—The ingredients in definite proportions are heated together. The mixture is homogenized, cooled, packed in five gallon tin cans and distributed only to dairies and licensees for the preparation of special Krim-Ko beverages

Analysis (submitted by manufacturer) —

	per cent
Moisture	23.0
Ash	1.7
Fat (ether extract)	4.9
Protein (N X 6.25)	1.9
Reducing sugars as invert sugar	39.9
Sucrose (copper reduction method)	18.5
Crude fiber	0.5
Carbohydrates other than crude fiber (by difference)	68.0
Caffeine and theobromine	0.21

Calories—3.2 per gram 91 per ounce

Claims of Manufacturer—For preparation of special Krim-Ko beverages in accordance with specific license contracts and conditions of preparation

SILVER DRIP BRAND CRYSTAL WHITE SYRUP

Distributor—Union Sales Corporation, Columbus, Ind

Manufacturer—Union Starch & Refining Co, Granite City, Ill

Description—A table syrup, corn syrup sweetened with sucrose, flavored with vanilla extract

Manufacture—Same as Pennant Crystal White Syrup, THE JOURNAL, Jan 30, 1932, page 403, except that less sucrose is used

Analysis (submitted by manufacturer) —

	per cent
Moisture	24.5
Ash	0.3
Fat (ether extract)	0.0
Protein (N X 6.25)	0.05
Reducing sugars as dextrose	30.7
Sucrose (invertase method)	7.5
Dextrins (by difference)	36.9
Titratable acidity as HCl	0.01
Sulphur dioxide as SO ₂	0.001
pu	4.8

No methods are available for accurately determining the composition of syrups of this nature, therefore the foregoing analysis is roughly approximate

Calories—3.0 per gram 85 per ounce

Claims of Manufacturer—For table use and as a carbohydrate supplement for milk modification in infant feeding

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 2, 1934

THE ESTIMATION OF VITAMIN C

The importance of a supply of antiscorbutic substances in the diet was appreciated long before the development of knowledge concerning vitamins. Scurvy was recognized as a true deficiency disease, and the belief was fortified when it became possible to develop the malady experimentally in animals and to avert or cure it by suitable dietary supplements. In the "alphabet of vitamins" the unidentified antiscorbutic factor was designated as vitamin C. On the basis of experimental and empirical clinical observation great progress has been made in the elimination of scurvy through well established principles of preventive medicine. Almost every child is now supplied with antiscorbutic foods. Infantile scurvy has all but disappeared. Recently two incidents have added to the knowledge of vitamin C. Foremost is the discovery of the chemical nature of this organic food accessory. It is clearly recognized as one of the hexuronic acids, designated as ascorbic acid—a compound that can be prepared synthetically in the laboratory. The other contribution is the development of an indirect chemical method for the estimation of ascorbic acid in foods and tissues. This promises to enable investigators to dispense with the time-consuming biologic method of assay that has been in vogue for more than a decade.

For comparison in terms of a convenient unitage, citrus fruit juice has been used of late, in fact, the so-called international unit is based on such a standard. Now it seems destined to be supplanted by ascorbic acid itself as a standard. The product is already commercially available. According to comparative investigations by Harris and Ray¹ of the Nutritional Laboratory in Cambridge, England, 2 mg of ascorbic acid is equivalent in antiscorbutic potency to 3 cc of orange juice. This value agrees with the amount of ascorbic acid actually present in average specimens of orange juice or in "good" lemon juice, as determined by titration (from 0.6 to 0.7 mg per cubic centimeter). According to English assays, lemon juice is subject to

some variation in potency, so that the evaluation of ascorbic acid in terms of international units will depend on the quality of the lemon juice used for comparison, but taking the interpretation that the standard lemon juice means a "good" specimen showing from 0.6 to 0.7 mg of ascorbic acid per cubic centimeter on titration, ascorbic acid has a potency of 15 international units per milligram.

With the new methods of assay it has become possible to estimate the distribution of the indispensable ascorbic acid in the body. It is already known that the substance is quite widespread in various tissues and organs, in which the content is decreased whenever there is a shortage of vitamin C in the dietary intake. According to observations by Harris, Ray and Ward,² the amount of vitamin C excreted in the urine is surprisingly constant under ordinary circumstances, amounting to 30 or more mg a day. The British investigators state that if a normal individual is given a single large dose of vitamin C (for instance, 600 cc of orange juice, thirty times the reputed daily requirement), the concentration of vitamin C in the urine sharply rises, reaching in about three hours a maximum as high as, e. g., eight or ten times the "normal", it then rapidly drops again and within a day or so reaches the "normal" resting level of about 33 mg excreted daily, where it remains remarkably steady although the subject may be restricted for a week or more to a vitamin C-free diet. At present the minimum daily requirement is estimated at 1 ounce (30 cc.) of orange or lemon juice, or about 20 mg of ascorbic acid. It may become possible, by examination of the urine, to ascertain whether the supply of vitamin C falls below a safe margin, so that a diagnosis of latent avitaminosis can be made before other symptoms are apparent.

LEAD AND MULTIPLE SCLEROSIS

Perhaps the most striking manifestations of lead poisoning are those associated with an impaired nervous mechanism. Lead intoxication may be followed by a variety of neurologic symptoms, such as tremor, transient paralysis, convulsions, vertigo, temporary blindness, headache, insomnia, and mental lethargy or other disturbances. A recent report by Cone, Russel and Harwood¹ further incriminates this element as a neurotoxic substance by the suggestion that it may be an etiologic agent in multiple sclerosis of the exacerbating and remitting type. This conclusion was based on the finding of appreciable quantities of lead in the cerebrospinal fluid, brain, spinal cord and bones of a number of patients with this disease. In only a few instances did the case histories indicate the possibility of a previous exposure to undue amounts of lead, therefore there had undoubtedly occurred a slow chronic absorp-

² Harris L. J., Ray Surendra N. and Ward Alfred. The Excretion of Vitamin C in Human Urine and Its Dependence on the Dietary Intake. *Biochem J.* 27: 2011 (No. 6) 1933.

¹ Cone William, Russel Colin and Harwood R. U. Lead as a Possible Cause of Multiple Sclerosis. *Arch Neurol & Psychiat* 31: 236 (Feb.) 1934.

¹ Harris L. J. and Ray Surendra N. Standardization of the Antiscorbutic Potency of Ascorbic Acid. *Biochem J.* 27: 2016 (No. 6) 1933.

tion of amounts too small to produce toxic symptoms. In several instances the appearance of the acute symptoms was preceded by some metabolic change caused by severe infections or by pregnancy and lactation. This was explained by the assumption that the lead which had been absorbed in earlier life had been stored, the subsequent metabolic changes caused its release in toxic amounts. That the foregoing explanation may be tenable is evident from a survey of reports in the literature describing the ubiquity of the distribution of lead, the ease with which it is absorbed, and the behavior of this element in the animal organism.

According to recent analyses,² many common foods, particularly fruits and vegetables which have been sprayed with insecticides containing lead, may contain small amounts of lead. Cognizance of this fact has resulted in the placing of a limit of 2 parts per million as the permissible maximum lead content of foods.³ Drinking water, cooking utensils, fumes, soot, dust particles and paint also may serve to introduce small quantities of lead into the body. Obviously, individuals engaged in occupations such as mining, plumbing and painting, which necessitate the constant handling or manipulation of material containing lead, may absorb additional amounts of this element. Thus it is evident that exposure to lead in varying quantities is inevitable under average modern living conditions. Lead may be absorbed readily from the respiratory and gastrointestinal tracts, and possibly also from the skin.⁴ After absorption it is apparently converted into a colloidal lead phosphate, transported as such in the general circulation to all parts of the body, and ultimately excreted or stored. Excretion may occur directly into the intestine or by way of the bile, the urine or possibly the skin. The amount of lead appearing in the excreta varies directly with the degree of exposure.² Mexicans living under "primitive" conditions and presumably subject to a minimal exposure excrete approximately 0.11 mg of lead daily in the feces and 0.014 mg per liter of urine whereas Americans, on the average, excrete approximately twice this amount. Individuals exposed to undue amounts of lead because of occupation may show an excretion from ten to twenty times greater than the average. The fact that appreciable quantities of lead appear in the urine of "normal" man shows conclusively that this element is absorbed into the blood stream and may come in contact with all body tissues. The available evidence indicates that lead may be retained temporarily by many tissues and that it may be deposited for prolonged periods in the bones. Ordinarily, lead stored in the bones remains inert but, as a result of certain stimuli, may be mobilized and appear in the circulation in a soluble form. The analogy between lead and calcium

in this respect is striking. Apparently the factors controlling the mobilization of calcium also influence that of lead. Indeed, it has been demonstrated recently⁵ that the production of an experimental acidosis in neurologic patients by the administration of ammonium chloride induces a decided increase in the amount of lead excreted in the urine and, in some instances, causes the appearance of detectable amounts in the cerebrospinal fluid. This can be most logically explained by assuming that a mobilization of stored lead has occurred. Thus there are indications that a slow, insidious accumulation of lead in the human organism may occur much more frequently than has been suspected and that the stored lead may serve as a potential etiologic agent in multiple sclerosis.

THE INTERPRETATION OF ERYTHROCYTE COUNTS

A recently published series of observations on the blood of healthy persons by Walters¹ at the University of Kansas offers some features for careful consideration by the physician who deals with blood examinations. The erythrocyte count, quantity of hemoglobin and volume of packed cells in eighty healthy men between the ages of 20 and 30 and determined after a half hour period of inactivity in the recumbent position were compared with those of eighty other subjects sampled after random uncontrolled activity. Resting subjects showed a significantly lower red cell count, hemoglobin and packed cell volume. Similar observations were made on twenty men, first after random activity and then one hour later after complete muscular inactivity in the recumbent position. Red cell count, total hemoglobin and total volume of packed cells showed a significant decrease following inactivity, while corpuscular volume, corpuscular hemoglobin and corpuscular hemoglobin concentration did not undergo any significant change.

It is not unusual for clinicians to make their diagnostic blood examinations while the patients are at complete rest. The possible influence of the enforced inactivity needs to be taken into account in the interpretation of the erythrocyte and hemoglobin observations. This is probably true also in relation to older persons of extremely sedentary habits, who are notably likely to exhibit low "blood counts" and thus present apparent aspects of mild anemia. There is nothing fundamentally new in the evidence that muscular activity, even for short periods of time, results in notable increases in circulating erythrocytes. The mechanism involved is fairly well understood. The spleen acts as a storage depot capable of increasing the oxygen-carrying capacity of the blood by the extrusion of considerable quantities of erythrocytes.

² Kehoe, R. A., Thamann, Frederick and Cholak, Jacob. On the Absorption and Excretion of Lead (a series of six articles). *J. Indust. Hyg.* 15: 257 (Sept.) 1933.

³ Committee on Foods. Tolerance for Arsenic, Copper and Lead in Foods. *J. A. M. A.* 101: 1483 (Nov. 4) 1933.

⁴ Aub, J. C., Fairhall, L. T., Minot, A. S. and Reznikoff, Paul. Lead Poisoning. *Medicine* 4: 1 (Feb. Mar.) 1925.

⁵ Rabinowitch, I. M., Dingwall, Andrew and Mackay, F. H. Studies on Cerebrospinal Fluid. II. The Occurrence of Lead in Cerebrospinal Fluid. *J. Biol. Chem.* 103: 207 (Dec.) 1933.

¹ Walters, O. S. The Erythrocyte Count, Quantity of Hemoglobin and Volume of Packed Cells in Normal Human Subjects During Muscular Inactivity. *Am. J. Physiol.* 105: 118 (April) 1934.

The lower figures after inactivity indicate an absolute decrease in circulating erythrocytes, owing to withdrawal of cells into storage. It has been alleged that the normal organism has a tendency to maintain the lowest degree of circulatory activity consistent with its requirements at any given time and will accordingly withdraw blood into storage areas whenever possible. Walters avers that the decreased red cell content in resting persons probably represents the converse of the erythrocytosis that occurs in exercise or emotion, both types of adjustment reflecting a delicate balance, which at all times appears to adapt the oxygen-carrying capacity of the circulating blood to the requirements of the tissues.

Current Comment

PHARMACOPEIAL VITAMIN
STANDARDIZATION

Elsewhere in this issue (Miscellany, page 1877) appears a comprehensive statement on standardization of vitamins issued by the Committee of Revision of the U. S. Pharmacopeia. The committee intends to issue interim revisions. The first of these has just been promulgated and deals with the methods and potencies of vitamin assay for cod liver oil. The new standards become official Jan. 1, 1935. It may be recalled that in the present Pharmacopeia there are two types of cod liver oil described: one that requires no assay and another that requires an assay of the vitamin A but not the vitamin D content. Even in the latter the vitamin A limits are low. For this reason the Council on Pharmacy and Chemistry has found it necessary to examine meticulously the protocols of assay of various accepted brands of cod liver oil. In each succeeding issue of *New and Nonofficial Remedies* it may be noted that the vitamin potencies of this or that accepted product have been increased as better methods of manufacturing technique have been developed. Also, supplies of cod liver oil have been found in which the vitamin activity is many times greater than that which was thought possible several years ago for an unfortified cod liver oil. In conformity with the progress for international standards, the new standards for the Pharmacopeia employ international units. These units are based on comparisons of the vitamin A and vitamin D activity of the oil to be assayed with a known reference oil. Using this method, the Committee of Revision has issued an order that all cod liver oil, labeled as such, which is sold in the United States shall have as minimum standards for vitamin A not less than 600 international units and for vitamin D not less than 85 international units per gram. This is approximately equal to 430 A. D. M. A. units or U. S. P. X units of vitamin A per gram or 32 Steenbock units of vitamin D per gram. It will thus be seen that cod liver oil in order to pass these minimum potencies must be of high grade. Some of the brands that have flooded the cheaper drug market must be considerably improved or they will cease to be marketed legally. Until the new U. S. P. standards are thoroughly established, however, those

who wish to avoid products of doubtful potency should confine their prescriptions to the brands that have been found acceptable by the Council on Pharmacy and Chemistry. Anticipating the action of the revision committee, the Council on Pharmacy and Chemistry at the last meeting issued a comprehensive statement on cod liver oil preparations which was published in the minutes. The Council requires that cod liver oils accepted for N. N. R. must have a vitamin potency of at least 850 vitamin A units per gram and 85 vitamin D units per gram when tested according to the revised method. It would serve physicians well to read the Council action in the light of the recent promulgation of cod liver oil standards.¹ The new U. S. P. standards do not cover products that have been fortified by the addition of viosterol or have been modified in such a way as to be sold as concentrates either in liquid or in tablet form. The average dose of cod liver oil as defined by the result of a cod liver oil questionnaire sent to pediatricians by the Council is three teaspoonfuls daily. The Council held at that time that the dosage contemplated the use of an oil having the potency of at least 400 U. S. P. units of vitamin A per gram, and at least 13.3 units (Steenbock) of vitamin D per gram. The pharmacopeial revision still recommends a dose of three teaspoonfuls daily for an infant. Calculated strictly under the new standards, one teaspoonful of cod liver oil gives approximately 310 vitamin D units and 2,200 vitamin A units (revised 1934 units), an increase in dose of vitamin A of approximately 40 per cent and vitamin D of approximately 240 per cent as compared with the hitherto accepted dosage. Physicians would do well to bear this in mind. The Committee on Revision and the Special Committee on Vitamin Standards are to be commended for their untiring efforts to place U. S. P. cod liver oil on a sounder basis.

THERAPEUTICS

With this issue *THE JOURNAL* begins a series of articles on therapeutics representing the methods of treatment used in the Cook County Hospital, Chicago, one of the largest medical institutions in the world. The responsibility for furnishing guidance to interns in large hospitals rests on the attending staff. Innumerable problems arise in the treatment of disease which demand the most careful consideration. It would no doubt be better if standing orders for routine methods could be eliminated entirely and every case considered wholly on its merits. However, in large institutions such orders are necessary because of the desirability of prompt action toward the relief of patients. The outlines of treatment that are included in the new series of articles on therapeutics represent the conclusions of conferences in which members of the staff representing various specialties have joined to give of their best thought and experience. An attempt has been made to limit the number of alternative procedures as much as possible. These outlines of treatment are not intended to be adopted in toto by other institutions but are merely suggestions based on successful results. Because

1. The minutes of the Council meeting appeared in *THE JOURNAL*, April 21, 1934, p. 1293. Reprints of this report will be sent to physicians on request.

of the number of men who contributed to the development of these outlines of therapy, it has been impossible to assign individual credit. It is understood that the outlines have been edited by the director of therapeutics in the hospital and that the entire staff bears a share of the responsibility for most of the procedures included.

Association News

THE CLEVELAND SESSION

Luncheon of the Phi Chi Fraternity

The Phi Chi Fraternity will hold a luncheon Thursday, June 14, at the Statler Hotel. The assembly will be addressed by Eben J. Carey, professor of anatomy and dean of the Marquette University Medical School, Milwaukee.

Banquet of Section on Gastro-Enterology and Proctology

The annual banquet of the Section on Gastro-Enterology and Proctology will be held at the Hotel Cleveland at 6:30 p. m., Wednesday, June 13.

Beware of Speed Traps

A physician who has evidently had some unpleasant experiences desires that those who drive their own cars to the Cleveland session be warned to keep under speed limits in all suburban areas around the city of Cleveland. Officers patrolling suburban roads do not ride on motorcycles but drive Ford cars and are said to be vigilant in arresting those who drive at a speed in excess of the ordinary limits.

MEDICAL BROADCASTS

National Broadcasting Company

The American Medical Association broadcasts on a coast-to-coast network each Monday afternoon from 3:45 to 4 o'clock. Central daylight saving time (3:45 Eastern standard time, 2:45 Central standard time, 1:45 Mountain standard time, and 12:45 Pacific standard time). The talk on June 11 from Cleveland will be broadcast at 6 o'clock Eastern daylight saving time. The next two broadcasts will be as follows:

June 4 Highway Hazards W. W. Bauer M.D.
June 11 The Common Cold Wilson G. Smilie M.D. (from Cleveland)

The National Broadcasting Company talks will be discontinued for the summer with the talk from Cleveland on June 11.

Columbia Broadcasting System

The Association broadcasts on a Western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4:30 to 4:45 Central daylight saving time. The June 14 broadcast will be from Cleveland from 4 to 4:15 p. m., Eastern daylight saving time. The next three broadcasts will be as follows:

June 7 The First Month W. W. Bauer M.D.
June 14 Medicine Marching Forward Morris Fishbein M.D. (from Cleveland)
June 21 Mischievous Misconceptions W. W. Bauer M.D.

Chinese Medicine—The story of medicine in China began in the hoary past. Her medical art certainly was well developed as early as 206 B. C. The founders were emperors and statesmen. The record is carried on from the standpoint of philosophers, with keen, logical reasoning, in which real intelligence and culture much labor and some truth are shown. Her ecclesiastics have definitely added a peculiar quota to the narrative, her pseudoscientists, in alchemy and astrology, have been most influential in contributing material, her magicians, exorcists, geomancers, necromancers, etc., have made the story turbid and unnatural, humbugs, coolies, quacks, scoundrels and deceivers have added a sinister note to the record—Morse, W. R. Chinese Medicine, New York, Paul B. Hoeber, Inc., 1934.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

State Medical Election—Dr. Robert A. Peers, Colfax, was chosen president elect of the California Medical Association at its annual meeting, May 2, and Dr. Clarence G. Toland, Los Angeles, was installed as president. Dr. Emma W. Pope, San Francisco, was reelected secretary. The next annual meeting of the association will be held at Yosemite.

University News—The University of California, cooperating with the Metropolitan Life Insurance Company, began a practical training course for health officers, May 14, to continue twelve weeks. Participants in the course have access to well organized urban and rural health departments, where practical field observation and training are available and biometric and bacteriologic laboratory facilities are at hand.

Society News—The Hollywood Academy of Medicine was addressed by Dr. Sterling Bunnell, San Francisco, May 17, on "Reconstruction of the Hands." Papers were presented before the Los Angeles Surgical Society, May 11, among others, by Drs. Charles E. Phillips on "Myoma of the Stomach," and Rudolph Marx, "Effect of Hysterectomy on Endocrine Balance."—Dr. John D. Camp, Rochester, Minn., addressed the San Francisco County Medical Society, May 8, on "Roentgenologic Findings in Hyperparathyroidism."—At a joint meeting of the Solano County Medical Society and the Napa-Solano County Dental Association, May 8, in Vallejo, Dr. Anthony B. Diepenbrock and Bertram F. Coleman, DDS, San Francisco, discussed focal infection.

COLORADO

Society News—The Medical Society of the City and County of Denver was addressed May 15, by Drs. Henry W. Averill, Evans, on "The Common Cold," Charles A. Ringle, Greeley, "Otitis Media," and Charles B. Dyde, Greeley, "Quinotic Medicine."—Dr. William F. Spaulding, Greeley, presented a case report on hemolytic icteric anemia. The program was presented by the Weld County Medical Society.

Medicolegal Banquet—The physicians and lawyers of Denver held their annual banquet at the Denver Country Club, April 17, under the auspices of the Denver Bar Association. Dr. Walter W. King was toastmaster for the physicians and George C. Manly, dean emeritus, law school of the University of Denver, for the lawyers. Benjamin C. Hilliard Jr. spoke on "The Doctor in the Courtroom" and Dr. Arthur W. Stahl, "The Lawyer in the Hospital." Other speakers included Dr. John W. Ames, Dr. James R. Arneill, William Hutton and Edward King.

CONNECTICUT

Personal—Dr. Felix F. Tomaino has been appointed health officer of Danbury to succeed the late Dr. John J. Mayerick.—Dr. Theodore H. Sills has been appointed health officer of Newington.

Society News—Dr. Howard Fox, New York, addressed the Bridgeport Medical Society, April 3, on common skin diseases.—Dr. Graeme M. Hammond, New York, addressed the Stamford Medical Society, April 17, on "Suggestions in the Treatment of Epilepsy," and Dr. William P. Healy, New York, "Precancerous Lesions of the Vulva and Cervix."

GEORGIA

Society News—Speakers before the Fulton County Medical Society, May 3, included Drs. Rudolph A. Bartholomew and Emmett D. Colvin on "Advantages of Paraldehyde as a Basic Anesthetic Agent in Obstetrics." Dr. Kenneth R. Bell, Atlanta, presented a paper on "Cholecystography: Advantages of Intravenous Administration of the Dye" before the society, May 17.

ILLINOIS

State Medical Election—Dr. Charles S. Skaggs, East St. Louis, was installed as president of the Illinois State Medical Society at its annual meeting in Springfield, May 17. Dr. Charles B. Reed, Chicago, was chosen president-elect. Dr. Harold M. Camp, Monmouth, was reelected secretary.

Rockford has been designated as the place of the next annual meeting, and the date tentatively set for May 21-23

Society News—Speakers before the Adams County Medical Society in Quincy, May 14, were Dr Frank J. Jirka on health department activities, H. J. Shaughnessy, Ph.D., the doctor and the diagnostic laboratory, and Dr Robert H. Woodruff, mortality trends and vital statistics.—The Winnebago County Medical Society conducted its fourth annual clinical program at St. Anthony's Hospital, Rockford, May 2, with the following participants, among others: Drs. David S. Hillis, Chicago, "Problems of Pregnancy", Theodor Lang, Rockford, pathologic demonstration, Robert A. Black, pediatrics, Max S. Wien, Chicago, clinic on dermatology, Henry W. Meyerding, Rochester, Minn., orthopedic demonstration, and Aaron Arkin, Chicago, illustrated demonstration of lesions of gastro-intestinal tract

Chicago

Society News—Speakers before the Chicago Society of Internal Medicine, May 28, included Drs. William C. Buchbinder on "Relief of Thyrotoxicosis by Thyroidectomy", Willis Stanley Gibson and Edward J. Denenholz, "Rheumatic Heart Disease in Children", Louis Leiter, "Hypertension and Nephritis", Richard H. Jaffe, "The Neutropenic State", and James A. Connor, "Amebiasis".—At the annual meeting of the Chicago Tuberculosis Society, May 10, Dr. Ellis B. Freilich was elected president, Dr. Ralph B. Bettman, vice president, and Dr. Richard M. Davison, secretary.—The Cook County Physicians Association was addressed, May 25, by Drs. Samuel J. Fogelson and Hugo O. Deuss on medical economics

INDIANA

Society News—Dr. Ralph W. Elston, Fort Wayne, spoke before the Whitley County Medical Society in Columbia, May 8, on treatment of fractures.—At a meeting of the Knox County Medical Society in Vincennes, May 8, Dr. Clark E. Stewart, Vincennes, discussed "Insulin in Malnutrition".—The Jefferson County Medical Society was addressed, April 24, in Madison, by Dr. Lester A. Smith, Indianapolis, on "X-Ray Diagnosis of Childhood Tuberculosis".—The Elkhart County Medical Association heard Dr. Matthew Winters, Indianapolis, discuss "Summer Diarrhea and Gastro-Intestinal Upsets" at its meeting in Goshen, May 10.—Dr. Frank M. Gastineau, Indianapolis, addressed the Carroll County Medical Society in Camden, May 11, on "Common Skin Diseases in Adult Life".—At a meeting of the Randolph County Medical Society in Winchester, May 14, Dr. Alois B. Graham, Indianapolis, spoke on "Office Treatment of Anorectal Diseases".—The Gibson County Medical Society was addressed in Princeton, May 14, by Dr. Robert H. Crawford, Indianapolis, on "Pernicious Anemia and Its Treatment".—Dr. William R. Cubbins, Chicago, discussed "Injuries Around the Knee Joint" before the La Porte County Medical Society in La Porte, May 17.—At the one hundred and thirty-second semiannual meeting of the Union District Medical Association in Oxford, April 26, the speakers included Dr. Goethe Link, Indianapolis, on "Mild Chronic Thyroid Disease", Dr. Elmore B. Tauber, Cincinnati, "Commoner Skin Diseases", Dr. Vieri C. Griffis, Richmond, "Treatment of Harelip and Cleft Palate", and Albert Stump, attorney for the state medical association.—Drs. Karl R. Ruddell and Norman S. Loomis, among others, addressed the Indianapolis Medical Society, May 15, on "Tuberculosis of Abdominal Viscera"

IOWA

Society News—Dr. Erwin von Graff, Iowa City, spoke on ectopic pregnancy before the Washington County Medical Society in Washington, April 3.—Members of the Pottawattamie County Medical Society, all of Council Bluffs, presented the program before the Woodbury County Medical Society in Sioux City, April 19, speakers were Drs. Arnold L. Jensen on the traumatic abdomen, Gerald V. Caughlan, transurethral prostatic resection, and Raymond M. Rice, the education of the diabetic patient

Alumni Reunion—Announcement is made of a reunion, June 18, of the graduates of medicine, dentistry, pharmacy and nursing of the old college of Physicians and Surgeons of Keokuk Medical College and the combined institutions, which was in 1908 consolidated with Drake University and later with the University of Iowa. This will be the fourth reunion to be held in Keokuk, the first being in 1927, the second in 1928 and the third in 1930 which was attended by 20 per cent of the living graduates. Dr. William Rankin is chairman of the committee

KANSAS

Changes in Health Officers—Dr. Tarlton A. Hood, Garnett, has been named health officer of Anderson County, succeeding Dr. John N. Carter, Jr., Dr. Darrel L. Evans, Manhattan, has been appointed health officer of Riley County, to succeed Dr. John R. Mathews, resigned. Dr. Mathews will engage in private practice in Glenwood Springs, Colo. Dr. Fred E. Harvey is now health officer of Ottawa County, succeeding the late Dr. Joseph F. Brewer

MAINE

Obstetric Meeting—The spring session of the New England Obstetrical and Gynecological Society convened in Portland, May 16, under the presidency of Dr. Alonzo K. Paine, Boston. In addition to operative clinics, Dr. Harold J. Everett conducted a prenatal clinic, and Dr. Theodore C. Bramhall one on trichomonas vaginalis. The following physicians presented papers:

Thomas A. Foster and Carl M. Robinson Congenital Pyloric Stenosis
Walter F. W. Hay Extra Uterine Pregnancy
Clinton N. Peters and Langdon T. Thaxter, Pyelonephritis in Pregnancy
William Holt Results of Radium Therapy in 170 Cases of Uterine Carcinoma

Sir Duncan Campbell, journalist and traveler, Glasgow, Scotland, addressed the dinner meeting in the evening

MARYLAND

Review Course for Physicians—The division of medical extension of the University of Maryland will conduct a combined review course for physicians, June 4-22. Morning lectures will deal with advances in diagnosis and treatment in subjects chiefly from the field of general medicine and surgery, with a few lectures devoted to the specialties. The afternoons will be given over to the laboratory methods. The class will be divided into groups for ward rounds, and a clinic will be held daily. A matriculation fee of \$25 will be charged all registrants of Maryland, while the charge to persons coming from other states will be \$50. The course will be limited to twenty men. Further information may be had from the dean of the medical school, University of Maryland, Baltimore

Personal—Dr. Joseph LeRoy Wright, Jessups, for the last three years physician in charge of the Maryland House of Correction, has been named warden to succeed the late Joseph A. Delaney. Dr. Henry S. Shelley, Baltimore, has been appointed to succeed Dr. Wright.—Dr. Humphrey Warren Buckler, until recently acting assistant health commissioner of Baltimore, has been appointed full time medical health officer for the city health department. Dr. William K. Skilling has been named director of the bureau of child welfare.—Dr. Kenneth B. Jones, superintendent of the District Training School (federal), Laurel, and a former superintendent of the University Hospital, has been named to succeed the late Dr. Frank W. Keating as head of the Rosewood State Training School Owings Mills. Dr. Keating has been superintendent of the institution for thirty-seven years.—Dr. Johannes Frandsen, director of the National Health Service of Denmark, recently spent several days in Baltimore, accompanied by Dr. Poul R. T. G. Guildad, orthopedic surgeon with the health service. Dr. Frandsen is touring the United States as guest of the Rockefeller Foundation

MASSACHUSETTS

State Medical Meeting—The one hundred and fifty-third annual meeting of the Massachusetts Medical Society will be held in Worcester, June 4-6, in the Hotel Bancroft and Chamber of Commerce Building, under the presidency of Dr. William H. Robey. The Shattuck Lecture will be given, Monday evening, by Dr. Warfield T. Longcope, professor of medicine, Johns Hopkins University School of Medicine, Baltimore, on "The Importance of Disturbances in Nutrition in Edematous States". Dr. Lincoln Davis, Boston, president of the Boston Medical Library, will deliver the annual discourse, Wednesday afternoon, on "The Objectives of Medical Progress". Out-of-state speakers on the program include the following physicians:

Harold D. Corbuser Plainfield N. J. Conduct of the Convalescent Stage of Anterior Polymyositis
Ross Golden New York Diverticulosis, Diverticulitis and Carcinoma of the Colon. A Roentgenologic Discussion
Hermion C. Bumpus Jr. New York Transurethral Resection of the Prostate
Clay Ray Murray New York Management of Fractures About the Ankle Joint
Homer F. Swift New York Chronicity of Rheumatic Fever
P. Brooke Bland Philadelphia Intracranial Hemorrhage in the New Born from the Standpoint of the General Practitioner

A symposium on measurement of activity in pulmonary tuberculosis will be held, Wednesday morning, by Drs. Harry S. Wagner, Pocasset, Frank H. Hunt, Mattapan, Olin S. Pettungill, Middleton, Theodore L. Badger, Boston, Jacob Kaminsky, Waltham, Gullis L. Muller, Boston, John W. Cass Jr., Boston, and William H. Ordway, Mount McGregor, N. Y. Other physicians included on the program will be

Warren E. Wheeler, Boston, The Use of the Ketogenic Diet in Pyuria
Clement A. Smith, Boston, Present Status of Vaccination Against Tuberculosis
Sidney Farber, Boston, Role of the Streptococcus in So Called Sudden Death in Infancy and Childhood
Abraham Myerson, Boston, Social Conditioning of the Visceral Activities
Henry D. Chadwick, state health commissioner, Boston, Tuberculosis As It Affects the Physician's Practice

MICHIGAN

Hygiene and Public Health—The University of Michigan announces courses in hygiene and public health to be conducted, June 25-August 3, under the direction of Dr. John Sundwall, director of the division of hygiene and public health. The courses have been designed for health officers, public health nurses, sanitary inspectors, public health laboratorians, medico-social workers, psychiatric social workers, social workers and teachers and supervisors of school health education.

Social Service Survey—Dr. Haven Emerson and Dr. Gertrude Sturges, New York, are conducting a social service survey in Detroit, under the auspices of the Council of Social Agencies and the American Public Health Association. In addition, the Wayne County Medical Society is sponsoring a similar study. Combined questionnaires for the two surveys have been issued to every member of the society, containing fifteen questions on outpatient departments and social service work. A second questionnaire was sent to the chiefs of every hospital staff, with a copy to the superintendent, regarding outpatient service with special reference to the type and amount of dispensary service available in the community. The results of the questionnaires of the county society will be tabulated and submitted to the Council of Social Agencies to aid it in this study.

MINNESOTA

Basic Science Law Violated—Stanley C. Flanning recently pleaded guilty to practicing healing without a basic science certificate at Rochester and received a suspended sentence of five months in the Olmsted County Jail, according to the state board of medical examiners. He was placed on probation on condition that he refrain from practicing in the future. Formerly in the real estate business and with no medical training, Flanning had been treating at least two patients for diabetes in his room at a Rochester hotel, the treatment consisting of injections of insulin with a hypodermic needle. He stated to the court that he had treated only these two patients and that he had been in the "business" less than three weeks.

Hospital Meeting—The eleventh annual conference of the Minnesota Hospital Association was held at the Kahler Hotel, Rochester, May 24-25. In addition to the papers dealing with nursing, group purchasing and payment of hospital care, the following speakers, among others, participated:

Dr. William A. O'Brien, Minneapolis, Necessity of Greater Cooperation Between the Medical Profession, Hospitals and Other Allied Professions
Dr. Russell M. Walder, Rochester, Use of Special Purpose Foods in the Hospital
Dr. Walter C. Alvarez, Rochester, Foods 500 People Could Not Eat
Richard E. Scammon, D.Sc., Minneapolis, Hospital Libraries
Dr. Halbert L. Dunn, Minneapolis, The Minnesota Hospital Statistical Bureau

MISSISSIPPI

Society News—Dr. William P. Robert, Vicksburg, addressed the Central Medical Society, April 3, on infantile eczema, and Dr. DeWitt T. Brock, Jackson, acute conditions in the abdomen.—Dr. Charles M. Hammond, Walls, discussed the aid of the respirator in diseases of the chest before the DeSoto County Medical Society, April 2.—Dr. Ray M. Balvat, Oklahoma City, addressed a joint meeting of the Clarkdale and Six Counties Medical Society and the Delta Medical Society in Cleveland, April 11, among others, on diagnosis and treatment of allergic diseases.—The Harrison-Stone-Hancock Counties Medical Society was addressed in Biloxi, April 4, among others, by Dr. Edwin B. VanNess, Gulfport, on roentgen therapy.—A symposium on appendicitis constituted the program of the Issaquena-Sharkey-Warrar Counties Medical Society in Vicksburg, April 10.

MISSOURI

Illegal Practitioner Fined—William J. Voss was sentenced to one year in the work house and to pay a fine of \$100, April 3, for practicing medicine without a license. The maximum penalty for this offense was imposed by Judge Butler in the court of criminal correction in St. Louis. Voss is alleged to have treated numerous persons for "eye trouble." Although he was formerly listed in the telephone directory with the classification "Dr." and was known as "Dr. Voss" at the address where he was arrested, Voss admitted that he was not a physician. He was paroled from the Colorado State Penitentiary in 1918, after having served a sentence on a charge of issuing a bogus check. A warrant was issued against him the day of his trial in St. Louis, charging him with a similar offense.

NEBRASKA

Society News—Dr. Waltman Walters, Rochester, Minn., addressed the Otoe County Medical Society, Nebraska City, May 14, on "Lesions of the Stomach and Duodenum and Their Surgical Treatment."—Drs. George W. Covey and J. Marshall Neely, Lincoln, addressed the Omaha-Douglas County Medical Society, May 29, on Erythroblastosis with Erythroblastic Tumors in the Thorax, and "Abdominal Hodgkin's Disease," respectively.

NEW HAMPSHIRE

State Medical Election—Dr. Frederic P. Lord, Hanover, was chosen president of the New Hampshire Medical Society at its annual meeting in Manchester, May 16. Dr. Clifton S. Abbott, Laconia, was named vice president and Dr. Carleton R. Metcalf, Concord, reelected secretary. The next annual session will be held in Manchester, May 14-15, 1935.

NEW YORK

Public Meeting on Cancer—The New York City Cancer Committee sponsored a public meeting on cancer at the Hall of the Bar Association, April 26. Mr. Charles C. Burlingham, president of the Welfare Council, presided and the following speakers participated: Drs. John L. Rice, Alfred E. Shipley, John C. A. Gerster, James Ewing and Francis Carter Wood, Mr. William Hodson, commissioner of public welfare, and Clarence C. Little, Sc.D., director, American Society for Control of Cancer.

Personal—Dr. Lawrason Brown, Saranac Lake, was recently appointed a member of the state board of social welfare.—Dr. Rosella C. Wilder, Buffalo, has completed fifty years in the practice of medicine, having graduated from the University of Michigan Medical School in 1884.—Dr. Wallace J. French, Pike, was the guest of honor at a luncheon given by the Wyoming County Medical Society, April 10, at Perry, in celebration of his fiftieth anniversary in the practice of medicine. A radio was presented to him.

New York City

Eighth Harvey Lecture—The eighth lecture of the Harvey Society was delivered by Detlev W. Bronk, Ph.D., Johnson professor of biophysics, University of Pennsylvania, Philadelphia, at the New York Academy of Medicine, May 17, on "The Nervous Mechanism of Circulatory Control."

County Society Library—Greater use of the library of the Medical Society of the County of Kings during 1933 was recorded in the annual report of the librarian. During the year 13,079 readers consulted 55,333 books in the library and 10,147 books were taken out for home use, all these figures being increases over the corresponding figures for 1932. This library receives 1,518 serial publications and has on its shelves 131,858 volumes.

Bridge to Displace Hospital—A new bridge in process of construction has forced evacuation of eight buildings of the New York City Children's Hospital on Randall's Island because the land on which they stand is needed for the bridge right of way, the New York Times reported recently. Eventually all buildings will be removed from the island for the development of a city park, but some will be left for the present, it was said. Dr. Sigismund S. Goldwater, hospital commissioner, reported that he hoped to transfer some of the 400 children to state institutions.

Seventh Graduate Fortnight—The seventh annual Graduate Fortnight of the New York Academy of Medicine will be held October 22-November 2 and will be devoted to consideration of gastro-intestinal diseases. Sixteen hospitals will present coordinated afternoon clinics and clinical demonstra-

tions At evening meetings, clinicians from various parts of the country will discuss various aspects of the subject. A comprehensive exhibit of anatomic, bacteriologic and pathologic specimens and research material will be shown. A complete program and registration blank may be obtained by addressing Dr. Frederick P. Reynolds, New York Academy of Medicine, 2 East One Hundred and Third Street, New York.

University News—A student recreation center has recently been completed at Long Island College of Medicine, with a \$25,000 gift to the college from the Misses Jennie A. and Cornelia Donnellon. The donors' former residence, which adjoins the college, was bought and utilized for this purpose, according to their wishes.—Dr. Julius M. Rogoff, associate professor of experimental medicine, Western Reserve University School of Medicine, Cleveland, delivered the third of a series of lectures sponsored by the department of biology of New York University at the New York Academy of Medicine, April 11, on "Studies on the Suprarenal Cortex." The fourth lecture was delivered by Dr. Friedrich Gudernatsch, visiting professor of biology at the university, on "Thyroid Actions as Exerted by Thyrogenic and Thyrotropic Substances."—Dr. Max Thorek, Chicago, made an address at Columbia University College of Physicians and Surgeons, April 7, on "A New Method of Obliterating the Gallbladder by Electrosurgical Means."—Dr. Walter T. Dannreuther, among others, gave an address at the alumni day observance of the Association of the Alumni of Long Island College of Medicine, April 28, on "Postgraduate Education in Obstetrics and Gynecology."

NORTH CAROLINA

Society News—Dr. Alfred R. Shands Jr., Durham, addressed the Rutherford County Medical Society, Forest City, April 20, on "Bone Formation and Management of Fractures."—Dr. George E. Brown, Rochester, Minn., addressed the Buncombe County Medical Society, Asheville, in March on essential hypertension.—Dr. Robert W. McKay, Charlotte, discussed pyelitis before the Guilford County Medical Society, High Point, April 5.—Dr. Rufus P. Sykes, Asheville, addressed the Randolph County Medical Society, Asheville, in March, on jaundice.—A symposium on fractures was presented before the Catawba Valley Medical Society in Morganton, May 8, by Drs. Edward W. Pluifer, Morganton, Abner M. Cornwell, and John R. Gamble, both of Lincolnton.

OREGON

Society News—Speakers at a meeting of the Central Willamette Medical Society, Eugene, April 5, were Drs. Ralph A. Fenton, Portland, on "Research on Sinus Disease," Charles T. Swecney, Medford, "Carcinoma of the Large Intestine and Its Treatment," and Irvin R. Fox, Eugene, a case of Malta fever treated by vaccine.

Anniversary Celebration—The Multnomah County Medical Society observed the fiftieth anniversary of its founding with a banquet at the Portland Hotel, Portland, May 16. The society was established June 10, 1884. Olof Larsell, Ph.D., opened the program with a history of the society. Other speakers and the titles of their papers were Drs. Andrew C. Smith, "Fifty Years of Medical Progress," Banner R. Brooke and committee, "The Old Timers," and Ralph A. Fenton "Medical Preparedness in Oregon." Dr. Alfred Kinney, the first and fiftieth president of the Oregon State Medical Society, was also present and Dr. Adalbert G. Bettman acted as toastmaster. Of the twenty-four charter members of the Multnomah society, only three survive, Drs. Simeon E. Josephi, Cortez H. Wheeler, Portland, and Arthur Dean Bevan, Chicago. Dr. Josephi, who was the first president of the society, and Dr. Wheeler, secretary from 1889 to 1891, were recently elected honorary president and secretary, respectively. Both physicians took part in the program.

PENNSYLVANIA

Hospital News—Because of a decrease in the number of patients with tuberculosis, the Free Hospital for Consumptives and White Haven Sanatorium Association announced, April 26, that its institutions will be opened to patients with other diseases, including mental ailments.

Cancer Meeting at Altoona—A conference on cancer will be held at Altoona, June 28 under the chairmanship of Dr. William H. Howell. Speakers will include Drs. George W. Crile, Cleveland, on "The Cancer Problem," Bernard P. Widmann, Philadelphia, "Value and Limitation of Roentgen Ray and Radium in Treatment of Cancer," Thomas G. Simonson, Pittsburgh, "Medical Care of the Cancer Patient," and Maxwell J. Lick, Erie, "Tumor of Testicle."

Philadelphia

Hospital News—The Association of Former Interns of the Hospital of the Protestant Episcopal Church held its second reunion at the hospital, April 27. The first was held five years ago and it is planned to continue the gatherings at five year intervals. Dr. Louis H. Mutschler was toastmaster at the banquet, which followed a day's visit to the hospital.

Society News—Speakers before the Obstetrical Society of Philadelphia, May 2, were Drs. George L. Weinstein and Maurice H. Friedman, on "Pharmacological Study of the Uterine Fistula of the Unanesthetized Rabbit," and John H. Harris and Franklin L. Payne, "Value of Irradiation in the Treatment of Ovarian Carcinoma."—Drs. Paul A. Bishop and Paul H. Schraer, among others, addressed the Philadelphia Roentgen Ray Society, May 3, on "Bone Manifestations of Chronic Fluorine."—Drs. Albert A. Martucci and George M. Dorrance addressed the Philadelphia Neurological Association, May 25, on "Diathermy of the Brain in Hemiplegic Patients" and "Management of Spinae Bifidae by Repeated Drainage of the Sac," respectively.

RHODE ISLAND

Society News—Dr. Robert Glen Urquhart, Norwich, Conn., addressed the Washington County Medical Society, April 11 on thoracic surgery.—Dr. Frederic J. Farnell, Providence, gave an address on "Topographical Problems in Brain Tumors" at the State Hospital for Mental Diseases, Howard, March 26.—Speakers at a meeting of the Providence Medical Association, April 2, were Dr. Peter Pimeo Chase, on "Cancer of the Mouth," and Charles J. Smith, D.M.D., diseases of the jaw.—Speakers before the Providence Medical Association May 7, were Drs. Thomas R. Goethals, Boston, on "The Risk to the Infant in Breech Delivery," George Elliott May, Boston, "Dehydration Therapy in the Toxemias of Pregnancy," and Milton Goldberger, Providence, "Sterility Investigations and Findings in Twenty-Four Cases."—Dr. Arthur H. Harrington, Providence, delivered an address on development of psychiatry in America at the State Hospital for Mental Diseases, Howard, May 14.

TENNESSEE

Hospital News—A seventy-five bed addition for Negro tuberculosis patients was dedicated at Oakville Memorial Sanatorium, December 10. The sanatorium is maintained by the city of Memphis and Shelby County.

Radiologic Society Organized—The Tennessee Radiological Society was organized during the annual meeting of the state medical association in Chattanooga, April 10-12. Dr. Charles M. Hamilton, Nashville, was elected president. Dr. Charles H. Heacock, Memphis, vice president, and Dr. Franklin B. Bogart, Chattanooga, secretary. The organization will not only promote radiology but endeavor to present to the profession of the state advances in the knowledge of radiology. It plans to meet yearly during the annual session of the Tennessee State Medical Association.

TEXAS

State Medical Election—Dr. Samuel E. Thompson, Kerrville, was inducted into the presidency of the State Medical Association of Texas at its annual meeting, May 17. Dr. John H. Burleson, San Antonio, was named president-elect, and Dr. Holman Taylor, Fort Worth, secretary. The next annual session will be held at Fort Worth.

Society News—Drs. Arthur C. Scott Jr. and Thelbert T. Bunkley, Temple, among others, addressed the Bell County Medical Society, Temple, April 4, on "Modern Management of Gallbladder Disease and 'Dystocia Fetal and Maternal,'" respectively.—Drs. John M. Triple and John T. Moore, Houston, addressed the Hardin-Tyler Counties Medical Society, Kountze, April 4 on diseases of the prostate and treatment of cancer, respectively.—Dr. Clarence C. Garrett, Fort Worth, among others, addressed the Tarrant County Medical Society, Fort Worth, April 3, on bromide intoxication.

VERMONT

Typhoid Epidemic—Newspapers reported May 3, that forty-six cases of typhoid had occurred at Websterville, near Barre. The infection was traced to the water used in the stricken area and it was believed contaminated material had entered from sewers through drains damaged by the severe winter. One death was reported.

Clinical Meeting—The Vermont State Medical Society held a clinical meeting in cooperation with the University of

Vermont School of Medicine, in Burlington May 4-5 Most of the meetings were held at Mary Fletcher Hospital and were attended by 145 physicians. The faculty committee in charge consisted of Drs Clarence H Beecher, Ernest H Butties and Lyman Allen

WASHINGTON

Public Health Association Formed—Following a public health institute held at Washington State College, Pullman May 4-5, the Washington State Public Health Association was formed with Dr Erval R Coffey, state health officer, as the first president. Among speakers at the institute were Dr James E Drake, Spokane, on control of diphtheria in public schools, and Holland E Wight, DDS, Yakima, on oral hygiene. Dr Platt W Covington, field representative of the Rockefeller Foundation, was the speaker at a dinner meeting.

State Eradicates Bovine Tuberculosis—The U S Department of Agriculture announces that Washington has been designated a modified accredited area in the eradication of bovine tuberculosis. Official tuberculin testing indicates that infection has been reduced to less than 0.5 per cent. Tuberculosis eradication work began in Washington in 1918 and the first county to become a modified accredited area was Waukegan, so designated in 1927. Approximately 2,000,000 tuberculin tests have been applied. Arrangements have been made for retesting in order to eliminate any remaining infection. Washington is the fourteenth state to win this recognition. The states already accredited are North Carolina, Maine, Michigan, Indiana, Wisconsin, Ohio, Idaho, North Dakota, Nevada, New Hampshire, Utah, Kentucky and West Virginia.

WEST VIRGINIA

State Medical Election—Dr Rome H Walker, Charleston, was elected president of the West Virginia State Medical Association at the annual meeting in Huntington, May 14-16. Other officers elected are Drs William W Strange, Huntington, and Robert C Hood, Clarksburg, vice presidents, Thomas M Barber, Charleston, treasurer and Mr Joe W Savage, Charleston, secretary. Wheeling was selected as the place of the meeting in 1935.

WISCONSIN

Meetings of Radiologists—The section on radiology of the State Medical Society of Wisconsin held its tenth annual meeting at the Colonial Club, Janesville, May 18-19. Dr James T Case, professor of radiology, Northwestern University, School of Medicine, Chicago, was the guest speaker. He gave an address at a banquet on "Diagnosis and Treatment of Diverticula of the Gastro-Intestinal Tract" and another at the scientific meeting on "Interesting Gastro-Intestinal Problems."

Dinner to Past Presidents—Drs James C Sargent, Edward L Tharinger and Paul M Currer, Milwaukee, gave a dinner, April 25, to past presidents of the Medical Society of Milwaukee County, with Dr Morris Fishbein, Chicago, editor of THE JOURNAL, as guest speaker. The guests were Drs William P Jobse, Lewis G Nolte, William H Washburn, Arthur J Patek, John J McGovern, Robert G Sayle, Franz Pfister, George H Fellman, Frederick A Stratton, Stanley J Seeger, Charles H Stoddard, Alfred W Gray, Henry J Granling, Ralph P Sproule, Edward L Tharinger, Charles Fidler, Harvey E Webb, Urban A Schlueter, Dexter H Witte and Mr Theodore Wiprud, executive secretary of the society, all of Milwaukee, and Dr Rock Slevster, Wauwatosa. Drs John W Coon, Stevens Point, and Louis T Jernam were unable to attend.

Society News—Dr Hugh Cabot, Rochester, Minn., was the guest speaker at the final meeting of the Milwaukee County Medical Society for the season May 11, on "War Experiences with the Royal Medical Corps." The Milwaukee Professional Men's Orchestra organized a few months ago, made its first public appearance at this meeting. Drs Hilmar G Martin and Herbert G Schmidt addressed the Milwaukee Ophthalmic Society, April 24, on "Biophysics of the Eye" and "The Elsching Intracapsular Cataract Operation" respectively. Dr Louis Hamman, Baltimore, among others, addressed the Medical Society of Milwaukee County, April 13, on "Diagnosis of Obscure Fever." Dr Benn P Churchill presented a paper on "Maxillary and Sphenoid Diseases Compared" before the Milwaukee Oto Ophthalmic Society. Dr Frederick O Tonney, Chicago, addressed the University of Wisconsin Medical Society, May 8, on the diagnosis of amebic dysentery.

GENERAL

Medical Bills in Congress—*Change in Status* H R 3768 has passed the House, changing the name of the retail liquor dealers' stamp tax in the case of retail drug stores or pharmacies to "medicinal spirits stamp tax." *Bills Introduced* H R 9675, introduced by Representative Reece, Tennessee, proposes to provide that any veteran of any war who was not dishonorably discharged, who is in need of hospitalization and is able to defray the expense therefor, may be furnished hospitalization in any Veterans' Administration facility, within the limitations existing in such facilities, on paying a per-diem fee in an amount equal to the average cost of hospitalization per patient day at the facility for the month previous. H R 9727, introduced by Representative Collins, Mississippi, proposes to authorize compensation by the United States to persons disabled by the use of improperly made Jamaica ginger.

American Proctologic Society—The thirty-fifth annual meeting of the American Proctologic Society will be held in Cleveland at the Hotel Cleveland, June 11-12. Speakers will include:

Dr William T Brockman, Greenville, S C, An Atypical or Unusual Attack of Amebiasis.
Dr Edward C Davis, Philadelphia, Is Colitis a Deficiency?
Dr Herbert T Hayes, Houston, Texas, Perirectal Streptococcal Cellulitis.
Dr Rufus C Alley, Lexington, Ky, Rectal Stricture—New Developments in Etiology.
Dr Curtice Rosser, Dallas, Texas, Relation of Anal Fistula to Development of Cancer.
Dr Charles E Howard, Cincinnati, Rectosigmoid Cancer with Extensive Gangrene.

Dr Thomas E Jones and his associates at the Cleveland Clinic Hospital will give an operative clinic and lectures Tuesday afternoon.

Medical Historians' Meeting—The American Association of the History of Medicine will hold its annual meeting in Cleveland, June 11, at the Hotel Carter, in afternoon and evening sessions. The following papers, among others, will be presented:

Dr Victor Robinson, New York, Karl Koller and Anesthesia.
Dr Richmond C Holcomb, Highland Park, Pa, Ruiz Diaz de Isla and the American Origin of Syphilis.
Dr Edward B Krumbhaar, Philadelphia, William Hunter of Newport.
Dr Joseph L Miller, Chicago, Experimental Methods of Claude Bernard.
Otto Glasser, Ph D, Cleveland, Roentgen's Ideals as Reflected in His Letters.
Dr Logan Clendenning, Kansas City, Laryngological Causes of the Great War.
Dr William Gerry Morgan, Washington, D C, Shakespeare's Knowledge of Medicine.

Officers of the association are Drs James B Herrick, Chicago, president; Charles N B Camac, New York, and William S Middleton, Madison, Wis., vice presidents, and Edward J G Beardsley, Philadelphia, secretary.

Conference of Health Officers—The Conference of State and Provincial Health Authorities of North America will be held at the U S Public Health Service Building in Washington, D C, June 5-6. The speakers will include:

Dr Herman N Bundesen, Chicago, Chicago Epidemic of Amebic Dysentery.
Dr George W McCoy, Washington, Epidemiologic and Laboratory Investigations of Amebic Dysentery.
Dr Eugene L Bishop, Nashville, Tenn, Tennessee Valley Health Program.
Arnold Bennett Hall, LL D, of the Brookings Institution, Washington, Public Administration Trends in Relation to Public Health.

Following this meeting will come the thirty-second annual conference of state and territorial health officers with the U S Public Health Service. The program includes the following:

Dr James P Leake, Washington, Epidemic Encephalitis.
Dr Dean Lewis, Baltimore, President American Medical Association, The Quality of Professional Services.
Arthur W Hedrich, Sc D, associate in biostatistics of Johns Hopkins University School of Hygiene and Public Health, Baltimore, Recent Changes in the Incidence and Fatality of Smallpox in the United States.

CORRECTION

The Pay of a First Lieutenant—In THE JOURNAL, May 12, page 1624, under "Physicians Wanted for Civilian Conservation Corps," it was stated that the pay and allowance of a first lieutenant are about \$250 a month. A first lieutenant of the Medical Reserve Corps attached to one of these camps considers that statement misleading. While pleased with the work with regard to the pay he says: "The actual pay that I receive is \$166.47 (this includes the recent 5 per cent increase). From this sum I must pay about \$15 for mess. The approximate pay of \$250 referred to in the article refers only to those officers who have a dependent wife. From this sum there is a deduction of 10 per cent according to the federal economy program."

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 6, 1934

Pasteurized Versus Raw Milk

It might be supposed that the question of raw versus pasteurized milk had been settled by the practically unanimous pronouncement of the medical profession. But a number of important persons—politicians, agriculturists and even the eminent professor of botany at Oxford, Sir Frederick Keeble, who was controller of the horticultural and food products department of the Board of Agriculture, have attacked the orthodox view in the columns of the *Times*. Their main arguments are that pasteurization impairs the nutritive qualities of milk, that the tuberculosis admittedly conveyed to man by raw milk should be abolished by eradication of the disease in cattle, that diseases other than tuberculosis conveyed by raw milk are unimportant because of their rare occurrence and that there is lack of agreement in the medical profession as to necessity for pasteurization. Lord Dawson, president of the Royal College of Physicians, has replied to these arguments as follows. The excellent project for the eradication of tuberculosis in cattle will take many years. The diseases other than tuberculosis conveyed by raw milk are serious and not infrequent, e. g., septic sore throat, scarlet fever and undulant fever. Within the medical profession there is a consensus for pasteurization perhaps unfamiliar to politicians. The fellowship of the Royal College of Physicians embraces all branches of medicine—not only clinical medicine but also pathology, bacteriology and public health. At the comitia held April 26 the following report was unanimously passed: 1 A daily ration of milk is important for the growth and health of children. 2 The risk of tuberculosis and other diseases following the consumption of raw milk is considerable. 3 Such risk can be obviated by the use of milk submitted to low temperature pasteurization. 4 Such pasteurization does not materially interfere with the nutritive value of milk. The college, while realizing that milk should be produced from cows free from infection and under conditions of cleanliness, recommends (a) that local health authorities should be given power to require that milk sold within their areas should be pasteurized under official control, (b) that steps should be taken to permit the pasteurization and sale, as such, of milk from tuberculin-tested herds, and (c) that, in areas where adequate pasteurization is now impracticable, milk should be boiled before use. Also butter has entered into the controversy. Dr J A Arkwright, bacteriologist of the Lister Institute, said that almost all imported butter, which in 1932 constituted 88 per cent of that consumed in this country, has been rendered free from risk of infection by high temperature pasteurization of the cream before churning. Some English butter has been treated in the same way. Dr Arkwright also pointed out that although living tubercle bacilli may be present in fresh or salt butter or cheese recently made from raw milk, they lose their vitality in these products in from one to eight weeks.

The Milk Marketing Board (a body appointed by the government to control the milk industry) has produced a purer milk scheme, which will come into operation in October, when the new contract period begins. It is proposed to prescribe a standard of purity for milk, and producers who conform to it will receive a bonus on every gallon of milk. Funds for the payment of this bonus will be provided by the levy of a small sum on all producers of milk. The new grade will be termed "accredited milk." The farm, the cow and the milk will be subject to expert examination by local health authorities. The object is not to produce a highly superior grade of milk of

limited quantity but to raise the general standard of milk. It is thought that the majority of producers, attracted by the bonus, will conform to the prescribed standard of purity.

The Human Factor in Road Accidents

Sir Ernest Graham-Little (dermatologist and member of parliament), who is joint chairman of the Road Accidents Parliamentary Group, points out in the *Times* that more than 50 per cent of road accidents are due not to dangerous machinery but to the human factor (the make up of those who operate the machines). Modern psychologic methods have produced reliable tests which show that there are "accident-prone" individuals who are a danger to themselves and to the community. Dr C S Myers, principal of the National Institute of Industrial Psychology, estimates that at least 80 per cent of fatal automobile accidents are due to the human factor. At the National Institute of Industrial Psychology a group of tests have been standardized and found valuable in four separate fields: (1) selecting the best drivers from a number of applicants for a post, (2) selecting the men most suitable for training as drivers, (3) discovering what is lacking in drivers of poor ability in order to remedy deficiencies, if possible, and (4) advising those who intend to learn to drive as to what degree of ability they are likely to develop. In the application of these tests, the following qualities are examined: (1) accuracy, speed and regularity of response to various signals, (2) resistance to distraction, (3) effective distribution of attention, (4) vision and optical defects, (5) ability to estimate correctly the speed, size and distance of other vehicles, (6) readiness to grasp the essentials of a dangerous situation and to respond appropriately, (7) confidence and general road behavior in driving a model car through moving scenery. The apparatus for these tests is simple and cheap and the technique is easy to learn. It is now carried out in certain large automobile schools. Sir E. Graham-Little therefore asks that selective tests should be included in the new road traffic bill.

First Woman Fellow of Royal College of Physicians

For the first time in the 400 years of its existence, the Royal College of Physicians has elected a woman to the fellowship. She is Dr Helen Mackay, physician to the Queen's Hospital for Children, London. She was one of the workers sent out to Austria in 1920 to study the rickets which the war and postwar shortage of food produced. Five years later she investigated the incidence of rickets in London at the request of the Medical Research Council. But her most important work has been on the anemia of infancy. In a report published by the Medical Research Council in 1932 she showed that a form of anemia, not dissimilar to the almost extinct chlorosis of young women, was prevalent among East London infants, whether breast or bottle fed, and was readily curable by administration of iron. The etiology was something of a riddle. Dr Mackay suggested that the anemia might be due to deficient store in the liver or wasteful utilization of iron, or that there might be some controlling factor, comparable to vitamin D. Probably a deficiency of iron in the diet of a pregnant woman would predispose the infant to anemia. The smaller the infant at birth, the greater the likelihood of anemia, for the more rapid the growth relative to the initial weight, the more quickly is the iron store of the liver exhausted.

The Refugees from Germany

The governing body of the High Commission for Refugees from Germany, which was set up by the League of Nations last autumn, has met in London under the presidency of Lord Cecil. Delegates representing Belgium, Czechoslovakia, Denmark, France, Great Britain, Italy, Holland, Poland, Switzerland, Sweden and the United States were present. The high commissioner, Mr James G McDonald, stated that, by nego-

tations, governments had been induced to postpone or soften administrative regulations that would have made the lot of the refugees more difficult, and some countries of potential permanent residence had been persuaded to lessen restrictions on emigration. But the present economic crisis made it impracticable to ask governments to grant general facilities to work to the refugees. Some, however, had given permits to refugees possessing certain qualifications, or organized in cooperative groups, to establish themselves. It was an error to represent the refugees as simply a burden on the countries to which they went. Those who had been permitted to establish a business or industry had brought employment to a number of persons in the country and in some cases had started important new industries. The intellectual refugees constituted a peculiarly difficult problem. The number of academic persons displayed was approximately 1,200, and of these somewhat less than half had actually emigrated. The refugees of the professional group probably totaled more than 3,000. While more than 8,000 students had found it impossible to continue their studies in Germany, about 1,500 had emigrated. Unfortunately, nearly all the academic places that had been found for the refugees were of a temporary nature. In England, fifty refugees had been placed in agricultural schools, and more than 100 had been apprenticed in technical workshops and trades. A number of refugee physicians had been admitted to English and Scottish universities with a view to obtaining in a year's course a medical qualification that would enable them to practice in parts of the British Empire. The larger number of the refugees of an age at which retraining was possible were being prepared for new vocations. The following figures indicate the distribution of the refugees: France, 21,000, Palestine, 10,000, Poland, 8,000, Czechoslovakia, 3,500, Holland, 2,500, England, 2,000, Belgium, 2,300, Switzerland, 2,500, Scandinavia, 2,500, Austria, 800, Saar and Luxembourg, 1,000, Spain, 1,000, Italy, 800, United States, 2,500, other countries, 2,000. Total, 62,400.

The Drug Traffic

The fifth annual report, for 1933, on illicit drug traffic by Russel Pasha, director of the Central Narcotics Intelligence Bureau, shows that in Europe the illegal manufacture of drugs has almost been destroyed and the traffic largely brought under control. But a fresh danger has arisen in the Far East, where in Manchuria a new field of drug traffic is being opened up, which may in time become a menace to the world. What appears to be a government opium monopoly is functioning in Manchuria, and this encourages the growth of the local product and the import of Persian opium. Bulgaria is now almost the only European country manufacturing morphine and cocaine, deliberately designed for illicit traffic. The survival of the manufacture in spite of the ostensible willingness of the Bulgarian government to suppress it seems to be due to the occult influence of various Macedonian organizations. The effects of the limitation of the drug traffic are evident in Egypt, where "white drugs" are now available only in an extremely adulterated form and the traffickers are turning their attention mainly to opium and hashish. The latter comes chiefly from Turkey and Syria, of which the former is the chief purveyor. It is hoped that, owing to the energetic attitude of the Turkish authorities toward the drug traffic, the cultivation of hashish may be gradually controlled. Syria has already taken effective steps to prevent it. A danger arises from the existence in Greece of a large body of professional smugglers, many of whom have been deported from Egypt but still carry on their trade from the Piraeus and the Greek islands. However the Egyptian statistics of drug addicts are striking. On a given date in 1929 there were no fewer than 5,681 addicts among the convicts of Egyptian prisons. On the same date in 1933 the number was only 674.

PARIS

(From Our Regular Correspondent)

April 11, 1934

Silicosis

The Societe d'etudes scientifiques sur la tuberculose pulmonaire devoted a session recently to the discussion of silicosis. Mr. Magnin described the condition as a pulmonary fibrosis resulting from prolonged inhalations of fine siliceous dust. Five years, or even three years, is sometimes sufficient for a workman to develop silicosis. According to Magnin, it is the inhalation of the dust of siliceous rocks, and that alone, which causes pulmonary fibrosis. Pulmonary fibrosis may develop in a person who is already tuberculous. Most commonly, however, pulmonary fibrosis of purely silicotic origin develops in persons who have no history of previous evolutionary tuberculous infection. On the other hand, silicotic fibrosis sometimes reveals a dormant primary infection. Experimentally, it is usually impossible to cause pulmonary fibrosis in an animal until an infection precedes. Finally, from the chemical point of view, the role of free silica in the genesis of so-called silicotic fibrosis of the lung cannot as yet be regarded as fully demonstrated. Recent research by Jones has produced evidence supporting the possible intervention of another substance contained in rocks—sericite. While it is evident that rock dusts are injurious, the damage may not be due to a specific chemical action but rather because they facilitate the development of tuberculous infection. Mr. A. Courcoux referred to the practice in foundries whereby workmen are required to smooth off steel castings in a sand blast, which operation often gives rise to pulmonary silicosis. In some foundries there has been such a high mortality among the workmen, and particularly among those who thus removed the rough places on bicycle parts, that manufacturers have been compelled to supply closed cages, the workmen standing on the outside of these. Since, however, metal tailings have been used for removing rough projections, the untoward manifestations have ceased to develop. Mr. d'Hour reported the peculiar case of a workman in whom a roentgenogram of the lung revealed a granite-like image that pointed to silicosis or granulosis. This man had worked, up to the previous year, in the mines of Nord, at boring in solid rock. Messieurs Rist, Mayel and Donbrow, who studied the question from the medicolegal point of view, are convinced that silicosis cannot develop other than in persons already infected with the tuberculous virus, and hence they refuse to regard it as a true occupational disease, which is in accord with the proposed agreement elaborated by the international bureau of labor. They declare that the acceptance of silicosis as an occupational disease should be avoided by French legislation.

International Federation to Combat Cancer

On the initiative of Mr. Justin Godard and the endorsement of the International Congress on Cancer, held last year in Madrid, a meeting was recently held at the ministry of public health, which was attended by a large number of cancer specialists from various countries, the purpose of which was to prepare the basis of an international federation of the various national leagues against cancer, and to draft a constitution. Justin Godard was elected president. The assembly chose a number of vice presidents: Professor Borst, Germany; Professor Maisin, Belgium; Professor del Rio Hortega, Spain; Professor Wood, United States; Professor Handley, Great Britain; Professor Bastianelli, Italy; Professor de Vries, Netherlands; Nazayo, Japan; Dluska, Poland; Keyberg, Norway; Athias, Portugal; and Dominguez, Cuba. Mr. Bandaline was chosen general secretary. Paris was selected as the headquarters of the federation and as the center for the deposition

of the records, the statistics and other documents of the federation. The triennial session of the officers will be held in a different capital each time to enable them to observe the progress made in each country. Borst, the German delegate, recommended that the new organization, while exercising a general control over the societies existing in the various countries, should respect their independence and should confine itself to supplying suggestions and documentary information. Long discussions were held on the unification of the terminology of tumors and that of statistics. At present, statistics are collected in such a widely different manner that they do not lend themselves to comparison. It was finally decided that every country should be allowed to follow its own custom and that the federation would be content to supply the national societies with a model form for the collection of statistics. The question of publishing an international review dealing with cancer was taken under advisement. It was agreed that the federation should remain associated with the cancer section of the international bureau of health of the League of Nations, with headquarters in Geneva, a section that, in reality, is not particularly active, but it was thought to be impracticable to endeavor to replace it at present. Borst of Germany, however, in conformity with the ideas of the present government of the reich, thought that it might be replaced. The delegates were entertained at two banquets. They visited the cancer institute of the Faculté de médecine de Paris at Villejuif, which is under the direction of Professor Roussy, and the Curie institute, where Madame Curie and Professor Regaud were the hostess and host.

BERLIN

(From Our Regular Correspondent)

April 2, 1934

Venereal Disease—Moving Pictures and the Press

In 1927 Germany changed the law pertaining to the combating of venereal disease. In the intervening period a number of changes have been made. The law has had a good effect. In spite of the unquestionable retrogression of venereal diseases, and particularly of syphilis, there is still a large proportion of the population of Germany affected with venereal disease. Detailed statistics on the subject were given in a previous letter (*THE JOURNAL*, January 13, p. 144). In October 1927 the central government took over the combating of venereal disease, which had previously been left to the *Gesellschaft zur Bekämpfung der Geschlechtskrankheiten*. During the twenty-five years of its existence this society had collected the basic statistics needed for an understanding of the status of venereal disease in Germany. Prof. J. Mayr, the director of the Freiburg Klinik für Haut- und Geschlechtskrankheiten, brought out before the Freiburg Medical Society that recent months have witnessed the launching of a publicity campaign among the young persons who belong to the various political leagues of the S. A., the S. S., the Stahlhelm, the work camps, and the like. Mayr emphasized that the law in its present form, has no teeth in it, as it does not provide penalties. Then it was found that this law furnished no adequate means of checking prostitution through the suppression of "street walking," whereas the new government, through an effective recasting of the paragraph in question, has been able to carry on a vigorous crusade against prostitution. It appears desirable to make the notification of venereal disease obligatory in Germany. The proposed plan of having certain mergers of societies take over the expense of treatment is commendable, since only by such means will it be possible to get quickly in touch with persons having venereal disease and to effect their cure—at least to the extent that they will no longer be a menace. In addition, all measures will be supported that tend to strengthen the sense of sexual responsibility, especially among the youth.

Professor Uhlenhuth emphasized the need of adopting strict measures with reference to race hygiene, or eugenics. The tragic decline in the birth rate is due in part to the widespread incidence of venereal disease. Fifty per cent of all childless and one child marriages point to gonorrhea in at least one spouse. Gonorrhea is responsible for the loss of 200,000 births annually, without attempting to measure precisely the baneful effects of syphilis. If the notification of venereal disease should be made compulsory, suspicious persons would be brought in at once for medical examination, for at present the demand that they present a medical certificate often causes such persons to change their residence, whereby the authorities lose sight of them. The result is that new foci of infection are established. A search for the source of a new infection cannot be instituted unless a special request is made, and many persons refuse to make such a request for fear of unpleasant experiences. To raise the standard of morals in matters of sex, other things are needed. The elimination of trashy and vicious literature as presented in word and picture, and a general purification of the press, the motion picture houses and the bars would be a pleasing beginning. Energetic efforts should be made to check clandestine prostitution. Uhlenhuth emphasized that present conditions are absolutely unbearable and constitute a great menace to youth, particularly in the university cities. The rendezvous taverns and hotels should be abolished. It appears doubtful whether it will be possible, in harbor and university cities, to dispense entirely with restricted districts. In Bremen, prostitutes are permitted to rent, on their own account, certain houses in certain streets, where they are subject to medical and police control but are not exploited by professional brothel keepers. In some countries (America and Hungary) such methods are being reintroduced.

Allergy in Relation to Rheumatism

Rheumatism in the conception of today was unknown to ancient medicine, as Prof. Ludwig Aschoff of the University of Freiburg pointed out before the Medical Society of Freiburg im Breisgau. An endeavor must be made to separate from the confused mass of rheumatic disorders those in which etiology is known or, if unknown, those which are of a specific nature. Among the specific disorders may be classed acute articular rheumatism. All attempts to discover the causative agent have thus far been fruitless. In Aschoff's opinion the causative agent is not to be sought in any known streptococcus. All attempts to explain the origin of specific nodules as due to allergic reaction are of no avail. The nodule formations occurring after direct injection of the joints or intravenous injection are not of a specific nature. The nodules that develop in the heart muscle or elsewhere following intravenous injection may have a similar appearance but the proof of identity is lacking. Aschoff stated that naturally, in so called serum horses that are being constantly injected with doses of toxin, the joints that are weight bearing in the standing posture, and particularly the extremities, may show evidence of damage due to toxins. Thus the well known forms of serum arthritis may arise, but these have nothing to do with so called rheumatic disease. They cannot, however be termed allergic diseases but at the most, arthritis with allergic symptoms. The conditions are similar with respect to asthma and the so called allergic disorders of the upper air passages. Here it might be more accurate to speak of pollen bronchitis with allergic symptoms. In any event, all these allergic disorders have nothing to do with the rheumatic diseases.

The attempt to include arteriosclerosis among diseases of a rheumatic nature is not justified. Aschoff called attention to conditions in Java where arteriosclerosis is common but genuine articular rheumatism or rheumatismus specificus infectiosus rarely occurs among natives. Aschoff emphasized how necessary

it is to investigate the etiology of all so called rheumatic disorders. Such etiologic research appears to him to promise better results than nosologic research. The cause of the confusion lies in the fact that a clinical symptom has been chosen for various disorders that are etiologically entirely different. The disorder should be named from the etiologic point of view, and in every disease a type with rheumatic symptoms should be distinguished from one in which rheumatic symptoms are lacking.

Roentgen Safety Films

Roentgen safety films possess advantages over the celluloid films in that they are not easily ignited when exposed to a flame, nor are they easily decomposed by heat. They burn only in a strong air current and smolder only when exposed to great heat. Burning safety films can ordinarily be extinguished by blowing on them and easily by pouring water over them. In quantity and composition the decomposition gases of safety films are no more dangerous than those arising from burning paper, wood or blankets.

The federal minister of the interior has announced that users of these films will be relieved of the necessity of adopting the special safety measures made necessary by the menace of celluloid films. Comparing the relative danger of celluloid films and of safety films, it is stated that the storage of safety films constitutes no more of a fire menace than the storing of paper documents.

ITALY

(From Our Regular Correspondent)

March 31, 1934

Congress of Orthopedics

The Società italiana di ortopedia held its twenty-fourth national congress at Palermo. Prof. Enrico Ettore said that the fundamental principles of the treatment of fractures are early and accurate reduction, absolute immobilization of the focus until complete consolidation of the callus has occurred and active mobilization of the joints. In fractures of long bones, the treatment comprises direct traction on the skeleton with a wire, applied as early as possible with the limb in an easy position, so as to obtain the greatest muscular relaxation. The reduction having been taken care of, immobilizing appliances are applied, which permit the continuation of traction on the double inclined plane without any secondary displacement. Absolute immobility of the focus of the fracture is indispensable, but it is no longer permissible to enclose a limb in a plaster cast and await consolidation. Modern treatment is understood in an active sense, and muscular contraction is worth more than any passive movement and helps more to maintain muscular tone than do electric currents. The period of traction is reduced to what is absolutely necessary, apparatus being applied that is capable of maintaining the reduction while permitting the patient to walk. Open treatment of fractures has lost ground everywhere. In fractures of the spinal column the speaker is opposed, save for certain rare exceptions, to any intervention whether surgical or reductive. In fractures of the neck of the femur, when bloodless or operative treatment (Smith-Petersen nail extension) does not inspire sufficient confidence, he favors subtrochanteric osteotomy, which if applied in time enables the patient to walk within four months of the accident.

Boehler of Vienna illustrated with films and with presentation of apparatus the various methods of treatment employed by him in fractures and luxations of the various parts of the skeleton. For fractures of the spinal column he is an advocate of reduction performed under local anesthesia.

Palagi, on the basis of statistics of the Clinica ortopedica of Florence which during the past eight years comprised sixty-seven cases of fracture of the upper end of the femur is an

advocate, in intracapsular fractures, of bloodless treatment, which permitted him to secure definitive consolidations in 76.5 per cent of the cases.

Rapaccini reported that in the Istituto ortopedico toscano in forty-six cases of fracture of the shoulder satisfactory results were obtained by the employment of the bloodless method, with abduction and external reduction of the arm and anteposition of the elbow.

Fusari of Turin reported on forty-one birth traumatism (namely, twenty-eight fractures and thirteen epiphyseal displacements). Epiphyseal detachments are considered grave. The fractures have an almost constant site, namely, at the middle third of the humerus and between the middle third and the upper third of the femur. In certain cases of birth fracture, open reduction and osteosynthesis give good results.

Rocher of Bordeaux discussed myositis ossificans progressiva. He said that one can secure an arrest of the ossifying process through action on the parathyroid apparatus. If the calcemia is not modified, removal of the osteomas is followed by a rapid recurrence.

The second topic, "Arthrodesis in Osteo-Articular Tuberculosis," was discussed by Professor Zanoli. He brought out that the basic treatment, so long as there is an active tuberculous focus, remains orthopedic treatment and heliochymotherapy. The new surgical trend (return to arthrodesis) has, however, gained ground in recent years.

Osteosynthesis of the spinal column has been on trial for more than twenty years. The consensus is almost unanimous. The ankylosing operation on the spine may be considered under two types: the Albee method and the Hibbs technic. The former is the preferred method for the treatment of Pott's disease.

In lesions of the hip, statistics give 88.7 per cent of good results from arthrodesis in a series of 700 cases. The operative methods are numerous. The prevailing tendency is to reserve arthrodesis for the sequels of coxitis, and to avoid resorting to it in the evolutionary types occurring in children. In incomplete and painful ankylosis of the knee, arthrodesis by inflexion was recommended, but resection is preferable. As to the foot, the speaker, in cases of tuberculosis localized in the tibiotarsal joint, tried arthrodesis by nail extension and also the extra-articular method. He found the latter preferable.

Fiorentini of Milan spoke on the remote outcome of vertebral osteosynthesis in tuberculous spondylitis and concluded that osteoplastic fixation of the vertebral column is effective but should not cause one to neglect the many other general and orthopedic aids. Mezzari performed arthrodesis in fifty-four cases, involving mostly the hip, in cases of osteo-articular tuberculosis. He had a high percentage of definitive recoveries.

Pacini, in forty-seven spondylitic patients treated by arthrodesis, reexamined them from two to six years after intervention and found good clinical and roentgenographic results.

Calandra of Palermo spoke on the treatment of articular tuberculosis with a new method that he applies in specific types involving the knee. It consists of injections of alcohol at a temperature of 90° C in the region of the nerves and vessels of the diseased joint. He secured favorable results in three cases. As the treatment is recent and the cases thus treated are few, the speaker refrains from drawing any final conclusions.

A New Academician

Prof. Pietro Rondoni, of the department of pathology at the University of Milan, was recently named "academician of Italy." Professor Rondoni, born in 1882, is the author of many scientific works, which in his earlier years dealt chiefly with morphology. Particular interest attaches to his serologic researches, in which he studied various problems pertaining to the Wassermann reaction, studies on trypanosomiasis, allergic inflamma-

tion and the histologic peculiarities of experimental tuberculosis, and pellagra and other diseases due to defective diets. He was the first to call attention to the involvement of the suprarenals in experimental scurvy. His treatise on biologic chemistry appeared recently in a second edition.

Professor Albertoni

Senator Pietro Albertoni, professor emeritus of physiology at the University of Bologna, has died. Three years after graduation, he became instructor in physiology at the University of Siena. He held later a chair in pharmacology, first at Genoa and then at Bologna. He succeeded Augusto Murri in the management of the *Clinica medica*. There is scarcely a field of physiology or pharmacology in which Albertoni had not done research. Special merit attaches to his researches on the digestive tract, the heart and the nerve centers. From his school have gone many students who have occupied chairs in Italian universities. Albertoni was the editor of the scientific periodicals *L'Universita*, *Bollettino delle scienze mediche* and *L'Universita Italiana*.

VIENNA

(From Our Regular Correspondent)

April 10, 1934

A Test Serum for the Blood Groups M and N

The discovery of the two blood groups M and N has confronted scientists with problems that have been particularly difficult, owing to the fact that the new blood groups form no antibodies in the human blood. For that reason, too, the mixture of M blood with N blood during a transfusion does not constitute a menace. After much research, Prof. Dr. M. Eisler of the *Staatliches Serotherapeutisches Institut* in Vienna developed a useful test serum from the blood of rabbits. But this serum could be preserved only a short time, so that it was not practical, for instance, in connection with court proceedings. Now Eisler has produced a test serum that can be preserved for at least one year and is suitable for transportation. This serum can be used for the determination of parenthood. To the previously known blood groups A, B, AB and O, three new groups have been added, namely, M, N and MN. Comprehensive investigations on more than 1,000 families and more than 3,000 children have shown that likewise the newly discovered blood groups are inherited in accordance with definite laws. If the blood group M or N is present in the blood of the parents, it will be found without exception in the blood of the children of that union. It is, for example, impossible that a child with the M blood group should have parents with the N blood group. In that case, therefore, in connection with court proceedings to establish the paternity of a child, a father with the N group can be excluded. The determination of the M and N groups alone is sufficient to divert suspicion from a suspected father in 18 per cent of the cases. In combination with A and B group, the number of positive results is increased to 31 per cent. Thus, this production of stable and ready-to-use test serum M and N in Vienna makes possible its use in general legal practice for the determination or rejection of paternity.

The Problem of Artificial Nutrition

Addressing the Vienna *Medicinisches Doktorenkollegium*, Dr. W. Lapp gave an exposition of the essentials of artificial nutrition. Emergency nutrition through the esophageal or nasal sound or a gastric or intestinal fistula can be carried on for an extended period. The foods must be seasoned in the same manner as would be necessary for the normal palate in order to maintain an equilibrium of the secretory activity. An adequate supply of vitamins must be introduced in case the normal food lanes remain impassable for some time. With the esophageal or the nasal sound, about every two hours, fluids are

introduced such as *café au lait*, bouillon with egg, oatmeal soup, mixtures of milk, cream, egg yolk and sugar, wine with egg, barley soup and the like. Between meals, fruit juices freshly prepared and sweetened should be given. Through a gastric fistula, more solid foods may be introduced. If hydrochloric acid is present in the stomach in normal quantities, one may follow an almost normal diet. If there is an acidity, the proteins should be reduced to a minimum and uncooked foods should be entirely omitted. One may introduce 2,500 calories in the form of the *au lait* (a mixture of tea and hot milk), oatmeal soup with egg, cream, cocoa, barley soup and sago, with suitable preparation. If it is a question of an intestinal fistula following jejunostomy, one must not count on the digestive activity of the stomach and, as in the gastrostomy diet in achylia, one should follow the diet just given. The narrow lumen of the intestine permits the introduction of only a small quantity of fluid at a time, which should be infused slowly, because of the danger of retrogressive peristalsis.

Rectal feeding will not furnish adequate nutrition over a long period. In the lower intestine, the resorption of fat and proteins is uncertain. Meat juices, eggs, milk, blood derivatives, casein and pulverized vegetable protein should be omitted from the nutritional *clysmas*. Albumoses and peptones can be resorbed, but, as a rule, the irritation is greater than the beneficial effect. The mucous membrane of the large intestine being poor in ferments, it is powerless when called on to digest normal fats, with the possible exception of egg yolk fat. Only isotonic fluids such as salt and dextrose solutions are resorbed without irritation, preferably in the form of a drip *clysmas*. As a nutritional *clysmas*, one may give a mixture of 10 per cent dextrin, 3 per cent alcohol and 0.7 per cent sodium chloride to 1 liter of water. In the presence of bleeding gastric ulcer, even such a *clysmas* may be injurious, owing to reflexive stimulation of the production of gastric juice. Nutrition by means of a duodenal sound is suitable only in psychogenic, incoercible vomiting, but it is often just as useless as the other methods of artificial nutrition (percutaneous, parenteral, which have no practical value).

Operative Treatment in Tuberculosis of the Bones

Dr. Erlacher of Graz delivered an address on the results obtainable by surgical interventions in tuberculosis of the bones and joints. On the series of 420 patients 700 interventions were performed. The patients were under observation from 1919 to 1933. In fifty-eight cases operative evacuation of the tuberculous focus was resorted to—a total of eighty-seven foci. Whereas of 207 cases treated conservatively nineteen ended fatally (the patients were all children under 14 years of age), of the patients operated on only three died, and these died from intercurrent diseases that had no connection with the operation. In not one of the cases observed could a dissemination of the tuberculous disease as a result of the operation be demonstrated. The cases treated conservatively showed a mortality four times as high as those in which an operation was performed. Of the latter group, twenty-eight patients have presented no recurrence after the lapse of five years, and a few patients have been under observation for thirteen years, and their cure appears to be permanent. The functional results are excellent. Of twenty-nine 'joint cases,' nineteen present joints that have entirely normal movements—one hip joint, four knee joints and four elbow joints. In only four cases did stiffness remain as before the intervention. The tuberculous nature of the disorder was clearly established in all cases by animal experiments or histologic examination.

The advantage of operative over conservative treatment is apparent from the economic point of view. Conservative treatment of the hip or knee covers a period of about four years. In the case of small bones and joints, two years is the average,

whereas a spine requires six years of conservative treatment to be cured. The operation, on the other hand, may remove all tuberculous tissue, so that definitive recovery usually is effected within one year. In only eight cases was the period of healing after the operation more than two years. Erlacher recommends as imperative the earliest possible operative evacuation of the bone or joint focus—that is, in early childhood if possible. In the choice of operative cases, due consideration must be given to the general condition of the patient.

Wenckebach's Birthday

The internist Karl Friedrich Wenckebach celebrated his seventieth birthday March 24, being in complete possession of his physical and mental vigor. Professor Wenckebach was born in the Netherlands. His first intention was to become a zoologist, but he soon turned his attention to medicine. While a practitioner in a rural district, he devoted himself to studies on cardiac conditions, especially arrhythmia. He published from this field a number of observations that attracted attention and procured for him in 1902 the chair of internal medicine at the University of Groningen. Nine years later he was called to the University of Strasbourg. In 1914 he accepted a post in Vienna as the successor of von Noorden, where he took charge of the first clinic and transformed it into a European center for cardiac research. The "Wenckebach Klinik" soon acquired an international reputation. His studies on arrhythmia, angina pectoris, "Wenckebach's bundle" "thorax piriformis Wenckebach" and "heart changes in beriberi," which he carried on in Batavia under a commission from the government of the Netherlands, established his fame on a firm basis. At the age of 65 he resigned his post as clinical teacher to do research exclusively.

Death of Schlesinger

Prof. Dr. Hermann Schlesinger, an eminent scientist and a great patron of art, has died, aged 67. Schlesinger was early recognized as a physician of unusual ability. His career has been brilliant. Nothagel, who at that time (1890-1900) was an authority in internal medicine, summoned him to Vienna as first assistant in his clinic. At this time he had begun his studies on syringomyelia. He devoted himself also to the study of tetany described by the syphilitic disorders of the vascular system and made researches on the pathology of tuberculosis. As head of a large department of the Vienna General Hospital, he founded what he termed a "Lehr- und Heil-Schule," which, at the time of the medical nihilism in therapy, gave a definite trend to thought. From this research center came a work that is still regarded as authoritative, "The Diseases of Old Age." During the war he established a large institute for the treatment of pulmonary tuberculosis, which is still functioning. In addition to his activity as scientist, teacher and physician he found time and leisure as a patron of art, to found the Theatrumuseum. In order that his work might not be left unsponsored, Docent Dr. Holler, a pupil and assistant of Professor Ortner, has been appointed successor to Schlesinger.

Marriages

THOMAS FORD HUEL JR., Anniston, Ala. to Miss Sybil Parrish Flowers of Durham, N. C., April 21.

KENNETH HERBERT HAMMOND Hoopeson, Ill., to Miss Martha Hugus of Gary, Ind., April 27.

VINCENT C. NIPPLE, Midvale, Ohio to Miss Lucy Schoonover April 22.

CARL GOLDBARK JR. to Miss Hazel Seligman both of New York, May 11.

SHELLEY C. DAVIS to Miss Ethel York both of Atlanta Ga., May 26.

Deaths

Charles Winfield Pilgrim, New York, Bellevue Hospital Medical College, New York, 1881, member of the Medical Society of the State of New York, member of the American Psychiatric Association, at one time chairman of the State Hospital Commission, past president of the New York Academy of Medicine, superintendent of the Willard (N. Y.) State Hospital, 1889-1893 and the Hudson River State Hospital, Poughkeepsie, 1893-1906, medical superintendent of Dr. MacDonald's House, aged 79, died, May 3, at his home in Central Valley.

John Forest Dickson, Berkeley, Calif., University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1880, member of the American Academy of Ophthalmology and Otolaryngology and the Pacific Coast Oto-Ophthalmological Society, fellow of the American College of Surgeons, member of the Oregon State Medical Society, emeritus professor of ophthalmology, University of Oregon Medical School, Portland, aged 78, died, April 3.

William A. Clark, Jefferson City, Mo., Washington University School of Medicine, 1897, past president of the Missouri State Medical Association and the Cole County Medical Society, past president of the state board of health, fellow of the American College of Surgeons, on the staffs of the Masonic Hospital, St. Louis State Hospital, number 1, Fulton and St. Mary's Hospital, Jefferson City, aged 68, died, April 11, of pneumonia.

Joseph Ellsworth Toot, East Liverpool, Ohio, University of the City of New York Medical Department, 1890, member of the Ohio State Medical Association, formerly on the staff of the East Liverpool City Hospital, aged 72, died, April 13, of angina pectoris, arteriosclerosis and hypertension.

Neil L. Goodrich, South Haven, Mich., University of Michigan Homeopathic Medical School, Ann Arbor, 1906, past president of the Kalamazoo Academy of Medicine, on the staff of the City Hospital, aged 53, died suddenly, March 25, in the Blodgett Hospital, Grand Rapids, of coronary thrombosis.

Theodore Parker Simpson, Beaver Falls, Pa., Bellevue Hospital Medical College, New York, 1877, fellow of the American College of Surgeons, member of the surgical staff of the Providence Hospital, Beaver Falls and the Beaver Valley General Hospital, New Brighton, aged 77, died, March 5.

Lawrence Boykin Hudson, Hattiesburg, Miss., Tulane University of Louisiana Medical Department, New Orleans, 1907, fellow of the American College of Surgeons, on the staff of the Methodist Hospital, aged 51, was accidentally shot and killed, April 18, while hunting in the woods.

Charles Mills Herald, Elyria, Ohio, Western Reserve University School of Medicine, Cleveland, 1916, fellow of the American College of Surgeons, on the staff of the Elyria Clinic and Elyria Memorial Hospital, aged 46, was found dead in his office, April 19, of heart disease.

James Edward Dickinson, Harrisburg, Pa., University of Pennsylvania School of Medicine, Philadelphia, 1899, for many years president of the city board of health, formerly member of the state legislature, on the staff of the Harrisburg Hospital, aged 58, died, March 12, of uremia.

Fred Hann Carver, Waitsburg, Wash., Medical Department of Washington University, 1901, member of the Washington State Medical Association, aged 56, died, February 28, of injuries received when his automobile plunged off the highway, presumably while he was asleep.

William Latane Varn, South Hill, Va., Medical College of Virginia, Richmond, 1915, member of the Medical Society of Virginia, past president of the Mecklenburg County Medical Society, aged 42, died, March 21, in the Richmond (Va.) Hospital, of streptococcal septicemia.

R. E. Thompson, Inman, S. C., Atlanta (Ga.) Medical College, 1875, member of the South Carolina Medical Association, formerly member of the state legislature, aged 84, died March 9, in a hospital at Spartanburg, of arterial hypertension and cerebral hemorrhage.

Walter Glenn Graham, Pittsburgh, University of Pittsburgh School of Medicine, 1911, member of the Medical Society of the State of Pennsylvania, aged 50, died, March 19, in the Passavant Hospital of heart disease during nephrectomy performed under spinal anesthesia.

Addison Eugene Elliott, San Diego, Calif., Rush Medical College, Chicago, 1908, fellow of the American College of Physicians, member of the American Roentgen Ray Society,

and the Radiological Society of North America, aged 57, died, April 9, of heart disease

Robert Daniel Tucker, Powhatan, Va, Medical Department of Columbian University, Washington, D C, 1892, member of the Medical Society of Virginia, president of the Powhatan County Medical Society, aged 73, died, March 13, of heart disease

Lauren Eugene Flickinger, Canton, Ohio, Western Reserve University Medical Department, Cleveland, 1892, member of the Ohio State Medical Association, on the staff of the Aultman Hospital, aged 65, died, March 25, of cerebral hemorrhage

Joseph Arthur Valenta @ Cedar Rapids, Iowa, State University of Iowa College of Medicine, Iowa City, 1896, aged 63, formerly on the staffs of the St Luke's Methodist Hospital and Mercy Hospital, where he died, March 17, of mitral stenosis and myocarditis

Burton N Clark @ Oshkosh, Wis, Rush Medical College, Chicago, 1894 past president of the Winnebago County Medical Society aged 66, on the staffs of St Mary's Hospital and the Mercy Hospital, where he died, April 18, of carcinoma of the bladder

James Edmund Dorsey, Boston, Harvard University Medical School, Boston, 1878, member of the Massachusetts Medical Society aged 80, died, March 13, in the Massachusetts General Hospital, of cerebral thrombosis and arteriosclerosis

Eli Slifer Walls @ Pittsburgh, University of Pennsylvania School of Medicine, Philadelphia, 1909, fellow of the American College of Surgeons, member of the visiting staff of St Francis Hospital, aged 52, died, March 28, of coronary occlusion

Kittie Plummer Gray, Portland, Ore, University of Oregon Medical School, Portland 1900 member of the Oregon State Medical Society aged 69, died, March 27, in the Good Samaritan Hospital of cerebral hemorrhage and arteriosclerosis

Blanche Edith Webber @ Chicago, Harvey Medical College Chicago, 1902 College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903, aged 67, died, April 18, of coronary thrombosis

Julian Hiland Dewey @ Philadelphia, University of Pennsylvania School of Medicine, Philadelphia, 1891, fellow of the American College of Surgeons, ophthalmic surgeon to St Francis Hospital Trenton, aged 66, died, March 30

Charles William White, Covington, Ky, Hospital College of Medicine, Louisville, 1894, at one time health officer of Covington, formerly on the staff of the Booth Memorial Hospital aged 62, died March 13, of myocarditis

Eddie Timothy Hollingsworth @ Goldsboro, N C, North Carolina Medical College, Charlotte 1912 formerly member of the state board of health, on the staff of the Goldsboro Hospital, aged 46, died, May 7, of angina pectoris

Charles Eugene Chappell, Marne, Mich, University of Michigan Medical School, Ann Arbor, 1885, formerly member of the board of education, aged 79, died, April 7, of cerebral hemorrhage, myocarditis and arteriosclerosis

Orley Morton Waters, East St Louis, Ill, St Louis University School of Medicine 1920, member of the Illinois State Medical Society, aged 50, on the staff of the Christian Welfare Hospital where he died, March 14

Andrew James Ames, Fargo, N D, University of Illinois College of Medicine, Chicago, 1901, on the staff of the Veterans' Administration Facility for many years, aged 68, died, April 12, of cerebral hemorrhage

Daniel Hurst Carns, Albuquerque, N M, Western Pennsylvania Medical College, Pittsburgh, 1894 member of the New Mexico Medical Society, aged 64, died, March 30, of angina pectoris and diabetes mellitus

James Rufus Liverman, San Bernardino, Calif University of Arkansas School of Medicine, Little Rock, 1900, aged 68, died, March 16 of hypostatic pneumonia, injury to the head and fractured forearm

Stephen L White, Seymour, Mo, St Louis College of Physicians and Surgeons, 1883 also a minister aged 73, died March 13, in Rochester, Minn, of hypertrophy of the prostate and pyelonephritis

Joel Audubon Webb, Providence, R I University of the City of New York Medical Department, 1889, member of the Rhode Island Medical Society, aged 79, died, February 20, of cerebral hemorrhage

William H Stiles, San Bernardino, Calif, Hahnemann Medical College and Hospital, Chicago, 1878, member of the

California Medical Association, aged 80, died, March 25, of cerebral hemorrhage

James T Hanson, Gallipolis, Ohio, Medical College of Ohio, Cincinnati, 1874, county coroner, aged 83, died, April 20, in the Holzer Hospital, of a skull fracture received in an automobile accident

Perry Lawson Ferry, Akron, Ind, Cornell University Medical College, New York, 1904, served during the World War, aged 54, died March 30, in McDonald Hospital, Warsaw, of pneumonia

Lillian Atkins Moore Clark, Philadelphia, Woman's Medical College of Pennsylvania, Philadelphia, 1923, member of the Medical Society of the State of Pennsylvania, aged 36, died, March 21

Willis Monroe Metzler, Vanlue, Ohio, Starling Medical College, Columbus, 1895, member of the Ohio State Medical Association, aged 67, died, March 12, in the Home and Hospital, Findlay

Edwin Daniel Townsend, Eastland, Texas (licensed in Texas under the Act of 1907) member of the State Medical Association of Texas, aged 72, died, March 20, of cerebral hemorrhage

Charles Clifford Bennett, Smith Center, Kan, University Medical College of Kansas City, 1913, member of the Kansas Medical Society, aged 43, died, April 26, of a self inflicted bullet wound

Charles Franklin Keyser, Cuyahoga Falls, Ohio, College of Physicians and Surgeons, Baltimore, 1886, member of the Medical Society of the State of Pennsylvania, aged 73, died March 10

Charles Ernest Tran, Kamsack, Sask, Western University Faculty of Medicine, London, Ont, Canada, 1912 served during the World War, formerly mayor, aged 52 died March 23

Achille Besner, Valleyfield, Que, Canada, School of Medicine and Surgery of Montreal, 1897 coroner for the district of Beauharnois, aged 62 died suddenly, February 15 of angina pectoris

Marvin Sumter Witt, Manchester, Ga Atlanta Medical College 1914, member of the Medical Association of Georgia aged 48, died March 3, in the Piedmont Hospital Atlanta

Charles Cogley Marshall, Aurora, Ind Medical College of Ohio, Cincinnati, 1897, served during the World War, aged 60 died March 12, in the Dillsboro (Ind) Sanitarium

Herman Lee Hildreth, Julian, Calif Bennett College of Eclectic Medicine and Surgery, Chicago, 1900, member of the California Medical Association, aged 58, died March 7

William Peyton Barton @ Portland, Ore Tulane University of Louisiana Medical Department, New Orleans 1904 aged 53 died April 27, of a self inflicted bullet wound

David Ber Domb, San Francisco, Indiana University School of Medicine, Indianapolis, 1909, aged 53 died, March 24, in the Stanford University Hospital, of myocarditis

Clarence Hyde Saunders, Chase City, Va College of Physicians and Surgeons Baltimore, 1891 member of the Medical Society of Virginia aged 63, died March 14

William Edward Cook @ Pageton, W Va Medical College of Virginia Richmond, 1901, served during the World War, aged 63, died, May 5, of chronic myocarditis

Leo Ervin Oscar Evens, Hartford Conn St Louis College of Physicians and Surgeons, 1897, member of the Iowa State Medical Society, aged 61, died, March 26

James D Harlan, Fairfield Ill, Missouri Medical College, St Louis, 1890, member of the Illinois State Medical Society, aged 72, died April 28, of organic heart disease

Levi Daniel Johnson, Whittier, Calif Bennett College of Eclectic Medicine and Surgery Chicago 1888, Atlanta (Ga) Medical College, 1897 aged 78 died, March 3

William Black, Winnipeg, Manit, Canada, Manitoba Medical College, Winnipeg 1903 served during the World War, aged 53 died, April 3 of cerebral hemorrhage

John B Deal, Crockett, Texas, Baylor University College of Medicine Dallas, 1913 member of the State Medical Association of Texas, aged 46 died March 2

F R Wallace, Cordele, Ga, University of Georgia Medical Department, Augusta 1879 member of the Medical Association of Georgia aged 77, died January 13

Allen Earl Gray, Marysville, Calif, Cooper Medical College, San Francisco 1911 member of the California Medical Association aged 46, died, March 16

Isaac Adal McCarty ☉ Los Angeles, St Louis College of Physicians and Surgeons, 1883, aged 74, died, March 23, of angina pectoris and arteriosclerosis

George W Darling, Portsmouth, Ohio, Hospital College of Medicine, Louisville, Ky, 1885, formerly postmaster of Wellston, aged 87, died, March 16

Orville Augustus Rhodes, Salem, Ohio, College of Physicians and Surgeons, Baltimore, 1882, aged 72, died March 16, in the City Hospital, of uremia

Griswald Bragaw, Milford Conn, Bellevue Hospital Medical College, New York, 1897, aged 68, died, Dec 26, 1933, of adenoma of the prostate

David De Tar, Winslow, Ind (licensed in Indiana in 1897), Civil War veteran, aged 88, died, April 20, of lobar pneumonia and chronic endocarditis

Thomas Henry McDonough, Frenchtown, N J, Medical School of Maine, Portland 1898, aged 59 died, March 29, of carcinoma of the esophagus

Henry William Kauffold ☉ Frankenmuth Mich, Vanderbilt University School of Medicine, Nashville, Tenn, 1917, aged 39, died, March 18

Felix Cornu, Buckingham, Que, Canada, Victoria University Medical Department, Coburg, 1887, aged 68, died, January 29, in Montreal

Thomas Dowe Allen, Shaw, Miss (licensed, Mississippi in 1903), aged 57, died, March 29, in the Kings Daughters' Hospital, Greenville

Peter D Arbogast, Morgantown W Va University of Virginia Department of Medicine, Charlottesville, 1901, aged 67, died, March 31

James Ozwill Nicholson, Lead Hill, Ark Memphis (Tenn) Hospital Medical College, 1900, aged 58 was found dead, February 27

Frederick Charles Delahey, Pembroke, Ont Canada University of Toronto Faculty of Medicine, 1895, aged 63, died, February 8

Francis Henry Bermingham, Kingston Ont, Canada Queen's University Faculty of Medicine, Kingston, 1892 aged 63, died, May 1

Henry Powell Halsted, Perry, Mich, University of Michigan Medical School, Ann Arbor, 1877, aged 83 died, April 11, of senility

J Esdras Beaudet, Deschailions, Que, Canada Laval University Faculty of Medicine, Quebec, 1899 aged 61, died, February 28

John T Smith, Georgetown, Tenn University of the South Medical Department, Sevanee 1899, aged 65, died, March 17

Thomas Wright Reagan, Union, Miss, University of Nashville (Tenn) Medical Department, 1908 aged 49, died, March 19

Whitley Gray Hendrix, New London, Mo, College of Physicians and Surgeons, Keokuk, Iowa 1871, aged 91, died in March

Russell Bayly, New York St Louis Medical College, 1877, aged 81, died, April 22, in the Bellevue Hospital, of arteriosclerosis

Henry Schumacher, Walcott, Iowa State University of Iowa College of Medicine, Iowa City, 1882, aged 77, died March 4

Edward Henry Wood, Riverside, Calif College of Physicians and Surgeons, Baltimore, 1894 aged 65 died, March 21

John J Livingston, Spencer, Ind Indiana Eclectic Medical College, Indianapolis, 1881, aged 78, died February 26

Charles Willard Sanders ☉ Northwood, Iowa Rush Medical College, Chicago, 1884, aged 74 died March 27

Judson Arthur Holland, Hayward, Calif, Cooper Medical College, San Francisco, 1894 aged 75, died March 1

Lelia Latta, Chula Vista Calif Woman's Hospital Medical College Chicago, 1888 aged 77 died, March 11

James Peter Quirk, Perry Fla, Rush Medical College Chicago 1891, aged 65 died, April 6 of heart disease

Thomas Winfield Herron, Little York Ind (licensed, Indiana in 1897) aged 84 died, March 16

Robert C Richey, Powell Ohio, Columbus Medical College, 1882 aged 78 died, March 26

Miles B Cook Angola N Y, Cleveland Medical College, 1877, aged 79, died March 14

Bureau of Investigation

SOME NOSTRUMS IN RETROSPECT

Condensed Reports on Widely-Advertised "Patent Medicines"

The Bureau of Investigation of the American Medical Association receives thousands of inquiries every year from physicians and laymen asking for information on "patent medicines" and quacks. The chief work of the Bureau consists in answering these inquiries. Naturally, the bulk of the questions that come in deal with nostrums that loom large in the public eye at the time of the inquiry. The material that follows represents condensed restatements of more extensive articles that have been published in the past in this department of THE JOURNAL dealing with preparations about which the Bureau still receives many inquiries. It is reasonable to believe that for every letter that the Bureau gets from a physician or layman about an advertised "patent medicine," there are probably a dozen laymen and an equal number of physicians who are interested in getting such information but do not take either the time or the trouble to write. It is for this reason that the following material in a greatly abbreviated form re-states facts previously presented on the products named.

Pfunder's Stomach Tablets—This was the subject of an article that was published by the Bureau of Investigation in THE JOURNAL, Dec 1, 1928. It was brought out in that article that Frederick H Pfunder of Minneapolis put out what was called "Pfunder's Stomach Tablets a Remedy for Ulcers of the Stomach." A letter had been written to Mr Pfunder in 1926, asking him whether he was willing to give any information regarding the medicinal ingredients of his "patent medicine." He replied that he was willing to give any information "except to reveal the formula"—that is, the only information that the public had a moral right to demand he was unwilling to give. Because of this refusal to throw any light on the composition of his "Remedy for Ulcers of the Stomach," the Bureau of Investigation asked the A M A Chemical Laboratory to analyze Mr Pfunder's nostrum. As a result of their analysis the chemists reported that each daily dose (3 tablets) of the preparation would be equivalent to

Bismuth subnitrate	33 grains
Magnesium oxide	25 grains
Baking soda	27 grains

Uvursin—Uvursin is put out by the John J Fulton Company of San Francisco and is sold as a remedy for diabetes. According to some of the advertising, Uvursin is said to "combine the desirable principles" of chimaphila (pipsissewa), eupatorium (boneset), pareira, taraxacum (dandelion), uva ursi (bearberry), jublans (butternut bark), lappa (burdock root), mulla (elecampane), eriodictyon (yerba santa), zea mays (corn silk), with some senna potassium nitrate and sodium borate. In other words, the product is essentially a mixture of herbs, most of which have long been discarded by scientific medicine and nearly all of which have mild diuretic action. In this respect Uvursin runs true to the orthodox diabetes-cure quackery. Give the diabetic a kidney stimulant so that more urine will be passed, and the patient will be gratified to find that he apparently has a lessened amount of sugar in the urine. The facts are of course, that there is no real diminution in sugar, but because of the increase in fluid output, any individual specimen of urine will naturally have a smaller proportion of sugar in it. Uvursin is apparently the same product that the John J Fulton Company used to put out under the name of "Fulton's Compound B 2." This preparation was declared by the federal authorities to be worthless as a cure for diabetes and the courts held that the implied claim that it would cure diabetes was false and fraudulent. The Fulton concern attempted to evade the federal law by declaring that they themselves did not make the claims for curative effect but that they merely quoted testimonials stating, in effect that it was a cure for diabetes. One federal judge on the Pacific Coast upheld this preposterous thesis, but the Circuit Court of Appeals reversed that judge's decision. The case was then remanded

to another United States District Court and judgment was obtained against the Fulton concern. A somewhat lengthy and detailed article on the Fulton Compound was published by the Bureau of Investigation in *THE JOURNAL*, Jan 29, 1916. In this article case after case was cited of individuals who had given testimonials to the Fulton Company and which that company printed, indicating that the stuff had cured diabetes. It was shown that the patients were dead, having died of the very disease of which they had claimed to be cured. The article has been reprinted in the pamphlet "Nostrums for Kidney Disease and Diabetes" (15c). Since the change of name has been made, the Fulton concern has widely circularized the medical profession.

Renton's Hydrocin Tablets—The Renton Company of Pasadena, Calif., has for some time put out an alleged rheumatism cure for which it used to make the claim "What insulin is doing for diabetes, Renton's Rheumatic Tablets are doing for arthritis, neuritis and rheumatism." At that time the "patent medicine" was known as Renton's Rheumatic Tablets. Apparently pressure brought to bear by the National Food and Drug officials caused them to change the title to Renton's Hydrocin Tablets. Extensive analytical work done by the A M A Chemical Laboratory brought out that the tablets were essentially five-grain cinchophen tablets, with a small amount of what appeared to be tetra-ethyl-ammonium hydroxide. In the Bureau of Investigation's original article on this product, published Jan 17, 1931, attention was called to the fact that the public, in purchasing Renton's Hydrocin Tablets, was paying an exorbitant price for cinchophen and in ignorance of the fact that it was getting cinchophen. Further, it expressed the opinion that it was little less than criminal that irresponsible "patent medicine" exploiters should be permitted to put so potent a drug in secret mixtures with no warning, especially as the number of cases of acute yellow atrophy of the liver following the continued use of cinchophen was increasing. Since the article was published, there have been a number of cases of poisoning reported following the use of the Renton nostrum, including the deaths of six people who had taken the Hydrocin Tablets, and in all of them autopsy disclosed symptoms of cinchophen poisoning.

Viavi—A piece of quackery that has been exploited throughout the United States for many years, known as "Viavi," was the subject of an extended article that appeared many years ago (April, 1907) in the *California State Journal of Medicine*. The Viavi Company is said to have been founded by two brothers, H and H E Law of San Francisco. Viavi is not the name of a single preparation, but a generic name given to a long list of nostrums put out by the Viavi Company. Practically all of the preparations are for the alleged treatment of diseases peculiar to women. There are "Viavi Capsules," "Viavi Cerate," "Viavi Liquid," etc. So far as analyses have been made of them, the basis of most of the Viavi preparations seems to be extract of hydrastis (golden seal). The method of sale of the Viavi preparations is not that of the usual "patent medicine." They are not handled by druggists and they are apparently not sold on the mail-order plan. The business seems to be carried on by means of agents. However, there has been one reported case of misbranding under the National Food and Drugs Act, that described in Notice of Judgment No 19466, issued December, 1932. Viavi Liquid and Viavi Cerate were both included in this prosecution, which was based on the fact that the therapeutic claims were false and fraudulent. One of the methods that have been reported as used by Viavi representatives in order to make "contacts" was that of getting well-meaning church women and unsophisticated parsons to act as pawns in the game of quackery. Cards would be sent out by the Ladies Aid Society of a given church, inviting women to attend an illustrated talk on the "Science of True Living," to be given "under the auspices of the Educational Department" of some branch of the Viavi concern. The bait was the promise that the Viavi agent would pay the Ladies Aid Society 10 cents for every woman who attended the "lecture." What the Viavi business sometimes does was well described in a brief article that was published in *THE JOURNAL*, Dec 3, 1927. A well-known physician in the middle west reported at that time that he had been called to see a twenty-

seven-year-old woman whom he had known for many years, as he had been the attending physician of the family. He was called suddenly because the woman had a severe uterine hemorrhage. On examination he found unmistakable evidence of cervical carcinoma of several months' standing. He was told that the young woman some four months previously had begun to lose weight, had severe pelvic pains, discharge, etc., and her husband had told her to go to the family physician. A neighbor, however, advised her to see the local Viavi agent first, which she did. From the agent she got two bottles of Viavi, one costing \$9.50 and the other \$3.50. The Viavi agent sent the woman's "symptom blank" to the Viavi branch headquarters, and the mail-order diagnosis was made that the condition was probably a "cyst" which would require several months' Viavi treatment to absorb. As the family physician wrote "Four months ago there might have been a chance to save the life of this young mother, today the case is practically hopeless."

R M B Prescription—This preparation, put out by the so-called R M B Laboratories of Seattle, Wash., used to be sold under the name "Asthma-Sera" and was advertised under the claim that it "ends asthma and hay fever forever." The Bureau of Investigation published an article on the subject in *THE JOURNAL* of Feb 11, 1928. The product was found to have the composition that nine out of ten "patent medicines" for asthma do have, namely, iodides. The A M A Chemical Laboratory, which analyzed the stuff under its earlier name at the request of the Bureau of Investigation, reported that the daily dose of the nostrum (4 teaspoonfuls) had the equivalent of 236 grains of strontium iodide, 116 grains of sodium iodide, and a laxative. This commonplace mixture was sold under the claim that it was a new treatment discovered by a French physician and never before used in either Canada or the United States in the combination found.

Free Breath—This preparation, sold as an alleged treatment for asthma and hay fever, is put out by the O W Dean Company of Benton Harbor, Mich., which had earlier been known as the Benton Asthma Remedy Company. Free Breath was described as the "World's Wonder Treatment for Asthma, Bronchitis, Hay Fever, and Catarrh of the Mucous Membranes." O W Dean, president of the company, was, if he is not still, an undertaker. The details of this piece of mail order quackery were set forth in an article published by the Bureau of Investigation in *THE JOURNAL*, Nov 27, 1926. At that time Free Breath was a liquid. It is now apparently sold in solid form, which should allow greater profits because of the lessened shipping costs. Free Breath was analyzed by the A M A Chemical Laboratory, which reported that the stuff contained the equivalent approximately of 21 grains of potassium iodide and 24 minims of solution of potassium arsenite (Fowler's solution) to the fluid ounce. This would mean that each dose was equivalent to $2\frac{1}{2}$ grains of potassium iodide and 3 drops of Fowler's solution.

Renesol—Renesol was one of several names used by Charles Goldblatt and Maurice E. Goldberg, who sold phenobarbital (luminal) at an exorbitant price as cures for epilepsy. The Goldblatt-Goldberg combination operated such mail-order fakes as the Renesol Laboratories, Inc., the Nurosol Laboratories, Inc., the Nurone Laboratories, Inc., the Vitosol Corporation and the Phenoleptol Company, all putting out "patent medicines" for the alleged treatment of epilepsy and all of them essentially phenobarbital. An extended article on this variously named piece of quackery was published by the Bureau of Investigation in *THE JOURNAL*, Feb 20, 1932. The analysis made by the A M A Chemical Laboratory disclosed that each capsule of Renesol contained approximately one grain of phenobarbital, to which had been added a small quantity of baking soda.

Haines' Golden Treatment—This is one of those cruel humbugs exploited as a cure for the liquor habit. It was the subject of an article by the Bureau of Investigation in *THE JOURNAL* Oct 27, 1917. It was brought out in that article that prior to the passage of the present Food and Drugs Act, when lying on the trade package was only immoral instead of expensive the stuff was labeled "Golden Specific." The preparation

is one of the numerous fakes exploited as cures for alcoholism which can be given secretly, curing the alcoholic in spite of himself. Not only is the claim that the stuff can be administered and will cure the drunkard "without his knowledge" false, but it is a viciously cowardly falsehood, in that it deceives those who, in the very nature of the case, are not in a position to protest when the deception becomes obvious. An analysis made in the A M A Chemical Laboratory was also part of the article already referred to. It was declared that Haines' Golden Treatment was composed essentially of milk sugar, starch, red pepper, and a minute amount of ipecac!

Frontier Asthma Remedy—This is a mail-order concern that is apparently conducted by one George H. Calkins, M.D., who also seems to have as a side-line an alleged mail-order remedy for piles. A brief note on the Frontier Asthma Remedy was published in *Hygeia* for June, 1929, in an article "Hay-Fever and Asthma Quackery." The claim is made for the Frontier remedy that individual treatment is given to the mail-order patients. While there is reason to believe that there may be some variations in the composition of the mixtures sent out to different persons, the essential ingredient seems to be iodides. Every analysis of which we have record shows the presence of these drugs. An analysis made by the A M A Chemical Laboratory in 1916 showed that each dose of the Frontier nostrum examined contained the equivalent of about 5 grains of potassium iodide, together with $\frac{3}{4}$ of a grain of caffeine and $\frac{1}{60}$ of a grain of arsenous oxide. In four analyses reported by the Chemical Laboratory of the City of Cleveland in 1919, all specimens were found to contain iodides. The state chemists of Connecticut, in a report issued in May, 1927, stated that a sample of the Frontier remedy, when analyzed, was found to contain iodides, ammonia and caffeine. In other words, the Frontier product, like nine-tenths of the nostrums sold either as "patent medicines" through the retail trade or as mail-order remedies for asthma and hay fever depends for its action on the iodides, whose value—and limitations—in the treatment of certain forms of asthma have been known for years.

Midol—This "patent medicine" has been advertised for some time as a "pain killer" for use at the time of the menstrual periods. In the past emphasis has been laid on the danger of taking acetanilid or acetphenetidin, and the public is assured that Midol contains neither of these substances. Midol was analyzed in the A M A Chemical Laboratory in 1912. At that time the chemists reported that a Midol tablet averaged about $6\frac{1}{2}$ grains, of which a little less than $\frac{1}{2}$ of a grain was talc, about 1 gram starch, and the balance of the tablet mainly amidopyrine with a small amount of caffeine. It was concluded that Midol depends for whatever therapeutic action it has essentially on the amidopyrine. The increasing evidence of a possible relationship between the continued use of amidopyrine and the production of granulopenia, emphasizes the danger of the indiscriminate use of "patent medicines" containing amidopyrine.

Crazy Crystals—This product has been claimed to be the mineral constituents that are obtained by evaporating a water known as 'Crazy Mineral Water.' The product Crazy Mineral Water has been on the market for many years and has been declared misbranded (because of fraudulent curative claims) or adulterated (because it contained filth) at different times in the past. The exploiters of Crazy Mineral Water have published what purported to be the ingredients of the water, and while they have varied, they all agree in showing that the chief mineral ingredient is sodium sulphate (Glauber's salt). Crazy Crystals was the subject of an article by the Bureau of Investigation published in *THE JOURNAL* of March 11, 1933. It was there declared in summing up the matter, that a \$1.50 package of Crazy Crystals could accomplish nothing that could not be accomplished equally well with a few cents worth of Glauber's salt. It was further stated that the attempt in the radio advertising of Crazy Crystals to lead the public to believe that the preparation was not a drug was but playing tricks with the English language for Crazy Crystals is just as much a drug as Glauber's salt or any other saline laxative sold for the treatment of human ailments.

Correspondence

"DERMAL MANIFESTATIONS OF VITAMIN A DEFICIENCY"

To the Editor—I have read with interest the editorial on "Dermal Manifestations of Vitamin A Deficiency," which appeared in *THE JOURNAL*, March 10. In connection with this I should like to refer you to an article by myself and Dr. C. K. Hu on "Cutaneous Lesions Associated with a Deficiency of Vitamin A in Man" which was published in the *Archives of Internal Medicine* 49:507 (Sept.) 1931. I think you will find that Dr. Loewenthal's observations in general are similar to those made in Peiping.

CHESTER N. FRAZIER, M.D.,
Peiping Union Medical College,
Peiping, China

SUPRARENALECTOMY IN ESSENTIAL HYPERTENSION

To the Editor—In *THE JOURNAL*, April 7, page 1118, the results of suprarenalectomy in essential hypertension are reported. It seems to me that the therapeutic importance of this paper is lost by the failure of the authors to control adequately their studies of the blood pressure. Thus, patient 1 entered their clinic apparently for the first time, Oct. 7, 1933, and on October 17, after ten days' observation, was operated on. Such a brief period of observation is of little value in determining the effect of subsequent therapy. Weeks and even months of careful observation under standard conditions are needed in any study of essential hypertension. The truth of this statement is illustrated by the following case.

M. R., aged 55, was first seen with a blood pressure of 240 systolic, 130 diastolic, which dropped at the end of twenty minutes' rest in a chair to 190 systolic, 120 diastolic. The patient was seen at weekly intervals, during which time no medication was given. The drop in blood pressure that occurred during these weeks of observation without treatment is indicated in the accompanying table.

Date	Initial Blood Pressure	After 10 Minutes Rest	After 20 Minutes Rest
9 2 33	240/130	210/120	190/120
9 9 33	208/120	180/110	194/120
9 16 33	180/110	160/94	150/94
9 23 33	184/108	164/98	160/100
9 30 33	200/110	164/108	160/100
10 7 33	170/98	158/90	152/90

Such an example is the rule rather than the exception, when a hypertensive patient is seen for the first time in the office or clinic.

DAVID AYMAN, M.D., Boston

[NOTE—The letter was referred to Dr. Joseph L. DeCourcy, who writes.]

To the Editor—Let me advise that it has been the policy of my associates and myself to have these patients under observation in the hospital for one week before operating. This was done with patient 1 and three hourly readings were made. During this time the diastolic pressure did not go below 140.

To date we have operated only in the so-called malignant type of hypertensive case and it has been our experience that, though the systolic pressure varies considerably, the diastolic does not go below 130 or 140 even with rest in bed.

It is also a fact that patient 1, as stated in the original article, had been in bed two months before operation and during this time the diastolic pressure did not go below 140.

We feel confident that our results will improve if we can operate on these patients early, before vascular changes have taken place

At present we are trying to determine the effect of sclerosis present by examination of the eyeground and will make a detailed report later

JOSEPH L. DECOURCY, M.D., Cincinnati

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted, on request

INHALATION OF OXYGEN IN PNEUMONIA

To the Editor—In Queries and Minor Notes in THE JOURNAL, January 27, page 311 there was consideration of the treatment of pneumonia at home. Reference was made to the use of oxygen by the use of a catheter placed in the nostril. Just how these arrangements are to be carried out and the details of the valves and other mechanism are a bit hard to figure out. Can you direct me to some information that will be able to enlighten me? Some manufacturer of such apparatus would be able to explain the details but I do not know of any or the address. Should you happen to know of any one using this form of oxygen medication I shall be glad to get his name and address

Mont

ANSWER—An increase in the concentration of oxygen in the upper air passages, and consequently in the lungs, may be accomplished by leading oxygen into the nares by means of a

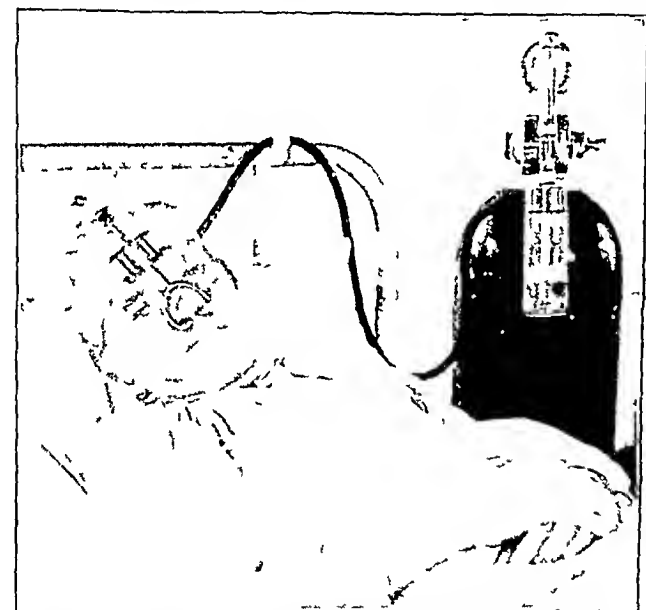


Fig 1—The method of using oxygen with a Bullowa catheter in an adult. The Air Reduction Company's variable orifice meter and flow back bottle

catheter. Two types of catheter are employed (1) metal catheters, which may have rubber tips or extensions, and (2) soft rubber tubing. Rubber catheters have been effectively employed by Barach, Barker, Waters and others and can be obtained in any reliable surgical supply house. Metal catheters are usually Y-tubes, shaped so as to fit just inside the nostrils. They should be made of malleable brass so as to permit bending. Several catheters of different kinds should be at hand because of the variation in facial contours. The Bullowa type, with band plate adjustable on the stem, is made by Frederick L. Noble of 2136 Seventh Avenue, New York City. The Connel and the Sanford types are made by the Foregger Company, Inc., 55 West Forty-Second Street, New York City.

Soft catheters may be attached to the bulbous ends of the metal catheter or to a glass tube connected with the oxygen supply. The ordinary urethral catheter No. 10, French, may be employed, provided holes are cut or punched at intervals of one-half inch so as to prevent a localized blast of air. The soft rubber tube or tubes may be introduced 1½ inches and either rest on the floor of nose or extend to the oropharynx,

in that case the length may be determined as the distance from the plane of the upper lip to the external auditory meatus. The catheters are kept in place with a band about the head or with an adhesive strip.

If dry oxygen were admitted to the nostrils, the mucous membranes would be dried and soon would become congested



Fig 2—The soft rubber catheter in a child

and ultimately inflamed, and the patient would reject the treatment. Accordingly, the oxygen is passed through several inches of water in a wash bottle. The Burdick oxygen humidifier manufactured by the Burdick Corporation of Milton, Wis.,

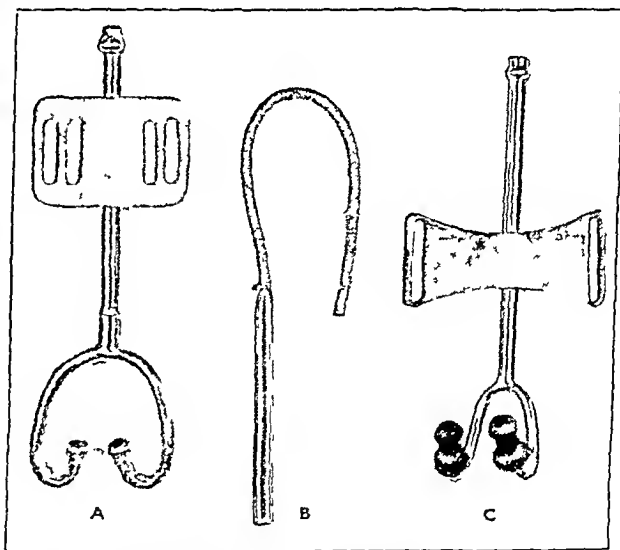


Fig 3—A the Bullowa catheter B soft rubber catheter with perforations C the Connel catheter with soft rubber tips

appears to be a satisfactory instrument for this purpose. An oxygen flow rate of 4 liters per minute for adults and from 15 to 2 liters per minute for children, has proved satisfactory and will give a pharyngeal oxygen of about 27 per cent, or a 50 per cent increase in the concentration usually found in the pharynx.

Regulators for the clinical delivery of oxygen are made by a number of manufacturers and may be obtained from local dealers in industrial oxygen or from the surgical instrument dealers (There is no medical oxygen. The oxygen used in garages for welding is suitable for inhalation and may be purchased from dealers in industrial gases.) The clinical regulators have the delivery gages graduated in liters. A two-stage regulator is desirable because it requires less observation to maintain a constant flow, permits more complete emptying of the oxygen tank, and protects Bourdon tube gages from excessive and sudden pressures.

There are two types of gages

1 The variable orifice or float gage in which a weight is supported by the flowing gas in a funnel shaped tube. The orifice between wall and weight varies, increasing in the upper portion of the tube. The number of liters flowing when the weight is supported at any given height is indicated on the tube. Should the outlet be obstructed so that less gas is escaping, the weight will fall and the amount flowing will be correctly indicated. The Air Reduction Company, 60 East Forty-Second Street, New York City makes such a gage.

2 The fixed orifice gage (Venturi principle). The amount of gas escaping through a given sized orifice is dependent on the pressure of the gas, so that a pressure gage may be calibrated in liters per minute to indicate the flow. If the flow of gas is free these gages may be accurate, but if the flow is obstructed the gage will indicate the same or a higher flow rate than is actually flowing. Sometimes the capillary opening becomes obstructed and this will impede the flow of oxygen and require a change in the calibration. The Bourdon tube may be sprung by sudden, excessive pressure, especially in one-stage regulators. The ordinary dial gages contain Bourdon tubes, these are curved tubes of metal which straighten when the pressure increases within them. By means of a ratchet attached to the end of the tube, the indicator on the dial is moved.

A recent production of the Linde Air Products Company is the Linde oxygen therapy regulator, type R-51, which has two stages of expansion and has been accepted by the Council on Physical Therapy of the American Medical Association.

In order to avoid breakage of the regulators, the tanks of oxygen should be strapped to the bed post so that delirious patients or persons moving about may not overturn them.

TREATMENT OF CERVICITIS

To the Editor—Kindly state what treatment could be applied in a case of chronic cervicitis the patient having a yellow watery copious discharge of foul odor of three years duration. The patient is single 26 years of age a bookkeeper and of nice reputation. She had a cervical cauterization (electrical apparently) about a year ago with no alleviation of the leukorrhea. She has had numerous treatments by various doctors and she is quite hopeless as to cure as far as she is concerned.

AARON I LEVIS M.D. Madison N.Y.

ANSWER—From the description given it is almost certain that this patient's annoying discharge is not due to a cervicitis, even though the latter may still be present but to trichomonas vaginalis. This belief is supported by the clinical symptoms enumerated and the persistence of the discharge in spite of various forms of treatment. Most likely the patient may be treated just as any married woman because with all the manipulation she has had the hymen has undoubtedly been ruptured and the vagina stretched.

In order to make a diagnosis of *Trichomonas vaginalis*, it is necessary to examine a fresh unstained drop of the discharge, diluted with a drop of physiologic solution of sodium chloride. *Trichomonas* is an actively moving paramecium-like organism and easy to detect.

There are many ways of treating a discharge due to this organism, and almost all types of drugs have been used. Thus far no specific has been found, but immediate relief can be given in most cases with almost any type of treatment though recurrences are frequent. The treatment outlined by Greenhill (THE JOURNAL May 30 1931 p 1862) is as follows.

The vagina is thoroughly scrubbed with gauze or cotton saturated with tincture of green soap (liniment of soft soap U.S.P.). All the vaginal folds are smoothed out and every part of the mucosa is scrubbed. The scrubbing is one of the most important steps in the treatment, and it is usually persisted in until slight bleeding is noted in the vaginal mucosa. Bleeding generally occurs because the mucosa in these cases is friable. The soap is washed out with tap water or with mercuric chloride and the vagina is dried thoroughly. A speculum is inserted into the vagina and hexylresorcinol solution (1:1,000) is instilled into the vagina and on the cervix.

A tampon saturated with half or full strength glycerin is then inserted high up into the vaginal vault. A second, dry, tampon is inserted to prevent the escape of glycerin on the patient's clothing. Hexylresorcinol solution (1:1,000) is applied to the vulvar and anal regions and the patient is instructed to remove the tampons after twenty-four hours. The string of the second tampon has a knot tied in it, so that the patient may know that this tampon is to be pulled out first. After removal of the tampons, a douche of tincture of green soap is taken. The treatment outlined is repeated every second day for at least three times. The patient takes a green soap douche on the mornings between treatments but not on the mornings she is to receive a treatment. A douche is not taken on the morning of a treatment because it is desirable to see how much discharge there is and also because hanging drop examinations are made at that time. Treatment is continued until hanging drops on two successive visits fail to show *Trichomonas*. However the patient is advised to take a 0.5 per cent lactic acid douche daily for about two weeks after treatment is discontinued. The purpose of the lactic acid douche is to attempt the reestablishment of a normal bacterial flora in the vagina.

A matter of great importance is the cleansing of the anus after a bowel movement. To accomplish the latter most women use an upward sweep toward the vagina and urethra, but this may produce reinfection if the causative organisms come from the rectum. The patients are instructed to use a sweeping motion directed away from the vagina and toward the sacrum. The significance of this method of cleansing the anal region should be impressed on the patient.

Since recurrences of the troublesome discharge occur in a certain proportion of cases, and since these frequently manifest themselves immediately after a menstrual period it is advisable to reexamine patients just before and just after a menstrual period. If organisms are found, a course of treatments should again be given.

TECHNIC OF MANTOUX TUBERCULIN TEST

To the Editor—The Mantoux test is being given in the schools at the present time (0.1 mg.) and the following questions have arisen: 1 Will 0.1 mg. light up a childhood type? 2 Will 0.1 mg. light up an adult type otherwise quiescent? 3 Are there any contraindications for the tests in children excepting the adult type? 4 What are the contraindications in an adult? Please omit name.

M.D. Ohio

ANSWER—One-tenth milligram of old tuberculin has been administered intracutaneously as the initial dose in diagnostic work by a large number of physicians. Many of them still use this amount as the initial dose in tuberculin testing of both children and adults. If the individual tested is highly allergic, a four plus local reaction may result that is a small area of necrosis is produced. This is not serious in any way and occurs so rarely that 0.1 mg. may be considered a safe dose from the standpoint of the local reaction. However, some physicians prefer to use as the initial dose only 0.01 mg., since with this amount one almost never sees a four plus reaction. With 0.1 mg. of tuberculin properly introduced into the layers of the skin there is no constitutional reaction. The tuberculin is absorbed very slowly and is present in such a small amount that it does not light up the childhood type of tuberculosis, nor is there any evidence to show that it lights up an adult type of tuberculosis otherwise quiescent. In children with the adult type of tuberculosis the intracutaneous tuberculin test is not contraindicated nor is it contraindicated in adults with the adult type of disease.

Apparently a great many physicians have confused the intracutaneous test with the subcutaneous test which was extensively used for a time but which often did result in constitutional symptoms, such as elevation of temperature, acceleration of pulse and malaise. Moreover, it sometimes resulted in focal reactions, that is around the site of the tuberculous focus in a lung there would appear increased shadow on the x-ray film, probably because of collateral inflammation. On auscultation one would occasionally find increase in rales. In patients with tuberculous cervical lymph nodes, large doses of tuberculin administered subcutaneously would result in increased enlargement and even tenderness over the nodes. There is little doubt that tuberculous lesions were sometimes lighted up by subcutaneous administration of tuberculin, owing to the large dose and the rapid absorption. However, from the small dose and the slow absorption by the intracutaneous method one need fear no danger. The occasional coincidence has led some physicians to fear the intracutaneous test. For example, The person who has had the test administered may within a few hours to a day or so develop symptoms, such as elevation of temperature due to an acute respiratory infection but for which the tuberculin was in no way responsible.

PARALDEHYDE IN RECTAL ANESTHESIA

To the Editor—In the article on "The Role of Pharmacology in the Development of Ideal Anesthesia" by C. D. Leake (*THE JOURNAL*, January 6), the statement is made that paraldehyde is satisfactory for rectal narcosis in place of tribromethanol. Reference was made to Stewart J. D. Rectal Paraldehyde Before Operation, *Brit. M. J.* 2, 1139 (Dec. 24) 1932. Would you give me the technique and dose used according to age and weight? Please omit name and address.

M D, Oregon

ANSWER—Stewart's report, to which reference was made, was based on experience with 500 cases. The patient was given an enema the evening before the operation, and barbitol by mouth as a sedative. The next morning an hour and a half before the operation, 0.7 mg ($\frac{1}{400}$ grain) of atropine sulphate was administered hypodermically (no morphine), and this was followed by the rectal administration of freshly prepared paraldehyde solution. The latter was approximately 10 per cent in physiologic solution of sodium chloride, which was found to be retained without difficulty if the rectal administration was slow. The adult dose was 8 drachms (32 cc.) of paraldehyde for patients weighing more than 8 stones (112 pounds, or 50 Kg). For patients under this weight the dose was in the proportion of 1 drachm of paraldehyde per stone, which is equivalent to 1 cc of paraldehyde for 18 Kg.

Another report on paraldehyde used rectally for basal narcosis was made by J. L. Thompson and L. J. T. Hartnett (*M. J. Australia* 2, 682 [Dec. 3] 1932). Their report was based on experience with seventy cases in which the dosage of paraldehyde was from 0.3 to 1.2 cc per kilogram in five times that amount of physiologic solution of sodium chloride administered rectally half an hour after a hypodermic injection of morphine, atropine and scopolamine, and one hour before the operation. These authors found that sleep occurred by the end of such administration, that anesthetization was simple, and that much less anesthetic agent was required than otherwise. Although unconsciousness was maintained several hours after operation, the reflexes returned quickly when the actual anesthetic was stopped. No unpleasant odor or taste was noted by any of the patients. Paraldehyde is recommended because it lessens the shock and postoperative pain, is easy to administer, is safe and certain in action, and is inexpensive.

PAINFUL FEET

To the Editor—Why is it that certain people employed in mercantile establishments and constantly walking about on a hard floor surface without any demonstrable physical or roentgen changes in either foot, complain of considerable pain during their hours of employment? The pain exists in both feet involving the metatarsophalangeal area, and is relieved when the patient operates a delivery truck or walks on other than a hard surface, in spite of the latter not being of even contour in fact being rough. The patient in mind is 23 years of age and has purchased every type of shoe and support for the foot but cannot get relief. This condition has existed for several years and of late is becoming quite a problem. Can you give me an explanation of what the condition is called, the prognosis and the treatment? Please omit name.

M D, Wyoming

ANSWER—The condition described would be classed as metatarsalgia, or foot strain.

The muscles are the first line of defense. After they have been strained to the limit, ligamentous strain comes into the picture. Standing is usually worse than walking, because in walking the muscles are used only intermittently.

In driving a truck the man exercises his muscles, especially the interossei, and keeps all other muscles and ligaments in good tone. Some of these patients develop "march foot" with an actual fracture.

USES OF EPSOM SALT COMPRESSES

To the Editor—I find many doctors using hot epsom salt compresses to localize infections such as abscesses. What does the work, the epsom salt or the heat? Would dry heat or infra red be just as efficient? Is there any special virtue to hot epsom salt compresses in infection after an incision has been made? Does the hypertonic solution actually "draw out the purulent material"? If so is there any preferable concentration of epsom salt? Is epsom salt solution antiseptic in any degree? Please omit name.

M D, Texas

ANSWER—Moist heat is often more soothing than dry heat, such as the infra-red. Warmth dilates the vasomotor nerves, producing a better blood supply, which aids tissue defense against infection and repair after injury. Where tension is present, heat may aggravate the pain and be contraindicated. A warm saturated solution of magnesium sulphate (epsom salt) applied to the skin exerts a soothing action in local inflammation whether from injury or infection, although as observed in erysipelas there may be no checking of the infection. An actual beneficial as well as soothing effect has been

proved after burns of the skin. Magnesium sulphate has also been found to be of great service in the treatment of infected wounds when applied as a paste. A paste of 765 Gm of dried magnesium sulphate and 350 Gm of glycerite of phenol has been found satisfactory in packing infected wounds. The injection of magnesium sulphate causes an increase in phagocytosis but no leukocytosis. Experimentally there is no migration of leukocytes from the application of magnesium to the frog's mesentery. It has no anesthetic effect on mucous membranes but does have a selective action on the motor endings of nerves, even in small doses. Solutions from 12.5 per cent to a saturated solution have been found to be soothing, to increase phagocytosis and to favor tissue repair.

EPILEPSY

To the Editor—A woman, aged 36 developed epilepsy at the age of 24 years. She has been having grand mal attacks occasionally in spite of medication, and two weeks ago she had several attacks in one night, followed by a delirium in which there have been no hallucinations but delusions. She has been rather excited and it has been necessary to use a chloral and bromide mixture and sodium amylal. This was interpreted as a status epilepticus equivalent and as such it should be expected to last only a week or two. She has had experiences somewhat similar to this lasting a week, however this is going on to the third week and there has been no change other than transient moments of more normal personality. Physical examination is negative with the exception that she has had an operation for removal of both tubes, ovaries and the uterus. I should be interested to have your comment about this condition if possible from this limited information. Please omit name.

M D, Michigan

ANSWER—Whenever convulsions begin after the age of 21, the diagnosis of idiopathic epilepsy should be held in reserve. It would be important to know whether this patient had any convulsions in childhood which might be considered the onset of the disease. The majority of epileptic patients have their first convulsions some time before puberty. In this case it would be advisable to obtain a careful history as to epilepsy in the family and then to make an extremely careful examination of the patient. This should include an examination of the optic fundi, a roentgenogram of the skull, a Wassermann test on both blood and spinal fluid, and an examination of the spinal fluid. If an organic lesion and syphilis can be definitely excluded, the diagnosis of epilepsy might be considered. A frontal lobe tumor, cerebrospinal syphilis and encephalitis must be considered in the diagnosis. The delirium and delusions might be caused by the medication. Bromides may eventually produce a mental deterioration, and phenobarbital may in some cases produce symptoms similar to intoxication with alcohol. If the examinations reveal no further information, it would be advisable to attempt to control the patient's condition with deodorized tincture of opium, which will produce cerebral sedation. Subsequently one of the barbiturates, preferably phenobarbital, may be administered in increasing dosage until the seizures are under control.

PROTECTIVE SUBSTANCES FOR SKIN

To the Editor—A cobbler consulted me about the condition of the skin on his thumb and first two fingers of his left hand. The skin is dry, thickened and scaly and at times it cracks open and bleeds. The fingers are very painful and he keeps them protected with gauze, which naturally interferes with his work. The index finger and thumb which he uses to pick up and hold shoe nails are the worst. This condition has existed for several years and he has tried many preparations to relieve the condition but without success. Can you tell me anything that might give this man relief?

H. H. Ash, M.D., West Lafayette, Ind.

ANSWER—The shoemaker and repairer is exposed to many irritants, such as those used in the complicated processing of leather, those present in shoe dyes and polishes, and the wax he uses in sewing leather. It is no wonder that dermatitis of the fingers is a common affliction. Attempts to soothe and heal the skin are unavailing because of repeated exposure. An attempt may be made to discover which of the many irritants is responsible. Patch tests are made by applying a small amount of the substance to be tested to apparently normal skin, covering it with gutta percha, rubber dam or oiled silk, and fastening this on with adhesive tape. If no itching is felt the patch may be left on for two days. At the end of this time, or earlier if itching is felt, it is removed and the reaction read. Any dermatitis at the center is recorded as positive.

If the substance found responsible for the dermatitis can be avoided, the difficulty is solved. If, however, it is indispensable in the work, he may be able to protect his skin by coating his hands with a protective dressing not thick enough to hinder the action of the fingers but sufficient for protection against any but watery solutions. After washing it must be renewed.

After work, it is washed off and a soothing ointment applied. If the skin is found sensitive to alkalis (a test with soap solution should always be included among the patch tests), plain water, oatmeal water, ointment of rose water or liquid petrolatum may be used for washing.

POLLENS IN NEW YORK AREA

To the Editor—A boy aged 5 years, contracted hay fever the second day of last August which lasted through to the early part of September. His parents are considering sending him to a camp in the Schroon Lake area in upper New York State with the hope of avoiding a recurrence. 1 Is this botanic area suitable? 2 Is there any better place within a radius of 300 or 400 miles from New York City? Please omit name.

M D, New York

ANSWER—It is assumed that this boy is sensitive to ragweed, although the history is not quite typical, the symptoms beginning and terminating rather early.

1 No local pollen surveys have been reported for the Adirondack region, but because of the predominance of forest flora there is reason to believe that there is less ragweed pollen in the vicinity of Schroon Lake than in the surrounding populous areas where atmospheric studies have been made. The approximate average annual fall of ragweed pollen in surrounding districts is as follows:

New York 1606 pollen granules to 18 sq cm or 100 pounds per square mile.

Buffalo 8,992 pollen granules to 18 sq cm or 563 pounds per square mile.

Montreal 744 pollen granules to 18 sq cm or 47 pounds per square mile.

Boston 790 pollen granules to 18 sq cm or 50 pounds per square mile.

2 There is no place within 400 miles of New York City which has been proved by atmospheric tests to be free from ragweed pollen. Two localities, however, enjoy considerable popularity and are probably relatively free. These are Bethlehem, N H, in the White Mountains, and the Georgian Bay region of Ontario. It is likely that either of these places would be better than the Adirondacks, since they are farther from agricultural areas and less likely to be affected by ragweed pollen blown in on prevailing westerly winds.

PREMATURE INFANTS

To the Editor—Just what constitutes a premature infant? Would a 5 pound infant born at what is believed to be term from an apparently healthy mother be called premature? Davis asks 'Is it customary to designate as premature all infants who at birth weigh between 1500 and 2500 Gm?' and states that 'immature as here used is the expression applied to any infant weighing less than five pounds.'

J D WALLER M D Wilmont Minn

ANSWER—Ordinarily an infant born before the fortieth week of intra-uterine life is considered to be prematurely born. However, many infants born from one to three weeks before term are so well developed that they are treated much the same as a full term infant. An infant weighing 5 pounds (2268 Gm) might be a premature infant, an immature full term infant, or a small full term infant commonly seen in twins. The decision as to how to treat this child would depend largely on its physical condition and the state of its development as manifested by its skin and nails, and its ability to maintain a normal temperature and digest food mixtures ordinarily taken by a new-born infant.

FUSIFORM BACILLI IN MOUTH AND VINCENT'S ANGINA

To the Editor—In the course of many examinations of patients gums and throats for the organisms of Vincent's angina I have frequently found smears that contained both fusiform bacilli and Spirochaeta refringens without there being any lesions definitely demonstrable. I should like to have some information as to the incidence of positive smears in the absence of any well marked lesions and also the extent to which the disorder is communicable in situations such as this. What treatment would you recommend for cases of this kind?

ROSS McC CHAPMAN, Towson Md

ANSWER—There is a marked difference of opinion both as to the facts and as to their significance with reference to this question. Smith (Oral Spirochetes Baltimore, 1932, p 68) says 'Fusiform bacilli, spirochetes, vibrios and cocci are normal inhabitants of the mouth. A few of these organisms are always to be found in smears from the gingival groove. Under conditions of disease they are enormously increased in number.' Appleton (Bacterial Infection Philadelphia, 1925, p 409) is of the opinion that 'Healing of the lesions goes on parallel with the disappearance of the organisms. When complete no organisms remain. However it must be admitted that the weight of opinion supports the belief that these bacteria

are common in filthy mouths and in persons with unhealthy gums, as in pyorrhea. Treatment in such cases should be directed to the elimination of conditions that favor multiplication of these organisms, such as gingival flaps over partly erupted lower third molars, dental defects favoring the collection of food or other debris, calculus, dental decay and diseased tonsils. It is possible that the carrier may be concerned in transmitting this disease, but there is no evidence to support such a belief. It would seem much more likely that only the "enormously increased number" in the active stages of the process favor contagion. Therefore only active preventive measures are warranted in dealing with the acute condition.

KERATITIS FROM TYPE WASH

To the Editor—A certain type wash containing either alcohol and phenol (carbolic acid) proportions unknown was accidentally rubbed in the eye of a patient. No immediate pain was noted. The eye became red and a sensation of a foreign body in the eye was complained of. I saw the patient three weeks afterward and found a keratitis profunda but no evidence of ulceration. Could such type wash as used in printing establishments be etiologically connected with the deep corneal inflammation? Is there any available literature on this subject? Please omit name.

M D, Illinois

ANSWER—Yes. Any one of the three substances mentioned could result in the deep keratitis spoken of. A complete digest of the literature to date upon this subject is contained in the following references:

Wagenmann in Graefe Saemisch Handbuch der gesamten Augenheilkunde ed 11 9 1579 1910
Cramer in Kurzes Handbuch der Ophtalmologie 4 528 1931
Wurde mann H V Injuries of the Eye ed 2 St Louis C V Mosby Company, 1932 p 413

PSEUDOHEMOPHILIA HEPATICA

To the Editor—A man, aged 40 known to be an alcoholic addict died suddenly without medical attention. There was a history of marked albuminuria and attacks resembling epilepsy. At necropsy he was found to have chronic nephritis, marked edema and atrophy of the brain and an acutely dilated heart. An unusual finding was the failure of the blood to clot. It had not been hemolyzed. There was no evidence of carbon monoxide, potassium cyanide, strychnine or other poisons. Can you tell me other possible causes of failure of the blood to clot? Please omit name.

M D Iowa

ANSWER—The most likely possibility in an alcoholic addict with this history and no previous evidence of a hemorrhagic diathesis is pseudohemophilia hepatica. The liver is the principal source of fibrinogen formation. Experimental injury to this organ results in a reduction of blood fibrinogen and prolongation of the normal clotting time. Clinically, the prolongation of the clotting time has been observed in persons with cirrhosis of the liver from chronic alcoholism, phosphorus and chloroform poisoning. Frank coined the term pseudohemophilia hepatica for this group of cases.

EXCISION OF HEMANGIOMA

To the Editor—Is surgical excision of a wine colored hemangioma about the size of 7 nickel and slowly growing an accepted method of treatment? It is elevated about one sixteenth inch. The patient is a 3 months old baby girl. The hemangioma is on the abdomen. Kindly omit name.

M D Long Island

ANSWER—Excision of small hemangiomas is an accepted method of treatment. If there is no underlying cavernous angioma, it ought not to give trouble. The excision must be wide of the tumor and care must be taken to ligate the vessels leading to the tumor. The excellent cosmetic results from treatment with the filtered rays of radium have made this a much more popular method at the present time.

PSORIASIS AND CLIMATE

To the Editor—Have you on file any accurate and reliable information as to whether psoriasis is more prevalent in any particular country in the world? Have you on the other hand any information regarding the fact that psoriasis is not seen in Siam? Is it true that psoriasis is rarely seen in countries located on the equator?

ALBERT M CRANCE, M D, Geneva N Y

ANSWER—Psoriasis seems to be more prevalent in the colder climates. Even in the temperate zone the disease is much more common in winter than in summer. It is true that one occasionally will get what is spoken of as an 'inverse' type of psoriasis, whereupon it is worse in summer than in winter. These cases are far in the minority, however.

We have no information as to the frequency of psoriasis in Siam. Probably the same conditions would apply to Siam,

however, as to any tropical country. The disease is not as frequent in the tropics as in the temperate zone. This is due, in part, to the temperature and, in part, to the influence of the sun's rays. It is well known that psoriasis does not appear on the parts exposed to the sun. Moreover, one of the best treatments that dermatologists have for obstinate cases of psoriasis is to send the patient South. Frequently sunning for a few weeks in a warm climate will take care of a very resistant type of the disease, even when it has reached the point at which it seems that nothing will help it.

ANILINE POISONING

To the Editor—Kindly let me know whether there are reports of systemic disturbance of people working in aniline oil.

E. M. FREMAN, M.D., Canton, Ohio

ANSWER—Yes. In every year since 1913, when the first extensive account of aniline poisoning in this country was published, one or more reports have appeared descriptive of this occupational disease. Among others:

Davis P. A. J. *Indust. Hyg.* 3:57 (June) 1921.

Lintz William. *Aniline Poisoning*. *THE JOURNAL* March 3, 1917, p. 692.

Luce R. V. and Hamilton Alice. *Industrial Aniline Poisoning in the United States*. *THE JOURNAL* May 6, 1916, p. 1441.

International Labour Office. *Encyclopedia of Industrial Hygiene*, vol. 1.

DRUGS TO CONTROL REACTION OF URINE

To the Editor—Is there any medication that may be administered by mouth that has a physiologic action of a sedative to the mucous membrane of the posterior urethra and base of the bladder for those conditions of urinary frequency not due to bacterial invasion, growths or organic prostatic disease? Please omit name.

M.D., California

ANSWER—If such cases exist they are in all probability due to the reaction of the urine. Acid urine may cause such irritation. Drugs that reduce the acidity of the urine or throw it over to an alkaline reaction, such as sodium citrate or sodium bicarbonate, may relieve this.

VACCINATION SCAR AS SIGN OF IMMUNIZATION

To the Editor—Is it possible for a patient to receive immunity to smallpox even though a scar or take does not result after two vaccinations? Kindly omit name.

M.D. Oklahoma

ANSWER—While the possibility of some immune reactions to the virus introduced at the time of vaccination cannot be denied, preventive immunization against smallpox is dependent on the local and general reactions characteristic of successful vaccination. A person who has been vaccinated twice without a take is not protected against smallpox.

SIMULTANEOUS IMMUNIZATION

To the Editor—I was much interested in your reply to the question regarding simultaneous immunizations (*THE JOURNAL* April 14, p. 1251 and April 21, p. 1326). I have always felt that it was only rational to carry out a single procedure at a time, as you suggest. Dr. Leake presented an outline in *THE JOURNAL* Jan. 28, 1928, where rapid immunization for a number of diseases seemed to be necessary. Now that general practitioners are becoming more and more interested in preventive work, they seem to feel it necessary to reduce the routine that has previously been followed and combine all immunizing practices in one single dose. I grant you that if this were a correct procedure it would be highly desirable. As it never seemed to me a scientific procedure to ask the same set of cells to manufacture two or more specific antibodies at one and the same time, I wrote fifteen or twenty outstanding men in this country regarding it and received some interesting replies. To my surprise the laboratory men (no less than McCoy of the United States Public Health Service, Young of Michigan and others) almost unanimously were of the opinion that there was no reason why two or more immunizing agents should not be given at the same time. Dr. Hektoen of Chicago felt that he would hesitate about giving smallpox vaccination with other immunizing agents as in that case one would be dealing with a live virus; otherwise there would be no objection. To Major Hitchens at Fort Sheridan it seemed to be a live subject and he hoped that some one would be interested and that they would carry out measured experiments.

I. F. THOMPSON, M.D., Racine, Wis.

Commissioner of Health

DERMATITIS DUE TO SPUN GLASS

To the Editor—On page 1245 of *THE JOURNAL* of April 14 appears a question in regard to a dermatitis due to spun glass. In the answer it is stated that this condition has not been mentioned previously in the literature. I encountered the following reference which is a brief discussion and report of a single case and may be of interest to your correspondent:

von Szentkalyi, S. *Dermatitis artificialis durch Engelhaare*. *Dermat. u. chnisch* 93:1302 (August 15) 1931.

LAURENCE TAUSIG, M.D., San Francisco

Council on Medical Education and Hospitals

COMING EXAMINATIONS

- ALABAMA, Montgomery, July 10-13. Sec. Dr. J. N. Baker, 519 Dexter Ave., Montgomery.
- AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY, Orol, Cleveland, June 11-12. Sec. Dr. C. Guy Lane, 416 Marlboro St., Boston.
- AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY, Orol (all candidates), Cleveland, June 12. Sec. Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.
- AMERICAN BOARD OF OPHTHALMOLOGY, Cleveland, June 11 and Butte, Mont., July 17. Sec. Dr. William H. Wilder, 122 S. Michigan Blvd., Chicago.
- AMERICAN BOARD OF OTOLARYNGOLOGY, Cleveland, June 11. Sec. Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.
- ARIZONA, Basic Science, Tucson, June 19. Sec. Board of Basic Examiners, Dr. Robert L. Nugent, University of Arizona, Tucson.
- MEDICAL, Phoenix, July 3. Sec. Dr. J. H. Patterson, 320 Security Bldg., Phoenix.
- CALIFORNIA, San Francisco, July 9-12 and Los Angeles, July 23-26. Sec. Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.
- COLORADO, Denver, July 3-6. Sec. Dr. Wm. Whitridge Williams, 422 State Office Bldg., Denver.
- CONNECTICUT, Basic Science, New Haven, June 9. Prerequisite to license examination. Address: State Board of Healing Arts, 1895 Yale Station, New Haven. Regular, Hartford, July 10-11. Endorsement, Hartford, July 24. Sec. Dr. Thomas P. Murdock, 147 W. Main St., Meriden. Homeopathic, New Haven, July 10. Sec. Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.
- DELAWARE, Wilmington, June 12-14. Sec. Medical Council of Delaware, Dr. Harold L. Springer, 1013 Washington St., Wilmington.
- DISTRICT OF COLUMBIA, Basic Science, Washington, June 25-26. Medical, Washington, July 9-10. Sec. Commission on Licensure, Dr. W. C. Fowler, 203 District Bldg., Washington.
- FLORIDA, Jacksonville, June 11-12. Sec. Dr. William M. Rowlett, Box 786, Tampa.
- ILLINOIS, Chicago, June 26-29. Supt. of Regs., Dept. of Regs. and Edu., Mr. Eugene R. Schwartz, Springfield.
- INDIANA, Indianapolis, June 19-21. Sec. Board of Medical Registration and Examination, Dr. William R. Davidson, Room 5, State House Annex, Indianapolis.
- IOWA, Iowa City, June 5-7. Dir. Division of Licensure and Registration, Mr. H. W. Greife, Capitol Bldg., Des Moines.
- KANSAS, Topeka, June 19-20. Sec. Board of Medical Registration and Examination, Dr. C. H. Lwing, Larned.
- KENTUCKY, Louisville, June 6-8. Sec. State Board of Health, Dr. A. T. McCormack, 532 W. Main St., Louisville.
- MAINE, Augusta, July 5-6. Sec. Board of Regs. of Medicine, Dr. Adam P. Leighton Jr., 192 State St., Portland.
- MARYLAND, Homeopathic, Baltimore, June 12-13. Sec. Dr. John A. Evans, 612 W. 40th St., Baltimore. Regular, Baltimore, June 19-22. Sec. Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore.
- MASSACHUSETTS, Boston, July 10-12. Sec. Board of Regs. in Medicine, Dr. Stephen Rushmore, 144 State House, Boston.
- MICHIGAN, Ann Arbor, June 5-7 and Detroit, June 12-14. Sec. Board of Regs. in Medicine, Dr. J. Earl McIntyre, 202-34 Hollister Bldg., Lansing.
- MINNESOTA, Basic Science, Minneapolis, June 5-6. Sec. Dr. J. Charnley McKinley, 126 Millard Hall, University of Minnesota, Minneapolis. Medical, Minneapolis, June 19-21. Sec. Dr. E. J. Engberg, 350 St. Peter St., St. Paul.
- MISSISSIPPI, Jackson, June 26-27. Sec. State Board of Health, Dr. Felix J. Underwood, Jackson.
- MISSOURI, St. Louis, June 14-16. State Health Commissioner, Dr. E. T. McGaugh, State Capitol Bldg., Jefferson City.
- NATIONAL BOARD OF MEDICAL EXAMINERS, The examinations in Parts I and II will be held at centers in the United States where there are five or more candidates, June 25-27 and Sept. 12-14. Ex. Sec. Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.
- NEBRASKA, Omaha, June 8-9. Dir. Bureau of Examining Boards, Mrs. Clark Perkins, State House, Lincoln.
- NEW JERSEY, Trenton, June 19-20. Sec. Dr. James J. McGuire, 28 W. State St., Trenton.
- NEW YORK, Albany, Buffalo, New York and Syracuse, June 25-28. Chief Professional Examinations Bureau, Mr. Herbert J. Hamilton, Room 315 Education Bldg., Albany.
- NORTH CAROLINA, Raleigh, June 18. Sec. Dr. B. J. Lawrence, 503 Professional Bldg., Raleigh.
- NORTH DAKOTA, Grand Forks, July 3-6. Sec. Dr. G. M. Williamson, 41/2 S. 3d St., Grand Forks.
- OHIO, Columbus, June 5-8. Sec. Dr. H. M. Platter, 21 W. Broad St., Columbus.
- OKLAHOMA, Oklahoma City, June 6-7. Sec. Dr. J. M. Byrum, Mammoth Bldg., Shawnee.
- PENNSYLVANIA, Philadelphia and Pittsburgh, July 10-14. Sec. Board of Medical Education and Licensure, Mr. W. M. Demson, 400 Education Bldg., Harrisburg.
- RHODE ISLAND, Providence, July 5-6. Dir. Public Health Commission, Dr. Lester A. Round, 319 State Office Bldg., Providence.
- SOUTH CAROLINA, Columbia, June 26. Sec. Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.
- SOUTH DAKOTA, Rapid City, July 17-18. Dir. Division of Medical Licensure, Dr. Park B. Jenkins, Pierre.
- TENNESSEE, Knoxville, Memphis and Nashville, June 14-15. Sec. Dr. H. W. Qualls, 130 Madison Ave., Memphis.
- TEXAS, Fort Worth, June 21-23. Sec. Dr. T. J. Crowe, 918-1920 Mercantile Bank Bldg., Dallas.
- UTAH, Salt Lake City, June 27-29. Dir. Department of Registration, Mr. S. W. Golding, 326 State Capitol Bldg., Salt Lake City.

VERMONT Burlington, June 20 22 Sec Board of Medical Registra-
tion Dr W Scott Noy Underhill
VIRGINIA Richmond June 20 22 Sec Dr J W Preston 28½
Franklin Road Roanoke
WASHINGTON Basic Science Seattle July 16 17 Medical Seattle
July 19 21 Dir Department of Licenses Mr Harry C Huse Olympia
WEST VIRGINIA Wheeling July 9 State Health Commissioner,
Dr Arthur E McClue Charleston
WISCONSIN Milwaukee June 26 29 Sec Dr Robert E Flynn 401
Main St LaCrosse
WYOMING Cheyenne, June 4 Sec Dr W H Hassed Capitol
Bldg Cheyenne

Rhode Island January Report

Dr Lester A Round, director, Rhode Island Public Health Commission, reports the written and practical examination held at Providence, Jan 4-5, 1934. The examination covered 7 subjects and included 70 questions. An average of 80 per cent was required to pass. Six candidates were examined all of whom passed. The following schools were represented:

School	PASSED	Year Grad	Per Cent
Georgetown University School of Medicine (1933)	83 9	84 8	88*
Boston University School of Medicine (1933)			86 4*
Tufts College Medical School (1929)	84 2	(1932)	83

One physician was licensed by endorsement on January 11. The following school was represented:

School	LICENSED BY ENDORSEMENT	Year Grad	Endorsement of
Boston University School of Medicine (1931)	N B M Ex		

*License withheld pending completion of internship

Wyoming Reciprocity Report

Dr W H Hassed secretary, Wyoming State Board of Medical Examiners reports 2 physicians licensed by reciprocity at the meeting held in Cheyenne, Feb 19, 1934. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Northwestern University Medical School (1933)			California
Marquette University School of Medicine (1933)			Wisconsin

Book Notices

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1933 with the Comments That Have Appeared in The Journal. Cloth Price \$1. Pp 188. Chicago American Medical Association 1933.

A feature of marked current interest in this volume is the preliminary report on alpha dinitrophenol the new drug for acceleration of cellular metabolism. The Council voices a warning on the dangers attending the use of this drug, this warning has been increasingly justified in reports of fatalities since the appearance of the Council's report in July of last year. Other preliminary reports which make this volume one of the most interesting issued by the Council in recent years are those on Dilaudid a new narcotic drug related to morphine. Tuadin, a new antimony compound for use in the treatment of bilharziasis and granuloma inguinale, and Hippuran, a new product for intravenous and oral urography.

The comprehensive and definitive special report on estrogenic substances furnishes a much needed review of the present status of such products in gynecologic therapy. The Council insists on the doctrine that basic laboratory investigation of these substances should precede clinical use. With the report on antipneumococcus serum containing type II antibodies, the Council in the light of recent improvement in preparations and technic puts its stamp of approval on the experimental use of type II antibodies as well as type I antibodies, which have been previously the only organisms of this kind recognized by the Council as worthy of clinical trial. Of interest to hospital authorities especially in connection with the book Hospital Practice for Interns recently issued by the Council in collaboration with the Council on Medical Education and Hospitals is the special report The Hospital Formulary, by Hatcher and Stamsby of New York. It outlines a plan characterized by the highest regard for the principles of rational drug therapy. Of more general interest is the Council's second

report on the intravenous use of barbitol compounds, which is the result of a questionnaire sent to representative physicians. In view of the answers to the questionnaire, the Council reaffirmed its previous decision concerning the limitations of intravenous use of barbitol compounds, namely, that these preparations should be administered intravenously only in a limited number of conditions in which administration by other routes is not feasible. The report carefully details these conditions.

The comparatively large number of reports on articles omitted from New and Nonofficial Remedies shows that the Council has recently been much concerned with products for which the original promise of therapeutic usefulness has not been fulfilled. Witness the omission of *Bacillus Bulgaricus* and *Kefir Fungi Preparations*, *Benzyl Benzoate*, *Benzyl Fumarate*, *Benzyl Succinate*, *Optochin Base*, *Pyridium*, and *Thiosinamine*, all of them for the reason stated. The lengthy report on the omission of *Pyridium* is an example of the meticulous fairness characteristic of the Council's treatment of the manufacturers of commercial preparations. In connection with the omission of *Pyridium* should be noted the report which declares *Azophene* (*Mallophone*) not acceptable. This product has been shown to be identical with *Pyridium* and the Council considers the claims for its usefulness as a local, general or urinary antiseptic as unwarranted as are those for *Pyridium*.

The main bulk of the volume, which, incidentally, is considerably increased over that of recent annual volumes, is taken up with reports on products which the Council has found unacceptable for inclusion in New and Nonofficial Remedies. Of special note are the report on *Alpha-Lobelin*, a drug on which the Council in 1927 issued a preliminary report but which is now found not to have established itself as a respiratory stimulant of as great usefulness as carbon dioxide and oxygen, the report on a number of preparations marketed by the Upjohn Company with unwarranted misleading and unscientific claims the report on *Clavipurin*, a preparation of the alkaloids of ergot, marketed without adequate declaration of the composition and without adequate standardization under a nondescriptive proprietary name with unwarranted therapeutic claims, the report on *Diampysal*, another pyridine derivative proposed for use in bacterial infections, convincing evidence for the therapeutic value of which is lacking, the report on *Euphydigital*, an irrational mixture of digitalis and a theophylline preparation marketed under an uninforming proprietary name with exaggerated and unwarranted claims for its therapeutic value, the report on *Guphen*, stated to be the guaiacol ester of phenylcinchonic acid marketed with unwarranted therapeutic claims under an uninforming proprietary name and having no proved advantage over its constituents administered separately, the report on *Niazol*, another pyridine compound of unsubstantiated value as a urinary antiseptic, the report on *Omnadin*, a preparation recognized for use for non-specific lipoprotein therapy practically as a cure-all, and the report on a group of endocrine preparations of the Roan Laboratories variously unacceptable as being of indefinite composition and of undemonstrated therapeutic value.

The Practitioners Library of Medicine and Surgery Volume V Traumatic Surgery [George Blumer Supervising editor] Associate editor Theodore S. Moose Jr. B.A. M.D. Surgeon to the Eastern Maine General Hospital Bangor. Cloth Price \$10 per volume Pp 1080 with illustrations. New York & London D Appleton Century Company 1934.

The Practitioners Library of Medicine and Surgery Volume VI Obstetrics and Gynecology [George Blumer Supervising editor] Associate editor Luther K. Musselman B.S. Ph.D. M.D. Associate Clinical Professor of Obstetrics and Gynecology Yale University School of Medicine. Cloth Price \$10 per volume Pp 800 with illustrations. New York & London D Appleton Century Company 1934.

These new additions to the Practitioners Library are on a par with the previously published volumes. They constitute essentially individual systems of "Traumatic Surgery" and "Obstetrics and Gynecology." The authors have been selected from a variety of institutions and have developed the topics they discuss according to simple and systematic outlines. The publisher has been extraordinarily generous in the provision of illustrations. The volume on "Obstetrics and Gynecology" is competent. The authors chosen are thoroughly familiar with the most recent literature of their subjects and the bibliographic references include not only recent contributions but also classic

contributions of an earlier day. If there is any special characteristic of these two volumes, it is the uniformly high character of practically all the contributions. It is rare in systems of such scope to find such an evenness of quality as is here apparent.

Studies in the Psychology of Delinquency. By Grace W. Palithorpe. Medical Research Council Special Report Series No. 170. Paper. Price 2s. Pp. 113. London: His Majesty's Stationery Office, 1932.

This study in the psychology of delinquency gives the result of investigations made on the recommendation of the Committee on Mental Disorders of the Medical Research Council of Great Britain. The material has been gathered over a period of five years from the inmates of prisons and of preventive and rescue homes. The study represents a combination of clinical and statistical approach and as such it is methodically superior to such statistical studies in criminology as do not investigate in detail the individual cases that serve as the basis of statistical calculations. The writer emphasizes the fact that, in contrast to most authors in this field who chiefly utilize methods of measurement and comparison instead of the most fundamental applications of psychopathology to individuals, she attempts to apply the analytic principles and refers to the similar efforts of Alexander and Staub in Berlin and of Aichhorn in Vienna. Although in the author's individual work with criminals there was no opportunity for formal, deep analysis of individual cases, she adopted the "simple but revolutionary expedient of letting the subject tell her own story, leaving first of course removed all possible obstacles to or obvious sources of bias in the recital."

The first part of the book consists in a comparative investigation of 100 female inmates of seven preventive and rescue homes in London. The cases were investigated by the standard methods of intelligence testing and with the method of prolonged interviews, approaching somewhat the psychoanalytic interviews. The second series of investigations was carried out on 100 female inmates of preventive and rescue homes and contains, apart from psychologic analysis, environmental studies, the results of which are also statistically worked up. It is noteworthy that in fifty out of a hundred cases satisfactory homes have been found and in only nine cases vicious homes. The high proportion of psychoneuroses and mental conflict, 55 per cent, is similarly of great interest. The second part of the book deals with case histories. The method adopted for taking case histories does not entitle one to expect a deep insight into the emotional development of the cases. But the case histories are intelligently recorded and show that the author's eye has been trained for observing relevant material. In summing up her results, the author states that there are 111 cases in 200 which need psychologic treatment in some form or other, and this figure excludes mental defectives and constitutional inferiors. Apart from treatment, segregation or supervision is also necessary.

Regarding sentiment development, the author recommends experimentation with intensive social education and psychoanalytic treatment. She suggests four general methods for dealing with the offenders: (1) segregation, (a) permanent, (b) temporary, (2) permanent supervision without loss of freedom, (3) education, (4) psychotherapy. Regarding the group that suffers from mental conflict or epilepsy and also displays psychotic tendencies before any definite psychosis has developed, the author first recommends full psychologic investigation. The investigator would then be in a position to advise (1) a specialized environment, educative or otherwise, (2) suggestion, direct or indirect, (3) psychoanalytic treatment. The author says that in 19 per cent of all cases of this group psychoanalytic treatment seems to be indicated.

On the whole, apart from some details, this study will be approved of by all physicians and criminologists who have accepted the principles of modern dynamic psychology. The relatively small number of investigated cases does not allow far-reaching statistical conclusions, but because of the careful individual study of the cases which are considered in the statistical charts this little study is much more valuable than most statistical studies in this field, in which criminality is usually taken as a unit in a mass of statistical data which are partly based on police records or on other inadequate sources of knowledge of the individual cases.

La diathermie et ses applications médicales. Par le Docteur Paul Duhem. *Electroradiologiste de l'Hôpital des Enfants Malades.* Second edition. Paper. Price 20 francs. Pp. 147, with 37 illustrations. Paris: Gauthier Villars, 1933.

This is an enlarged and completely revised edition of a work forming one of the nineteen monographs on facts of physical therapy, edited and in this instance written by Duhem. It follows in general outline the style laid down for the entire series, presenting the available theories and proved facts of diathermy and its medical practice with the least amount of circumlocution. To accomplish this and to keep it within its present size, a great deal of detail has been sacrificed in order to stress the basic facts and principles on which this discipline is founded. Discussions are therefore concise, the subject matter having that orderly arrangement of sequence—theory preceding practice—which makes it a practical exposition on the subject. In the space of seven chapters the author has managed to present in rough outline the historical background of high frequency therapy, its physical principles and electrophysiologic data, even to the point of bringing these down to date by a sketchy but, nevertheless, concise review of the promising possibilities of electroparalysis and short wave therapy. That the practical side has not been neglected is indicated by the fact that nearly half of the subject matter is devoted to discussions of its therapeutic action, the author stressing principles above specific indications, rather than dogmatizing on individual conditions. One closes the book with a conviction that here has been presented a valuable summary of diathermy and its medical applications from the point of view of an individual who has obtained his information from the country in which the therapeutics of the high frequency current was discovered.

Leadership in Medicine. By Lord Moynihan. Walker Trust Lectures on Leadership No. IV. Delivered before the University of St. Andrews, 16 February, 1933. Paper. Price, 2s. 6d. Pp. 48. London & New York: Oxford University Press, 1933.

The Oxford University Press here makes available in forty-eight pages of large, widely spaced type an essay by Lord Moynihan. Admirers of the literary style and of the philosophy of Lord Moynihan—and who is not—may wish to have the essay in this handsome form and consider the dollar well spent. The essay is built about the contribution of Lord Lister as contrasted with that of political and military leaders of mankind. It leads to the conclusion that science has assumed responsibility for leadership in industry and that what is now needed is introduction of the scientific method into the government of affairs.

Synopsis of Obstetrics and Gynecology. By Aleck W. Bourne. M.A. M.B. B.Ch. Senior Obstetric Surgeon, Queen Charlotte's Hospital, London. Fifth edition. Cloth. Price \$5.25. Pp. 439, with 175 illustrations. New York: William Wood & Company, 1932.

For the student desirous of rapid review in preparation for examination, Bourne's synopsis will be found of valuable assistance. It is written in outline form, well systematized, and illustrated with adequate line diagrams. In the new material in this edition the Stockholm treatment with radium for carcinoma of the cervix is fully outlined. The English school of teaching is strictly followed, so that in certain subjects, such as forceps, some variance from American practice will be observed. In general, however, the subjects are outlined in wholly acceptable form. The type is small with boldface headings. An adequate index is appended.

A Text Book of Gynaecology for Students and Practitioners. By James Young D.S.C. M.D. F.R.C.S.E. Gynaecologist, Royal Infirmary, Edinburgh. Third edition. Cloth. Price \$3.75. Pp. 411, with 220 illustrations. New York: The Macmillan Company, London: A. & C. Black, Ltd., 1933.

This is an almost complete revision of the previous editions. The chapters on physiology, disorders of menstruation, uterine hemorrhage and sterility have been completely rewritten. This well written and concise volume is an excellent textbook for students. However, the space devoted to operative gynecology might well have been devoted to an elaboration of certain chapters that have suffered by their brevity. The section on operative procedures is so incomplete and poorly presented that its omission would have been a distinct improvement.

Miscellany

RECENT DEVELOPMENTS IN PHARMACOPEIAL VITAMIN STANDARDIZATION

During the revision of the U S P X it became apparent that the newly discovered fat-soluble vitamin A should be recognized as an important factor in the potency of cod liver oil. It was also being demonstrated that "the antrachitic factor" should be given consideration, but at that time it had not been sufficiently studied so that there was knowledge of how to evaluate it. A group of those active in developing vitamin knowledge, including Drs Sherman, McCollum, Anderson, Holmes and the late Alfred F Hess, were invited by the Pharmacopeia Committee to suggest the basis for the new U S P text, they developed the first standard vitamin A assay method (1924) (U S P X, p 263) and this is still essentially correct. In setting a vitamin A standard for cod liver oil, these early workers realized that no one then knew what was the potency of an "average oil," so they required only a minimum amount (50 vitamin A units) primarily to exclude the cod liver oils then on the market, which were being purified and bleached by chemical methods, with destruction, thereby, of all vitamins.

In the period following 1926 when the U S P X became official, the scientific knowledge concerning vitamins advanced rapidly, so that in 1930 it was realized that the U S P standards were entirely inadequate. Steps were taken to issue a new text by "interim revision."

The U S P board of trustees appropriated an initial \$1,000 toward the expense and the Pharmacopeial Vitamin Committee was organized and the first meeting called in New York, under the auspices of the U S P Committee of Revision and presided over by the chairman of that committee.

The conference agreed on the general methods of assay for vitamins A and D, adopting in the main the details that had already been carefully developed by a vitamin committee of the American Drug Manufacturer's Association. The committee adjourned after a full day of discussion, having reached practically a unanimous agreement on all points. The committee also appointed Drs McCollum and Steenbock as their representatives at the International Vitamin Conference, called in London by the Health Organization of the League of Nations.

Some months later, the London conference having been held and its deliberations and conclusions released, a second meeting of the U S P Vitamin Committee was called in New York, again with a large group, about thirty-five participating. Again the government representatives, the leading experts in the vitamin sciences in this country and members of the scientific staffs of pharmaceutical manufacturers were present at the invitation of the Pharmacopeia. The committee agreed that the U S P should adopt as its standards the "International Vitamin Units."

To carry out the decisions of the larger committee and to serve specifically as an advisory group for the Pharmacopeia the U S P board of trustees established the U S P Vitamin Advisory Board and appointed as members, Dr Lafayette B Mendel of Yale University, Dr H C Sherman of Columbia University, Dr E M Nelson, director of the Vitamin Laboratory of the Food and Drug Administration, Prof E F Kelly, secretary of the American Pharmaceutical Association representing the Trustees and E Fullerton Cook, representing the U S P Committee of Revision.

THE INTERNATIONAL STANDARDS

By this time the Health Committee of the League of Nations had released and sent to this country a limited amount of the international vitamin A standard in the form of carotene and the international vitamin D standard, a special irradiated ergosterol both of these having been prepared at the British Institute for Medical Research under the direction of Sir Henry Dale.

THE U S P REFERENCE COD LIVER OIL OF KNOWN VITAMIN A AND VITAMIN D POTENCY EXPRESSED IN THE NEW U S P UNITS (INTERNATIONAL UNITS)

There being only a limited amount of this international standard available, the vitamin board immediately undertook the preparation of a sufficient quantity of a cod liver oil of known vitamin potency to be used as the basis for the standardization of American preparations claiming A or D vitamin potency.

The vitamin board secured the cooperation of the Bureau of Fisheries at Washington, which supplied a sufficient quantity of authentic cod liver oil, collected and destemmed under the supervision of the government laboratory in Gloucester, Mass. This oil was immediately placed in 30 cc amber-colored glass containers under rigid conditions involving the drying of the container and oil to eliminate all water, the exclusion of all air by vacuum, the introduction of carbon dioxide and hermetic sealing, independent of the screw cap.

This packaged oil was immediately placed in cold storage at a temperature under 15 C. Previous experience had shown that under such treatment and storage no deterioration in cod liver oil could be detected over a long period. Nevertheless the plans of the vitamin board include a reassay of this oil every six months for both its vitamin A and vitamin D potency.

To determine the initial vitamin activity of the "reference or standard cod liver oil," the board arranged with seventeen "vitamin laboratories" to assay this bottled oil, following exactly the assay methods adopted by the large vitamin committee. The board supplied added information made available by the International Vitamin Committee and supplied uniform report blanks, including graphs. All laboratories reported only by code number, the chairman of the board alone holding the key.

One set of assays was arranged for in London in the laboratory of Dr Coward, another in Oslo, Norway, under Dr Poulsen at the National Vitamin Laboratory, another at Johns Hopkins, another at Columbia University, another at the University of Wisconsin, and the others by well known vitamin experts many of them directing commercial laboratories. The board paid for two of these assays and all others were voluntary. When it is realized that the average cost of a vitamin A assay is \$280 and a vitamin D assay \$80 and that many laboratories ran from two to five assays on this one sample, the extent and value of this cooperation can be estimated.

Another significant feature of the program is the fact that with the promulgation of the new U S P vitamin standards and assay methods, most of the important vitamin laboratories in this country and even in producing countries abroad will already be thoroughly familiar with the details of the new U S P assay.

Fifteen of the seventeen laboratories have reported and the other two have the assays under way. The vitamin board has painstakingly studied and evaluated the reports and has recommended the following standards for the official cod liver oil.

Minimum Standard for Vitamin A for U S P Cod Liver Oil—The minimum vitamin A standard for U S P cod liver oil shall be not less than 600 international units.

Minimum Standard for U S P for Vitamin D Cod Liver Oil—The minimum vitamin D standard for U S P cod liver oil shall be not less than 85 international units.

NOTE—The new "U S P vitamin A units" and "U S P vitamin D units" are identical with the corresponding "international units." In expressing on labels the potency of vitamin-containing products, it is recommended that the term "U S P vitamin A units" or "U S P vitamin D units" be employed. To indicate the adoption of the new standards, the statement "U S P X—revised 1934" may be used.

For the benefit of those who wish to know the approximate relationship between units they are now using and international units of vitamins A and D, the following information is provided.

One U S P X Sherman or A D M A unit of vitamin A equals approximately 14 international or new U S P units.

One Steenbock unit of vitamin D equals approximately 27 international or new U S P units.

One international or U S P unit of vitamin D equals approximately 325 A D M A units. Or to phrase it another way, the new U S P minimum standard of 600 U S P Vitamin A units per gram is approximately equivalent to 428 "old" U S P A units, and the new 85 U S P Vitamin D per gram is approximately equal to 315 Steenbock or 276 A D M A units.

The U S P board of trustees has also announced the release of the "reference cod liver oil," prepared under the supervision of the vitamin board, for use in the standardization of medicinal or food products claiming vitamin potency, and already many laboratories in this country have secured this official vitamin standard. These new U S P standards of vitamins A and D will be the basis for the evaluation by the Food and Drug Administration of all products in the country claiming vitamin A or D potency.

Copies of the U S P X (1934) interim revision Cod Liver Oil Text or the Reference Cod Liver Oil may be obtained by addressing the Chairman of the Committee of Revision

Medicolegal

Workmen's Compensation Acts Industrial Commission May Not Order Attorney to Pay Medical Witness' Fee—The state industrial commission of Oklahoma ordered a certain fee to be paid to a claimant's attorney and directed the attorney to pay out of this sum the witness fee of the physician who testified for the claimant in the case. It was contended that the commission erred in ordering the attorney to pay this witness fee. We regard this contention as serious, said the Supreme Court of Oklahoma. Attorneys are permitted to practice before the state industrial commission. Their fees must be approved by the commission before they become a lien on the compensation awarded. Attorneys should be accorded the same fair consideration in fixing the amount of their fees for appearing and conducting litigation before that body as they usually receive before any other tribunal, considering the amount of legal work done and the amount of money involved. The question of the reasonableness of the fee is a discretionary matter with the commission, and unless this discretion is abused the award should be upheld. For the commission, however to direct that a lawyer pay a portion or all of the expense of a client's litigation is highly improper. It would not be sound policy to permit the commission to order the mingling of attorneys' fees and medical fees. It might lead to the encouraging of litigation, collusion, and framing of evidence, and might tend to make a medical witness feel that his remuneration in the case would depend on the result of the commission's decision. The Supreme Court therefore declared void that portion of the award of the industrial commission directing payment of the witness fees out of the attorney's fees.—*Willhite v Prairie Oil & Gas Co (Ola)* 26 P (2d) 406

Workmen's Compensation Acts Aggravation of Pre-existing Heart Disease Compensable—In the course of his employment the employee pushed up a grade tramway cars loaded with coal. After pushing one car containing a somewhat heavier load than usual, he appeared out of breath, evidenced extreme distress, sank to the ground and died within ten minutes. In a proceeding instituted by his widow under the Tennessee Workmen's Compensation Act physicians testified that the death resulted from acute dilatation of the heart, which, in their opinion, was likely to result from overexertion. Proof was adduced however, that prior to the alleged industrial accident the employee had "a chronic condition of heart weakness." The employer insisted that death was not due to an accident but rather to this disease condition of the employee's heart. The trial court awarded compensation to the widow and the employer appealed to the Supreme Court of Tennessee. We are of the opinion said the court that under the facts shown here the award of the trial court was proper. In *Tennessee Eastman Corporation v Russell* 150 Tenn 334, 265 S W 540, the court approved of the general rule of law that

in proceedings under the workmen's compensation act "a pre-existing weakness or disease will not prevent the injury from being the result of an accident, if the accident is the immediate cause of the injury." In *Brightman's Case*, 220 Mass 17, 107 N E 527, L R A 1916A 321, it was held that the acceleration of a previously existing heart disease to a mortal end sooner than it otherwise would have come was an injury within the meaning of the Massachusetts workmen's compensation act. The award in favor of the widow was affirmed.—*Cambria Coal Co v Ault (Tenn)*, 64 S W (2d) 18

Society Proceedings

COMING MEETINGS

- American Medical Association Cleveland June 11 15 Dr Olin West
535 North Dearborn Street, Chicago Secretary
- American Academy of Pediatrics Cleveland June 11 12 Dr Clifford
G Grullee 636 Church Street Evanston Ill Secretary
- American Association for the Study of Gout Cleveland June 7 9
Dr J R Yung 670 Cherry Street Terre Haute Ind Secretary
- American Association for the Study of Neoplastic Diseases Baltimore
June 21 23 Dr Eugene R Whitmore, 2139 Wyoming Avenue N W
Washington D C Secretary
- American Association for Thoracic Surgery Boston May 31 June 2
Dr Duff S Allen 3720 Washington Boulevard St Louis Secretary
- American Association of Industrial Physicians and Surgeons Cleveland
June 11 12 Dr Volney S Cheney Armour and Company Union
Stock Yards, Chicago Secretary
- American Association of Medical Milk Commissions Cleveland June
11 12 Dr Harris Moak 360 Park Place Brooklyn Secretary
- American Bronchoscopic Society Cleveland June 11 Dr Louis H
Clerf 110 South 10th Street Philadelphia Acting Secretary
- American Dermatological Association New York June 7 9 Dr William
H Guy 500 Penn Avenue Pittsburgh Secretary
- American Heart Association Cleveland June 12 Dr Irl C Riggan
50 West 50th Street New York Executive Secretary
- American Laryngological Association Cleveland June 7 9 Dr William
V Mullin 9204 Euclid Avenue Cleveland Secretary
- American Neurological Association Atlantic City June 4 6 Dr Henry
Alsop Riley 117 East 72d Street New York Secretary
- American Ophthalmological Society Lucerne in Quebec Canada July 9 11
Dr J Milton Griscorn 2213 Walnut Street Philadelphia Secretary
- American Orthopedic Association Rochester Minn June 6 9 Dr
Ralph K Ghormley Mayo Clinic Rochester Minn Secretary
- American Physiotherapy Association Cleveland June 13 16 Mrs Bess
Searls 1430 West 77th Place Chicago Secretary
- American Proctologic Society Cleveland June 11 12 Dr Frank G
Kunyeon 1361 Perkiomen Avenue Reading Pa Secretary
- American Psychiatric Association New York May 28 June 2 Dr
William C Sandy State Education Building Harrisburg Pa Secretary
- American Society of Clinical Pathologists Cleveland June 8 11 Dr A
S Giordano 531 North Main Street South Bend Ind Secretary
- American Surgical Association Toronto Canada June 4 6 Dr Vernon
C David 59 East Madison Street Chicago Secretary
- American Therapeutic Society Cleveland June 8 9 Dr Oscar B
Hunler 1835 Eye Street N W Washington D C Secretary
- Arizona State Medical Association Prescott, June 7 9 Dr D F
Harbridge 822 Professional Building Phoenix Secretary
- Association for Research in Ophthalmology Cleveland June 12 Dr
Conrad Berens 35 East 70th Street New York Secretary
- Association for the Study of Allergy Cleveland, June 11 12 Dr Warren
T Vaughan 808 Professional Building Richmond Va Secretary
- Association for the Study of Internal Secretions Cleveland June 11 12
Dr I M Pottenger Pottenger Sanatorium Monrovia Calif
Secretary
- Conference of State and Provincial Health Authorities of North America
Washington D C June 5 6 Mr A J Chesley Minnesota State
Office Building St Paul Secretary
- Massachusetts Medical Society Worcester June 4 6 Dr Walter L
Burrage 182 Walnut Street Brookline, Secretary
- Medical Women's National Association Cleveland June 10 12 Dr
Elizabeth Kirtledge 3906 McKinley Street Washington D C,
Secretary
- Minnesota State Medical Association Duluth July 16 18 Dr E A
Meyerding, 11 West Summit Avenue St Paul Secretary
- Montana Medical Association of Helena July 11 12 Dr E G Balsam
Box 88 Billings Secretary
- New Jersey Medical Society of Atlantic City June 5 8 Dr J B
Morrison 66 Milford Avenue Newark Secretary
- New Mexico Medical Society Las Vegas July 19 21 Dr L B
Cohenour 219 West Central Avenue Albuquerque Secretary
- North Pacific Pediatric Society Vancouver B C June 18 Dr R H
Somers 1305 Fourth Avenue Seattle Secretary
- Pacific Coast Oto Ophthalmological Society Butte Mont July 16 18
Dr I C Cordes Fitzhugh Building San Francisco Secretary
- Pacific Northwest Medical Association Salt Lake City June 21 23 Dr
C W Countryman 407 Riverside Avenue Spokane Wash Secretary
- Rhode Island Medical Society Providence June 7 Dr J W Leech
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Titles marked with an asterisk (*) are abstracted below.

Alabama Medical Association Journal, Montgomery

3 293 332 (March) 1934

Cancer of Larynx. Report of Three Cases of Laryngectomy M. E. Quen Atlanta, Ga.—p. 293

*Treatment of So Called Intestinal Intoxication of Infants. Comprehensive Plan A. C. Gipson, Gadsden—p. 296

Drifting Sands of Medical Practice J. S. McLester Birmingham—p. 305

Ankle Fractures R. Carothers, Cincinnati—p. 309

Pelvic Inflammation in Women G. F. Douglas Birmingham—p. 311

Treatment of Intestinal Intoxication of Infants—Gipson outlines a plan of treatment in cases of intestinal intoxication in infants. Ringer's solution is given intraperitoneally or subcutaneously or both ways. As quickly as possible, blood is taken from the baby and from relatives or friends in order that they may be cross-matched. A blood transfusion by the citrate method is done, the amount of blood given varies from 10 to 30 cc. per pound of body weight, transfusions seldom total less than 100 cc. or more than 200 cc. If the patient has acidosis, the stomach is washed and from 45 to 90 grains (3 to 6 Gm) of sodium bicarbonate dissolved in from 40 to 60 cc. of ice cold water is left in the stomach. This treatment may be repeated once or twice, according to indications, at intervals of three hours. Water is given by mouth, either in fixed amounts at definite intervals or continuously by the drip method through a nasal catheter. Ringer's solution is administered parenterally as often as it is indicated. Transfusion may be repeated once or twice at intervals of twenty-four hours if the child does not improve. No food is given by mouth until toxic symptoms have disappeared or greatly diminished. When food is given, the interval is two hours, and the caloric value is raised daily by small increments. On the first day a total of about 50 calories is given, on the second 75 on the third 100, and so on. The increments may then be made larger and the total caloric requirement attained in a week or ten days. Modification of the procedures as regards feeding is made when the patient is an atrophic baby with severe infection.

American Journal of Cancer, New York

20 539 790 (March) 1934

Dilatations of Cavity of Septum Pellucidum and Cavum Vergae. Report of Cases W. P. VanWagenen and R. B. Aird, Rochester, N. Y.—p. 539

Effect of Radium on Spinal Cord. Report of Two Cases of Myeloma W. T. Peyton, Minneapolis—p. 558

Breeding Behavior of Dilute Brown Stock of Mice (Little dba) W. S. Murray, Bar Harbor, Maine—p. 573

*Metastasis of Melanoma to the Groin Four Years Before the Appearance of the Primary Lesion on the Heel S. Selig, New York—p. 594

Multiple Primary Carcinoma Involving the Rectum and Ovary. Case H. K. Seelaus and B. Haskell, Philadelphia—p. 597

Union of Pathologic Fractures Following Metastatic Hypernephroma E. L. Rybins, Iowa City—p. 601

Accidental Autogenous Transplantation of a Mammary Carcinoma to the Thigh During a Skin Graft Operation. Case Report J. W. Spies, F. E. Adair and M. C. Johs, New York—p. 606

Nematode and Carcinoma in Human Kidney Pelvis A. Plaut, New York—p. 610

Tumor Amylase. General Properties and Estimation of Activity F. H. Charles and W. T. Salter, Boston—p. 613

Id. Effect of Various Hormones and Chemical Agents F. H. Charles, Phoebe D. Robb and W. T. Salter, Boston—p. 625

Effect of Testicle Extract on Animal Neoplasms F. Prime and C. D. Haagenen, New York—p. 630

Metastasis of Melanoma Four Years Before Appearance of Primary Lesion—Selig presents the case of a non-pigmented melanoma of the right heel metastasizing to the groin four years before the primary growth was visible. The early

metastasis may have been due to the constant trauma to which the growth was subjected because of its location. The tumor was resistant to roentgenotherapy. A lymph node metastasis was the first evidence of the disease, and a careful search of the skin over the area drained by the involved node failed to reveal the primary growth until more than four years had elapsed.

American Journal of Clinical Pathology, Baltimore

4 1 168 (Jan) 1934

Medicolegal Necropsy Introduction F. E. Sondern, New York—p. 1

Id. Medicolegal System of United States O. T. Schultz, Evanston, Ill.—p. 7

Id. The Medicolegal Necropsy C. Norris, New York—p. 24

Id. Performing the Medicolegal Necropsy A. V. St. George, New York—p. 32

Id. Pathologic Anatomy of Death by Drowning E. L. Miloslavich, Zagreb, Yugoslavia—p. 42

Id. Toxicology in the Medicolegal Necropsy A. O. Gettler, New York—p. 50

Id. Medical Examiners' Findings in Deaths from Shooting, Stabbing, Cutting and Asphyxia H. S. Martland, New York—p. 66

American J. Obstetrics and Gynecology, St. Louis

27 317-472 (March) 1934

Preconceptional Address: The Challenge of the Falling Birth Rate J. C. Litzberg, Minneapolis—p. 317

Rupturing the Membranes to Induce Labor D. L. Jackson, Boston—p. 329

Histopathology of Epithelial Hyperplasia and Neoplasia of Cervix Uteri H. Schmitz, F. A. McJunkin and M. A. Macaluso, Chicago—p. 336

Pregnancy and Rheumatic Heart Disease W. A. Scott and D. N. Henderson, Toronto—p. 342

The Length of Labor. III. First Stage. Labor Pains and Consistency L. A. Calkins, Kansas City, Mo.—p. 349

*Complications Resulting from Pelvic Irradiation for Cancer of Cervix P. Findley, Omaha—p. 358

Chemical Mechanism of Liver Protection in Abdominal Surgery C. G. Heyd, New York—p. 366

Some Observations on Stricture of Female Urethra H. M. N. Wynne, Minneapolis—p. 373

Study of Human Uterine Motility F. L. Adair and M. E. Davis, Chicago—p. 383

Starvation Hypoglycemia in Late Pregnancy E. D. Plass and E. B. Woods, Iowa City—p. 395

*Amenorrhea and Oligomenorrhea Associated with Low Basal Metabolic Rates R. D. Mussey and S. F. Haines, Rochester, Minn.—p. 404

Hemorrhage in the Later Months of Pregnancy W. B. Hendry, Toronto—p. 408

Extensive Perineal Damage at Labor H. M. Little, Montreal—p. 414

Secondary Abdominal Pregnancy. Analysis of Sixteen Cases with Report of Case E. D. Colvin and J. R. McCord, Atlanta, Ga.—p. 421

Interposition Operation for Prolapsed Uteri. Report of Five Hundred and One Cases A. J. Rongy, A. Tamis and H. Gordon, New York—p. 428

Prenatal Care in Private and Clinic Practice G. D. Royston, St. Louis—p. 440

The Friedman Pregnancy Test F. Spielman, New York—p. 448

Method for Biopsy and for Facilitating Insertion of Radium in Carcinoma of Cervix H. Strauss, Brooklyn—p. 451

Atelectasis of the New Born. Recovery Following Intratracheal Insufflation D. A. Bristol, New York—p. 452

Pyometra Complicating Pregnancy W. F. Gemmill, York, Pa.—p. 453

Uterus Didelphys Case G. R. Cheatham, Endicott, N. Y.—p. 455

Complications Resulting from Pelvic Irradiation for Cancer—Findley points out that complications, such as pyometra, parametritis and thrombophlebitis, are found in cases of cancer of the cervix after radium irradiation. The primary mortality of radium therapy is generally conceded to be about 2 per cent and is largely due to an awakening of an unrecognized latent infection within the pelvic structures or to direct contamination of the field of irradiation. When there is evidence of active pelvic infection, a period of rest should precede irradiation, together with such local applications as will favor the elimination of infection. When symptoms of cystitis arise shortly after irradiation, it is assumed that there was a pre-existing and possibly unrecognized chronic cystitis, as cystitis does not usually manifest itself for from two to four weeks following irradiation. The usual edema and congestion of the mucosa of the bladder incident to irradiation rarely persists beyond from two to four weeks, but there are aggravated cases in which lesions of a serious nature develop one or more than one year later. Fistulas and fixation of the bladder are the end stages of a most distressing condition. In all this there is evidence of excessive irradiation and the lack of precautionary measures in protecting the bladder from direct exposure to the

rays Chronic vaginitis, with the formation of adhesions between folds of the vaginal walls, is a late development and is largely confined to the postmenopausal period. Here, again, excessive dosage and inefficient screening are responsible. The rectum is most often the seat of postirradiation sequelae: proctitis, diarrhea, tenesmus, ulcers, fistulas and strictures. Pelvic irradiation for therapeutic purposes, in the presence of an unsuspected pregnancy or when done for the relief of conditions known to complicate a recognized pregnancy, is a serious matter. Irradiation of the early fetus results in such deformities as microcephalic idiocy, microcephaly, hydrocephalus, blindness, spina bifida, clubfoot, alopecia of the scalp, ossification defects of the skull, divergent squint, and deformities of the upper extremities. The likelihood of such deformities has led Norris to advise the interruption of pregnancy when it is disclosed that an unrecognized pregnant uterus has been irradiated for therapeutic purposes. An exploratory curettage preceding pelvic irradiation in the childbearing age as a precautionary measure would be advisable. Cancer of the cervix associated with pregnancy should be treated in the interests of the mother in the early stages of cancer. In the late stages the interest of the baby is the prime consideration and radium therapy is the method of choice. Because of the danger of infection and of injury to the fetus, the uterus should be emptied before radium is applied.

Amenorrhea and Low Basal Metabolic Rates—Mussey and Haines discuss a small series of cases in which there was a low basal metabolic rate without evidence of myxedema and in which amenorrhea or oligomenorrhea occurred and a pathologic cause could not be found in the pelvis. Clinical observation has shown that either an excessive or an inadequate supply of thyroxine may definitely be associated with disturbed menstrual function. Thyroxine is essential to normal cellular metabolism, and this may be its only mode of action on the ovary. A study of twenty-seven patients having amenorrhea or marked oligomenorrhea failed to disclose any organic disease to which the menstrual disturbance could be attributed. Basal metabolic rates were raised by the administration of an active preparation of desiccated thyroid administered orally each day. After a suitable dosage had been determined for a metabolic rate of from -5 to -8 per cent, the patients were allowed to return home to continue the treatment with desiccated thyroid. The condition of thirteen of the twenty-two patients having amenorrhea was improved after treatment. The improvement of most patients was marked, and the menstrual periods of seven were reestablished to normal intervals and in normal amounts. The longest duration of amenorrhea of any patient who was better after treatment was one year. Of the five patients having oligomenorrhea, two were better after treatment, two were not helped, and one had a more scanty menstrual flow. Twenty-five of the twenty-seven patients complained of fatigue or functional disturbances, which, in many instances, had preceded the menstrual disturbances by years, twenty-one of which expressed themselves as in better general health after elevation of the basal metabolic rate.

American Journal of Public Health, New York

24 187 302 (March) 1934

- Germany's Sterilization Program W W Peter, White Plains N Y —p 187
 Practical Limitations in the Attempt to Control Enteric Disease by the Examination of Specimens Collected Without Regard to Clinical History or Epidemiologic Evidence Ruth Gilbert and Marion B Coleman Albany N Y —p 192
 Protein Minerals and Vitamins of Evaporated Milk F E Rice Chicago —p 194
 Need for Methods for the Bacteriologic Examination of Crustacea A C Hunter, Washington D C —p 199
 Suggested Laboratory Procedures for Use in Determining the Cause of Food Poisoning S A Koser Chicago —p 203
 Reaching the Negro Community M O Bousfield Chicago —p 209
 The New City Appraisal Form G T Palmer New York —p 216
 Relationship of *Shigella Alkaliscens* to Other Members of the *Shigella* Group H Welch and F L Mickle Hartford Conn —p 219
 Examination of Fermented Foods by Laboratory Methods C S Pederson Geneva N Y —p 229
 *Effect of Age Dilution and Dosage on Immunizing Value of Diphtheria Toxoid W Levin and Helen A Cary Portland Ore —p 251

Diphtheria Toxoid—Levin and Cary gave a preliminary Schick test to 1,016 children, 84 per cent of whom were in the 4 to 10 year age group. None of these children so far

as could be determined, had had diphtheria or had been immunized against it. Three 0.5 cc injections of undiluted toxoid at weekly intervals gave 98 per cent of immunities. Practically no reactions were obtained with this size dose.

Am. J Roentgenol & Rad Therapy, Springfield, Ill

31 289 432 (March) 1934

- Bronchography in Amplification of Roentgen Film of Chronic Pulmonary Tuberculosis with Especial Reference to Surgical Indications H Nienhof New York —p 289
 Bronchography an Essential and Safe Adjunct in the Study of Pulmonary Tuberculosis J E Murphy Secaucus N J —p 301
 Bronchography in Relation to Pathology of Pulmonary Tuberculosis B P Potter Secaucus N J —p 308
 Round Foci Type of Pulmonary Tuberculosis S Bruck, Philadelphia —p 319
 *The Inverse Ratio in the Roentgen Visualization of Bronchi and Alveoli After the Injection of Contrast Mediums R A Bendove and B S Gershwin New York —p 323
 Bronchopulmonary Segment with Especial Reference to Putrid Lung Abscess Anatomic and Roentgenographic Aspects A. Glass New York —p 328
 Syphilitic Gumma of the Lung Case Report. E Freedman and C S Higley Cleveland —p 335
 Pathologic Appendix J Felsen New York —p 340
 Intrapelvic Protrusion of the Acetabulum (Otto's Pelvis) B H Nichols and E L Shifflet Cleveland —p 346
 Roentgen Findings in Ainhum L J Friedman, New York —p 349
 *Roentgen Treatment of Benign Hypertrophy of the Prostate Gland B S Barringer A L Dean Jr, R E Herendeen and J J Duffy, New York —p 350
 Studies in Diagnosis and Treatment of Teratoma Testis R S Ferguson New York —p 356
 Management of Cancer of the Mouth and Cervical Lymphatics D Quick New York —p 366
 Comprison of High Voltage Roentgen Ray Tubes L S Taylor, G Singer and C F Stoneburner Washington D C —p 378

Visualization of Bronchi and Alveoli—Bendove and Gershwin state that, when iodized oil is injected intratracheally, it tends to delineate the bronchi and alveoli in an inverse proportion, i. e. the more the alveoli are outlined, the less the bronchi are visible, and vice versa. This inverse ratio in the visibility of the iodized bronchi and alveoli is of diagnostic significance. In a normal lung the outlined alveolar element predominates, overshadowing all the bronchi, and the roentgenographic image simulates a tree in midsummer. Diseased and dilated bronchi retain most of the injected material, and few, if any, of the alveoli in the corresponding territory will be delineated on the roentgenogram. In cases of extreme cylindric dilatation, the filled bronchi resemble the branches of a tree in winter with no remnant of the former foliage. The absence of the alveolar leaves may be general or localized, depending on the extent of the bronchial dilatations. Any bronchus that retains the iodized oil fifteen minutes after its injection is to be considered functionally impaired, irrespective of its morphologic appearance. In order to maintain definite standards of comparison, it is advisable always to inject 20 cc of the iodized oil and to outline only one lobe at a time.

Roentgen Treatment of Benign Hypertrophy of the Prostate Gland—Barringer and his associates tried high voltage roentgen therapy in thirty-four cases of hypertrophied prostates. They observed that in 30 per cent of cases which otherwise would come to operation, high voltage roentgen irradiation reduces the residual urine and controls the symptoms. The edematous prostate entirely loses its edema under the treatment. A complete cystoscopic examination of the prostate is essential to determine the type of prostatic hypertrophy present. It is probable that the "simple bilateral lobe hypertrophy" so well described by Randall is the type most suited to respond to this therapy. In those patients, in whom for one reason or another, such as poor heart advanced age, bad kidney function, operative intervention of any kind is contraindicated, high voltage roentgen irradiation should be the therapy of choice. The technic of administering the dose selected has varied with the patient factors that enter into the selection of the dose and the method of administering it. The dosage at each exposure amounted to about 200 roentgens. The same series of treatments were repeated after an interval of ten days. The third cycle or even the fourth, is decided on after later urologic examinations. A small dosage has been given to decrease reactions. Repeated doses are given for the theoretical reason that this method produces more fibrosis.

American Journal of Surgery, New York

23 399 602 (March) 1934

- Hyperfunction of Thyroid Gland Recent Developments in Clinical Recognition and Surgical Treatment J deJ Pemberton and S F Haines, Rochester, Minn—p 399
- *Resection of Presacral Nerve for Dysmenorrhea Based on Favorable Results in a Series of Twenty One Cases J L DeCoursey Cincinnati—p 408
- Carcinoma of the Cervix Uteri Diagnosis and Treatment L Frank, Louisville Ky—p 413
- Surgery of the Ovary Sophia J Kieegman New York—p 419
- Effects of Alpha Lohelien on Respiration Experimental Study R A Wilson and M A Torrey Brooklyn—p 426
- The Past and Present in Genito Urinary Carcinoma Bladder Prostate Testicle Penis B S Barringer, New York—p 438
- Rupture of Urinary Bladder L M Bogart, Flint Mich—p 442
- Prostatic Resections, with Especial Reference to Poor Surgical Risks A E Goldstein and C S Levy Baltimore—p 452
- Urinary Antiseptics in Relation to Fluid Intake N F Miller and C C Chu Ann Arbor, Mich—p 457
- Anorectal Fistulas F C Smith Philadelphia—p 474
- Surgical Significance of Spontaneous Hematoma of Rectus Abdominis Muscle R B McCarty Riverside Calif—p 480
- *Concept of Pyloric Balance in Ileus Treated by Continuous Suction from Stomach W Bartlett Jr St Louis—p 484
- Geographic Distribution of Peptic Ulcer H Muller Detroit—p 497
- *Specific Vaccine in Treatment of Peptic Ulcer J W Hinton, New York—p 504
- Gallbladder Surgery Observations from a Series of Cases as to the Advantages of Early Operations H Bashein New York—p 506
- Blood Changes Following Splenectomy R MacDonald Chicago—p 514
- Phlebitis D C Geist Philadelphia—p 519
- Application of Principles of Local Anesthesia to Treatment of Peripheral Nerve Manifestations R P Caron, Minneapolis—p 521
- Malignancy of the Tonsil W E Costelow Los Angeles—p 528
- Actinomycotic Focal Infection with Metastases to the Os Pubis R B Haining and F D Hankins Los Angeles—p 532
- Pneumography Its Technic Indications and Contraindications M S Lloyd and L T Perrault New York—p 537
- *Head Immobilization for Skull Radiography Simple Method in Posterior Anterior Position G E Moore Antigo Wis—p 545
- Pulmonary Abscess J A Halpin, J W Ellis and H L Puckett Lee, Mass—p 547
- New Method of Suturing Traumatic or Operative Wounds of Gastro Intestinal Tract A Viatrakos Athens Greece—p 551
- Modified Sling for Fractures About the Elbow S Vernon, Willimantic Conn—p 555

Resection of Presacral Nerve for Dysmenorrhea—DeCoursey resected the presacral nerve in twenty-one cases for the relief of dysmenorrhea. The immediate results of the procedure have been excellent, and in no instance has the relief of pain failed. Menstruation regularly takes place within forty-eight to seventy-two hours after operation no matter at what time in the menstrual cycle it has been performed. Most of the patients have had to be catheterized for two or three days but the inhibition of bladder function has been no more marked than after any other gynecologic operation. None of the author's patients have had any difficulty with the bladder afterward, although the possibility of some interference with vesical function has always been kept in mind. Several of his patients have since become pregnant, demonstrating that there is no interference with child bearing.

Ileus Treated by Continuous Suction from Stomach—Since 1931 Bartlett has employed continuous positive suction of the stomach in eighteen patients having ileus. Suction was used as the only curative measure in some and as an adjunct to enterostomy in others. In every patient but one who developed ileus following an intra-abdominal operation evidence was found for the existence of peritonitis as the exciting factor by characteristic changes in the differential leukocyte count (Schilling), a clinical course which was febrile, at least in part and physical findings or postmortem observations when death ensued. Dilatation of the stomach was a relatively late phenomenon nausea and slight abdominal distention usually having already occurred, while intermittent aspiration of the stomach revealed only small amounts of fluid and gas and while the stomach continued to pass ingested fluid over the pylorus. When considerable handling of the abdominal viscera has been necessary ileus appears usually within twenty-four hours of the resumption of fluids by mouth, and it disappears rapidly after institution of continuous suction. In cases in which trauma and motor inhibition are minimal factors ileus develops after forty-eight or seventy-two hours as intraperitoneal infection becomes manifest and recedes more slowly after treatment is

started. The author feels it is undesirable that the nasal catheter pass through the pylorus into the duodenum. He urges the employment of continuous positive suction of the stomach as a curative measure. He has simplified Ward's apparatus for continuous suction. This apparatus permits one to know with mathematical accuracy the gastro-intestinal status of the patient, so far as function is concerned. Increasing experience with this treatment indicates that there is a large group of patients with intestinal obstruction in which the risk of death is far less if decompression of the intestine is brought about by continuous suction of the stomach than if operation is performed within more than a few hours of the onset.

Specific Vaccine in Treatment of Peptic Ulcer—During two years Hinton has treated seventy-two cases with intravenous vaccine, which included nine cases of acute perforation and eight in which operation was performed for chronic ulcers, leaving fifty-five nonoperative cases under treatment, and these were more favorably selected as they did not necessarily represent medical failures from other types of conservative treatment, of these, six were gastric, three pyloric and forty-six duodenal lesions. Cases in which the epigastric pain returned or was intensified for twenty-four hours following the injection offered the most favorable prognosis. The diet has been restricted and the author feels that it is best to place the patient on an ambulatory Sippy regimen in conjunction with the vaccine administration. In deciding the good results of the method he relies exclusively on symptomatic relief from pain, based on frequent visits to the clinic. He is sure that Saunders' vaccine has a definite place in the treatment of peptic ulcer.

Head Immobilization for Skull Roentgenography—Moore points out that the only equipment necessary to immobilize the head completely is two cushions, small enough so as not to obscure too much of the head, and stuffed with soft material packed tightly so as to make the cushions firm. When the patient is placed on the table with the face over the Bucky diaphragm, the arms are extended forward. The head is then placed in the desired position and following this the cushions are placed one on each side of the head. The arms are then drawn medially and the forearms crossed. This brings the upper arms snugly against the cushions and they in turn press these cushions firmly against the head. The hands then grasp the opposite forearms, producing a stable and comfortable position.

American Review of Tuberculosis, New York

29 249 372 (March) 1934

- Relation of Ductless Glands to Incidence and Development of Tuberculosis H Lissner San Francisco—p 249
- Extrapleural Paraffin Pneumolysis for Phthisis R B McDindoe Howell Mich., and J Alexander Ann Arbor Mich—p 270
- Bilateral Collapse Therapy in Pulmonary Tuberculosis W C Pollock Denver—p 284
- Pathologic Findings and Pathogenesis of Congenital Tuberculosis M Siegel Vienna Austria—p 297
- Topographic Localization of Pulmonary Lesions A J Hruby and M Joannides Chicago—p 310
- Displacement of Intrathoracic Viscera Resulting from Pathologic Processes in the Lung Analysis of Causes of Diaphragmatic Rise Dextroposition and Sinistroposition of the Heart and Mediastinum M Joannides Chicago—p 313
- Behavior of Pleural Effusion in Hydropneumothorax M Joannides Chicago—p 329
- *Blood Pressure Variations in Tuberculosis Statistical Study of Range of Arterial Tension E Bunta Chicago—p 335
- Spontaneous Pneumothorax Report of Thirty One Cases Elizabeth A Leggett J A Myers and Ida Levine, Minneapolis—p 348
- Clinical Features of Pulmonary Tuberculosis Clinical Analysis of One Thousand and Ninety Nine Consecutive Cases Discharged from the Cook County Hospital Tuberculosis Wards During 1932 C B Freilich and O B Ragins Chicago—p 362
- Successful Method of Cultivating Tubercle Bacilli M E Cowen and E J Henderson, Cresson Pa—p 368

Blood Pressure Variations in Tuberculosis—Bunta made a total of 3,411 blood pressure determinations on 2,915 patients. Of the 1,671 nontuberculous subjects, free from signs of cardiovascular or nephritic disease, the systolic measurements varied from a minimum of 70 to a maximum of 154 mm of mercury. The mean pressure was 112 mm and the standard deviation was 53 mm, representing a normal systolic range of from 107 to 117 mm of mercury. Diastolic readings varied from 40 to 100 mm of mercury. The mean pressure was 72 mm and the standard deviation was 31 mm, defining a

normal diastolic pressure range of from 69 to 75 mm of mercury. Pulse pressures varied from 20 to 70 mm, the average being 42 mm with a deviation of 3 mm of mercury. Normal pulse pressure, therefore, ranged from 39 to 45 mm of mercury. Of the 1,244 patients comprising the tuberculosis group the systolic pressures varied from a minimum of 60 mm to a maximum of 276 mm of mercury. The mean pressure was 112 mm and the standard deviation was 21 mm, representing an average systolic pressure ranging from 91 to 133 mm of mercury. Diastolic readings varied from 30 to 152 mm of mercury. The mean pressure was 72 mm and the standard deviation was 7.6 mm, defining an average diastolic range of from 64 to 80 mm of mercury. Pulse pressures varied from 10 to 146 mm of mercury. The mean pressure was 37 mm and the standard deviation was 7.7 mm, describing an average pulse pressure range of from 29 to 45 mm of mercury.

Anatomical Record, Philadelphia

58 107 216 (Jan 25) 1934

- Effect of Growth Hormone on Body and Tail Lengths H S Rubinstein and L J Kolodner, Baltimore—p 107
 Ectopic Submaxillary Ostium Near the Isthmus of the Fauces W H Waller, Ithaca N Y—p 111
 Para Esophageal Recess of the Diaphragm Case R Fraser Dunedin, New Zealand—p 119
 Early Relation of Auditory Vesicle to Ectoderm in Human Embryos B J Anson and W T Black Jr Chicago—p 127
 *Studies on Effect of Pregnancy on the Ovary H Selye J B Collip and D L Thomson Montreal—p 139
 *Responses of the Reproductive System of Hypophysectomized and Normal Rats to Injections of Pregnancy Urine Extracts I The Male P E Smith and S L Leonard New York—p 145
 *Id II The Female S L Leonard and P E Smith, New York—p 175
 The Effects of Ultraviolet Irradiation on Rachitic Chickens G M Higgins C Sheard and R M Wilder Rochester Minn—p 205

Effect of Pregnancy on the Ovary—Selye and his associates state that both the gonadotropic hormone of the anterior pituitary and that obtained from the urine of pregnant women prevent the appearance of thecal deficiency cells in the ovaries of hypophysectomized rats. Hypophysectomy during gestation does not alter the corpora lutea of pregnancy in any way but does cause the thecal cells to show signs of hormone deficiency. Hence the unknown influence which maintains the structure and function of the corpora lutea of pregnancy is not identical with either of the known gonadotropic hormones.

Injection into Male Rats of Extracts of Pregnancy Urine—Smith and Leonard injected extracts of pregnancy urine over varying periods (from ten to sixty days) in hypophysectomized and normal mature and immature male rats. The injections in the hypophysectomized males either maintained testicular weights or profoundly slowed the atrophy that characteristically takes place after pituitary ablation. The treatments invariably produced an enlargement of the accessory reproductive organs and a hypertrophy of the interstitial tissue both in the normal and in the hypophysectomized males. In some of the normal animals this enlargement persisted for the duration of the injections, in others a regression of the accessories took place (sixty-two days). In all the hypophysectomized animals there was a marked regression of the accessories and the interstitial tissue by the thirtieth day of treatment. In mature hypophysectomized rats, injections maintained spermatogenesis, mating and fertility for the duration of the injections. In immature hypophysectomized rats, the development of the tubules continued and spermatids but not spermatozoa formed, though none were present at the time of operation. In both mature and immature hypophysectomized rats, injections begun after a period of from twenty to seventy-five days following operation induced a relatively great increase in the weight of the testicles, an enlargement of the tubules and an increase in the activity of the germinal epithelium. In only one of four treated animals were spermatids formed. The injections did not hasten maturity in normal males. The tubules were not injured in either the mature or the immature rats. In the mature males intratubular columns of typical spermatogenic cells were infrequently found. The treatments did not interfere with mating or fertility.

Injections into Female Rats of Extracts of Pregnancy Urine—Leonard and Smith observed the effect of injections of pregnancy urine on immature and mature hypophysectomized

female rats. Treatment begun at the time of operation increased or maintained the weights of the ovaries for a time, though regression took place with prolonged injections. Postponed treatment caused an invariable increase in the weights of the ovaries. Follicular growth was not induced by the treatments. The interstitial and theca cells hypertrophied and became much like lutein cells, causing a structural homogeneity of the ovary. The hypertrophy did not persist when the treatments were prolonged or stopped. It persisted however, in certain newly formed bodies which appear to be structurally identical with corpora lutea. Estrin was secreted by the ovaries in both the mature and the immature hypophysectomized animals injected immediately after the operation and in some of the postponed treatments. The effects induced by injections of pregnancy urine in hypophysectomized rats are dissimilar to those produced by anterior pituitary implants, the latter producing larger ovaries which contain normal and cystic follicles and larger corpora lutea. The effects of injection of pregnancy urine in hypophysectomized rats are also not the same as in normal rats, for in the latter there is a development of follicles, cysts and blood follicles. The pituitary sex hormone facilitates the action of pregnancy urine on the ovaries as shown by results obtained in partial hypophysectomies and in concurrent injections of anterior pituitary and pregnancy urine in hypophysectomized and in normal immature animals. The action of pregnancy blood serum is similar to that of the pregnancy urine extracts. Hypophysectomy followed by injections of pregnancy urine induces ovarian changes in rats which are strikingly similar, in many respects, to those produced by irradiation of the ovaries of adult mice.

Annals of Internal Medicine, Lancaster, Pa

7 1059 1200 (March) 1934

- Significance of Hypertrophy and Hyperplasia of Parathyroid Glands in Rickets and Osteomalacia R M Wilder G M Higgins and C Sheard Rochester Minn—p 1089
 Chronic Pericardial Effusion in Myxedema Report of Case E B Freeman Baltimore—p 1070
 Effect of Calcium on Storage of Colloid in the Thyroid Gland J Klein Chicago—p 1080
 Nomenclature of Disorders of Insulin Secretion Diabetes Mellitus Hyperinsulinism and Dysinsulinism Analytic Review of Data Relevant to Classification and Terminology of Secretory Disorders of the Islands of Langerhans of the Pancreas S Harris Birmingham Ala—p 1084
 Obliterating Thrombosis of Pulmonary Arteries W M Fowler Iowa City—p 1101
 Parenteral Liver Therapy in Pernicious Anemia Observations Covering Two Years of Continued Use J E Connery and L J Goldwater New York—p 1117
 Mucin in Treatment of Peptic Ulcer Associated with Renal and Hepatic Disease A B Rivers and Frances R Vanzant, Minneapolis—p 1122
 The Redundant Duodenum Clinical Significance T H Morrison and M Feldman Baltimore—p 1126
 *The Hereditary and Familial Factor in Hypochromic Anemia with Achlorhydria W H Barrow San Diego Calif—p 1135
 *Tuberculoma of the Brain M Lewison E B Freilich and O B Ragins Chicago—p 1141

The Hereditary Factor in Hypochromic Anemia with Achlorhydria—Barrow states that a review of the literature and of the case histories of hypochromic anemia with achlorhydria indicates that there is a not uncommon association of this type of anemia with primary anemia in members of the same family. A family history of secondary anemia of undetermined type is occasionally found, but proved reported cases of achlorhydric anemia in more than one member of a family are rare. The author has found no record of more than two cases in one generation. Of possible importance from the point of view of etiology is the evidence of a familial form of achlorhydria although there is no known relationship between this and achlorhydric anemia. The specific hematopoietic hormone of normal gastric juice recently demonstrated by Castle which is absent in pernicious anemia was found to be present in some cases of achlorhydric anemia. Nevertheless, nearly all contributors to the subject from Faber to the most recent writers, advance the theory that the anemia is secondary to a gastric secretion deficiency which results in an interference with the maintenance of normal hematopoiesis. A case history of achlorhydric hypochromic anemia is presented with actual or presumptive evidence of the same type of anemia in the patient's five sisters and in her mother and mother's sisters. There is nothing in the history or physical or laboratory observations

of these patients to suggest a common factor of etiologic significance. A second family is reported in which there seems to be a tendency to secondary anemia, but only one case was of the achlorhydric achromic type. If these cases are related etiologically, there is again no indication as to what the etiologic factor may be. One may only conclude that this type of anemia is not uncommonly found in families in which there is evidence of primary or secondary anemia in other members of the same family.

Tuberculoma of the Brain—In an analysis of 757 necropsies performed at the Cook County Hospital from 1917 to 1927 inclusive on patients who had died of tuberculosis, Lewison and his associates discovered twenty instances of tuberculoma of the brain. From the point of view of symptomatology the cases fall into two groups. In the first the symptoms are those of a space-occupying mass in the cranial cavity or spinal canal, i. e., the symptoms of increased intracranial pressure and those further localizing symptoms and signs that indicate the level of the lesion. In the second group of cases the most prominent clinical symptoms are those due to the coincident tuberculous meningitis, and these meningeal symptoms frequently completely mask the clinical evidences of the presence of tuberculoma. In seven cases the clinical diagnosis of tuberculous meningitis was made. In two instances tuberculoma of the brain was diagnosed. At necropsy meningitis was found in seventeen cases, in one a focal meningitis was reported and in two the meninges did not show any involvement. The sites in the brain at which the tuberculomas were found did not indicate any special predilection of this lesion for any certain area. There were eleven cases with one tuberculoma, four with two, two with three and three with multiple tuberculomas. In all cases tuberculous lesions were found in other organs of the body in addition to the lesions of the brain. The average age was 22.7 years, the youngest 15 months and the oldest 56 years. It was predominantly an adult group. There was an equal number of men and women in the group. There were sixteen cases in Negro patients, two in white and two in Mexicans.

Annals of Otol, Rhinol and Laryngology, St Louis

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- A Syndrome of Ear and Sinus Symptoms Dependent on Disturbed Function of Temporomandibular Joint J B Costen St Louis—p 1
Diffuse Cranial Osteomyelitis Complicating Frontal Sinusitis O J Dixon Kansas City Mo—p 16
Nerve Fibers of Spinal and Vagus Origin Associated with Cephalic Sympathetic Nerves A Kuntz St Louis—p 50
Hypertonic Muscles of Neck as a Cause of Headache W Lithoefer Cincinnati—p 67
Advanced Methods in the Surgical Treatment of Facial Paralysis A B Duell New York—p 76
*Clinical and Experimental Study of the Action of Saliva on Blood Coagulation and Wound Healing in Surgery of the Oral Cavity and Throat M S Ersner, D Myers and W Ersner Philadelphia—p 114
Methods for Preparing and Studying Temporal Bone Specimens J J Potter and D M Lierle Iowa City—p 166
Tracheotomy Study of Two Hundred Consecutive Cases F A Figg Rochester Minn—p 178
Primary Actinomycosis of Nose with Extension to Pharynx Hard and Soft Palate and Cervical Vertebrae Report of Case Rea E Ashley San Francisco—p 248
Hypothyroidism and Vasomotor Rhinitis J Forman, Columbus Ohio—p 279

Action of Saliva on Blood Coagulation and Wound Healing—The Ersners and Myers show that saliva when added to blood *in vitro* produced in numerous trials a reduction of blood coagulation time of from ten to fifteen minutes to one of from two to three minutes. The saliva, whether autogenous, exogenous mixed from various individuals centrifuged, using supernatant fluid or the sediment has the same effect in producing a reduction of the coagulation time. Saliva that has been kept on ice from twenty-four to forty-eight hours or at room temperature for this length of time has the same effect in decreasing the coagulation time, showing again that whatever agent is present does not become inert. Saliva, after continued stimulation (petrolatum chewing) retained its coagulating power and the *ph* of the saliva did not vary. Filtered saliva possesses the same coagulant action as whole saliva. The authors suggest that patients who are to undergo an operation be given sodium bicarbonate to neutralize gastric acidity and petrolatum to chew or some other inert substance

that will stimulate the salivary secretions, and be made to swallow this saliva, so that its presence will alkalize the gastric acidity as well as aid blood coagulation.

Annals of Surgery, Philadelphia

99 401560 (March) 1934

- Jejunal Ulcer Some Observations on Its Complications and Their Treatment D P D Wilkie Edinburgh Scotland—p 401
*Osteochondritis Dissecans Intra Articular Osseocartilaginous Loose Bodies Clinical Study Based on Ten Personally Observed Cases F M Conway New York—p 410
Solitary Bone Cyst Localized Form of Osteitis Fibrosa Cystica B L Coley and N L Higginbotham New York—p 432
Posttraumatic Acute Bone Atrophy (Sudeck's Atrophy) F B Gurd, Montreal—p 449
*Dislocation of Cervical Vertebrae Report of Case of Complete Forward Dislocation of the Sixth Cervical Vertebra with Reduction by Forcible Traction and Full Recovery D Warshaw New York—p 470
Osteochondromatosis of Elbow S Kleinberg New York—p 480
Radial Paralysis Complicating Fracture and Dislocation in Upper Limb E S Gurdjian and A G Goetz Detroit—p 487
Fracture of Capitulum of Humerus W E Lee and T J Summey Philadelphia—p 497
Colles' Fracture of the Radius Observations on One Hundred and Eighty Eight Cases K M Lewis New York—p 510
Pseudarthrosis of Hip Following Acute Infection of the Joint W J Stewart Columbia Mo—p 515

Osteochondritis Dissecans—Of Conway's ten cases of osteochondritis dissecans, eight involved the knee and two the elbow. The condition is more often seen in men than in women. The average age is from 15 to 35 years. The symptoms in the order of frequency are pain, disability, swelling and the presence of a movable body. The roentgenogram is usually pathognomonic and stereoscopic views of the affected joints are invaluable in the determination of the amount and degree of articular damage. The treatment is arthrotomy with the removal of the loose fragments, and the optimal time for surgical intervention is during the period of demarcation before any great degree of synovial change has occurred.

Dislocation of Cervical Vertebrae—Warshaw reports a case of complete forward dislocation in which full reduction of the dislocation was secured by forcible traction and counter-traction under anesthesia without subsequent immobilization. There was no injury of the spinal cord. A few peripheral nerves were involved. The author believes that the fact that the patient made a permanent recovery without any form of immobilization is of interest, in view of the prevailing view that hyperextension in some form of apparatus or plaster is necessary over a long period of time.

Archives of Internal Medicine, Chicago

53 325480 (March) 1934

- Relationship Between Anatomic Changes in Knee Joint with Advancing Age and Degenerative Arthritis C S Keefer F Parker Jr, W A Myers and R L Irwin Boston—p 325
Studies of the Blood in Normal Pregnancy III Hemoglobin and Cell Volume Coefficients Erythrocyte Volume Hemoglobin Content and Concentration Color Volume and Saturation Indexes W J Dieckmann Chicago and C R Wegner St Louis—p 345
Id IV Percentages and Grams Per Kilogram of Serum Protein and Fibrin and Variations in Total Amount of Each W J Dieckmann, Chicago and C R Wegner St Louis—p 353
*A Comparison of the Development of the Specific Nodule of Silicosis W S Lemon and W H Feldman Rochester Minn—p 367
Lipoids and Lipoid Diseases II Xanthomatosis (Schüller-Christian's Type) D E Licht Ann Arbor Mich—p 379
Id III Lipoid Content of Tissues in Schüller-Christian's Disease (Xanthomatosis) and Review of Literature on Lipoid Content of Human Tissues D M Cowie and M Catherine Magee Ann Arbor Mich—p 391
*Arteritis of the Temporal Vessels A Previously Undescribed Form B T Horton T B Magath and G E Brown Rochester Minn—p 400
*Generalized Thrombo-Angitis Obliterans Report of Case with Involvement of Retinal Vessels and Suprarenal Infarction W Birnbaum, M Prinzmetal and C L Connor San Francisco—p 410
Relation of Plasma Cholesterol to Obesity and to Some of the Complicating Degenerative Diseases (Diabetes Mellitus Essential Hypertension Osteo Arthritis and Arteriosclerosis) M Brugger and C A Pounder New York—p 423
Muscular Dystrophy and Atrophy Clinical and Biochemical Results Following the Oral Administration of Amino Acids C J Tripoli and H H Beard New Orleans—p 435
Bacteriologic Study of Throats in Rheumatic and Nonrheumatic Fever with Especial Reference to Hemolytic Streptococci I Weinstein and Norma C Styron New York—p 453

The Development of the Specific Nodule of Silicosis—To study the morphologic reactions provoked in the lung by particulate silica and by bacilli of tuberculosis, Lemon and

Feldman gave intratracheal injections to two series of rabbits. The animals were killed at intervals of from four hours to four weeks after receiving the respective inoculums, and the cellular response was studied histologically. The character of the cellular response to the irritative influences of particulate silica and to bacilli of tuberculosis was essentially the same, both promoted the formation of characteristic tubercles. The properties of the provocative agent responsible for the production of the silicotic tubercle precluded the formation of a structure characterized by continuous progression. This contrasts markedly with that formed as a consequence of the injection of bacilli of tuberculosis, which is usually of a progressive, destructive nature. The similarity of the structural unit or tubercle invoked experimentally in response to particles of silica and to bacilli of tuberculosis was so striking as to make their certain differential identification impossible by ordinary morphologic criteria. Although the pathologic characteristics of the two processes were practically identical during the early period of cellular progression, significant structural differences became evident as the duration of the diseases was extended.

Arteritis of the Temporal Vessels—Horton and his associates observed a woman aged 55 and a man aged 68 who complained of fever, weakness, anorexia, loss of weight, anemia, mild leukocytosis and painful, tender areas over the scalp and along the temporal vessels. The symptoms had been present from four to six weeks. Localized periarteritis and arteritis were present in each case. Study of the affected arteries indicated that the lesion probably began as periarteritis of a small segment of the artery. When the artery was palpated at this stage, segments from 1 to 2 cm in length were tender but pulsations were still present. What apparently happened was that the process subsided when it reached this stage, leaving the wall of the vessel thickened but patent, or the process continued, spreading into the surrounding tissue as well as to the media and intima, with thrombosis of the involved segment. Microscopic sections of the blood vessels removed for biopsy disclosed identical lesions. Both patients apparently recovered completely from the local condition, although one died approximately two years later from congestive heart failure and renal insufficiency. The bacteriologic studies were inconclusive. They believe that this report may represent a new clinical syndrome the etiology of which is still obscure.

Thrombo-Angitis Obliterans with Suprarenal Infarction—Birnbbaum and his associates present a case of generalized vascular disease, probably early thromboangitis obliterans, in which necropsy was possible early in the course because of the involvement of vital structures (the suprarenals). Involvement of the cerebral, retinal, pulmonary, coronary, mesenteric, suprarenal, pancreatic, duodenal, hepatic, renal and prostatic vessels and of the vessels of the extremities was found. The clinical manifestations of the changes and of the suprarenal apoplexy in this case are discussed. The possibility that thromboangitis obliterans is more frequently a generalized disease is pointed out.

Archives of Ophthalmology, Chicago

11 389 590 (March) 1934

- Recession of Levator Muscle for Lagophthalmos in Exophthalmic Goiter I Goldstein New York—p 389
- Anomalies of the Ocular Muscles. Symptomatology and Diagnosis, Evidences of Paralysis and Spasm A Duane New York—p 394
- *Surgical Treatment of Concomitant Squint O Wilkinson, Washington, D C—p 423
- Some Possibilities of Orthoptic Training. Comparative Study of a Control Group and a Treated Group of Patients with Squint with Remarks Concerning Technic Used in Orthoptic Training G P Guibor, Chicago—p 433
- Clinical Determination of the Light Threshold E B Spaeth Philadelphia—p 462
- Bistigmatism A S Percival Shenley Woking, England—p 486
- Periscopic Spectacles A S Percival Shenley, Woking England—p 490
- Optic Neuromyelitis. Report of Two Cases R A Perritt Chicago—p 492
- Velonocopy Check Test for Astigmatism J I Pascal New York—p 498

Surgical Treatment of Concomitant Squint—Wilkinson presents his operations for concomitant squint in which all shortenings or recessions are accurately measured by calipers. In recession operations the position of the scleral stitch is

measured and marked in order that accurate placing of the stitch may be accomplished. In the resection operation he uses a central mattress suture similar to that described by Snellen, Ewing and Lancaster. This is brought out through the capsule and conjunctiva, as suggested by Duverger. This mattress suture secures a much stronger anchorage than is obtained by the Reese operation. The author has also devised a recession operation in which he does not use a scleral stitch and which he feels is safe and at the same time the most simple recession operation possible. He has performed twenty-five of these operations during the past two years and so far his results have been good. About 12 degrees of correction can be secured with a 4 or 4.5 mm recession, and the cosmetic and functional results are excellent.

Archives of Pathology, Chicago

17 291 452 (March) 1934

- *Histology of Adenoma of the Islets of Langerhans J L O'Leary and N Womack St. Louis—p 291
- Malformations of the Heart of the New-Born. Congenital Lesions Suggestive of an Inflammatory Origin Grete Stohr, New York—p 311
- Colloid Chemical Properties of Some Protein Amine Compounds M H Fischer, W J Suer and A R Johnston, Cincinnati—p 324
- Changes in the Myocardium of Rabbits from Augmenting the Heart Rate Mechanically and from Induced Hyperthyroidism F R Menne O N Jones and N W Jones Portland Ore—p 333
- Experimental Intimal Sclerosis of the Coronary Arteries of Rats A W Ham and M D Lewis Toronto—p 356
- *Hepatic and Bile Duct Changes from Obstruction of Common Bile Duct Due to Pancreatic Carcinoma M M Lieber and H L Stewart Philadelphia—p 362
- Influence of Extract of Anterior Pituitary on Autotransplanted and Homotransplanted Thyroid M Silberberg Breslau Germany—p 381

Histology of Adenoma of Islets of Langerhans—O'Leary and Womack verified five tumors of the pancreas, operatively removed, as islet cell adenomas, verifying in each case the preoperative diagnosis of hypoglycemia due to suspected tumor. Although the adenomas varied in size, gross appearance and apparent age, the majority cell type of each was closely allied to the beta cells of the normal islets of Langerhans but possessed definite tumor characteristics. In only one of the five tumors was there evidence of a malignant process. The staining reactions of the specific cytoplasmic granules in the majority of tumor cells of each deviated sufficiently from those of the beta cells of normal human islets to lend support to the hypothesis of dysinsulinism. In none of the cases did the histologic picture of the islets of Langerhans of the pancreas containing the tumor indicate the suppression of function that might be expected to parallel the prolonged secretion of excessive amounts of the hypoglycemic hormone.

Hepatic Changes from Obstruction of Common Duct—Lieber and Stewart describe the changes in the hepatic and bile ducts resulting from obstruction to the common bile duct by carcinoma of the head of the pancreas and submit evidence showing that cirrhosis may result from uncomplicated or non-infectious biliary stasis. The biliary conducting system undergoes a tremendous volumetric increase, with corresponding stretching and thinning of its walls. The process extends uniformly into the branches of the fourth and fifth orders. The vasa aberrantia and parietal sacculi become effaced. The canaliculi are distended with bile thrombi, many of which remain in place, although others are extruded into the tissue spaces and sinusoids, where they may be phagocytosed by Kupffer cells and macrophages. Bile pigment in the form of granules or droplets and in colloidal suspension may be found, chiefly in the cells of the central portions of the lobule. Regressive lesions are present as mild and localized degenerative changes involving the hepatic cells about the central vein, as nonpigmented focal midzonal areas of necrosis, and as deeply pigmented biliary necroses occurring either in the outer portion of the lobule or within the portal radicle. The intrahepatic ducts elongate and become tortuous, and they show, in addition, a true proliferation. A new formation of connective tissue occurs simultaneously with the changes in the bile ducts until after the second month, when a rapid, independent and progressive proliferation takes place, resulting in a well marked deposit of connective tissue, which is interlobular, intralobular and, in long-standing cases, even perilobular in distribution. The hepatic lobules show a corresponding reduction in size.

without much architectural alteration except at the peripheries, where atrophy may become well marked. The walls of the branches of the hepatic artery undergo hypertrophy and those of the branches of the hepatic vein and to a less extent of the portal veins show a new formation of fibrous tissue. The liver possesses little or no regenerative ability in the face of total stasis.

Endocrinology, Los Angeles

18 161 316 (March April) 1934

- The Adrenal Cortex and Electrolyte Metabolism R L Zwemer New York—p 161
- Effects of Sodium Bromide and Other Haloid Salts on the Weight and Structure of the Thyroid Gland in the Albino Rat A S Hamilton Minneapolis—p 170
- Effects of Interrenal Function on Fat Metabolism and Tissue Respiration M A Goldzieher Brooklyn—p 179
- Secretin Its Influence on the Amount of Hemoglobin in the Circulating Blood J Ferguson Edmonton Alta—p 188
- Anterior Pituitary Hormone and Tumor Growth W Saphir Chicago—p 191
- Experimental Colloid Goiter C A Hellwig Wichita Kan—p 197
- Menstrual Response to Luteinizing Extract of Pregnancy Urine D P Murphy, Rosemary Shoemaker and Marion Rea Philadelphia—p 203
- Effects of Introduction of Blood from Bred Rabbits on Immature Rabbits Charlotte Dumont, F E D'Amour and R G Gustafson, Denver—p 206
- Quantitative Hormone Requirements J P Pratt Detroit—p 211
- Endocrine Statistics from the Southeast J K Fancher Atlanta Ga—p 221
- The Effects of Various Compounds of Thyroxine on the Basal Metabolism W O Thompson Phebe K Thompson S G Taylor 3d J M Alper and Lois F N Dickie Chicago—p 228
- *Treatment of Pituitary Infantilism with Antuitrin Report of Case M M Goldberg New Orleans—p 233
- Attempt to Duplicate Certain Hormone Responses by Means of Drugs M C D'Amour University Ala—p 235
- Nervous and Hormonal Factors in Lactation H Selye J B Collip and D L Thomson Montreal—p 237
- Ovarian Stimulation by Adrenal Extracts L E Casida and A A Hellbaum Madison Wis—p 249
- Effects of Cod Liver Oil on Basal Metabolism and on the Thyroid Gland T C Sherwood L A Toth and Katherine Carr Lexington Ky—p 254
- *Studies of the Adrenal Glands in Health and Disease I Diseases of the Adrenal Glands as Revealed in Twenty Five Thousand Autopsies J H Clark and L G Rowntree Philadelphia—p 256

Treatment of Pituitary Infantilism with Anterior Lobe Extract—Goldberg reports the case of a boy of 17 who exhibited the cardinal features of pituitary infantilism. Coincident with a course of sixty-seven injections of a soluble extract from the anterior lobe of the pituitary the patient gained approximately 2 inches (5 cm) in height and showed objective evidence of an increased sex drive as well as personal aggressiveness. During an interval of ten weeks when treatment was omitted no growth occurred.

Studies of Suprarenals—Clark and Rowntree reviewed a series of 25,000 necropsies to determine the incidence of suprarenal disease. Beyond a surprising lack of interest in the suprarenals, as evidenced by mention of pathologic changes in only 925 instances nothing noteworthy or definitely new came of the survey. In a limited number of cases, however suggestive relationships were observed between chronic suprarenalitis and cardiorenal vascular disease and cortical atrophy associated with atrophy of the parenchymatous organs. The need for further investigation of tumors of the suprarenal is indicated to determine the cells of origin not only in those arising in the medulla but also in those cortical adenomas causing such marked changes in sexual characteristics.

Journal of Comparative Neurology, Philadelphia

59 1 174 (Feb 15) 1934

- Size of Man's Brain as Indicated by Skull Capacity G von Bonin Chicago—p 1
- Some Observations on Early Development of Vestibular Nuclei in the White Rat G A Walker—p 29
- Determination of Number of Nerve Fibers in the Eighth Thoracic and Largest Lumbar Ventral Roots of the Albino Rat D Duncan Buffalo—p 47
- Effect of Central Nervous System on Responses to Light in *Eisenia Foetida* Sav C J Prosser Baltimore—p 61
- Amphibian Forebrain IX. Neuropil and Other Interstitial Nervous Tissue C J Herrick Chicago—p 93
- Are There Efferent Fibers in Dorsal Roots? J C Hinsey—p 117
- Myelogeny of Cat as Related to Development of Fiber Tracts and Prenatal Behavior Patterns W F Windle M W Fish and J E O'Donnell Chicago—p 139
- Cells and Fibers in Spinal Nerves II Study of C2 C6 T4 T9 L3 S2 and S5 in Man II A Davenport and R T Bothe Chicago—p 167

Journal of Infectious Diseases, Chicago

54 149 280 (March April) 1934

- Phases of the Metabolism of *Trichophyton Interdigitale* Priestley D R Goddard Berkeley Calif—p 149
- Growth Stimulating Properties of Cystine and Tryptophan W Burrows Chicago—p 164
- Passage of Bovine Brucella Through Swine H L Gilman C H Milks and R R Birch Ithaca N Y—p 171
- Diphtheria Field Cultures Comparison of Their Growth on Wahby's and on Loeffler's Medium Ellen Kimberly and Margaret Beattie Berkeley Calif—p 175
- *Immunologic Studies in Case of Typhoid with Relapses G D C Thompson and E E Ecker, Cleveland—p 177
- Microscopic Demonstration of Acid Fast Bacilli in Tuberculous Filtrates and the Production of Tuberculous Ultravirus Infections in Guinea Pigs E L Walker and Marion A Sweeney San Francisco—p 182
- Suitability of Herrold's Egg Yolk Agar Medium for Isolation of the Bovine Tubercle Bacillus W H Feldman Rochester, Minn—p 194
- Bacterial Activity in Different Levels of the Intestine and in Isolated Segments of Small and Large Bowel in Monkeys and in Dogs G M Dack and Elizabeth Petran Chicago—p 204
- Mechanism of the Production of Diphtheria Toxin Role of Sulphur Compounds and of Copper and Iron G Scheff and Irene P Scheff Pecs Hungary—p 221
- Filtrability of the Acid Fast Group F B Cooper Trudeau N Y—p 236
- Dissociation of *Staphylococcus Aureus* II Relation of Filtration to Dissociation of *Staphylococcus Aureus* Rachel E Hoffstadt and G P Youmans, Seattle—p 250
- Id III Relation of Bacteriophage to the Dissociation of *Staphylococcus Aureus* Rachel E Hoffstadt and P Almaden Seattle—p 253
- Oxidation Reduction Studies of Growth and Differentiation of Species of *Brucella* C D Tuttle and I F Huddleson, East Lansing Mich—p 259
- Determination of Oxidation Reduction Potentials of Sterile Culture Mediums with the Graphite Electrode C D Tuttle and I F Huddleson East Lansing Mich—p 273

Immunologic Studies in Case of Typhoid with Relapses—Thompson and Ecker cite a case of typhoid with two relapses, which is of interest because of a complete lack of agglutination and precipitation reactions in the course of the disease, while positive complement fixation and bacteriolytic and marked opsonic powers were observed, possibly indicating the final mechanisms of recovery. These results also appear to indicate a plurality of antibodies, but it is to be emphasized that the antigen is complex and that the question of unity or plurality of antibodies can be solved only by the use of a single and pure antigen. The case is also of importance in that serum failed to dissociate the organism and no bacteriophage was isolated. The organisms isolated proved to be typical typhoid bacilli (cultural and serologic) and stimulated the production of the O type of agglutinins in the rabbit.

Laryngoscope, St Louis

44 173 260 (March) 1934

- Treatment of Hay Fever and Its Allied Conditions by Ionization Preliminary Report H L Warwick Fort Worth Texas—p 173
- Alcoholic Injections into Inferior Nasal Turbinates for Amelioration of Symptoms of the Common Cold Rose Fever Hay Fever and Hay Fever Asthma M Metzenbaum Cleveland—p 182
- The Common Cold and Its Treatment with Homodin A A Cinelli, New York—p 185
- Eye Diseases Caused by Sinusitis N P Stauffer, Philadelphia—p 190
- Detection of Simulated Deafness R D Russell Chicago—p 201
- Test for Simulation of Deafness C Firestone Seattle—p 211
- Unilateral Loss of Hearing for High Sounds Following Head Injury Internal Ear Deafness Probable Fracture of Left Temporal Bone Temporary Paralysis of Facial Nerve Case Presentation P S Stout Philadelphia—p 219
- Recurrent Mastoiditis with Petrositis Temporoparietal Abscess Large Epidural Abscess and Recovery Report of Case C H Smith New York—p 221
- Atypical Mastoiditis Case Report H Sporn Brooklyn—p 223
- Suppurative Perforation of Lateral Sinus with Preoperative and Operative Hemorrhage L R Effler Toledo Ohio—p 228
- Pterygomaxillary Abscess Associated with Acute Suppurative Otitis Media Simulating Zygomatic Mastoiditis Report of Case S D Greenfield Brooklyn—p 232
- Tuberculous Larynx and Uppill Feeding C D Van Wageningen, New York—p 240
- New Submucous Elevator R A Luongo Philadelphia—p 243

Medical Annals of District of Columbia, Washington

3 55 88 (March) 1934

- Angina Pectoris Consideration of Some of the Recent Literature with Particular Reference to That Relating to Cause and Treatment W H Resnik Stamford Conn—p 55
- Common Skin Diseases with Especial Reference to Their Treatment C B Campbell Washington—p 64
- Complete Anuria of Six Days Duration Report of Case with Recovery H Einstein Washington—p 70
- Fundamentals of Internal Medicine Diseases of the Heart W M Walter Washington—p 72

Nebraska State Medical Journal, Lincoln

19 81 120 (March) 1934

- Prostatic Resection A D Munger, Lincoln—p 81
 Some Problems of the New Born the First Few Days of Life H M Jahr Omaha—p 86
 Free Full Thickness Skin Transplant R D Schrock and H T Johnson Omaha—p 91
 Six Hundred Kilovolt Radiation R L Smith Lincoln—p 94
 Etiologic Point of View in Diagnosis of Heart Disease B C Russum Omaha—p 97
 *Use of Blood Serum in Pregnancy Tests H E Anderson Omaha—p 98
 Allergic Manifestations of the Skin L J Owen Lincoln—p 101

Use of Blood Serum in Pregnancy Tests—By following the technic of Brown (using blood instead of urine in pregnancy tests) Anderson made an error of diagnosis in two of a hundred cases. In both cases a negative diagnosis was made instead of a positive one, which was later proved by clinical observation and delivery of full term fetuses. In both instances the animal was examined at the end of the twenty-four hour interval and the ovaries were examined grossly. However, if microscopic sections of these ovaries had been made at the time, it is likely that a positive diagnosis would have been possible. Numerous tests were run on the blood of a patient with a hydatidiform mole which gave a positive reading. These tests were done over a period of weeks after the patient had expelled grapelike vesicles on numerous occasions. After curettement had been done and symptoms of the mole had disappeared, another test was run which gave a negative reaction. The patient has had no subsequent symptoms referable to a chorion epithelioma. The author emphasizes the point that the anterior pituitary hormone is more concentrated in the blood serum per unit of volume than in the urine, therefore that using blood serum instead of urine is more accurate, and that the modified technic of the Friedman test as described by Brown is practical, accurate and economical.

New England Journal of Medicine, Boston

210 563 614 (March 15) 1934

- Dental Health Problem in Nutrition J Garland Boston—p 563
 Consideration of Obstetric Management of Premature Labor S H Clifford Boston—p 570
 Medical History of Contraception N E Himes Hamilton, N Y—p 576
 *Infestation with Diphyllbothrium Latum Fish Tapeworm E A T Ronka Boston—p 582
 Function of the General Practitioner in Public Health Work H W Haggard New Haven Conn—p 584

210 615 668 (March 22) 1934

- Cooperation in the Care of the Patient E P Joslin Boston—p 615
 Treatment of Acute Poliomyelitis with the Respirator N L Croone Boston—p 621
 Herniation of Fundus of Stomach Through the Esophageal Hiatus with Especial Reference to Its Roentgenologic Diagnosis L B Morrison, S L Morrison and J H Delaney Boston—p 624
 Practical Features in Study and Treatment of Anxiety States Esther Loring Richards Baltimore—p 633
 Treatment of Peptic Ulcer Complicated by Hypersecretion E S Emery Jr Boston—p 637
 Leukocytosis in Mental Disease J Kasanin Howard R I—p 641
 Dr Lucinda Susannah (Capen) Hall The First Woman to Receive a Medical Degree from a New England Institution F C Waite, Cleveland—p 644

Infestation with Diphyllbothrium Latum—Ronka presents a case of Diphyllbothrium estum infection in which, though the patient harbored the fish tapeworm in her intestine, she suffered no ill effects from the parasite. She presented a variety of clinical manifestations without anemia. The functional disorders were referable to the alimentary tract. A familial tendency of parasitism was exhibited. Man contracts the infection on consuming insufficiently cooked flesh of infected fish. The worm proceeds to develop within the intestinal tract and matures in five or six weeks after exposure, at the end of which time eggs first appear in the feces.

210 669 722 (March 29) 1934

- Examination of the Stomach by Means of a Flexible Gastroscope Preliminary Report E B Benedict Boston—p 669
 Forced Grasping in Man and Its Localizing Significance H R Viets Boston—p 675
 Dislocation of the Shoulder End Result Study H Rogers, Boston—p 679
 Use of Autogenous Urinary Protease in an Allergic Condition P G Schube Boston—p 682

- Experimental Procedure Designed to Overcome Tubal Sterility E A Herr Waterbury, Conn—p 684
 *Aplastic Anemia Following Treatment of Lupus Erythematosus with Gold Sodium Thiosulphate with Review of Literature of Hematologic Reactions Following Gold Therapy W Dameshek Boston—p 687
 Neoplastic Factor in Chronic Ulcerative Colitis J C M Brust and J A Birgen, Rochester Minn—p 692
 Neoplasms Originating in Ischioanal Fossa, with Particular Reference to Sarcomas W M Shedden Boston—p 696

Aplastic Anemia Following Treatment with Gold Sodium Thiosulphate—Dameshek reports the case of a woman presenting the typical lesions of lupus erythematosus who was given nineteen intravenous injections of gold sodium thiosulphate (totaling 17 Gm) within about five months. At about the time of the last injection, symptoms referable to anemia developed and shortly thereafter she presented the typical features of aplastic anemia. She was given sixteen transfusions of blood within a period of nine months but at no time did she show any signs of regenerative activity on the part of the bone marrow and finally died. Although there is no absolute evidence, it was believed that the drug was of etiologic significance.

New York State Journal of Medicine, New York

24 221 268 (March 15) 1934

- Relation of Biliary Dysfunction to Lithiasis L R Whitaker Boston—p 221
 Coronary Thrombosis Some Points in the Diagnosis and Prognosis R H Halsey New York—p 237
 The Universities of the Middle Ages D Riesman Philadelphia—p 242
 Irritation of the Entire Body (Heublen Method) L F Craver and W S MacComb New York—p 249

Oklahoma State Medical Assn Journal, Muskogee

27 73 112 (March) 1934

- Treatment of Diabetes Mellitus and Its Complications S Harris Birmingham Ala—p 73
 Personal Observations on Fractures About the Elbow I Cohn New Orleans—p 92

Pennsylvania Medical Journal, Harrisburg

37 453 554 (March) 1934

- Consideration of Resistance of Tissue Cells W deB MacNider, Chapel Hill N C—p 453
 Fundamental Principles of Specific Calcium Therapy A Cantarow, Philadelphia—p 457
 Gastric and Duodenal Surgery Adapting the Operation to the Patient J S Rodman Philadelphia—p 459
 Refinements in Technic of Thyroidectomy H L Foss Danville—p 464
 Maternal Mortality from Hemorrhage Its Prevention in Pregnancy and Labor P B Bland Philadelphia—p 470
 Treatment of Anemia J K Everhart Pittsburgh—p 474
 Otitis Externa R J Hunter Philadelphia—p 477
 Genito Urinary Tuberculosis Urogenital Tuberculosis T R Fetter Philadelphia—p 481
 Id Renal Tuberculosis Clinicopathologic Diagnosis C J Bucher, Philadelphia—p 486
 Treatment of Gastric Cancer J H Gibbon Philadelphia—p 489
 Acute Suppurative Labyrinthitis Complicating Acute Otitis Media Report of Case J Winston Philadelphia—p 490

Philippine Islands Med Association Journal, Manila

14 81 120 (March) 1934

- Cellular Counts in the Spinal Fluid in Epidemic Encephalitis and Tuberculous Meningitis L Guerrero and P Ignacio Manila—p 81
 Is It Desirable from the Standpoint of Nutrition to Increase Filipino Sugar Consumption? I Concepcion Manila—p 90
 The Nerve of Expression A B M Sison Manila—p 97
 Outline for a Malana Survey A Ejercito Manila—p 102

Public Health Reports, Washington, D C

49 321 356 (March 9) 1934

- Frequency of Health Examinations in Nine Thousand Families Based on Nation Wide Periodic Canvasses 1928 1931 S D Collins—p 321
 49 357 378 (March 16) 1934
 Control of Amebic Dysentery G W McCoy—p 359
 Notes on Experimental Rheumatic Fever A M Stimson, O F Hedley and Eydilhe Rose—p 361
 Rocky Mountain Spotted Fever Susceptibility of Mice W L Jellison—p 363
 49 379 418 (March 23) 1934
 Viability of Endamoeba Histolytica and Endamoeba Coli Effect of Drying Bertha Kaplan Spector and Florence Buky—p 379
 The American Dog Tick Dermacentor Variabilis as a Host of Bacillus Tularensis C B Philip and W L Jellison—p 386
 Most Probable Numbers for Evaluation of Coli Aerogenes Tests by Fermentation Tube Method J K Ho kins—p 393

49 419 450 (March 30) 1934

- Sickness Among Male Industrial Employees During Final Quarter of 1933 D K Brundage—p 419
Malaria Among Drug Addicts in New York City Epidemic of Estivo Autumnal and Quartan Malaria Among Drug Addicts in New York City Transmitted by Use of Contaminated Hypodermic Syringes M Helfern—p 421
Comparative Experiments on Spotted Fever and Boutonneuse Fever (1) G E Davis and R R Parker—p 423

Radiology, St Paul

22 261 390 (March) 1934

- Method of External Irradiation of the Axilla J J Duffy and C D Lucas New York—p 261
*Comparative Analysis Between the Pathogenesis of Osteodystrophies and Bone Tumors I Levin New York—p 266
Roentgen Treatment of Hyperthyroidism T A Groover and A C Christie, Washington D C—p 275
The Rise in Voltage Effect of Therapy X Ray Tubes C M Slack and K O Smith, Bloomfield N J—p 280
Hip Joint Changes in Hemophilia M Kahn, Baltimore—p 286
Report of Committee on Standardization of X Ray Measurements Submitted for the Committee by L S Taylor Chairman, Washington D C—p 289
Significance of Osseous Changes in the Roentgenographic Diagnosis of Tumors of the Spinal Cord and Associated Soft Tissues J D Camp Rochester, Minn—p 295
Standardization of Roentgen Dosage by Means of Methylene Blue II W Stenstrom and Anne Lohmann Minneapolis—p 304
Comparison of Photographic and Ionization Measures of Radiation Quality O Glasser and L E Rovner, Cleveland—p 309
Study of Some Physiologic Effects of Ultraviolet Irradiations on Normal Adults Hope H Hunt and Jane M Leichensring St Paul—p 318
X Ray and Cathode Ray Tubes in the Service of Biology C P Haskins and C N Moore Schenectady N Y—p 330
Pneumopericardium Following a Foreign Body in the Esophagus R A Arens and Ellen Stewart Chicago—p 334
Bronchial Obstruction Its Diagnosis and Treatment R H Stevens and W A Hudson, Detroit—p 339
Problems of Protection and Their Solution in Short Wave Roentgen Therapy T Leucutta and K E Corrigan Detroit—p 350

The Pathogenesis of Osteodystrophies and Bone Tumors—Levin states that osteitis fibrosa and deformans appear to be morphologically and roentgenologically similar to osteoplastic metastatic carcinoma of the skeleton. Only 25 per cent of all cases of carcinoma of the stomach and 3 per cent of all cases of carcinoma of the uterus show metastases in the bones. The types of carcinoma that most frequently develop metastases in the bones are carcinoma of the breast, of the prostate and of the thyroid. In carcinoma of the prostate the greatest number show extensive osteoplasia and the patients may continue to live even for years with a well functioning skeleton. In carcinoma of the thyroid the predominance of osteoplasia or osteoporosis is encountered with about equal frequency. In carcinoma of the breast, cases with osteoporosis are more frequently observed, and even a beginning of osteoplasia soon changes into osteoporosis. The destruction of the normal bone tissue (osteoporosis) in skeletal metastasis is a purely local processes and must be a direct function of the group of cancer cells transported to the bone. This function is most probably chemical and is analogous to the condition found in osteomalacia. The difference between the osteoporosis in carcinoma and in osteodystrophy consists in the fact that in the latter condition the cells which act on the bone do it at a distance and may represent the function of the parathyroids or other endocrine glands. The reason for the prominence of osteoplasia in some forms of osteodystrophies and tumors of the bone and its absence in others must be looked for in the differences of the function of the endocellular metabolism whether it concerns endocrine action, nutritional deficiency or local action of cancer cells. One type of cancer cells or of endocrine organs may predominate in its destruction of the bone over the reparative power of the latter, while in other types of cells the reparative function of the bone tissue predominates. Osteoporosis (rachitic, carcinoma of the breast) prevails in the young and osteoplasia (Paget's disease, carcinoma of the prostate) predominates in old age. This coincides with the fact that during senescence many types of parenchymatous tissues are replaced by fibrous connective tissue. Scirrhus carcinoma, in which the fibrous stroma predominates is also a disease of old age. A final diagnosis of Paget's disease should not be made until the possibility of a primary malignant process elsewhere in the body is excluded. In the case reported by the author the mechanism of the healing of the traumatic fracture established the diagnosis of Paget's disease though the patient did not present a classic picture of the disease.

Review of Gastroenterology, New York

1 194 (March) 1934

- The Physician's Legal Duty to a Patient W Weiss New York—p 12
Ways of Discovering the Foods That Are Causing Indigestion W C Alvarez Rochester Minn—p 13
History of Gastroenterology A Bassler, New York—p 19
Physiology of Gallbladder J F Dreier, W N Crellin and M E Rehfsuss Philadelphia—p 24
Function of Liver in Relation to Its Blood Supply L Lichtwitz New York—p 33
*Tobacco Sensitivity in Peptic Ulcer I Ehrenfeld and M Sturtevant, New York—p 44
Role of Stomach and Upper Intestinal Tract in Water and Mineral Metabolism E Foldes New York—p 46

Tobacco Sensitivity in Peptic Ulcer—Ehrenfeld and Sturtevant gave injections of tobacco protein to fifty-five patients, proved roentgenologically to be suffering from peptic ulcer, in order to determine whether tobacco had any effect on gastric function. Only two patients gave a marked, characteristic positive reaction to the three antigens that were used, and nine reacted to a concentrated mixed tobacco solution with a slight increase in the size of the wheal and a faint zone of erythema but no pseudopodia. These reactions were considered negative. Passive transfer was attempted from the two positive reactions to four persons, giving negative results in the eight instances.

Rhode Island Medical Journal, Providence

17 35 52 (March) 1934

- Specific Treatment of Asthma in Children W P Buffum, Providence—p 35
Asthma Study in Children R C Bates and S Freedman, Providence—p 38

Science, New York

79 191 214 (March 2) 1934

- *Rapid Method for Preparation of Delafield's Hematoxylin H W Neild Urbana Ill—p 209
Soap as Mosquito Larvicide J M Ginsburg—p 210
Fixing the Print of Carbon Copies A F Roe, Washington D C—p 210
Deuterium Oxide and Aspergillus S L Meyer, Nashville, Tenn—p 210
*Effect of Ferric Chloride Injections in Experimental Tuberculosis V Menkin Boston—p 211
Frogs and Opalimidae M M Metcalf Waban, Mass—p 213

Rapid Method for Preparing Delafield's Hematoxylin—Neild reduces the ripening period of Delafield's hematoxylin from sixty days to three hours by preparing the solution in the usual way and placing it in an open dish, at a distance of 15 cm from a Cooper Hewitt burner, operating at 140 volts and 33 amperes, for one hour. The solution is then filtered and 100 cc of methyl alcohol and 100 cc of glycerin is added to it. This solution is placed under the Cooper Hewitt burner at the same distance for two hours. The solution is then filtered and used for staining purposes. The author noticed no appreciable difference between the staining quality of the hematoxylin prepared in this manner and that left for sixty days to ripen.

Effect of Ferric Chloride Injections in Tuberculosis—Menkin inoculated intravenously ten rabbits each with 0005 mg of a relatively avirulent strain of bovine tubercle bacilli. Six weeks later each one of these ten rabbits was inoculated subcutaneously in the thigh with 005 mg of a virulent bovine Ravenel strain of tubercle bacilli. Repeated intravenous injections with a 0.25 per cent solution of ferric chloride were immediately started in five of the rabbits, the remaining tuberculous animals were kept as controls. The ferric chloride injections were carried on for about fifteen weeks and then discontinued. The first control rabbit died forty-seven days after reinfection with tubercle bacilli. The last of the control rabbits died 130 days after reinoculation with the bacilli. At necropsy these control animals displayed widespread confluent tuberculous lesions affecting primarily the lungs, with discrete tubercles in the kidneys, and with prominent tuberculous abscesses at the site of subcutaneous reinoculation. The first experimental rabbit died eighty-one days after reinoculation the second 110 days later and the third 131 days after reinfection with tubercle bacilli. Two of these three animals had an infection of the upper respiratory tract at the time of death. All three rabbits showed discrete caseous tubercles in the

lungs, with hardly any confluence of lesions. The two remaining animals continued to increase in weight for more than six months after the death of the last control, and 334 days after reinoculation with tubercle bacilli these two rabbits were killed. One showed absolutely no sign of any lesion in the thigh. The other rabbit, which had just begun to show a slight loss in weight at the time it was killed, presented a somewhat more tuberculous involvement at necropsy.

South Carolina Medical Assn Journal, Greenville

30 49 64 (March) 1934

- *Operative Treatment of Infantile Hydrocephalus R G Doughty, Columbia—p 51
Modern Open Method of Treating Certain Fractures J H Taylor, Columbia—p 54
Ludwig's Angina Report of Cases D St P Ashill, Columbia—p 55

Operative Treatment of Infantile Hydrocephalus—Doughty states that in infantile hydrocephalus, if after intraspinal injection of the phenolsulphonphthalein none of the dye is obtained from the ventricle and only a 10 per cent output is shown from the kidney, one is dealing with a block of the ventricular system and an absence of the arachnoid and there is no operative procedure worth while. If, however, no dye is obtained from the ventricle and the two hour phenolsulphonphthalein output approximates 40 per cent, there is not only a block present but the arachnoid is present also and is functioning, and a third ventriculostomy offers considerable hope. The author reports a case of hydrocephalus in a child of 4 months in whom a lumbar puncture was done and, following the removal of 1 cc of spinal fluid, 1 cc of phenolsulphonphthalein was injected. Twenty minutes later a tap of the left ventricle failed to show any dye in the fluid obtained. During the two hours subsequent to the injection of the phenolsulphonphthalein the urinary output was extremely small and only a 12 to 15 per cent phenolsulphonphthalein return was obtained. Subsequently this was repeated, and while the urinary output was again small there was a return of 30 per cent of the phenolsulphonphthalein in two hours. The head was put in a plaster cast and, through a curved left temporal incision, the brain was exposed. The left lateral ventricle was tapped and partially emptied. The temporal lobe was then lifted up and the bulging arachnoid at the base was torn. The wall of the lateral ventricle was then quite prominent. It was widely incised just posterior and lateral to the hypophyseal stalk. The cavity was then filled with physiologic solution of sodium chloride, the dura and temporal bone were sutured and the galea and skin were closed. The baby's general condition was fair. For about a week after operation the child's temperature ranged from 101 to 105 F, but he was conscious and took his feedings well. Following this the temperature gradually returned to normal. There was a slight skin infection in the wound, which cleared up quite readily. The cast was removed three days after operation. On dismissal from the hospital, two weeks after operation, the fontanels were soft and fluctuant and the circumference of the head was less than 20 inches. The patient has continued to improve, the fontanel has remained soft and the circumference of the head, six weeks after operation, was 19 inches.

Southern Medical Journal, Birmingham, Ala

27 185 282 (March) 1934

- Value of Radiology to the Thoracic Surgeon A Ochsner, New Orleans—p 185
Modified Goebell Stoeckel Operation for Urinary Incontinence R W TeLinde, Baltimore—p 193
Fractures of Facial Bones with Especial Reference to Involvement of the Paranasal Sinuses and Orbits W D Gill, San Antonio, Texas—p 197
Reticulo-Endothelial System and Its Relation to Neoplastic States G T Caldwell, Dallas, Texas—p 205
Von Recklinghausen's Disease Often a Difficult Surgical Problem H T Phillips, Wheeling, Va—p 212
Arthrokatadysia of the Hip Joint M Gellman, Baltimore—p 215
Inguinal Hernia Standardizing Technic for Operative Repair R L Payne, Norfolk, Va—p 220
Massive Renal Calculi in Association with Nutritional Diseases G Walsh and E M Norton, Fairfield, Ala—p 224
Extensive Bilateral Renal Calculosis of Rapid Development Following Fracture of Vertebrae Discussion of Possible Etiologic Factors R J Holmes and M M Coplan, Miami, Fla—p 228
Artificial Pneumothorax in Treatment of Pneumonia L J Moorman, Oklahoma City—p 233

- Quantitative Determination of Water Losses in Surgical Patients F A Coller and W G Maddock, Ann Arbor, Mich—p 237
Some Heart Irregularities and Their Management L Hart, Meridian, Miss—p 240
Use of Sodium Iso Amylethyl Barbiturate (Sodium Amytal) in Treatment of Eclampsia M S Lewis, Nashville, Tenn—p 244
Specially Produced Milk in Solution of Gorter Problem W Weston, Columbia, S C—p 249
Psychopathic Personality Medicolegal Aspects C A McKendree, New York—p 254
Rupture of Kidney Pelvis Report of Three Cases B S Abeshouse, Baltimore—p 258
Surgical Treatment of Glaucoma J H Burleson, San Antonio, Texas—p 262
Coordinated National Health Program A T McCormack, Louisville, Ky—p 266
*Mite Infestation in the Human Intestine R H Kampmeier and E H Hinman, New Orleans—p 271

Mite Infestation in the Human Intestine—Kampmeier and Hinman present two cases of gastro-intestinal mite infestation. Diarrhea was the chief presenting symptom and ceased on elimination of contaminated food from the diet. It was possible to correlate proctoscopic and pathologic observations in one of these cases, owing to intercurrent pneumonia and death. The source of the ingested mites could not be ascertained, but the social stratum of the patients made mite contamination of food probable. Chronic diarrhea is probably due to continuous reinfestation as a result of constantly eating contaminated food. The organisms probably have only a temporary sojourn in the intestine, especially when diarrhea is present. Oviposition and hatching of eggs unquestionably occur, but completion of the life cycle seems doubtful. Treatment would appear to consist only of the elimination of food contamination. The incidence of intestinal mite infestation would be difficult to determine. Routine fecal examination would undoubtedly fail to reveal many cases. The eggs, if observed, might be mistaken for those of the hookworm or other nematodes. Since only a few eggs are deposited daily, they may be readily overlooked. Culture of stools obtained with adequate precaution is the most reliable method of diagnosis. Failure to find the parasites does not exclude the possibility of their presence. Unclean catheters and douche tips when used by the public or others may be the sources of contamination in such cases.

Southern Surgeon, Atlanta, Ga

3 178 (March) 1934

- Tumors of the Breast I Abell, Louisville, Ky—p 1
*Vaginal Approach to Peritoneal Cavity W W Babcock, Philadelphia—p 11
Diagnosis and Treatment of Tumors of Thorax, Exclusive of Breast Tumors C A Hedblom, Chicago—p 21
Transpleural Splenectomy for Ruptured Spleen Case Report A Blalock, Nashville, Tenn—p 37
Postoperative Treatment I Cohn, New Orleans—p 39
Cancer About the Mouth J B Brown, St Louis—p 47
Diagnosis and Treatment of Malignant Tumors of the Thyroid Gland M Nordland and L M Larson, Minneapolis—p 53
Fibroid Tumors Review of One Hundred Cases J C Norris, Atlanta, Ga—p 62

Vaginal Approach to Peritoneal Cavity—Babcock points out that in the adult woman the lower peritoneal cavity may be entered, explored and drained in the simplest and quickest way through the vaginal vault. Here the extraperitoneal layers are only a few millimeters in thickness and the peritoneum may be entered by a single thrust of a pair of curved scissors. Such an opening may be readily enlarged by the fingers alone to a size sufficient for exploration of the pelvis and lower part of the abdomen without the division of a single important blood vessel or the need of a ligature. Not infrequently a hand may be introduced through such an opening and the lower abdominal structures may be palpated. At the completion of the operation no sutures or peritoneal closure is required; a gauze drain laid through the opening completes the operation. Secondary complications resulting from the vaginal approach are rare, as the integrity of the anterior abdominal wall is not jeopardized. If skillfully done, the vaginoperitoneal section is usually much safer and has a lower mortality than an abdominal section. Against the manifest advantages for the patient, the surgeon must contend against increased difficulties, restricted operative field, special instruments and methods of illumination. Adequate training to avoid injury to intestine, bladder, ureter or other important structure and to ensure dependable hemostasis is essential.

Southwestern Medicine, Phoenix, Ariz

18 77 108 (March) 1934

- The Crippled Hand C Von Wedel Oklahoma City—p 77
Is Our Present Day Knowledge Adequate for the Control of Clinical Tuberculosis? O E Egbert El Paso, Texas—p 81
Does Tonsillectomy Light Up Latent Tuberculosis? E W Phillips, Phoenix Ariz—p 84
Treatment of Tuberculous Pulmonary Cavity C W Mills Tucson, Ariz—p 88
How Our Experience in the Last Few Years Has Changed Our Attitude Toward Collapse Therapy J J Beatty Tucson Ariz—p 93

Virginia Medical Monthly, Richmond

60 709 762 (March) 1934

- Bronchoscopy and Esophagoscopy Report of Cases E T Gatewood and T E Hughes Richmond—p 709
Fever Therapy in Paresis J King Radford—p 720
Does Circumcision in Infancy Protect Against Disease? A L Wolharst New York—p 723
Inflammatory Tumors of the Small Intestine Case Report C Williams Richmond—p 728
Functional Disorders Arising from Ovarian Hypofunction F M Horsley Arrington—p 733
Indications for Posterior Gastro Enterostomy H H Hurt Lynchburg—p 736
Cervicitis Prenatal Puerperal and Postnatal Prophylaxis J W Henson Richmond—p 739
Rational Treatment of Pylorospasm in Infants C P Mangum, Richmond—p 743
Multiple Abscesses of the Liver Complicating Acute Appendicitis Case Report W H Saunders and T D Armistead Roanoke—p 747
Diagnostic Hints in Gynecology E Podolsky Brooklyn—p 748
Abdominal Drainage S Leigh Norfolk—p 749

West Virginia Medical Journal, Charleston

30 49 96 (Feb) 1934

- Infections of the Blood Stream R M Wylie Huntington—p 49
Phrenotomy in the Treatment of Pulmonary Tuberculosis R B Bailey Wheeling—p 56
Short Review of Certain Aspects of Pellagra W H Riheldaffer Lost Creek—p 60
Practical Skin Therapy M L Bonar Charleston—p 64
Management of Acute Head Injuries A A Wilson Charleston—p 71
Treatment of Postpartum Hemorrhage S J Goodman Columbus Ohio—p 78

30 97 144 (March) 1934

- Chronic Suppurative Otitis Media Observations Regarding Its Prevention Examination and Treatment J W Downey Jr Baltimore—p 97
Unfavorable Reactions Due to Antirabic Treatment Two Cases F C Hodges Huntington—p 106
Cholesteatoma Case Report of Bilateral External Cholesteatoma A P Huggins, Hinton—p 114
Rocky Mountain Spotted Fever Eastern Type Three Cases Occurring in Same Family on Western Decline of the Alleghenies D G Preston Lewisburg—p 119
Treatment of Hemorrhoids and Pruritus Ani B Banks Charleston—p 122
Umbilical Cord Clamp T W Nale Glen Rogers—p 128

Yale Journal of Biology and Medicine, New Haven

6 367 486 (March) 1934

- Doctor Hezekiah Beardsley 1748 1790 W R Steiner Hartford Conn—p 367
*Diabetes Insipidus Associated with Pinealoma Transplant in the Tuberculum S W Stringer New Haven Conn—p 375
Roentgenographic Study of Thoraces of New Born Infants Ethel C Dunham and M D Amico New Haven Conn—p 385
Relationship of Age to Immunologic Reactions Leona Baumgartner New Haven, Conn—p 403
End Results in the Treatment of Carcinoma of the Colon A W Oughterson New Haven Conn and M T Shelton Harrisonburg Va—p 435

Diabetes Insipidus Associated with Pinealoma—Stringer presents the history and necropsy observations of a man, aged 27, who suffered from diabetes insipidus for a period of five months preceding death, which followed after a period of hyperpnea of 107 F lasting one week. Generalized signs of an intracranial tumor were absent. The administration of solution of pituitary was at first successful in relieving the diabetes insipidus, but gradually this therapeutic measure failed to be effective. At necropsy a pinealoma was found in the pineal body and a transplant of this tumor was present in the region of the tuber cinereum. This metastatic implant destroyed the tuberal group of hypothalamic nuclei and invaded the stalk of the hypophysis producing closure of the infundibular canal.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Urology, London

6 1 100 (March) 1934

- Investigation into Permeability of Kidney to Bacteria in Circulating Blood H J R Kirkpatrick—p 1
Observations on Stimulating Influence of Temporary Rubber Splinting on Regeneration Following Ureteral Resection Experimental Study J L Wiseman—p 11
Extravasation of Urine from Ureter Secondary to Ureteral Calculus G S Foulds and D H Valey—p 27
*Diagnosis of Renal Tuberculosis by Cultures Made from Urinary Sediment D N Esendrath—p 37

Diagnosis of Renal Tuberculosis by Cultures—Eisendrath says there is a close relation between the elimination of tubercle bacilli from a tuberculous kidney and the anatomic changes incident to such an infection. For this reason one may find the bacilli at one examination and not at another. In the author's first series, consisting of fifty-seven cases, the cultures were positive in thirty, whereas the stain was positive in only twenty of the thirty. In a second series, of thirteen cases, the culture was positive in seven, whereas the stain was negative in the five but had been positive at previous examinations in four of the five cases. The bladder specimen may be negative and that taken directly from the kidney may be positive, hence it is always advisable to examine the urine obtained by ureteral catheterization. The author is of the opinion that one should always control the culture by animal inoculation to avoid error. One should keep the cultures under observation for at least ninety days. The culture method should be employed as a routine measure whenever the stain is negative. The chief advantage of making a smear before visible colonies appear is that one can find the bacilli as early as the seventh day, whereas the earliest visible colonies were not found until the fourteenth day. That tubercle bacilli may be found in the urine by culture from three to ten years after nephrectomy was evident in five of the author's cases.

British Medical Journal, London

1 365 414 (March 3) 1934

- Hypochondriasis Individual Vicarious and Communal R Hutchison—p 365
Significance of Monilia in the Sputum B H Jones—p 368
Study of Pulmonary Tuberculosis in Infants and Children Note G G Kaye—p 370
Lack of Evidence of Transmission by Human Beings of Tuberculosis Due to Bovine Type of Bacillus G Walker—p 371
Artificial Pneumothorax After History of One Hundred and Thirteen Cases R R Trail—p 373
Ocular Torticollis Inferior Oblique Tenotomy and Its Indications E T Smith—p 374
Construction of a Vagina from a Loop of Sigmoid E R Carling—p 375
*Leaking Cerebral Aneurysm G D Kersley—p 376

Leaking Cerebral Aneurysm—Kersley presents the case of a multipara, aged 38 sent to the hospital because of antepartum hemorrhage. Six months previously she had experienced a sudden intense occipital headache, which gradually subsided. There was albuminuria and a blood pressure of 215 systolic, 140 diastolic. There were no labor pains, but the cervix was three fingers dilated, the placenta could not be felt. The following night the patient fainted, labor pains began and there was a profuse hemorrhage from the uterus. The membranes were ruptured and a stillborn child was delivered. The mother collapsed, with a pulse rate of 130 and a blood pressure of 140. Two hours later she had a fit, lasting six minutes, with opisthotonos and clonic movements of the limbs. Under treatment with morphine and chloral she improved a little but remained somewhat cyanosed. On the fourth day the temperature rose to 101 F, the breasts became tender and the patient became more lethargic. The blood pressure was now 180. On the sixth day after delivery the patient developed a right hemiplegia. The diagnosis of leaking aneurysm was confirmed by lumbar puncture, when the cerebrospinal fluid was found to be intimately mixed with blood, with a colored supernatant fluid after centrifugation. The patient gradually became more comatose and died on the tenth day. At necropsy a small ruptured aneurysm was found at the origin of the left middle cerebral artery, and another aneurysm, about 3 mm

in diameter, was situated close by on the posterior communicating artery. It seems likely that six months previously the patient had a slight leak from an aneurysm, in the latter months of pregnancy she became toxemic and finally had an eclamptic fit, which caused the aneurysm to leak again, with a fatal result.

1 415 468 (March 10) 1934

Uses and Dangers of Hypnotic Drugs Other Than Alkaloids W Willcox—p 415

*Carbon Dioxide Therapy in Lobar Pneumonia R Hilton—p 418
Renal Tuberculosis Survey of Seventy Cases A Jacobs—p 420
Effects of Subcutaneous and Intravenous Injection of Toxins Combined with Fine Emulsions of Oils V G Walsh and A C Frazer—p 424

Ten Years of Malarial Therapy J E Nicole and E J Fitzgerald—p 426

Carbon Dioxide Therapy in Lobar Pneumonia—To determine the value of carbon dioxide in lobar pneumonia, Hilton took a sample of blood from the femoral artery, administered approximately 3 per cent carbon dioxide with a loose face mask and made examinations of the breathing and the blood fifteen minutes later. The blood gases were determined by the van Slyke method. To obtain these measurements he used a specially devised low resistance mask, which has proved its value in collection of air in dyspnea. He observed that arterial anoxemia is not relieved after carbon dioxide administration in these quantities in spite of the fact that the depth of the tidal air is considerably increased. He discusses the part that shallow breathing may play in the production of anoxemia, the action of carbon dioxide on the oxygen dissociation curve and on arterial carbon dioxide pain, blood pressure and cyanosis and concludes that in the absence of respiratory failure, as evidenced by shallow breathing, the clinical benefits of carbon dioxide administration in air are not sufficiently demonstrated to warrant its routine use in lobar pneumonia.

Edinburgh Medical Journal

41 61 140 (Feb) 1934

Prognosis in Mammary Carcinoma in Relation to Grading and Treatment E K Dawson and M C Tod—p 61

*Treatment of Hypochromic Anemia with Soluble Ferrous Salts H W Fullerton—p 99

Mental Element in Crime and Criminals R A Fleming—p 108
Clinical Studies in Pathology of Bone D M Greig—p 120

Treatment of Hypochromic Anemia with Ferrous Salts—Fullerton treated twenty-one cases of hypochromic anemia with small doses of ferrous sulphate (9 grains [0.6 Gm.] daily). Most of the cases were treated as outpatients. Ten patients (48 per cent) showed an average daily hemoglobin increase of 1 per cent or more and accordingly can be regarded as having responded satisfactorily to this form of therapy. Three patients showed a good response although falling short of the standard rise of 1 per cent hemoglobin a day. The remaining eight cases were complicated by hemorrhage during treatment. A comparison of the efficacy of iron preparations in the treatment of hypochromic anemia has shown that ferrous sulphate treatment appears to be reliable when hemoglobin deficiency is the essential feature and that the speed of its return to normal is surely the best index of therapeutic efficiency.

41 141 244 (March) 1934

*Detection of Tubercle Bacilli in Blood Stream in Pulmonary Tuberculosis A G Emslie—p 141

Tuberculous Disease of the Middle Ear and Mastoid H R Souper—p 154

Demonstration Illustrating the Comparative Value of Certain Mediums in the Culture of Tubercle Bacilli The Laboratory Staff of the Southfield Sanatorium Colony—p 167

Demonstration of Growths of Tubercle Bacilli W T Munro—p 168
Phrenic Evulsion in Treatment of Pulmonary Tuberculosis B W Anderson—p 169

Impressions from a Recent Personal Study of Tuberculosis Work in the United States of America D M Dunlop—p 188

Some Aspects of Tuberculosis of the Nervous System with Especial Reference to Tuberculomas E Bramwell—p 195

Problems of Research in Tuberculosis A S MacNalty—p 207

Silica in Relation to Pulmonary Disease M J Stewart—p 226

Tuberculosis in Relation to Eye Disease A H H Sinclair and G B Flint—p 233

Bacilli in Blood in Tuberculosis—Emslie made fifty-four blood cultures by Loewenstein's technique and twenty-eight animal inoculation tests (omitting the two animals that died within two weeks) for tubercle bacilli with the blood of thirty-four known tuberculous and four nontuberculous patients, and

in two cases some result other than a definite negative has been found. Two cases produced acid-fast bacilli which failed to infect guinea-pigs. As both subculture and animal inoculation with scrapings of the cultures showing acid-fast bacilli failed, it is impossible to regard them as tubercle bacilli. All animal inoculation tests were negative. Reexamination at a later date of the cultures containing acid-fast bacilli revealed that they had disappeared from the culture. The author concludes that the occurrence of any degree of continuous tuberculous bacillæmia is not proved. Acid-fast bacilli are to be found in the cultures by various methods the proportion varying with the different investigators. The author obtained a percentage of 53 by his method. The exact nature and source of these acid-fast organisms have not yet been determined, but it is highly probable that they are contaminations from sources such as glassware and tap water. Loewenstein's results have not been confirmed by the author, whose work agrees with the observations of Schwabacher, Weatherhall, Cummings and Pearce. Loewenstein's medium is suitable for the culture of tubercle bacilli.

Glasgow Medical Journal

3 89 124 (March) 1934

More Recent Relationship of Ophthalmology to General Medicine H W Thomson—p 89

Epidemic Sodium Intravenous Anesthesia in Gynecology Note on One Hundred and Thirty Seven Cases A Sharman—p 104

Indian Medical Research Memoirs, Calcutta

No 28 178 (Jan) 1934

*Investigation into Relative Immunizing Value of Kasauli and Paris Strains of Rabies Fixed Virus H E Shortt R H Malone, A C Craighead and J P McGuire—p 1

Kasauli and Paris Strains of Rabies Virus—As the result of human inoculations carried out in a series of 15,910 cases, Shortt and his associates demonstrate that the Paris strain of rabies fixed virus is superior in immunizing properties to the Kasauli strain of rabies fixed virus. An extensive series of animal experiments confirms this conclusion. The minimal lethal dose of the Paris strain of rabies fixed virus is smaller than that of the Kasauli strain, but the latter kills animals in a shorter time, averaging about twenty-four hours less. In the experiments devised for testing the relative immunizing values in human cases of these two strains and in the interpretation of the results of the experiments, homogeneity of the treated population during the entire time range of the experiments, the uncertainty as to the number of persons actually at risk, the plurality of street viruses, the species of the biting animal and the uniformity in the classification of the cases were taken into consideration.

Journal of Laryngology and Otology, Edinburgh

40 153 220 (March) 1934

Vertigo W R Bram—p 153

Labyrinthine Tests and Their Aid to Diagnosis A R Tweedie—p 160

*Secondary Thiersch Grafting of Radical Mastoid Cavity Through the Meatus W I Daggett and G H Bateman—p 169

Grafting of Mastoid Cavity Through the Meatus—Daggett and Bateman believe that the logical solution in mastoid cavity grafting is through the meatus at the end of a fortnight. They operate with especial attention to refashioning a wide meatus, under gas, changing the dressing on the seventh day from the seventh to the fourteenth day the dressings are changed and the cavity is syringed when necessary, on the fourteenth day the cavity is grafted under a barbituric acid derivative (evipan) anesthesia and wax is poured in, on the fifteenth or sixteenth day the patient leaves the hospital the top dressing is changed when necessary till the twenty-eighth day, on the twenty-eighth day the wax is removed and powder is insufflated and the cavity is inspected periodically as circumstances dictate. In the nineteen cases in which the foregoing method was employed, the grafts have taken and there has not been a single instance of adhesion between the roof and the facial ridge. In six the cavity has remained completely dry from the time the wax was removed. In one patient having complete facial paralysis before operation the facial movements were normal a week after removal of the wax and only a small moist area persisted over the site of the fistula.

Journal of Tropical Medicine and Hygiene, London

37 81 96 (March 15) 1934

British Solomon Islands Health Surveys 1933 S M Lambert—p 81
Studies on Ascariasis 1 Geographic Distribution with Especial Reference to Egypt R Girges—p 85

Lancet, London

1 333 384 (Feb 17) 1934

Treatment of Nephritis A Ellis—p 333
Alleged Dangers of Barbiturates R D Gillespie—p 337
Suppuration in a Closed Fracture of the Clavicle C Flemming—p 346
Myeloma Case F H Scotson—p 346
Sarcoma of Thigh Muscles Treated Conservatively L Ley—p 347

1 385 440 (Feb 24) 1934

Medical Education, 1760 1934 C Wallace—p 385
*Treatment of Puerperal Infection Due to Streptococcus Pyogenes by Organic Arsenical Compounds L Colebrook and R Hare—p 388
Hemolytic Streptococcal Septicemia Treated by a Modified Form of Immunotransfusion C B Dyson note by R Miller—p 391
*Heredity as a Factor in the Etiology of Diabetes Mellitus P J Cammidge—p 393
Mucocoele of the Vermiform Appendix B S Cran—p 395
Rhythmic Arterial Muscular Contractions and Electrocardiogram C B Rossiter—p 397
Effect of Diminution of Tumor Metabolism E C Dodds and G D Greville—p 398

Treatment of Puerperal Infection—Colebrook and Hare give the results obtained in the treatment of sixty-six cases of puerperal infection by *Streptococcus pyogenes* with organic arsenical compounds (usually of the sulpharsphenamine type). In twenty-nine cases in which, when treatment was commenced, the infection was limited to the tissues of the genital tract, the spread of the streptococcus invasion beyond those tissues occurred much less frequently (in 31 per cent as compared with 47) than in a control group of approximately similar cases. *Streptococcus pyogenes* did not disappear from the lochia during treatment by arsenicals. The arsenical content of the lochia in several cases following administration of arsenicals was usually low, suggesting that the transudate from the blood vessels into the infected tissues of the body of the uterus was too small to allow of any considerable destructive effect on the streptococci in that situation. In a group of twenty-eight cases presenting an infection of the blood stream (positive blood culture) in which peritonitis could be excluded there were three cases in which it appeared probable that the treatment had had a definite effect. The rate of recovery for the whole series, however, was only 40 per cent as compared with 42 per cent for a control group of similar cases treated by various other methods. In most of the patients whose blood yielded more than one or two colonies per cubic centimeter of blood before the arsenical compound was administered, negative blood cultures were not obtained during the treatment. Necropsies on several of the treated cases indicated that the probable reason for failure was the presence of septic clots in large pelvic or abdominal veins into which a bactericidal agent could not be expected to penetrate. In a group of nine cases of general peritonitis (four giving a positive blood culture) there was no apparent effect of treatment.

Heredity and Diabetes Mellitus—From a study of 800 cases of diabetes reported previously, in 224 of which there was a history of glycosuria in blood relations and his present report of 1000 cases in 396 of which there was a history of familial diabetes, Cammidge states that the available evidence confirms the dictum of Naunyn that the more carefully the family histories are inquired into, the more frequently is evidence of heredity discovered. At present one can safely say only that heredity is a factor in the etiology which has to be reckoned with much more seriously than has been supposed previously. Seeing that the potentiality for developing diabetes may be transmitted either as a mendelian recessive character or as a mendelian dominant, it is necessary if the part played by heredity is to be fully determined, that the investigation of the histories of diabetic patients should include all blood relations, that is to say all persons related by blood and not merely by marriage as far as possible and not be confined, as it often has been in the past merely to immediate members of the family for as is well known a recessive character may remain in abeyance for several generations and be evident only in collaterals. Differentiation of the recessive from the dominant type is of some clinical importance

since the dominant variety is almost invariably mild and is easily controlled by diet alone, it usually persists for many years, even in young people, without causing serious symptoms or materially affecting the general health the recessive form, on the other hand, is generally grave from the onset and almost invariably requires the use of insulin to keep it under control.

Medical Journal of Australia, Sydney

1 325 360 (March 10) 1934

Correlation of X Ray and Clinical Findings in Diagnosis of Chest Diseases D Thomas and K Halfam—p 325
Esophageal Obstruction R M Glynn—p 329
*Reactions Produced by Hydncarpates in Chronic Pulmonary Tuberculosis L W Martin—p 334
Vitamin C G Bourne—p 339

Hydncarpates in Chronic Pulmonary Tuberculosis—Martin states that in vitro experiments show the hydncarpates to have a definite bactericidal effect on tubercle bacilli. Cummins has shown that sodium hydncarpate (alepol) in a dilution of 1 1,000,000 only has a growth-inhibiting and probably bactericidal effect on tubercle bacilli growing in Besredka egg medium. Other workers have found hydncarpates in a dilution of from 1 100,000 to 1 1,000,000 to inhibit the growth of avian tubercle bacilli. Favorable results have been obtained in surgical tuberculosis. The author employed subcutaneous injections of hydncarpates in chronic pulmonary tuberculosis in six selected cases, using a sterile 2 per cent solution with 0.5 per cent phenol acid. In none of the cases were immediate or late beneficial results obtained. The effect of injections was to produce undesirable pulmonary reactions and a temporary setback to any improvement that was occurring under general hygienic measures. Though only small doses were given, it was thought that the continuation of treatment would be detrimental to the patients concerned. Topical applications of sodium hydncarpate to tuberculous ulcerations of the larynx had no effect in relieving pain or checking ulceration.

Chinese Medical Journal, Peiping

47 1075 1476 (Nov Dec) 1933 Partial Index

Parasites and Tumor Growth R Hoeppli—p 1075
Histologic Changes in the Liver of Sixty Six Chinese Infected with *Clonorchis Sinensis* R Hoeppli—p 1125
Myeloid Changes in Spleen of Experimental Animals Due to Infection with *Cysticercus Fasciolaris* and to Emulsions Prepared from Tapeworms R Hoeppli and L C Feng—p 1146
Cutaneous Amebiasis Review and Report of Three Cases Observed in North China S K Ngai and C N Frazier—p 1154
Certain Surgical Complications of *Schistosomiasis Japonica* H L Chung—p 1171
Nodules or Tumors in Subcutaneous and Other Tissues Due to *Cysticercus Cellulosae* K Y Chin—p 1181
Some Histologic Changes Caused by Mites L C Feng and R Hoeppli—p 1191
Curiosities in Human Parasitology R Hoeppli—p 1200
Experiments on Resistance of Dipterous Larvae in Connection with the Problem of Intestinal and Urinary Myiasis R Hoeppli and J Y C Watt—p 1298
Mouth Spear of *Trichocephalus Trichiurus* and of *Trichocephalus Sp* from Monkey *Macacus Rhesus* H C Li—p 1343
Acute Hemorrhagic Pancreatitis Due Probably to Impaction of *Ascaris Lumbricoides* in Ampulla of Vater Report of Case K Y Chin—p 1373
The Spirochetoses P Muhlen—p 1384
Modern Methods of Treatment and Prophylaxis of Malaria by Medicaments P Muhlen—p 1401
*Treatment of *Schistosomiasis Japonica* with Fuadin in Man C U Lee and H L Chung—p 1411
Antimony in Treatment of Kala Azar and Its Toxic Effects C B Struthers H H Chang L C Lin and J T Chen—p 1421
Treatment of Ascariasis with Heptylresorcinol K C Wang—p 1433

Treatment of *Schistosomiasis Japonica* with Fuadin—Lee and Chung treated four cases of *schistosomiasis japonica* with fuadin. One patient derived no apparent benefit from the treatment. In the other three, clinical improvement with disappearance of eggs from the stool followed the treatment, but relapse occurred in all after a time. Any possibility of reinfection was excluded by virtue of the patients continued residence in a nonendemic area during the period of observation. As compared with antimony and potassium tartrate, fuadin is less toxic and more easily administered. One of the patients, however, showed marked sensitivity to it, and the treatment had to be discontinued. For the present it does not seem safe to regard fuadin as a reliable specific in bringing about a permanent cure in *schistosomiasis japonica*.

Archives des Maladies du Cœur, Paris

27 129 188 (March) 1934

- Double Impulse Conspicuous by Persistence of Coupled Ventricular Rhythm Case E Geraudel—p 129
- Atrioventricular Dissociation and Alteration of Ventricular Complex with Negative T Wave in Course of Hyperthyroidism Treated by Iodide and Subtotal Thyroidectomy P Meyer and J Stahl—p 143
- Clinical Syndrome of Myocardial Infarction Without Anatomic Infarction L Langeron—p 150
- *Crises of Sweating as Clinical Equivalent of Angina Pectoris and Acute Edema of Lungs J Urioste and R P Blanco—p 155

Sweating in Angina Pectoris—It has been recognized for years that attacks of profuse sweating may alternate in certain persons with attacks of anginal pain Urioste and Blanco cite four patients of advanced age in whom periods of profuse sweating occurred In all instances cardiovascular disease was present and had been producing other symptoms, or these developed later The sweating crises were characteristically abundant and generalized, or predominant in the anterior portion of the neck and thorax They were always accompanied by pallor, peripheral chilliness, tachycardia and a sensation of distress or even a sensation of approaching death They might follow effort, digestion and emotion, or arise during nocturnal rest If the sweating occurred in elderly people before any other sign of serious cardiovascular disease, it announced the serious nature of the condition The authors look on these crises of sweating as a defense reaction of a viscerosensory-motor reflex substitute for typical anginal attacks They must, however, be considered to have the prognostic significance of atypical angina

Archives Méd-Chir d l'App Respiratoire, Paris

S 477 586 (No 6) 1933

- *Gaseous Distention of Retrosternal Pleural Pouch in Course of Therapeutic Pneumothorax Anatomic Clinical and Roentgenologic Study R Grandgerard and P Weber—p 477
- Introduction to Theory and Practical Study of Climatology J Chaize—p 504
- Bacillema According to Lowenstein and Tuberculin Allergy A Komus—p 518
- Lipoexia and Lipodieresis of Lung L Binet E Aubel and M Marquis—p 522
- Plasmatic Phosphatase in Pulmonary Tuberculosis L Binet and J Pautrat—p 531
- Lung Abscess and Septicemia Produced by Pneumobacillus of Friedlander N N Stoichitz and D Jonnesco—p 534

Gaseous Distention of Retrosternal Pleural Pouch in Therapeutic Pneumothorax—Grandgerard and Weber state that mediastinal hernia occurring during artificial pneumothorax causes symptoms of dyspnea, pain and cardiac disturbance To relieve the patient, the pneumothorax cavity should be aspirated and the pneumothorax carefully continued with refills of smaller amounts under reduced pressure and at longer intervals There are two weak spots in the mediastinum, the upper lying between the first and third ribs anteriorly and the lower between the fifth and tenth dorsal spines posteriorly In most cases hernia occurs in the upper and anterior mediastinal weak spot Hernia has been observed in the presence of highly positive intrapleural pressure and of definitely negative intrapleural pressure The authors maintain that the lung will collapse satisfactorily only when the air is introduced at a pressure higher than the atmospheric pressure This pressure, which is distributed through the whole pleural cavity, allows distention to occur at the weakest spot This distention appears soon after filling If filling is done in the pleural cavity where the retrosternal pouch overlaps the opposite side, distention appears rapidly In typical cases the leaves of the mediastinal pleura are directed obliquely from front to back and from left to right, the left pouch projects beyond the right anteriorly If the patient receives insufflations into the left pleural cavity, the left pouch reacts to pressure by forcing it back, the distal end finds its way between the thoracic wall and the costal pleura of the opposite side, slips and, separating the costal pleura, projects into the contralateral half of the thorax In a number of cases the authors constantly found a positive pressure in the hernial sac as well as in the principal pleural cavity Distention of the retrosternal pouch was found only in young patients aged from 18 to 31, their age favoring a flexible mediastinum In these young patients the pleura is rarely the seat of pathologic disturbances such as pachypleuritis and adhesions found in older patients The authors emphasize the importance of the

anatomic predisposition of the sternomediastinal pleural leaves for the formation of a distention of the retrosternal pouch Although this complication is usually harmless and does not hinder the course of the pneumothorax, it is necessary to know how to administer the injections in such a way as to reduce the hernial pouch or at least to arrest its progress

Presse Médicale, Paris

42 513 528 (March 31) 1934

- Recent Progress in Vaccination with Diphtheritic Anatoxin G Ramon—p 513
- *Subcutaneous Vaccination with Neurovaccine E Gallardo—p 515
- Must Pneumococci Peritonitis Be Operated On? Loutsch and Merigot—p 517

Subcutaneous Vaccination with Neurovaccine—Gallardo feels that subcutaneous vaccination with the neurovaccine of Levaditi may advantageously replace dermal vaccination The technic is simple and serious complications are not encountered Positive results in children more than 4 months of age and in the revaccinated are comparable to those obtained by the dermal method Local manifestations always appear more slowly than in dermal vaccination It appears that immunity produced by subcutaneous vaccination is just as effective as that by dermal The patients with negative reaction to subcutaneous vaccination could be divided into two groups In forty-three nurslings (ten less than 4 months of age) a second cutaneous inoculation was performed at the end of twenty or thirty days In twenty of these the reaction was positive, in nine an allergic type of reaction occurred and in fourteen there was no reaction Thirty-four children more than 4 months of age formed the second group These were given a second subcutaneous dose of vaccine thirty days after the first In ten the results were positive The twenty-four having negative results were revaccinated by scarification, four of these showed typical pustules of slight intensity, four others an allergic reaction, and sixteen no reaction The author believes that subcutaneous vaccination with neurovaccine has a good future and further experiments may modify the technic toward obtaining a perfect immunization with a minimum of reaction

Revue Française de Pédiatrie, Paris

9 693-868 (No 6) 1934

- Endoscopic Technics in Diagnosis and Treatment of Croup and Tracheobronchial Diphtheria A Lemarney and L Hamon—p 693
- Epidemic of Cerebrospinal Meningitis at Kharkov in 1931 and 1932 M S I Chaferstein—p 718
- Mesoeclitic Appendicitis R C Monod—p 751
- *Problem of Syphilitic Etiology of Infantile Diabetes V Mikulowski—p 767
- Clinical Study and Diagnosis of Pulmonary Abscess in Children I Reyderman and P Nesterovskaja—p 783
- Anesthesia with Tribrom Ethanol in Children H L Rocher and J Souillard—p 803
- *Chorea and Rheumatism N Faven—p 809

Syphilitic Etiology of Infantile Diabetes—Mikulowski admits no doubt that congenital syphilis may produce diabetes Examination of the curve of sugar content of the blood in eighty children having congenital syphilis revealed a definite tendency to pathologic hyperglycemia Although the classic signs of congenital syphilis are often lacking in infantile diabetes, critical study shows a series of analogies between the two pathologic entities Thus in infantile diabetes the existence of congenital malformations and anomalies is a frequent and characteristic sign Similar observations are frequent in syphilitic children A comparable analogy lies in the neuro-pathologies and convulsive seizures in both syphilitic and diabetic infants Anatomic and physiologic studies of diabetes demonstrate the existence of syphilitic lesions of the pancreas or liver Evidence based on the specific effect of antisiphilitic treatment of infantile diabetes is uncertain and inconclusive, perhaps because of the sclerotic nature of the lesions in the pancreas, or because of the more important and pressing part played by insulin

Chorea and Rheumatism—Faven studied 117 cases of Sydenham's chorea, 84 girls and 33 boys In 91 cases the condition developed between the ages of 7 and 13 In 70 (60 per cent) a definite relationship to rheumatic infection was demonstrated, but the clinical course of cases without other rheumatic manifestations was similar to that of cases with

cardiac or articular symptoms. The majority of the cases of chorea developed during the cold season (from November to April). The small number of cases, however, does not allow a satisfactory statistical study. Study of these patients with the sedimentation reaction showed a normal rate in cases of uncomplicated chorea. This agrees with the observation of most other investigators. Usually the sedimentation rate increased with the advent of infection or endocarditis, but sometimes, in spite of complications, the rate remained normal.

Diagnostica e Tecnica di Laboratorio, Naples

5 188 (Jan 25) 1934

Technic of Serodiagnosis of Syphilis According to Sciarra V Nicoletti—p 1

Use of Orthotolbenzaldehyde for Research of Indole in Bacterial Cultures B Jolles—p 8

*New Method of Differentiating Between *Pasteurella* and Micro-organisms of *Bacillus Coli Paratyphoid* Group U Pagnini—p 15

Best Technical Conditions for Cultures in Anaerobiosis B Trambusti—p 23

Differentiating Between *Pasteurella* and the *Bacillus Coli-Paratyphoid* Group—Pagnini adds two or three drops of Loeffler's methylene blue to an average test tube containing from 7 to 8 cc of common broth. He found that *Pasteurella* when placed in the tube does not discolor the culture medium even after being several days in an incubator at 30 C. At most, some strains of *Pasteurella* give the medium a weak greenish tinge. The *B coli-paratyphoid* group begins to discolor the culture medium a few hours after it has been introduced into it, after twenty-four hours, discoloration is almost complete and the medium turns a bright green. This difference in behavior of the two groups of micro-organisms is clearly manifested in twenty-four hours and often evinced after from eight to ten hours. The author observed that *Pasteurella* refrains not only from discoloring the medium but also from rendering it turbid, whereas the bacilli of the *coli-paratyphoid* group always produce discoloration and turbidity of the culture medium. Thus Loeffler's methylene blue when added to the broth does not hinder the development of the *B coli-paratyphoid* group but greatly inhibits that of *Pasteurella*. This inhibitory action on *Pasteurella* may also be observed when Loeffler's methylene blue is added to a simple agar medium.

Minerva Medica, Turin

1 489 528 (April 14) 1934

Essential Hypochromic Anemia A Allodi F Penati and F Quaglia—p 489

First and Second Stage of Frey's Operation in Prostatic Retention Patients with Cardiac Disease. P Pariset—p 506

*General Anesthesia with Ether Symptoms of Awakening M Faenza—p 509

*Mueller's Conglobation Reaction No II in Blood and in Cerebrospinal Fluid M Santone—p 512

Narcosis with Evipan Sodium V Podetti—p 616

Symptoms of Awakening from Ether Anesthesia—Faenza studied 100 operative patients to whom general ether anesthesia had been administered. In forty-four the symptom of awakening was represented by lateral movements of the eyeball, in fourteen by lateral nystagmus, in thirteen by groaning in seven by vomiting, in six by return of the pupillary reflex to light, in three by return of the corneal reflex in two by lateral and vertical nystagmus, in one by temporary lateral nystagmus and groaning, and in nine, in addition to lateral movement of the eyeballs, there was a corneal reflex in one, lateral nystagmus in three, vomiting in two, groaning in two and a pupillary reflex to light in one. The author concludes that the period of awakening in general ether anesthesia is not marked by the return of the corneal reflex in the majority of cases but by lateral movements of the eyeballs.

Mueller's Conglobation Reaction for Diagnosing Syphilis—Santone tested 1,187 serums and 201 specimens of cerebrospinal fluid with Mueller's second conglobation reaction and with the Wassermann reaction. He found that in serums Mueller's reaction is 133 per cent more sensitive and 104 per cent less specific than the Wassermann reaction. In cerebrospinal fluid Mueller's reaction was less sensitive than the Wassermann reaction but not to the degree at which it ever gave any nonspecific results. The Wassermann reaction was absolutely specific never having given positive results in non-

syphilitic fluids. In no case did Mueller's reaction show itself thermolabile, whereas the Wassermann reaction manifested its thermolability in several cases. The author states that Mueller's reaction must be considered one of the most valuable sero-diagnostic methods for the determination of syphilis and as such merits adoption in the laboratory as a concomitant test to the Wassermann reaction.

Policlinico, Rome

41 109 156 (March 15) 1934 Surgical Section

Regeneration of Tunica Adventitia in Periarial Sympathectomy of Doppler E Palmieri—p 109

*Leotta's Sign of Perivisceral Adhesions F Rabboni—p 118

Aneurysms of Superior Mesenteric Artery C Spampinato—p 124

Functional Relations Between Spleen and Bone Marrow Splenopathic Medullary Inhibition G Zappalà—p 139

Leotta's Sign of Perivisceral Adhesions—Rabboni attempted to establish the existence of adhesions in the upper quadrant between the colon and the liver or gallbladder according to Leotta, in 100 patients presenting a right abdominal syndrome. Leotta's maneuver consists in placing the hand on the right abdominal quadrant and exerting a downward pressure with the fingers. The traction, because of a downward pull exerted on the colon below, is painful if the colon is adherent to the gallbladder or liver. The pain becomes more marked if the patient is asked at the same time to expire forcibly, causing the diaphragm to rise and to displace the liver and gallbladder upward. To establish the existence of adhesions between the ascending colon and the parietal peritoneum, the maneuver of stretching is applied to the inner part of the right half of the abdomen by making traction with the hand in a transverse direction and from the lateral aspect toward the median line. Thus, if adhesions exist between the ascending colon and the parietal peritoneum, stretching will elicit a sharp pain. The author found this sign positive in 74 per cent of patients presenting the simple right abdominal syndrome and in 100 per cent of patients whose right abdominal syndrome was complicated by gastroduodenal ulcer and cholecystitis. The validity of this test was proved at operations by establishing the presence of adhesions and their topographic localization corresponding to the direction of stretching necessary to bring out the pain. When the sign was negative, few adhesions were found and these for the most part were localized about the cecum, appendix and ileum.

41 523 562 (April 9) 1934 Practical Section

*Weltmann Coagulation Test in Pleurisy R D'Alessandro—p 523

To Diminish Risks of Postoperative Gastric Hemorrhage G Cavina—p 530

Echinococcosis of Muscles of Lumbar Region Case B Picardi—p 533

Weltmann Coagulation Test in Pleurisy—D'Alessandro applied the serocoagulation test of Weltmann to thirty patients with pleurisy. He noticed during the exudative stage a diminution of the coagulation band or a deviation to the left, and during the stage of absorption and fibrosis a widening of the band or a deviation to the right. In two cases the deviation to the left concurred with specific lesions of the homolateral lung and of the contralateral lung and was manifested as a pleurisy due to an osseous tuberculous lesion. In exudative cases of dry pleurisy presenting symptoms of fibrosis, the coagulation band always deviates to the right, especially when the disease is regressing. In pleural diseases with fibrous involvement the widening of the coagulation band may be dependent on modifications in the protein fractions of the blood serum. The deviation of the coagulation band toward the more diluted solutions may concur with an increase in the seroproteins of this fraction at a lower electrolytic threshold. It is best to increase the more diluted solutions of calcium chloride in order to bring about coagulation. The deviation of the coagulation band to the left or to the more concentrated solutions demonstrates a diminution in the coagulability of the serum; this is observed in inflammatory exudative processes in which the cellular disintegration is more intense and the protein content therefore greater. The author states that the serocoagulation reaction of Weltmann in patients presenting pleurisy and other diseases has a practical prognostic and diagnostic value. The deviation to the right when the pleural liquid is absorbed is valuable in that it indicates another pleural

process not easily revealed by symptomatologic examination and calls attention to the development of a tuberculous process of the lung

Revista Medica Latino-Americana, Buenos Aires

19 449 578 (Feb.) 1934

- Immediate Sedation of Pain in Gonococcal Epididymo Orchitis L. A. Surraco and E. Bonnacarrère—p 449
 *Broadbent's Inverted Sign in Aneurysm of Left Auricle R. Lorenzo—p 469
 Physicochemical Study of Photochemical Transformation of Viosterol into Vitamin D O. F. Nicola—p 479
 Nongonococcal Urethritis J. J. Gazzolo—p 517

Sign in Aneurysm of Left Auricle—Lorenzo describes under the name of Broadbent's inverted sign a new sign for the discovery of aneurysm of the left auricle. It consists of a localized pulsation in the lateral and posterior wall of the left hemithorax synchronous with the ventricular systole. The author reports a case in which he observed the sign and studies its pathogenesis. He believes that the auricle, greatly dilated, causes atelactasis of the lung and that its pulsations are transmitted through the lung and become perceptible to inspection and palpation on account of the impaired expansibility of the lung. The synchronism of the pulsation with the systole was due, in the author's case, to the existence of mitral insufficiency, which established a permanent communication between the ventricle and the aneurysmatic auricle. The author studies also the osseous propagation of the systolic murmurs and their displacement toward the right side. He describes the typical roentgenogram of aneurysm of the left auricle and makes especial reference to the double arch of synchronous pulsation given by the right outline of the roentgen image. He points out the advantages of the orthodiagram over the teleroentgenogram, especially because in the latter the double arch cannot be distinguished.

Archiv für Verdauungs-Krankheiten, Berlin

55 129 248 (March) 1934 Partial Index

- *Behavior of Regulatory Processes in Organism Under Influence of Repeated Administration of Histamine O. Klein and P. Mahler—p 129
 *Foundations of Mucin Therapy of Gastric Ulcer N. Henning and L. Norpoth—p 143
 Gastropathy R. A. Luria—p 148
 Action of Hypertonic Solutions of Dextrose in Duodenum on Function of Duodenum and on Blood Sugar K. Hoesch—p 173
 Read's Formula E. Herzfeld and A. Frieder—p 199
 Action of Pure Alcohol on Gastric Motility L. von Friedrich and G. A. Bokor—p 202
 Analysis of Gastric Secretion in Human Beings A. Petrovic—p 213

Effects of Repeated Administration of Histamine—Klein and Mahler studied the gastric juice, urine, blood, alveolar air and saliva of patients who were given four or five successive histamine injections at intervals of forty-five minutes. Then, to gain a deeper insight into the effect of the repeated histamine injections on the acid-base economy, the histamine experiments were preceded by a period of salt-free diet, by intramuscular injections of merbaphen, or by either an acid or an alkaline diet. It was found that, in persons with hypersecretion, up to 4 Gm of chloride could be eliminated through the stomach in three and three-quarter hours. In patients with achylia, up to 25 Gm of chloride, mostly in the form of neutral chlorides, is eliminated under the same conditions. This shows that the secretion of neutral chlorides can be promoted by histamine stimulation even in cases in which free hydrochloric acid is lacking. The repeated histamine injections also frequently promote the renal secretion in the absence of fluid intake and simultaneously with the loss of fluid and chlorides through the stomach. In some persons the urinary secretion ceases rather early, while in others, particularly in achylic patients, the increased elimination of urine is so noticeable that it appears as if, in case of insufficient response of the gastric glands, the kidneys were stimulated instead. The stimulation of the renal secretion of chlorides is especially marked in persons in whom the chloride secretion through the stomach is high (hyperacidity). The fluid secretion, however, is different, in that the water elimination through the kidney is generally greatest in those persons in whom the fluid elimination through the gastric juice is slight (achylia) and vice versa. The pH of the urine increases (greater alkali-

linity of urine) in cases in which there is a great loss of gastric juice and of acid. This indicates that the kidney acts as a regulator of the acid-base economy. However, under extreme histamine action this regulatory function may become exhausted. The blood chlorides show a decrease, particularly in patients with hyperacidity, and the alkali reserve of these persons frequently increases. In patients with achylia there are no such changes. The carbon dioxide tension increases correspondingly to the loss of acids. In a few cases the prolonged histamine stimulus caused a disturbance in this regulation on the part of the lungs. The injection of merbaphen and the salt-free diet changed the reaction of the organism to the repeated histamine injections in that the urine and the gastric juice revealed the loss in chlorides, and there are also changes indicative of the alkalization of the organism by merbaphen: greater rise of the alkali reserve and of the carbon dioxide tension of the alveolar air, and percental increase in the neutral chlorides. The dietetic and medicinal modification of the acid-base economy changed the effects of the histamine action only slightly.

Mucin Therapy of Gastric Ulcer—Henning and Norpoth employed mucin preparations in the treatment of gastric ulcers over a period of eighteen months. The favorable results induced them to study the action mechanism of the mucin. In summarizing, they state that: 1 Gastric mucin swells in water, in tenth normal sodium hydroxide and in tenth normal hydrochloric acid. 2 Mucin binds the hydrochloric acid partly by water combination and partly chemically by acid combination, which can be demonstrated in vitro and in vivo. 3 A certain amount of mucin becomes dissolved in the process of swelling in water, hydrochloric acid or sodium hydroxide, for it can be demonstrated by the determination of the protein content. 4 The viscosities of gastric juice, of hydrochloric acid of sodium hydroxide and of water are increased in various degrees by the admixture of mucin, the highest values being obtained in gastric juice and in hydrochloric acid. 5 There was no histamine or pepsin in the examined preparations. 6 Mucin inhibits the peptic protein digestion.

Deutsche medizinische Wochenschrift, Leipzig

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- Clinical Parasitological Observations R. Wigand—p 461
 Treatment of Severe Intoxications and of Central Respiratory Disturbances H. Frank—p 464
 Therapy of Exophthalmic Goiter and of Bronchial Asthma H. Handa—p 467
 Blood Groups and Immunity H. Binhold—p 468
 *Important Reactions of Cerebrospinal Fluid for Demonstration of Meningitis and Description of New Method J. Geldrich—p 472
 Parenteral Calcium Therapy F. Schierenberg and H. Theisen—p 474

Cerebrospinal Fluid Tests in Meningitis—Geldrich emphasizes that there is no single cerebrospinal fluid reaction which alone is a reliable indicator of the presence of a meningitis, but that the demonstration of all characteristic changes is necessary for a definite diagnosis. He mentions, as the characteristic changes of the cerebrospinal fluid, increase in the protein content, in the number of cells and the lactic acid content and decrease in the sugar content. In connection with the protein content he reviews the Pandy test and the foam test of J. Pauncz, and for the determination of the increase in the number of cells he recommends the pus reaction of Walthner, which is really the Donne test applied to the cerebrospinal fluid. The demonstration of the reduction in the sugar content encounters certain difficulties, and for this reason the detection of an increase in the lactic acid content is of great importance. The lactic acid test is done according to Hopkins. Into a test tube with 5 cc of concentrated sulphuric acid and 1 drop of saturated cupric sulphate, the author puts 0.3 cc of cerebrospinal fluid. After shaking, the test tube is placed for from one and a half to two minutes in a boiling water bath and is cooled off under running water or in ice. Then 0.1 cc of an alcoholic solution of thiophene is added and the test tube placed once more in the hot water bath. After the tube has been shaken for from twenty to twenty-five seconds it is rapidly cooled off. Now the reaction is read: a pink to cherry-red is positive, that is, it indicates a considerable increase in the lactic acid, however, a brownish coloration is negative. A lactic acid content of less than 20 mg per hundred cubic

centimeters always gives a negative reaction, but if it exceeds 40 the reaction is positive. Thus the reaction is positive only if the lactic acid increase is as considerable as it is found almost exclusively in meningitis.

Jahrbuch für Kinderheilkunde, Berlin

142 69 190 (March) 1934

- Early and Late Reactions as Allergic Skin Tests Their Theoretical and Practical Significance O. Tezner —p. 69
Agranulocytosis During Childhood Malignant Granulocytopenias with Hemorrhagic Diathesis and Subsequent Strong Myeloid Reaction H. Wili —p. 102
Fulminant Meningococcal Sepsis Etiology of Syndrome of Waterhouse Friderichsen F. Bamatter —p. 129
*Symptomatology and Therapy of Hemolytic Icterus During Childhood M. Grob —p. 163

Hemolytic Icterus During Childhood—Grob points out that the diagnosis of hemolytic icterus may give considerable difficulties in children, particularly during the so called crises. He thinks that the higher incidence of hemolytic crises during childhood is due to the fact that, because of the greater activity of the growing organism, the equilibrium between the erythropoiesis in the bone marrow and the disintegration of the erythrocytes is more frequently disturbed. The sudden onset of the hemolysis which leads to a crisis, not only causes an aggravation of the symptoms already present (icterus anemia enlargement of the spleen and so on) but also the appearance of a number of new symptoms, which make the symptomatology of the crises extremely manifold. According to the predominance of the one or the other symptom a differentiation can be made. The thermic crises are characterized by increases of temperature that frequently persist for long periods. During the crisis-free intervals the rectal temperatures are often considerably increased while the axillary temperatures are normal. The abdominal crises may simulate acute appendicitis. The hemolytic crises (in the narrower sense) frequently lead to severe anemia and to severe reactions of the bone marrow with elimination of young red cells and of white cells, so that the blood picture resembles that of leukemia. The author describes a number of cases. In one, the hemolytic icterus concurred with signs of a hemolytic diathesis (cutaneous hemorrhages, thrombopenia). Splenectomy was performed, and there followed such a tremendous increase in the blood platelets (four million) as never before has been reported. In a case of splenomegaly, the injection of epinephrine produced a 100 per cent increase in the number of blood platelets in the circulating blood. This points to a hitherto unknown function of the spleen, namely, that of being a depot organ of the blood platelets. Extirpation of the spleen was done in two cases and so far has been of lasting effect (one and a half and two years), there was even an increase in the resistance of the erythrocytes.

Klinische Wochenschrift, Berlin

13 465 504 (March 31) 1934

- Surgery and Problem of Autointoxication M. Biehl —p. 465
*Determination of Specific Gravity in Human Beings E. Rehn and K. Horsch —p. 467
*Varied Utilization of Trendelenburg's Phenomenon for Diagnosis of Disorders of Hip Joint and Pelvis K. Ludloff —p. 469
Infectious Spondylitis with Fusion of Vertebrae K. Middeldorpf —p. 475
*Treatment of Tetanus with Intravenous Application of Large Amounts of Antitoxin and with Tribrom Ethanol Anesthesia C. Hempel —p. 477
*Genesis of Inguinal Endometriomas O. Hilgenfeldt —p. 478
*Changes in Blood as Diagnostic Aid in Disturbances Caused by Poison Gas O. Muntsch —p. 482
Experimental Contribution to Inhibition of Passage in Gastro Intestinal Canal in Icterus H. Schroeder —p. 485
Cushing's Pituitary Basophilism Constitutional Obesity and Interrenal Virilism E. J. Kraus —p. 487

Specific Gravity of Human Beings—Rehn and Horsch describe a simple method for the determination of the specific gravity of human subjects. They use a bath tub with an especially constructed volumeter. The test should be made in the morning following evacuation of intestine and bladder. The nose is closed with a clamp and a tube is attached to the mouth. The latter permits inspiration and expiration while the person is entirely submerged. On command, the person expels the air and holds the breath in deep expiration and the volumeter is read. The reading may be repeated several times.

The specific gravity is computed from the values of deepest expiration after deduction of the nose clamp and the tube. The authors cite the specific gravities of several persons. In a healthy man, aged 24, with a weight of 65.5 Kg, they determined a volume of 61.3 liters and consequently a specific gravity of 1.06443. A woman with thyrotoxicosis had a specific gravity of 1.09471, while a woman with endogenic obesity had a specific gravity of 0.9538. In an asthenic patient who underwent surgical treatment for an abdominal hernia the specific gravity was determined several times. Disappearance of gastric disturbances, a better food intake and improvement in the general condition, was followed by a decrease in the specific gravity (from 1.079 to 1.049). The authors think that such comparative determinations in the same person will prove to be a valuable aid.

Trendelenburg's Symptom in Disorders of Hip and Pelvis—Following the description of a case of tabetic arthropathy, which had been erroneously diagnosed, Ludloff shows how he recognized the true nature of the condition by giving attention to Trendelenburg's symptom, which consists in the downward instead of an upward movement of the pelvis on the side of the nonsupported leg when the patient is standing on one leg. The author shows that the symptom not only is produced by an insufficiency of the median gluteal muscle, but may have several other causes. The concurrence of Trendelenburg's symptom with lordosis and luxation is indicative of congenital luxation of the hip. The concurrence of the first two in the absence of luxation indicates muscular dystrophy. Trendelenburg's syndrome alone without either lordosis or luxation indicates coxa vara. In congenital coxa vara, the Trendelenburg symptom is present and the hip joint is deformed but lordosis may be either present or absent. The concurrence of Trendelenburg's symptom and of destroyed hip joint in the absence of lordosis may indicate either tabetic arthropathy or healed tuberculous coxitis. If in case of Trendelenburg's symptom lordosis is absent, the hip joint is normal but the sacro iliac synchondrosis is impaired, there exists either a loosening of the pelvic ring by fracture, tuberculosis or malignant tumors. The detection of the Trendelenburg symptom together with the anamnesis will often permit a definite diagnosis of disorders of the hip joint and the pelvis, but these diagnoses should of course be verified by inspection and roentgen examination.

Treatment of Tetanus—At his clinic, in Marburg, Hempel adheres to the intravenous injection of large doses of antitoxin in combination with tribrom-ethanol anesthesia. This method was employed in five cases. The author describes the clinical history of a boy, aged 6, in whom the tetanus developed after an incubation period of ten days. Hospitalization was not done until three days after the onset of the symptoms of a severe, generalized tetanus. The prognosis seemed unfavorable. Tribrom-ethanol anesthesia was induced (0.08 Gm for each kilogram of body weight [20 Kg]). Immediately after anesthesia set in, the wound was excised, injections of tetanus serum were made around it and a sterile bandage was applied. In the course of fifteen days the patient received in all 52.7 Gm of tribrom ethanol (increased doses at the later injections, 0.1 and 0.125 for each kilogram of body weight). The total number of antitoxin units was 720,000. During the first four days 480,000 units was given intravenously, and during the subsequent days the other 240,000 units was administered intramuscularly. At the end of the treatment there was still a certain stiffness in the extremities and in the back. The walk was insecure and motor pareses existed in both legs, particularly in the region of the peroneus. These disturbances disappeared gradually and after forty-nine days the patient was discharged completely cured. Of the other four patients treated with this method at the author's clinic two died and two recovered. In those who died the incubation period was comparatively short, being four and six days, respectively.

Changes in Blood in Disturbances Caused by Poison Gas—Muntsch discusses the changes caused by the poison gases of the green cross (phosgene) group and by the yellow cross (mustard gas-dichlorethylsulphide) group. He describes animal experiments he conducted with phosgene. He observed that during the first half hour after intake of the phosgene the

hemoglobin content increases slightly. During the following three hours it remains about the same or even decreases slightly, but beginning with the fourth hour it increases rapidly and reaches a maximum before the end of twenty-four hours, then it gradually decreases, and at the end of seventy-two hours again has reached the normal level. The number of erythrocytes runs practically parallel with the hemoglobin content. The rapid increase of both the hemoglobin and the erythrocytes sets in when the symptoms of pulmonary edema become manifest, before that the increase is so slight that a differentiation from the normal is almost impossible, and for this reason the determination of the hemoglobin content and of the number of erythrocytes is of no value for the early diagnosis. In studying the leukocytes the author observed a lymphopenia, a deviation to the left, but he admits that for an early diagnosis the studies on the leukocytes are of little value because they require too much time. The changes resulting from the loss of plasma in cases of phosgene poisoning are of great significance. There is a considerable increase in the inspissation and in the viscosity and the coagulation is accelerated. Attention was given also to the sedimentation, and shortly after the poisoning it was found that the speed increased slightly. The author thinks that, although the sedimentation speed alone cannot serve as a basis for the diagnosis, it is nevertheless a valuable diagnostic aid in phosgene poisoning. He reports his studies on the hematic changes in poisoning with mustard gas (yellow cross), dichloroethylsulphide. He found that poisoning with vapors of mustard gas produces in the blood changes similar to and perhaps even more severe than those that develop when the fluid substance acts on the skin. The number of erythrocytes and the hemoglobin content decrease, a temporary neutrophilia is followed by a neutropenia, and a passing lymphopenia by a lymphocytosis. There also is an eosinopenia, special forms of granulocytes appear and the segmented nuclei tend to degenerate. The blood picture presents essentially the same three phases (neutrophilia, monocytosis, lymphocytosis) that characterize an infection (Schilling's biologic curve of leukocytes). The sedimentation speed always shows an increase, which as a rule becomes noticeable three or four hours after the poisoning. The author emphasizes that in gas poisoning the blood picture reveals dangers as well as a favorable course, and he hopes that these studies on the blood will form a basis for new therapeutic methods, at least for poisoning by mustard gas.

13 504 544 (April 7) 1934

Significance of Hereditary Research for Pathology. F. Curtius—p. 505

Anti-inflammatory Diet. C. von Noorden—p. 507

*Exogenic Causal Factors in Diabetes Mellitus. H. Curschmann—p. 511

Significance of Regulation of Venous Pressure for Pathology of Circulation. S. Dietrich and H. Schwiegk—p. 514

Coordination of Sympathetic Regulations. F. Hoff—p. 519

Influence of Organ Extracts on Blood Pressure in Human Beings

Action of Liver Preparations in Intravenous Injection. H. A. Heinsen and H. J. Wolf—p. 523

Benign Neoplasms of Lung. A. Böger and K. Voit—p. 526

*Changes in Blood as Diagnostic Aid in Disturbances Caused by Poison Gas. O. Muntsch—p. 529

Exogenic Causal Factors in Diabetes Mellitus—Curschmann points out that the role of the exogenic factors in the etiology of diabetes mellitus is still in dispute. His opinions are based on more than 400 cases. He thinks that the assumption of a syphilitic etiology of diabetes mellitus has an uncertain basis. In regard to the causal significance of tuberculosis he says that in case of concurrence of the two disorders in his series of cases tuberculosis always was the primary and diabetes mellitus the secondary disease. He denies the etiologic significance of occupation, mode of living and race. He considers the abuse of alcohol of no particular etiologic significance but thinks that excessive use of tobacco may at least lead indirectly to diabetes by promoting the development of arteriosclerosis. Carbon monoxide poisoning occasionally may lead to diabetes mellitus. The author observed two such cases and in this connection he calls attention to the traumatic, particularly the neurotraumatic, etiology of diabetes mellitus. He thinks that cerebral physical traumas as well as psychic traumas should be recognized as possible eliciting factors of diabetes mellitus and that absolute rejection of a neurotraumatic pathogenesis is not justified.

Medizinische Klinik, Berlin

30 353 384 (March 16) 1934

Clinical Aspects of Allergy in Infectious Diseases. F. Hamburger—p. 353

Etiology and Treatment of Acne Rosacea. P. Linser—p. 357

Potassium Group. R. Keller—p. 358

Nature and Significance of Care for Drunkards. E. Gabriel—p. 361

Psychotherapeutic Method. E. Froschels—p. 366

*Blood Transfusions in Septic Diseases and in Ulcerative Colitis. F. Sinek—p. 368

Autovaginoscopy. E. Bergmann—p. 369

*Abnormal Digestive Substances as Cause of Inflammatory Periarthritic Changes. E. Freund and Eva Kolmer—p. 371

Blood Transfusions in Ulcerative Colitis—Sinek made careful studies on the efficacy of blood transfusion in various conditions and reaches the conclusion that in cases of ulcerative colitis blood transfusion can be recommended but that expectation should not run too high. He found that blood transfusion had no effect in sepsis and in endocarditis lenta and that its efficacy was not quite convincing in typhoid.

Digestive Substances in Inflammatory Periarthritic Changes—Freund and Kolmer decided to study in mice the influence of extracts from stools of patients with articular rheumatism. They describe the preparation of the extracts, of which from 0.4 to 0.6 cc was subcutaneously injected into mice. Controls were treated in the same manner with extracts of stools from normal persons. Whereas the mice injected with the latter extract showed practically no changes, those injected with stool extract from rheumatic patients showed a reduced mobility, namely, a dragging of the hind legs and often swelling on the knee joints. These changes persisted for several days but then subsided gradually. The experiments were made on stools from twenty-three rheumatic patients (sixty-seven mice) and on six stools from normal persons (fifteen mice). In six rheumatic patients the results were negative, but in these patients the rheumatism was not in an acute stage. The histologic pictures did not unequivocally represent the aspects of rheumatism, but the authors point out that this could hardly be expected from a single product of the digestive activity, and they think that the results might be different if the abnormal products of digestion could be made active for longer periods by introduction directly into the intestine. They plan further studies along this line.

Monatsschrift für Kinderheilkunde, Berlin

59 321 400 (March 21) 1934

Diagnostic Significance of Muck's Epinephrine Probe Test in Children. E. E. Gierlich—p. 321

Influence of Gastric Juice on Hematopoiesis in Rats. Johanna Engberding—p. 332

*Cause and Incidence of Albuminuria in Young Persons. H. Nowak—p. 341

Significance of Determination of Blood Protein in Dysentery During Childhood. E. von Frolich and B. von Gozsy—p. 352

*Newer Points of View in Medicinal Treatment of Epilepsy. E. von Lederer—p. 359

Albuminuria in Young Persons—To obtain an insight into the incidence of orthostatic albuminuria, Nowak gave especial attention to the examination of the urine in 4,500 persons aged from 14 to 17 years, who were examined for occupational fitness. He discovered albuminuria in 560, that is, in 12.4 per cent of the young people. Of these, 524, or 11.6 per cent, had orthostatic albuminuria and 36, or 0.8 per cent, had a chronic renal disorder. Of the 524 with orthostatic albuminuria, 248 had a noticeable lordosis but the other 276 had disorders that would, like lordosis, lead to circulatory disturbances of the kidney. This latter group presented aspects indicative of weakness in the muscular, connective, cartilaginous and bony tissues, greater susceptibility to catarrhal infections and conditions such as excessive growth in height, neuropathic predisposition, severe dental caries and pulmonary or otic disorders. The author shows in a number of cases how gradual may be the transition from anephritic to nephritic albuminuria.

Treatment of Epilepsy—Von Lederer says that in the pathogenesis of epilepsy two factors play a part: (1) the irritative epileptogenic noxa (congenital, hercdogenerative, traumatic, inflammatory or sclerotic changes, toxicoses, tumors and disturbances in the circulation of the blood and the cerebro-

spinal fluid) and (2) a reduced spasmodic threshold (increased spasmophilia). The latter factor may be predominating in hormonal disturbances (hormonic dysfunction, puberty, menopause), during early childhood, at the beginning and end of a sleeping period and after eating. The treatment may be aimed at one or the other of these factors, various surgical interventions for the removal of traumatic and inflammatory sequelae or of tumors for the first and various medicaments to increase the spasmodic threshold for the second factor. The author observed that the customary bromine-phenobarbital medication failed in many cases and he resorted to the use of vasodilatory hormone preparations, the so called circulatory hormones, that are obtained from striated muscles or from the pancreas. The trials with these hormones seem to indicate that the peripheral (cerebral) vascular spasm is one of the important irritative epileptogenic factors, and that whenever the sedatives do not bring the desired results the circulatory hormones should be tried. The fact that in some cases of epilepsy the circulatory hormones proved ineffective does not prove the theory erroneous but only shows that in these cases the vascular spasm is not the eliciting cause. He cites a case in which most likely an injury of the brain was the causal factor.

Munchener medizinische Wochenschrift, Munich

81 387 424 (March 16) 1934 Partial Index

- Treatment of Sleep Disturbances O Wuth—p 387
*Practical Experiences on Prevention of Inferiority G Bonne—p 391
Treatments of Laryngeal Tuberculosis and Their Results A Brugemann—p 393
Evipan Sodium (Sodium Salt of a Barbituric Acid Derivative) for Intravenous Complete Anesthesia R Decker—p 395
Spontaneous Cure of Case of Ozena O Bergmann—p 397
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Medical Expert Testimony in Social Insurance J Weichsel—p 398
Experiences in Treatment of Eclampsia with Pernoxon (Solution of Sodium Salt of Secondary Butyl Beta Bromoethyl Barbituric Acid) H Goecke—p 402
*Treatment of Wounds with Resin Ointment Muller Meernach—p 405

Prevention of Inferiority—Bonne stresses the role played by alcohol, nicotine and syphilis in the degeneration of the offspring. He realized the importance of these factors in the development of inferiority not only in the course of his long private practice (forty-seven years) but also in studies on approximately 1,000 criminals. He relates the histories of twenty families in which inferiors of various types, such as idiots, epileptic persons, problem children, deaf-mutes, children subject to convulsions, homosexuals and criminals appeared, and in which he was able to trace the degeneration to syphilis, to the addiction to alcohol and nicotine, or to the fact that the child was conceived at a time when one or both of the parents were under the influence of alcohol. Fatigue, starvation, anxiety and addiction to morphine, cocaine or other narcotics may likewise lead to a disturbance in the psychic equilibrium of a person or his offspring but the author ascribes the greatest influence to the three factors named. The theory that drunkenness as such is a manifestation of degeneration is rejected by him, although he admits that an inferior conceived during intoxication may likewise become a drunkard. He thinks that in most instances drunkenness is a psychic infection produced under the narcotic influence of alcohol. He gained the impression that an asocial disposition, an inclination to criminality and homosexuality are frequently the result of chronic abuse of tobacco. He shows that by reducing the addiction to alcohol and to tobacco the economic crisis has exerted a beneficial effect, in that the incidence of idiocy and of other inferiorities has noticeably decreased. He considers the sterilization of the inferiors a step in the right direction, but he emphasizes that the attention of the people must also be directed to the injurious effects that alcohol, nicotine, syphilis and so on may have on the health of the offspring.

Treatment of Wounds with Resin Ointment—Müller-Meernach first resorted to the use of resin during the war, when he ran out of balsam of Peru. He made an ointment of equal parts of resin from larch trees (*Terebinthina larcina*) and petrolatum and he found it highly effective in the treatment of wounds. Now, after almost twenty years experience with this ointment, he is convinced that this simple preparation

makes all other ointments for wound treatment superfluous, although he did not neglect to try the various products of the chemical industry that were put on the market in the course of the years. He applied the ointment to surgical wounds, to wounds caused by accidental injuries and to acute suppurating wounds and abscesses, following their surgical treatment. Moreover, he found that the ointment stimulated the formation of granulations in wounds that had a tendency to slow healing.

Wiener klinische Wochenschrift, Vienna

47 353 384 (March 23) 1934 Partial Index

- Spondylitis Deformans F J Lang—p 360
Symptomatology of Sciatica S Erben—p 367
*Ready Prepared Dried M and N Test Serums M Eisler—p 369
Diagnosis and Therapy of Diseases of Vulva and Vagina T Antoine—p 370

Prepared Dried M and N Test Serums—Eisler points out that normal human serums (iso-agglutinins) are not used for the detection of the M and N factors, but rather immune agglutinins obtained by treating rabbits with human corpuscles that contain the factor in question. The author calls attention to numerous difficulties encountered in the preparation of these agglutinins and states that, after the test serums have been prepared, there arises the problem of keeping them effective for longer periods. Since in the fluid state they can be preserved for only a comparatively short time, the author decided to dry them, and he found that, when this was done, they were still effective after storage for about a year. These dry serums will make the determination of the M and N factors possible in laboratories that are not equipped for the preparation of the immune agglutinins.

Zentralblatt für Chirurgie, Leipzig

61 721 784 (March 31) 1934

- Late Blood Picture After Extensive Stomach Resections W Rieder—p 722
Method of Extirpation of Rectum of Sacral Route O Orth—p 724
Results with "Pantocain" L High Spinal Anesthesia A Schmechel and O Boden—p 725
*Indication for Removal of Vasoconstrictors in Diseases of Extremities W Rieder—p 734
Dangerous Duodenal Hemorrhage Resulting from Portal Thrombosis I Philipponcz—p 733
Scapular Crepitation F Krauss—p 742
Etiology of Postoperative Pulmonary Complications F Koch—p 745
Composite Extension Outfit for Extension Bed Splints and Extension Table E Heller—p 747
Preoperative and Postoperative Treatment, Blood Transfusion J Volkmann—p 762

Indications for Removal of Vasoconstrictors in Diseases of Extremities—Rieder had excellent results with ramisectomy combined with sectioning of the sympathetic fibers in allaying the pain and delaying or entirely preventing gangrene in vasomotor disturbances of the extremities. The failures in his material as well as in the reports in the literature are, in his opinion, the result of faulty indication for operative intervention. Elimination of vasoconstriction can be effective only when the underlying condition is essentially on a vasoconstrictor basis. Constriction of the arteries of the skin leads to diminution in the volume of blood circulating in it and to lowering of its temperature. Organic occlusion of an artery can no longer be influenced by sympathectomy. The problem is to estimate before the operation the dilating capacity of the vessels. The question of hyperemia reaction can be tested by anesthetizing the nerves running to the extremity or, still more effectively, by anesthetizing the brachial plexus when studying the upper extremity and by spinal anesthesia for the study of the vessels of the lower extremity. The author's experience with this diagnostic procedure in a large number of cases convinced him of its validity. If the test results in a definite hyperemia and hyperthermia instead of coldness and cyanosis of the limb, the sympathectomy as a rule will be effective. The positive test is followed at once by the operation, since the duration of spinal anesthesia is not less than two hours. Exact measurements of the skin temperature are essential. One could expect no beneficial results from the operation if the rise of temperature was less than one degree. The author made an interesting observation, i. e., that brachial plexus anesthesia of one side sometimes produced hyperemia and

hyperthermia of the opposite side. This corresponds with the clinical observation that unilateral sympathectomy may bring about a temporary improvement in the opposite side. The author does not agree with the opinion that a complete removal of sympathetic fibers paralyzes the vessels. He showed in his microcapillary studies that the capillary reflex remained intact and that it could be elicited by external stimuli. The regulating mechanism remains unaltered, since the autonomic nerve plexuses reside within the blood vessels. The peripheral nerve plexuses are independent to so high a degree that in spite of the removal of the corresponding ganglions and of sympathetic branches combined with a periarterial sympathectomy they continue to regulate the peripheral circulation and to dilate or to constrict the vessels according to the needs of the peripheral circulation. They are autonomic in the fullest sense of the word. The rise of temperature may persist for years. The periarterial sympathectomy alone is incapable of bringing about such results. The author cites several histories with appended skin temperature charts to show that when the anesthesia test resulted in a rise of skin temperature of three or more degrees the operative results were gratifying. To the contrary, no benefit followed the operation when the skin temperature rise was less than one degree.

Zentralblatt für Gynäkologie, Leipzig

58 673 720 (March 24) 1934

Treatment of Dangerous Venous Hemorrhages in Urinary Bladder. A Bruereisen—p 674
Urethral Calculus Removed by Vaginal Route. S Szentei—p 678
Urinary Bladder in Ray Therapy of Uterine Carcinoma. W Korchow—p 681

*Treatment of Urinary Incontinence in Women. E Santi—p 685
Results of Functional and Radiologic Examination in Ureteral Anastomosis. A Esat—p 689

Treatment of Urinary Incontinence in Women.—Santi states that in 1919 he described a simple method for the restoration of the destroyed urethra. Since this report received little attention and since in the meantime his own experiences, as well as those of other Italian surgeons, have proved that the method produces good permanent results, he calls attention to it once more. He stresses the following as the main aims of his method: (1) narrowing of the urethral tube, (2) the utilization of certain factors that permit the formation of valves, (3) the lengthening of the tube that facilitates the discharge of the urine, and (4) the strong curvature or even double curvature of the newly formed urethra. He forms a new channel in the anterior soft portions of the vulva, and this channel lengthens the original urethra or what is left of it.

Sovetskaya Vrachebnaya Gazeta, Leningrad

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Serodiagnosis of Syphilis. M P Izabolinski and P B Podvalnaya—p 270

*Tenderness of Left Supra Orbital Nerve as a Sign of Previous Malaria. P K Bereskin—p 307

Tenderness of Left Supra-Orbital Nerve as Sign of Previous Malaria.—Bereskin states that in the course of forty years of practice he has observed, with few exceptions, tenderness of the left supra orbital nerve in patients who gave a history of malaria. The shorter the period since the last attack, the more pronounced was the tenderness. It was always more pronounced in patients with an enlarged spleen. The test is carried out by exerting a gentle pressure simultaneously on the supra-orbital nerves at the point at which they emerge from the supra-orbital notch. This 'supra-orbital phenomenon' is analogous to the phrenicus phenomenon of pain of the right shoulder in diseases of the gallbladder. It is probably not a neuralgia due to malarial toxemia since it has no periods of exacerbation and since it does not explain the predilection for the left side. The more likely explanation is to be sought in stimuli proceeding from the pathologically altered spleen. The symptom should prove of value in clearing up obscure cases of hepatitis and splenic involvement.

Hospitalstidende, Copenhagen

77 241 268 (Feb 27) 1934

*Investigations Concerning Carbohydrate Tolerance in Carbohydrate Hunger. N I Nissen—p 241
Tuberculosis in Sacro Iliac Articulation. H Thomsen—p 253
Evipan Sodium Anesthesia. J Nordentoft—p 261

Carbohydrate Tolerance in Carbohydrate Hunger.—Nissen's experiments showed that, after a few days without carbohydrate administration or with restricted administration on a diet either low or high in calories, a disturbance appeared in the carbohydrate metabolism. There was a fall in the fasting value. Renewed administration of carbohydrate by oral and intravenous application of dextrose resulted in an abnormally high and prolonged alimentary hyperglycemia and marked glycosuria, a transient difference, as a rule less than normal, was seen in the alimentary sugar content in arterial and venous blood. Oral administration of galactose was followed by a galactosemia, too high and too long continued, accompanied by galactosuria, the course of the assimilation curve was not affected after intravenous injection of galactose. The degree of the disturbance seemed to be independent of the intensity of the acidosis and was more marked on a diet low in calories. It is ascribed to a deficient or delayed glycogen synthesis in the liver and the peripheral tissue, possibly together with disorder in the utilization of the administered carbohydrate.

77 269 296 (March 6) 1934

*Investigations on Basophil Substance in Red Blood Corpuscles and Their Structure by Staining with Yellow Cyaninchromalum. J Stefensen—p 269
Nutrition Anemia in White Rats and Its Treatment with Iron and Copper. E E Fog—p 284

Basophil Substance in Red Blood Corpuscles.—Steffensen stained smears from well and sick persons with yellow cyaninchromalum. The red blood corpuscles were hemolyzed and assumed a peculiar granulated appearance. The method seems to him especially suitable for staining the basophilic substance in the red corpuscles, particularly the stippling, and preferable to staining with borax-methylene blue (Manson) in demonstrating the stipple cells because of greater delicacy. The coagulation products produce the stippling. The yellow cyaninchromalum method most closely resembles supravital staining, with the advantage that it indicates both the quantity and the quality (i.e., the shifting to the left) of the basophil substance. The white blood corpuscles are also especially well stained by the combined yellow cyaninchromalum-Leishman method.

77 297 324 (March 13) 1934

Medical Treatment of Exophthalmic Goiter with Especial Reference to Iodine Treatment. E Möller—p 297
*Silicosis Among Metal Grinders. S V Gudjonsson—p 313
Secondary Pellagra. Three Cases. Ellen Vibeke Jensen—p 319

Silicosis Among Metal Grinders.—On roentgen examination of 186 metal grinders, Gudjonsson found 51, or 27.4 per cent, with silicosis in different stages, mostly in milder forms. The frequency of the silicosis among the workers depended primarily on the length of time of exposure, and older persons were perhaps more susceptible. There was no roentgenologically demonstrable recent tuberculosis in the material.

Ugeskrift for Læger, Copenhagen

96 293 318 (March 15) 1934

Scleroderma and Chronic Polyarthrits. S Petersen—p 293
Diphtheria in Vacation Colony. F Ingerslev—p 295
Intoxication with Liquid Asphalt. Case. A Schiermacher—p 296

Scleroderma and Chronic Polyarthrits.—From the history and objective results, particularly the positive Zondek-Aschheim reaction, in his case of scleroderma and polyarthrits Petersen concludes that the ailments are an expression of changes in the pituitary body and the vegetative centers in the hypothalamus.

96 341 358 (March 29) 1934

Evaluation of High Blood Pressure. Ctd. E Rosling—p 341
*Insulin Coma in Pregnant Diabetic Patient. N S Jacobsen—p 347

Insulin Coma in Pregnant Diabetic Patient.—Jacobsen's patient, without the control of a physician, increased her carbohydrate consumption and lowered her insulin dosage during the last half of her pregnancy. Grave insulin coma, however, set in shortly before delivery. The child was stillborn. Its suprarenals were normal but the pancreas showed a greatly increased number of moderately enlarged islands. The increase is regarded as compensatory.



Walter Dilling

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ARTIFICIAL PNEUMOTHORAX IN THE TREATMENT OF LOBAR PNEUMONIA

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In 1921 Friedemann,¹ a German clinician, reported favorably on the treatment of lobar pneumonia by artificial pneumothorax, in a series of seven cases. In the same year David² reported six cases similarly treated with good result. Two years later Schottky³ reported a single case successfully treated. Interest in the procedure waned then, or the preliminary articles received scant attention, for not until 1928 does further literature appear on the subject.

A group of pediatricians then borrowed the idea but used it only in cases of pneumonia characterized by abnormally continued fever showing intrapleural collections or bronchiectasis. They advised against its use in acute pneumonias, mainly because they felt that most children recover from the disease with conservative treatment. Ibrahim and Duken,⁴ Duken,⁵ Jahr and Neumann,⁶ and Klotz⁷ reported seventeen cases of childhood pneumonia with protracted fever in which artificial pneumothorax was used, generally with good result and with only three deaths.

In an excellent article on the subject of the treatment of lobar pneumonia in adults by artificial pneumothorax, Coghlan⁸ reported six cases with one death, which was attributed in part to an error of judgment in the amount of air injected. Coghlan was most impressed by the ability of artificial pneumothorax to precipitate a crisis and the prompt relief of pleuritic pain which followed the separation of the parietal from the visceral pleura by air. After the publication of Coghlan's work Guadarrama,⁹ Li,¹⁰ Anderson,¹¹ and Perlroth and Topercer¹² reported good results with this new form of therapy.

Lately Leopold and Leberman¹³ have written a paper on the effect of artificial pneumothorax on lobar pneumonias experimentally produced in dogs. Of eighteen animals treated, three died. Of eighteen dogs untreated, five survived and thirteen died.

Stimulated by the appearance of the article by Coghlan, we decided to apply it clinically to a series of patients at the Philadelphia General Hospital following the suggestion of Dr William Egbert Robertson and with the approval of our respective chiefs of service.

THEORETICAL ASPECTS

When acute inflammation occurs in a part of the body that is functionally or anatomically movable, experience has taught that the primary treatment of the affected part is rest. We may cite, for example, the splinting of the joint in acute arthritides, the immobilization of the extremities in cellulitis and the strapping of the chest in pleurisy. The object is to supplement by mechanical means the natural demands of the organism for rest.

Lobar pneumonia furnishes an excellent example of acute inflammation in an organ whose function requires almost constant movement. Attempts of the body to limit motion of the lung by decreased expansion and shallow, frequent respirations cannot be too successful. The introduction of air into the pleural cavity by artificial pneumothorax furnishes a mechanical aid that admirably accomplishes the desired result.

But rest is not the only benefit that theoretically derives from the use of artificial pneumothorax. When acutely inflamed pleural surfaces are separated, the pain formerly caused by every respiratory excursion disappears. The patient is able to breathe normally, even deeply, without discomfort. This allows the well lung on the unaffected side to expand to capacity, permitting more complete oxygenation of the blood flowing through it. In consequence, cyanosis is diminished.

Most recent experimental studies indicate that artificial pneumothorax causes a decrease in the amount of blood circulating in the collapsed lung. This is still a controversial point. However, Corper, Simon and Rensch¹⁴ and Corper and Rensch¹⁵ have rather conclusively shown that the blood flow through the collapsed lung is gradually decreased. These observations are corroborated by Dock and Harrison,¹⁶ who found that within a few hours after the initiation of artificial pneumothorax from 52 to 58 per cent of the total blood flow passes through the collapsed lung but that within three days this falls to from 9 to 18 per cent. It follows then, that there will be decreased absorption

Read before the Philadelphia County Medical Society, March 14, 1934.
From the Medical and Tuberculosis Services of the Philadelphia General Hospital.

1. Friedemann U. *Deutsche med Wchnschr* 47: 433 (April 21) 1921.
2. David O. *Deutsche med Wchnschr* 47: 802 (July 14) 1921.
3. Schottky P. *Med Klin* 19: 1298 (Sept 23, 30) 1923.
4. Ibrahim J and Duken J. *Arch f Kinderh* 84: 241 (July 20) 1928.
5. Duken J. *Klin Wchnschr* 9: 2195 (Nov 22) 1930.
6. Jahr J and Neumann R. *Klin Wchnschr* 9: 2200 (Nov 22) 1930.
7. Klotz M. *Monatschr f Kinderh* 42: 312 (Jan) 1929.
8. Coghlan J J. *Lancet* 1: 13 (Jan 2) 1932.
9. Guadarrama I. *Medicina Mexico* 12: 141 (March 25) 1932.
10. Li K H. *Chinese M J* 46: 886 (Sept) 1932.
11. Anderson H C. *Chinese M J* 46: 769 (Aug) 1932.
12. Perlroth S and Topercer M. *Wien klin Wchnschr* 45: 1508 (Dec. 2) 1933.
13. Leopold S and Leberman J. M. to be published.
14. Corper N J, Simon S and Rensch O B. *Am Rev Tuberc* 1: 592 (Oct) 1920.
15. Corper H J and Rensch O B. *Am Rev Tuberc* 1: 769 (Dec) 1920.
16. Dock W and Harrison T R. *Am Rev Tuberc* 10: 534 (Jan) 1925.

from the diseased side and a decrease in the amount of unoxygenated blood appearing in the general circulation

Lymph stasis with diminution of absorption of toxins has long been held largely responsible for the beneficent effect of artificial pneumothorax in pulmonary tuberculosis by Riviere,¹⁷ Warnecke,¹⁸ Mariette,¹⁹

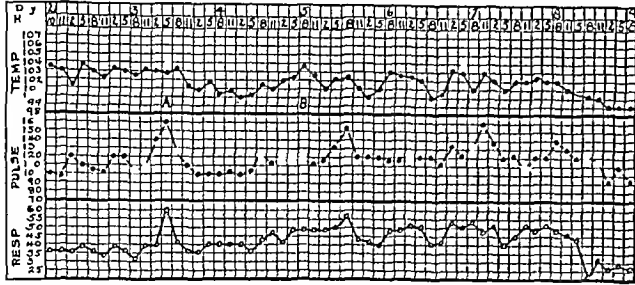


Fig 1—Temperature pulse and respiration in case 1 A injection of 330 cc of air B injection of 250 cc

Gardner²⁰ and others It doubtless functions in a similar manner in lobar pneumonia The importance of this fact cannot be underestimated when it is recalled that almost all deaths from lobar pneumonia are due directly or indirectly to toxemia

SELECTION OF CASES

Patients treated at the Philadelphia General Hospital are almost without exception of the underprivileged class Many come to the wards with a history of alcoholism, exposure or malnutrition, and it is not unusual to see persons with frank lobar pneumonia walk into the receiving ward to apply for admission The mortality in this type of case must of necessity be high From Nov 1, 1933, to Jan 1 1934, there were 107 male patients admitted with lobar pneumonia and subsequently treated with various supportive and non-specific measures Of this number forty-seven, or 43.9 per cent, died During the same period thirty-four women were admitted, with eighteen deaths, or a mortality of 52.9 per cent The combined mortality of men and women was 48.4 per cent The mortality among the patients treated with artificial pneumothorax was 18.1 per cent We are aware that it is impossible to draw conclusions from so small a series of cases, but we do feel that the figures here presented are interesting and highly suggestive

Eleven cases provide the clinical material on which this report is based The eleven cases presented physical signs of unilateral lobar pneumonia involving one or more lobes When the patient's condition permitted, the diagnosis by physical signs was checked by roentgenographic study

No effort was made to select patients who looked as if they might or might not get well with or without benefit of treatment Pneumothorax was induced at various stages of the disease and the first injection of air was given as early as the second day of disease and as late as the eleventh day Results tend to show that the time of induction is not a factor of great importance As in the serum therapy of pneumonia, treatment should be instituted as soon as a diagnosis is definitely established

The age of the subjects ranged from 15 to 54

The blood pressure varied from 94 systolic, 42 diastolic, to 160 systolic, 80 diastolic before compression therapy was started

RESULTS OF TREATMENT

There were two deaths among the eleven patients treated In one of these there was an overwhelming septicemia and toxemia, and death was certainly not caused by the treatment given Indeed, it was the feeling of all who saw this patient that his life was prolonged The second death was attributed to pneumococcal meningitis and occurred on the twenty-first day of the disease While it is hard to believe that pneumothorax precipitated the meningitis, it is also true that it did not prevent that dreaded complication of pneumonia in this instance

Artificial pneumothorax was easily inducible in ten of the eleven cases In the exceptional case three attempts were made to introduce air into the pleural cavity There must of necessity be a small percentage of patients in whom this treatment cannot be utilized because of adhesions caused by previous pleuritis or pneumonia with resultant approximation of parietal and visceral pleurae

Without doubt the most striking result of the treatment was the prompt relief of pain and dyspnea To see patients looking sick as only pneumonia patients can, with anxiety expressed in every feature, with every breath seemingly a torture and every cough a knife thrust—to see these patients immediately following successfully induced pneumothorax breathing with surprised ease and lack of pain is most gratifying, and we have seen it occur repeatedly In some cases the patient went to sleep promptly, and this was often the first protracted sleep enjoyed in from forty-eight to seventy-two hours Of course, the patient still has lobar pneumonia and is acutely ill, but the relief of pain afforded by pneumothorax without resort to opium derivatives with their deleterious side-effects changes the psychologic outlook of the case for physician and patient alike

Only slightly less spectacular than the relief of pain was the fall in temperature that followed pneumothorax In one case alone did the initial dose fail to produce a reduction in the degree of fever The crisis,

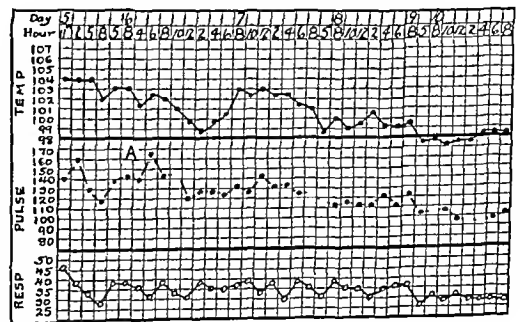


Fig 2—Temperature, pulse and respiration in case 2 A injection of 350 cc of air

the term being used in the sense that normal temperature occurred in twenty-four hours or less after pneumothorax, was produced in five cases In four additional cases the temperature came down more or less gradually by lysis, in one case adhesions prevented the introduction of air, and in one case the air introduced, while relieving pain, caused no febrile drop

17 Riviere Clive Pneumothorax and Surgical Treatment of Pulmonary Tuberculosis Oxford University Press 1927
18 Warnecke Beitr z Klin d Tuberk 16 171 1910
19 Mariette E C Am Rev Tuberc 16 220 (Aug) 1927
20 Gardner L Am Rev Tuberc 10 220 1924

Clinically and hematologically it appears that artificial pneumothorax, not invariably but sometimes, can cause a critical drop in temperature. How this occurs can only be surmised. Since we believe that pneumothorax causes diminution of absorption of toxins by lymph stasis, we believe it is possible that the mustering immunologic forces are able to overcome toxins suddenly decreased in amount. The temperature fell to normal and stayed there in the successfully treated cases in from two to five days after the first air was introduced, three days being the average time.

The temperature may rise again after an initial post-pneumothorax drop. This is due to absorption of air, which occurs rapidly in pneumonia as shown by roentgen and clinical signs, allowing reexpansion of the compressed lung. Additional air again causes defervescence. When the first injection causes little drop in temperature, a second fill may bring about the desired result.

Toxicity is greatly diminished within twenty-four hours after the injection of air. Even when the effect of the procedure on the temperature, pulse and respiration is slight, "toxemia," as judged by the appearance of the patient, is reduced.

Cyanosis, when present, is relieved.

Cough is diminished and the amount of sputum becomes almost negligible.

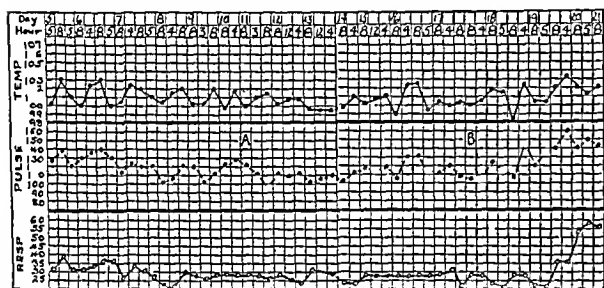


Fig 3—Temperature pulse and respiration in case 3. A injection of 500 cc of air. B injection of 500 cc.

It is difficult to follow the course of the disease by physical signs after pneumothorax because the signs of pneumothorax replace those of pneumonia. With absorption of air and consequent expansion of the lung, the breath sounds again become audible and at this time the affected lung is usually in a stage of late resolution.

None of the commonly anticipated complications occurred in this series. Pyopneumothorax, cardiac collapse, pleural shock, abscess and gangrene of the lung did not develop in a single case. In the patient who died with a septicemia there was also some spread of the pneumonic process to the opposite side. This may constitute a real danger in the use of this form of therapy, but when it is detected the air on the originally affected side can be withdrawn.

Specific serums were not used in conjunction with artificial pneumothorax because these patients were treated in a municipal hospital whose budget for medicines does not at present include antipneumococcic serum. The combination of the two methods in suitable cases may in time come to be recognized as the ideal form of treatment.

TECHNIC OF ARTIFICIAL PNEUMOTHORAX

The usual type of apparatus used in treating patients with pulmonary tuberculosis was employed. The patient is given a drachm (4 cc) of aromatic spirit of

ammonia. He lies flat in bed on the sound side. A small pillow is placed under the ribs. The arm on the affected side is raised to widen the intercostal spaces. The site of injection is prepared with iodine and alcohol. A skin wheal is made with 2 per cent procaine hydrochloride in the seventh-eighth interspace in the posterior axillary line. An 18 or 21 gage needle is

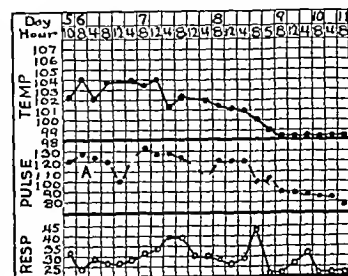


Fig 4—Temperature pulse and respiration in case 4. A injection of 400 cc of air.

attached to a three-way stopcock leading to the pneumothorax machine and a syringe containing procaine hydrochloride. The needle is inserted slowly, infiltrating with procaine hydrochloride down to and through the parietal pleura. That the needle is in the pleural cavity is determined by reading the oscillations of the water column in the manometer of the apparatus. The pressure should be negative and the oscillations were usually quite wide. Air is introduced slowly and manometric readings are made after each 50 cc. If the pressure becomes positive or the patient complains of pain, the needle is immediately withdrawn. From 400 to 500 cc usually produced the desired effect without causing a mediastinal shift. The same amount is then repeated in from eighteen to twenty-four hours. Two injections usually suffice. Injection of air by syringe and needle alone without benefit of a manometer may be likened to a blindfold intravenous puncture and is mentioned only to be heartily condemned.

CONCLUSIONS

1 Eleven patients with unilateral lobar pneumonia were treated with artificial pneumothorax to compress the affected lung, with two deaths. Neither of these fatalities could be directly attributed to the pneumothorax.

2 We believe that collapse therapy is a rational form of treatment of lobar pneumonia, based on sound surgical principles.

3 That lung tissue affected by lobar pneumonia can be compressed by air has been shown clinically, by roentgenograms and at autopsy.

4 Artificial pneumothorax relieves the pain of the pleurisy that frequently accompanies lobar pneumonia.

5 It is possible to induce a critical fall in temperature by artificial pneumothorax.

6 We believe that artificial pneumothorax is neither a "cure-all" nor a "therapia magna sterilisans," but it has shown itself to be a valuable adjunct in the treatment of lobar pneumonia and even, we feel, a life saving measure in some cases.

7 We have seen no complications directly attributable to the procedure.

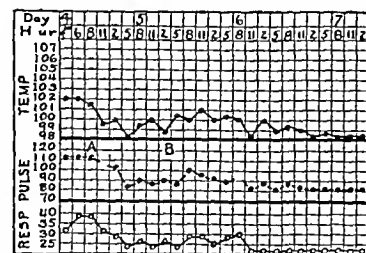


Fig 5—Temperature pulse and respiration in case 5. A injection of 400 cc of air. B injection of 500 cc.

REPORT OF CASES

CASE 1—C G, a man, aged 41, a Negro, admitted to the service of Dr William Egbert Robertson and Dr Cowper, June 14, 1933, had been well until the day before, when he awoke with pain in the right side of the chest. The patient was well developed, acutely ill and dyspneic. There was limitation of expansion, tubular breathing, friction rub on respiration, crepitant rales, marked increase of whispered pectoriloquy, increased fremitus and percussion dulness over the right lower portion of the chest. The blood pressure was 110 systolic, 64 diastolic. The abdomen was distended with gas. Laboratory tests revealed red blood cells, 3,020,000, white blood cells, 17,400, with polymorphonuclears, 88 per cent, lymphocytes, 10 per cent, monocytes, 1 per cent and eosinophils, 1 per cent. The Kahn test was negative. The blood sugar was 122, the blood urea nitrogen, 70. The sputum was positive for type I pneumonia.

A diagnosis of pneumonia of the right lower lobe was made June 15, the third day of disease. 330 cc of air was introduced into the right pleural cavity in the seventh interspace posteriorly.

TABLE 1—Blood Count in Case 5

White Blood Cells	Eosino- phils	Mono- cytes	Myelo- cytes	Juve- niles	Stab Forms	Seg mented Forms	Pol- ymor- pho nuclears	Lym- pho- cytes	S I *
12/11/33 (before artificial pneumothorax)	16,000	2	10	2	8	60	16	56	2 43
12/12/33 (12 hours after artificial pneumothorax)	10,500	5	0	0	0	75	5	80	15 15
12/13/33	12,600	14	0	0	0	50	18	63	18 27
12/14/33	9,000	13	0	2	2	28	62	25	12

* Schilling Index: the ratio of myelocytes juveniles and stab forms to segmented forms

only. It was noted immediately that the physical signs in the affected side were muffled after the introduction of air. The replacement of the physical signs of lobar pneumonia by the signs of pneumothorax were noted in every case in which induction of the pneumothorax was successful. June 16, the patient felt much better and the pain in the right lower part of the chest was alleviated. June 17 45 cc of turbid fluid was withdrawn, culture of which showed no growth and direct

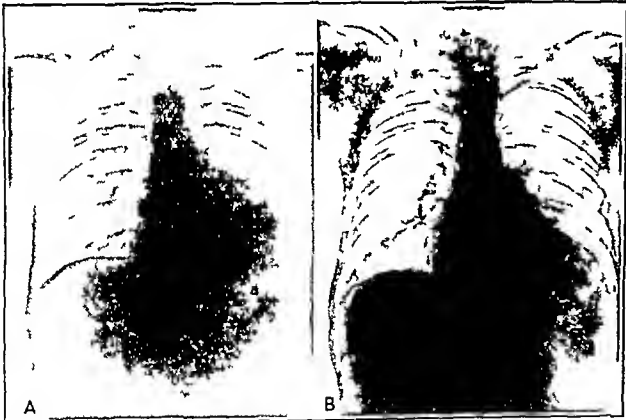


Fig 6 (case 5)—Pneumonia of the left lower lobe. A before artificial pneumothorax. B after artificial pneumothorax.

smear no organisms. At the same time 250 cc of air was introduced. The temperature fell from 103.8 to 100 F following this injection but rose again. In retrospect, it seems that more air would have been beneficial in this case. The temperature gradually fell to normal on the ninth day of disease and further course was without incident.

CASE 2—E W, a man, aged 55, a Negro, admitted to the service of Dr Andrew Callahan and Dr Cowper, Nov 28, 1933, had complained of pain in the right upper portion of the chest and a "bad cold" since November 24. On admission it was seen that the patient was very acutely ill and dyspneic.

Physical examination revealed swelling over the manubrium, tender and slightly fluctuant. In addition there were signs of lobar consolidation over the right upper part of the chest. The blood pressure in the left arm was 110 systolic, 74 diastolic, in the right arm it was 96 systolic, 62 diastolic. A diagnosis of pneumonia of the right middle lobe and aneurysm of the aortic arch and innominate artery was made.

Laboratory examination showed red blood cells, 4,300,000, white blood cells, 7,200, Schilling count, myelocytes, 0, juveniles, 0, stab form 15, segmented forms, 30, total polymorphonuclears, 45. The Kahn test was + + + +, blood sugar, 109, blood urea nitrogen, 17. The sputum was negative for tubercle bacilli and positive for pneumococcus group IV.

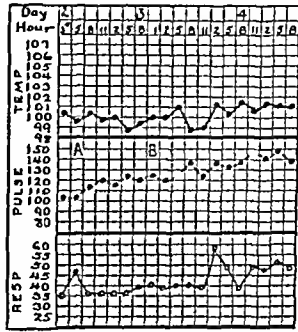


Fig 7—Temperature and respiration in case 6. A in jection of 500 cc of air. B in jection of 450 cc.

Roentgenograms made November 28 and December 8 showed consolidation of the right upper lobe and aneurysm of the ascending aorta and innominate artery.

November 29 the right side of the chest was needed. No fluid was obtained and 350 cc of air was introduced. Pain and malaise were relieved almost at once, and the temperature fell to normal within twenty-four hours only to rise again and fall spontaneously to normal the next day. Air

was not given on the occasion of the postpneumothorax rise of temperature because the patient looked and felt so much better. He was discharged subsequently in good condition.

CASE 3—S N, a man, aged 54, a Negro, admitted to the service of Drs Callahan and Cowper, Dec 7, 1933, for four weeks prior had complained of a cold and for four days before admission had noted severe pain in the right shoulder and chest, together with cough and expectoration. On physical examination he was acutely ill with signs of pneumonia of the right upper lobe. The blood pressure was 138 systolic, 84 diastolic.

Laboratory examination December 8, showed white blood cells 17,400, polymorphonuclears, 82, lymphocytes, 16. The sputum was negative for tubercle bacilli on three occasions.

December 13, the eleventh day of disease, the patient was given 500 cc of air in the right side of the chest. The patient felt better thereafter, complained less of pain in the chest and was apparently less toxic. On this day a Schilling count read myelocytes, 0 juveniles, 5 stab forms, 53 segmented forms, 28, polymorphonuclears 83 lymphocytes 15, mononuclears 2.

December 16 the patient felt and looked better but the temperature remained elevated. December 20, since the temperature was still elevated, it was decided to introduce more air and a refill of 500 cc was given seemingly with good result for the temperature fell to normal within twenty-four hours. The next day, however, the patient complained of headache. There was slight muscular rigidity, the pupils were pinpoint and did not react to light, and the patient looked very toxic. Lumbar puncture revealed no increase in pressure, but the spinal fluid was turbid and culture revealed group IV pneumococci. The patient grew steadily worse and died on the twenty-first day of the disease.

Autopsy revealed an acute diffuse purulent meningitis, ulcerative endocarditis of the aortic valves and congestion and early bronchopneumonia of both lower lobes. The right upper lobe, which was the seat of the original lobar pneumonia, was tightly compressed and presented the picture of unresolved pneumonia.

CASE 4—L E, a Negro woman aged 30, admitted to the service of Drs Callahan and Cowper, Dec 15, 1933, said that she had been feeling well until December 10, when she awoke with headache and pain in the left lower part of the chest. She also had some chills and a cough. On physical examination she was acutely ill presenting signs of lobar consolidation over the left upper part of the chest. The blood pressure was 94 systolic 42 diastolic. The abdomen was slightly distended. December 16 a roentgenogram showed a pneumonic consolidation

tion of the left upper lobe Four hundred cubic centimeters of air was introduced into the left side of the chest The temperature did not begin to fall appreciably until the next day, but despite this she felt much better and stated that the chest pain had entirely disappeared Three days after the single injection of air the temperature was normal and remained so, and the patient was discharged in good condition

Laboratory examination of the blood (Schilling) showed white blood cells, 21,900, myelocytes, 0, juveniles, 2, stab forms, 50, segmented forms, 12, polymorphonuclears, 64, lymphocytes, 25, monocytes, 10, eosinophils, 1

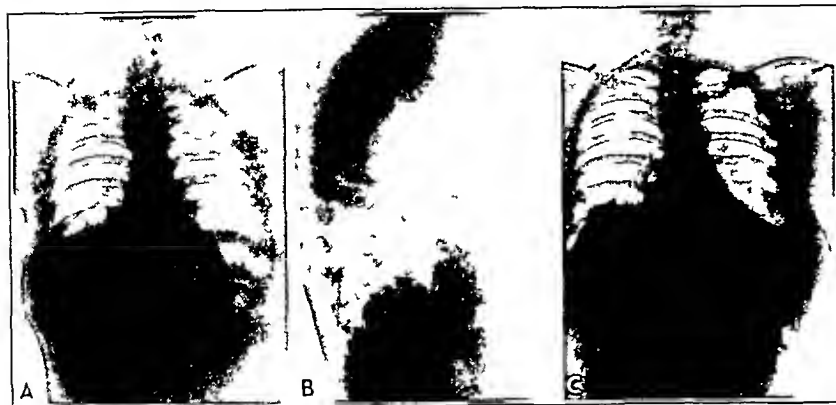


Fig 8 (case 7)—Pneumonia of the right middle lobe A, before artificial pneumothorax B right lateral view before artificial pneumothorax C after artificial pneumothorax

Blood culture showed no growth

The sputum was negative for tubercle bacilli and showed pneumococcus group IV

CASE 5—B S, a white youth, aged 15 years, very large for his years, admitted to the service of Dr F J Kalteyer and Dr Behrend, Dec 11, 1933, became ill, December 7, with cough, yellow sputum and pain in the left lower part of the chest On physical examination the patient was acutely ill, with definite signs of consolidation of the left lower lobe A friction rub was present at the left base The blood pressure was 100 systolic, 72 diastolic

TABLE 2—Blood Count in Case 6

White Blood Cells	Eosino phils	Mono cytes	Myelo cytes	Juve niles	Stab Forms	Seg mented Forms	Poly nuclear	Lym cytes	S I
12/26/33 (before artificial pneumothorax)									
6,000		1	0	24	51	0	84	10	84
12/27/33 (after artificial pneumothorax)									
7,100		6	2	34	30	10	76	18	66
12/28/33									
7,400		1	7	5	70	10	97	2	87

At 9 p m on the day of admission the left pleura was punctured and 400 cc of air introduced A roentgenogram taken just before had confirmed the diagnosis of pneumonia of the left lower lobe Following the first air injection the patient appeared more comfortable and slept without the aid of narcotics, a fact worthy of note in view of his statement that he had not slept for the two preceding nights because of chest pain Eight hours after pneumothorax the temperature was normal

December 12, the improvement in the condition of the patient was evident to all The pain in the side disappeared and was replaced by an indefinite soreness Despite the improvement, an additional 500 cc of air was introduced and the patient was sent for roentgen study The report by Dr Ostrum at this time read Artificial pneumothorax left side with partial collapse of the left lower lobe (about 33 per cent) There is a small amount of fluid in the sinus There is also a partial collapse of the left upper lobe and the heart is displaced somewhat to the right

December 14 the temperature was normal and the patient felt so well that he asked to be discharged Breath sounds

were already returning on the treated side, attesting to the rapid absorption of air in the presence of acute pulmonary infections This phenomenon was observed in every case in which artificial pneumothorax could be induced and, doubtless, accounts for the rise in temperature frequently seen after a preliminary fall from a single injection of air

Some of our cases, such as case 5, were checked by daily Schilling white blood counts, and thus has furnished us with an interesting commentary on the manner in which artificial pneumothorax acts in lobar pneumonia Dr W G Crocker, who has made a careful study of Schilling counts in the laboratory of the Philadelphia General Hospital, has found that in pneumonia it is impossible to distinguish hematologically between crisis and a prelethal state Schilling counts made during the period of defervescence following artificial pneumothorax show the same confusing picture This would appear to furnish another link in the chain of evidence indicating that pneumothorax may precipitate crisis

Laboratory examination showed blood sugar, 102, blood urea nitrogen, 21 The Kahn test was negative Blood culture yielded no growth The blood count is given in table 1

The patient left the hospital twelve days after admission in good condition and without complications

CASE 6—J W, a man, aged 38, a Negro, admitted to the service of Drs Kalteyer and Behrend, Dec 26, 1933, complained of pain in the right chest and side The onset occurred at 2 a m, December 25, when the patient was awakened from sleep by pain in the chest He felt very ill and had a severe productive cough, but no chill was noted

When seen the patient was apparently very acutely ill He was robust, breathing with difficulty and perspiring freely There were signs of consolidation of the right lower lobe A friction rub so severe that it was easily palpable was present on the right side The blood pressure was 122 systolic, 80 diastolic The rhythm was regular Tympanites was present Shortly after admission, 500 cc of air was introduced into the right pleural cavity Relief from pleuritic pain was noted immediately, and the patient required only one-half grain

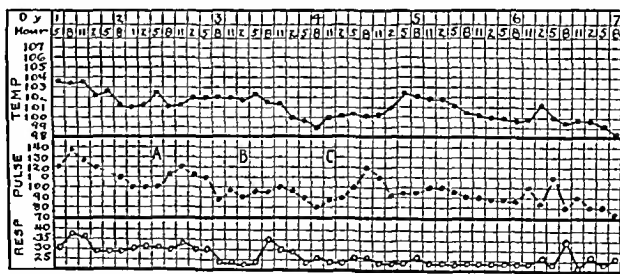


Fig 9—Temperature pulse and respiration in case 7 A injection of 50 cc of air B injection of 400 cc C injection of 300 cc

(0.03 Gm) of codeine for sleep that night December 27, the temperature having fallen to normal and risen again, 450 cc of air was introduced Following this he looked comfortable, and apparently improved, sleeping almost the entire day without narcotics Roentgenograms made at this time were reported by Dr Ostrum as showing 33 per cent collapse of the right lung considerable fluid at the right base and consolidation of the right lower lobe During the night he became irrational and continued so throughout the day (December 28), his pulse gradually mounting until death

Laboratory examination showed blood sugar, 160, blood urea nitrogen, 36. Blood culture, December 27, was positive for group IV pneumonia, there were too many colonies to count. The Schilling blood count is given in table 2.

Pneumothorax was still present when the chest was opened at autopsy. The right lung was partially but uniformly com-

pressed. The right lower lobe showed a confluent bronchopneumonia and pleuritic adhesions to the diaphragm. There was 400 cc of fluid containing fibrinous flakes in the right side of the chest. The left lower lobe showed a few areas of patchy bronchopneumonia.

In retrospect, it would appear that this patient, the only one in this series to show a positive blood culture, was doomed no matter what the treatment. The overwhelming septicemia and the lack of febrile and leuko-

cytic response as well as the severe toxicity all boded ill. Yet it cannot be denied that artificial pneumothorax made him look and feel much better until a few hours before death. The pain of a severe pleurisy was relieved and it may be said that if a cure was not effected at least death was made more comfortable.

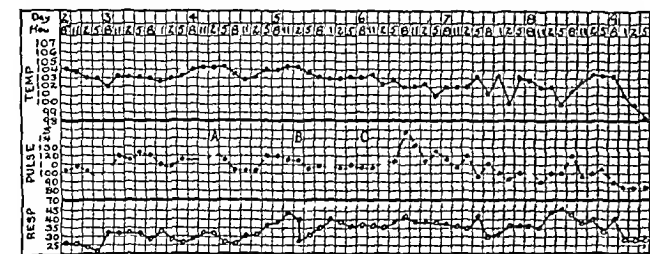


Fig 10—Temperature pulse and respiration in case 8. A injection of 150 cc of air B, injection of 50 cc C injection of 50 cc

pressed. The right lower lobe showed a confluent bronchopneumonia and pleuritic adhesions to the diaphragm. There was 400 cc of fluid containing fibrinous flakes in the right side of the chest. The left lower lobe showed a few areas of patchy bronchopneumonia.

In retrospect, it would appear that this patient, the only one in this series to show a positive blood culture, was doomed no matter what the treatment. The overwhelming septicemia and the lack of febrile and leuko-

TABLE 3—Blood Count in Case 7

White Blood Cells	Eosino- phils	Mono- cytes	Myelo- cytes	Juve- niles	Stab Forms	Seg mented Forms	Polymor- pho nuclears	Lym- pho- cytes	S I
12/27/33 24,900	3	1	0	12	51	21	90	6	32
12/28/33 25,300		13	0	0	37	12	49	38	3

cytic response as well as the severe toxicity all boded ill. Yet it cannot be denied that artificial pneumothorax made him look and feel much better until a few hours before death. The pain of a severe pleurisy was relieved and it may be said that if a cure was not effected at least death was made more comfortable.

CASE 7—M R, a woman, aged 43, admitted to the service of Drs Kalteyer and Behrend, Dec 26, 1933, complained of pain in the back and neck, cough and chills, which began on the day of admission.

Sputum was blood streaked. She reeked of alcohol on admission and admitted that she drank at least a pint of spirits a day. Physical examination showed only impairment to percussion at the right base and a light friction rub in the posterior axillary line. December 27 there were definite signs of a right middle lobe consolidation and rales were also present over the right lower lobe. A roentgenographic

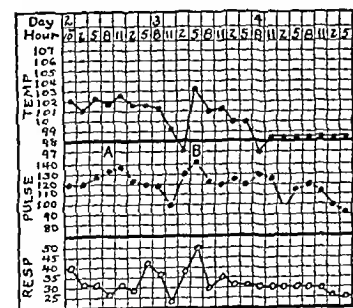


Fig 11—Temperature pulse and respiration in case 9. A injection of 350 cc of air B, injection of 400 cc

report by Dr Ostrum showed definite evidence of a right middle lobe pneumonia. Artificial pneumothorax was attempted but the patient was very apprehensive and uncooperative. After 50 cc of air had been introduced, the patient complained of pain and the intrathoracic pressure had become positive. The needle was withdrawn. December 28, the patient seemed a little better. Pneumothorax was again attempted and

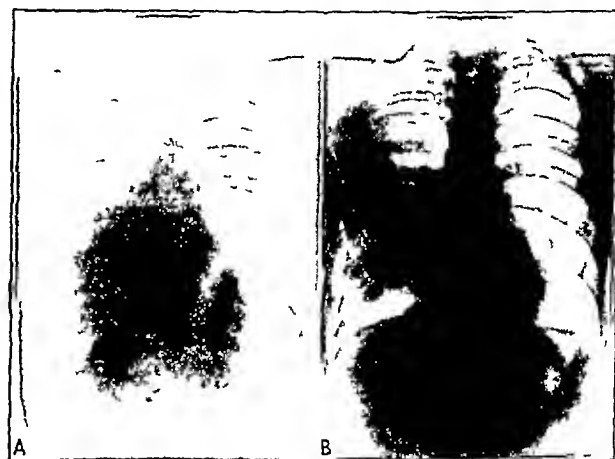


Fig 12 (case 10)—Right lower lobar pneumonia with pleurisy A before induction of air B after induction of artificial pneumothorax

50 cc of air was injected and the patient complained of pain. The needle was withdrawn. January 2 the experience of the preceding day was repeated, only 50 cc of air was given. Further attempts to induce artificial pneumothorax were abandoned. The patient then went on to a spontaneous crisis on the ninth day of disease.

TABLE 4—Blood Count in Case 10

White Blood Cells	Eosino- phils	Mono- cytes	Myelo- cytes	Juve- niles	Stab Forms	Seg mented Forms	Polymor- pho nuclears	Lym- pho- cytes	S I
1/15/34 10,100		4	3	12	51	24	90	6	35
1/16/34 15,800		8	0	0	62	28	90	2	12
1/17/34 31,800		0	2	2	68	28	100	0	25

This case is included in these records because it illustrates that in lobar pneumonia, as in pulmonary tuberculosis, a preceding or an accompanying pleuritis may render impossible the induction of an artificial pneumothorax.

CASE 9—M S, a woman, aged 29, admitted to the service of Drs T G Schnabel and A S Moscarella, Dec 31, 1933, complained of pain in the right side of the chest, cough and weakness. She had had a "cold" since December 26. On the

day before admission a severe pain had developed in the right side of the chest, cough became more severe, sputum was bloody and there was shortness of breath. Physical examination showed signs of lobar pneumonia over the right upper and middle lobes. The blood pressure was 122 systolic, 72 diastolic. The abdomen was slightly distended.

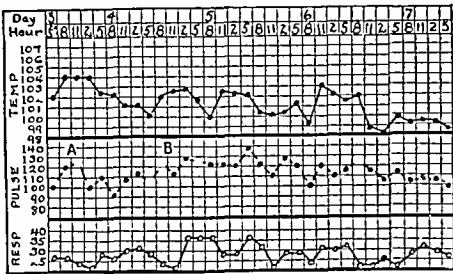


Fig. 13—Temperature, pulse and respiration in case 10. A injection of 300 cc of air. B injection of 400 cc.

On the day of admission, 350 cc of air was introduced into the right side of the chest. Within ten hours the temperature had fallen to normal and the patient said that she felt much better and that the pain had gone. Jan. 1, 1934, the temperature rose to 103.2 F, although the sputum had become scanty and the patient felt much better. She was given 400 cc of air on the affected side. Fourteen hours later the temperature was normal and remained so until discharge from the hospital. Laboratory examination of the sputum was negative for pneumococci but positive for Friedländer's bacillus. Blood culture was negative.

CASE 10—P. K., a man, aged 29, admitted to the service of Drs. William E. Robertson and V. L. Tuck, Jan. 11, 1934, complained chiefly of pain in the right side of the chest. He had had a severe infection of the upper respiratory tract for a week before admission. January 9 he had had severe pain in the right side of the chest, chills, blood-streaked sputum and a high fever. On physical examination the patient was very acutely ill and toxic. There were signs of consolidation over the right lower lobe and a friction rub in the posterior axillary line. The blood pressure was 110 systolic, 60 diastolic. The pulse was rapid and of poor volume. Rigidity was present in the right upper quadrant.

January 11 roentgenograms showed the presence of right lower lobe pneumonia with pleurisy. Three hundred cubic centimeters of air was introduced into the right pleural cavity. Respiratory pain was immediately relieved. January 12 the temperature had fallen somewhat, the patient was reading a newspaper and laughing and remarked that he "felt fine" and all pleuritic pain had left. Late in the day the temperature rose and 400 cc. of air was given. The temperature fell again.

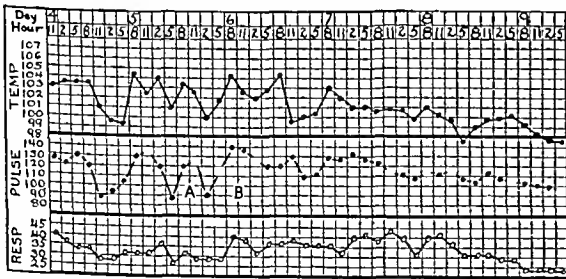


Fig. 14—Temperature, pulse and respiration in case 11. A injection of 400 cc of air. B injection of 450 cc.

temporarily but rose the next day. No alarm was felt, however, because the patient felt so much better. By January 18 all air had been absorbed but the temperature at that time was normal.

On laboratory examination the Kahn test was negative, blood culture on two occasions showed no growth.

Blood sugar was 98, blood urea nitrogen was 18. The blood count is given in table 4.

CASE 11—J. B., a man, aged 48, a Negro, admitted to the service of Drs. Robertson and Tuck, complained chiefly of fever and pain in the left side. Jan. 15, 1934, the patient had a chill, the temperature rose, the sputum was blood streaked and epistaxis occurred. The pain in the chest was severe.

On physical examination the patient was acutely ill. There were signs of lobar pneumonia over the left upper lobe, and a friction rub was present. The blood pressure was 140 systolic, 70 diastolic.

TABLE 5—Blood Count in Case 11

White Blood Cells	Eo phils	Mono cytes	Neu- tro- cytes	Juve- niles	Stab Forms	Seg- mented Forms	Poly- morpho nuclears	Lym- pho- cytes	S. I.
1/20/34 15,000		16	0	17	25	30	77	0	12
1/22/34 19,000		8	0	0	40	40	80	12	1

January 16, 400 cc of air was introduced into the left pleural cavity. Following this, the patient felt much better and the pain in the chest was relieved. The temperature dropped from 103.4 to 100 F. The procedure was repeated, January 17, and 450 cc of air was given with benefit to the temperature and general well being of the patient.

Roentgenograms taken January 20 showed artificial pneumothorax on the left side with density over the entire left upper lobe.

The Wassermann reaction was 4 plus, blood sugar was 120, blood urea nitrogen was 45. The sputum showed pneumococcus group IV. The blood count is given in table 5.

Thirty-Fourth and Pine streets

TRANSURETHRAL RESECTION OF THE PROSTATE

IMPROVED INSTRUMENTS AND OPERATIVE INDICATIONS

HUGH H. YOUNG, MD
BALTIMORE

Transurethral surgery for the obstructing prostate goes back one hundred years. Among the most important procedures proposed were those of Mercier, ultimately discarded on account of the mechanical imperfections, hemorrhage and infection. Then came the transurethral electrocautery operation of Bottini, improved much later by the instruments of Freudenberger, Young and Chetwood. This operation was used very widely, the question of immediate hemorrhage was solved by the cautery, but extensive sloughing, gangrene, occasional extravasations and even injuries of the rectum, generalized sepsis and, particularly, recurrence of the obstruction months later led to the abandonment of the Bottini operation, which for a time swept prostatectomy off the boards. I did seventy-five Bottini operations in cases of enlarged prostate, but the complications and the mortality drove me again to take up the perineal route, which resulted in the introduction of the conservative perineal prostatectomy by my double bladed tractor. This operation was accompanied by amazingly little mortality. For one period of three and one-half years, 198 consecutive patients (six of whom were over 80 years of age) were operated on without a death.

Then cases appeared of the fibrous type, contractures of the vesical orifice, bars and valves in which the tissue was not enucleable and the attack through the perineum not entirely satisfactory. Some of these cases

From the James Buchanan Brady Urological Institute, Johns Hopkins Hospital.

I attacked suprapubically, with poor results, owing to the inability to remove the intra-urethral bar or contracture just within the vesical orifice. It was then that I brought out my transurethral prostatic excisor, or "punch." By means of the fenestra on the posterior surface, bars, lobes and the like can be entrapped, excised or treated by electrocautery, or fulguration, so

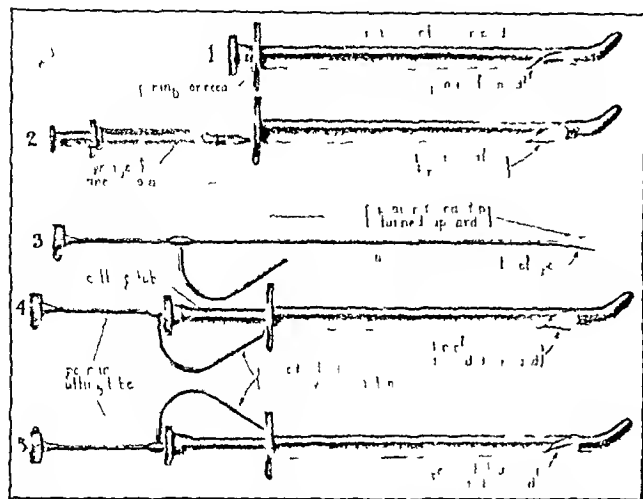


Fig 1—1 Young's punch with a tube attached through which a long needle can be passed and anesthetic injected into the tissue. 2 A syringe attached to a long needle and the tip of the needle emerging near the fenestra. 3 A spear with the tip at an angle to the shaft. It is inserted into the inner cutting tube and plunged into the tissue. As the spear is rotated the tissues to be excised are drawn into the fenestra and held in position. 4 Spear placed in punch with tip turned downward. 5 The spear has been rotated, showing the tip turned upward.

as to stop the bleeding. Encouraged by the simplicity of the operation, I tried this procedure in increasingly larger prostates. In many of these I found difficulty in entrapping the lobe and also in holding the entrapped tissue while it was cut away by the sharp inner tube. To obviate this I used a small electric motor to make the inner tube revolve rapidly, with greater success in cases of hypertrophy, but the instrument was not entirely successful. To combat this deficiency I have recently devised a lance-shaped spear, by means of which the tissue entrapped in the fenestra is speared and drawn farther into the fenestra. A curve has recently been placed on the end of the spear, which allows it to go more deeply into the prostatic tissue to be removed and then, by rotation, draws still larger amounts in the fenestra, as shown in 3, figure 1.

For many years I have generally employed local anesthesia, plus a little preliminary morphine, to carry out transurethral resection with the "punch." Recently I have used a long needle to plunge into the entrapped tissues and thus obtain, by injecting procaine hydrochloride, better anesthesia. Still more recently, Mr. Angele, the chief mechanic of the Brady Urologic Institute, has placed a minute tube on the posterior surface of the outer tube, which carries a needle through which the injections are made (2, fig 1).

THE NEW TECHNIC

Careful cystoscopy is carried out with the cystourethroscope, sometimes with the addition of the simple urethroscope. In this way the obstructing contracture, bars, valves or lobes at the vesical orifice projecting into the bladder or into the urethra, are carefully noted and charted. The size of the trigone, its elevation and its proximity to the median enlargement is carefully charted, so that at operation the trigone may be surely avoided. The thickness of the tissues between the

trigon, prostate and rectum are carefully determined. If my transurethral excisor or "punch" is to be used, it is introduced, and turned first to the right, the obturator is removed and the sheath is drawn outward until the right lateral margin of the prostate is caught in the fenestra. The needle in the outer tube is then plunged into this tissue, and an injection of 5 cc of 1 per cent procaine is made (1, fig 2). Such injections are also made on the opposite side, posteriorly, anteriorly and, if desirable, between these points. In this way the vesical neck is completely infiltrated, and operations may then be carried out with very little pain. In some cases calculi have been present in the bladder. In these I have also infiltrated the base of the bladder by intentionally catching the trigone with the fenestra and injecting it and the posterior surface of the bladder with procaine hydrochloride. Litholapaxy can then be carried out almost painlessly. After this excisions of the prostatic tissue, as indicated by the previous cystoscopy, are done.

THE SPEAR TECHNIC

When it has been decided to make, at first, the right lateral cut the instrument is introduced, the obturator removed, the bladder filled, and the instrument turned to the right and withdrawn quickly to stop escape of fluid. The right lateral margin with its enlargement, is entrapped in the fenestra. The spear is then plunged into the deeper portion of the entrapped mass, the instrument going out of the fenestra obliquely into the prostatic tissue (2, fig 2). A curved rod that impinges

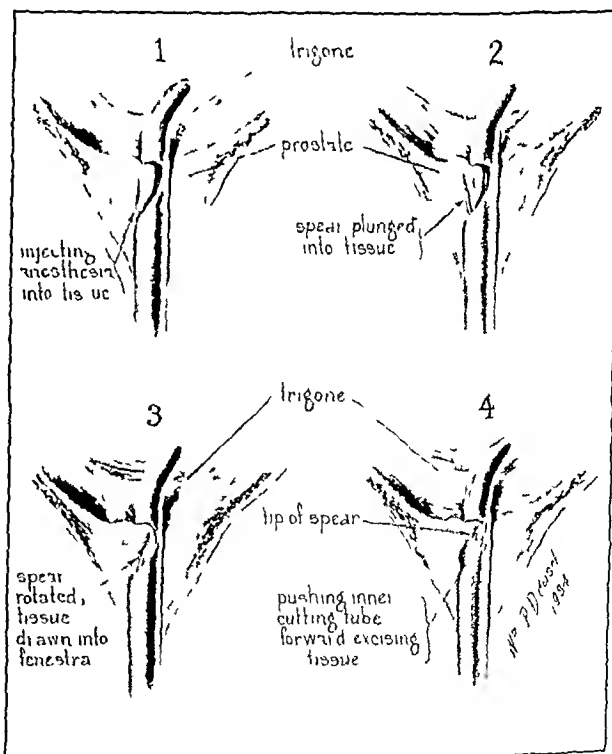


Fig 2—1 Punch turned to right with tissue partly engaged in fenestra. The needle has entered the tissue and anesthetic is being injected. 2 The spear turned outward has been plunged into the tissue. 3 The spear rotated drawing a greater amount of tissue into the fenestra. 4 The inner cutting tube is pushing forward, excising tissue as the end of the spear holds it firmly in position.

on the plate of the punch (4, fig 1), allows the spear to go only the proper distance. In order to draw the prostatic tissue more deeply through the fenestra into the outer sheath of the excisor or punch, it is simply

necessary to rotate the angulated spear 180 degrees. This inevitably draws considerably more tissue into the instrument (3, fig 2), and fixes it while the operator quickly pushes home the cutting tube (4, fig 2). Thus removed the large mass of tissue within the fenestra.

By means of this spear technic the tissue now removed is much greater than that obtained with the old punch, or certain electrical resectors, as shown in figures 3 and 4. The excision on the right side is continued with one or more cuts, perhaps in varying directions as previously shown to be necessary by previous cystoscopic and endoscopic study. One may also attach the endoscopic light, swab the tube clean and thus inspect the remaining tissues and determine whether further excision should be made. The same thing can be done with Caulk's irrigating cystoscope which may be attached to the instrument and used to inspect the vesical neck during or after excisions. Having com-

pleted the work on the right side, the operator usually turns to the left, carries out the same procedure—alternately ensnaring, spearing, drawing into the urethra and pushing the cutting tube quickly inward to excise the entrapped lobe. Here again one or more additional cuts may be made. One then turns to the posterior margin. The cutting tube is withdrawn, partly opening the fenestra; there is a rush of bladder fluid, and the fenestra, directed backward, is then withdrawn until arrested.

The question now arises, "Have I caught the trigon, or passed over it and entrapped the median portion of the prostate?" It is very important to settle this question, because

the division of the trigon either by instruments of the punch type or by electrical resection, has been responsible particularly with the latter for extravasation and rectovesical injury. To determine whether the trigon has been caught in the fenestra one simply turns the instrument 90 degrees to the right (fig 5). This will release the trigon, and if one makes traction the instrument will come outward until caught by the right prostatic margin. It can then be turned backward so as to entrap the median portion. If the middle lobe projects farther into the bladder than the lateral, the operator may find it necessary to go a little farther in to catch it, but by following this technic practically no difficulty is encountered in avoiding the trigon. In some six hundred prostatic resections I have apparently never had a case of trigonal injury.

In rare instances there is a definite bar or lobule anteriorly which requires removal, but the operator must be very cautious not to go too deep. I have seen a case in which several anterior cuts were made that

resulted in prevesical extravasation, requiring suprapubic drainage. Such ought not to occur.

The operator having convinced himself that an abundance of tissue has been removed the question of arresting hemorrhage comes up. I have found the use of fulguration most satisfactory (fig 6). Under

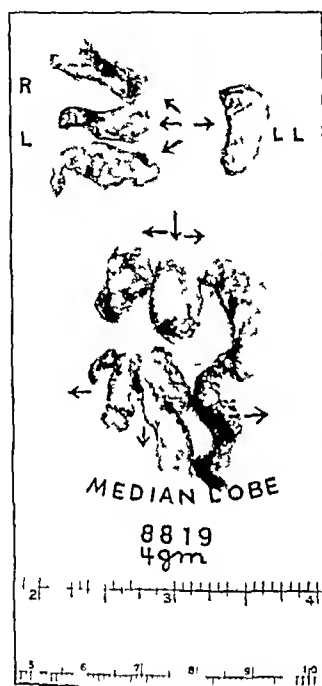


Fig 3—Specimen removed by Young's punch instrument ten pieces weighing 4 Gm



Fig 4—Specimen removed by McCarthy resectoscope thirty-one pieces weighing 5.5 Gm

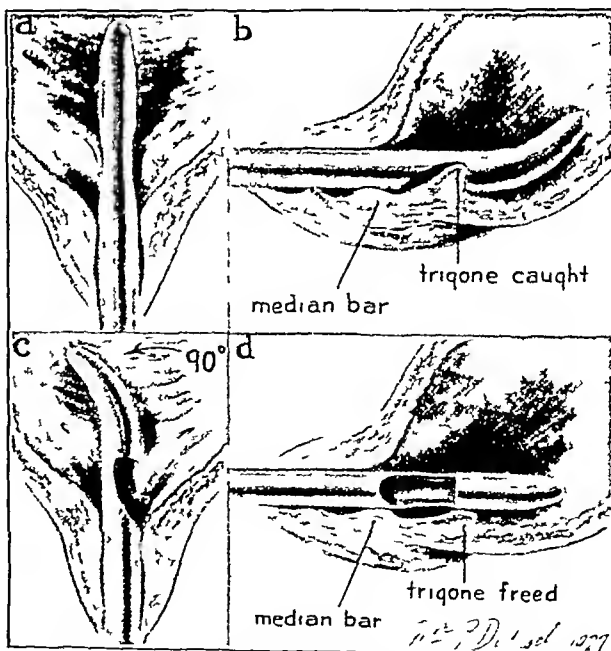


Fig 5—Manner in which a hypertrophied trigon may be caught in the fenestra of the punch instrument (a and b). By turning the instrument 90 degrees as shown in c and d the fenestra is freed from the trigon and when drawn outward catches at the lateral margin of the prostate.

cystoscopic observation with continuous irrigation, the bleeding points are easily recognized and seared with the electric spark. This may be carried out through the punch instrument, as provided in Caulk's cysto-

scopic attachment, or by the introduction of an ordinary catheterizing cystoscope

At the end of this procedure, there is little or no necrotic tissue left behind, no slough to come away and produce severe secondary hemorrhage, and no necrotic nidus for infection and even gangrene. The simplicity of the procedure is shown by the fact that in

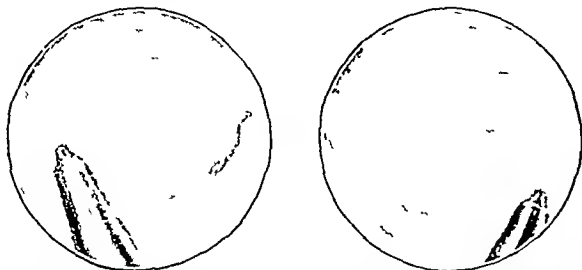


Fig. 6—Arresting hemorrhage by fulgurating bleeding points through catheterizing cystoscope showing the condition after the cuts have been made and hemorrhage being stopped by fulgurating electrode

about 600 cases, excluding two of carcinoma, one also of diabetes mellitus in which the patient died in uremic coma, the mortality has been about 0.5 per cent

If one wishes to do transurethral surgery on a much more enlarged prostate, I would not recommend my instrument. By the electric loop it is possible to go deeper and to continue the removal for hours (as has been done). I saw one case in which the operator produced a huge cavity on the right side, and even gravely injured the external sphincter, but left behind a left lobe 2 inches long on the left side. As the patient described it "the operation took three hours, a handful of little pieces were removed and I found myself incontinent." But such must happen rarely, although it is

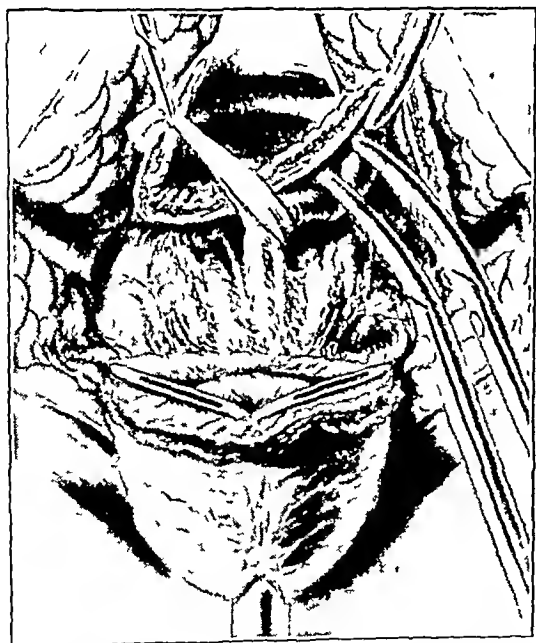


Fig. 7—Young's radical operation for carcinoma of the prostate. Removal of the entire prostate cuff of bladder vasa deferentia and seminal vesicles. Anastomosis of the bladder to the membranous urethra

quite possible to do great damage with the unrestrained use of the powerful electric loop. In careful hands, and particularly when the operation is done in two or three stages, much tissue can be removed with comparative safety, although the mortality in a large series of cases has not been. I believe, as low, nor the results as

good, as with the simple or the cautery punch, as shown by Caulk's remarkable series of some 15,000 collected cases

The loud acclaim of the transurethral resection of the prostate has come very largely from those surgeons who have been most addicted to suprapubic prostatectomy. With the passage of time the ultimate mortality of the suprapubic route has been shown to be much too high. The preliminary cystostomy alone has presented a sizable mortality. Keyes has frankly acknowledged a mortality of 40 per cent in his series of suprapubic prostatectomies. He decided that pre-vesical infection, extravasation and extension of suppurative processes behind the abdominal muscles have been the most frequent cause of death. To avoid this he has advised a series of different suprapubic techniques by which the wound may be walled off to prevent the aforesaid complications.

Those who have adhered to the perineal route for the great majority of cases still believe that it is a comparatively safe operation, since it has the advantage that the prostatic operation is under the control of

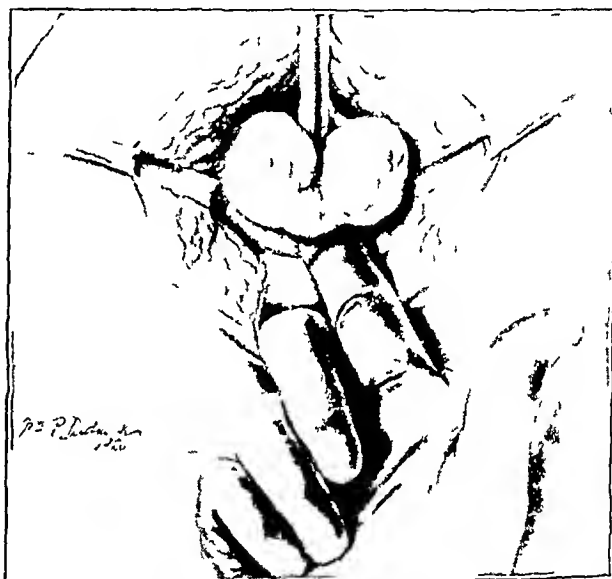


Fig. 8—Perineal prostatectomy through inverted V capsular incisions. Final stage of enucleation of lateral and median lobes in one piece

the eye, and indurated and suspicious areas may be palpated, incised, excised and examined microscopically for malignancy. If cancer is present, the operation can be so modified as to make it a radical removal, which now has the proud record of over 50 per cent of cured cases followed more than five years (fig. 7).

I need not stress the great advantages of the perineal operation in cases of multiple calculi, which are so frequently found between the hypertrophied lobes and the nonhypertrophied capsule. Through the perineum it is possible to see and avoid the external sphincter, the verumontanum, ejaculatory ducts and the trigon. Sloughing and gangrene almost never occur, hemorrhage is completely arrested, infection is taken care of by excellent drainage, and antiseptics may be freely employed. Perineal prostatectomy can be done in a fraction of the time that is required for the transurethral electrical resections in even moderate hypertrophies. As the hypertrophied lobes are completely enucleated, although the patient may stay in the hospital a little longer, he gets entirely well in a much shorter time and, what is more, he stays well.

In pointing out the great simplicity and multiple advantages of the perineal route, I do not wish to condemn transurethral surgery, as a matter of fact, it is employed in my clinic with great frequency, and there are many cases in which it is distinctly preferable to prostatectomy. Both the electric and the plain cutting instruments are used. With the introduction of improved instruments, the tube for injections of procaine hydrochloride, the rotating, angulated spear to secure larger excised masses, and the accurate fulguration of all bleeding points, much progress has been made. The advantages of the punch operation, with the spear technic, are briefly as follows: the simple convalescence, due to absence of slough, the comparative avoidance of infection and secondary hemorrhage, the quicker healing, and the greater freedom from suppuration and pain.

In the more advanced cases of prostatic hypertrophy my punch, even with the spear, is not satisfactory. For such cases perineal prostatectomy is greatly to be preferred to any transurethral operation, even though it is possible to remove much tissue by the punch and by electroresection. The clean enucleation of hypertrophied lobes through the perineum (fig. 8) is certainly more permanently curable and is accompanied by less suppuration and grave complications than after electroresection.

Prostatic surgery has now arrived at a point where it is one of the safest major operations. By means of transurethral surgery and accurate visual perineal prostatectomy, the high mortality of the past should be completely eliminated and many more cases of carcinoma recognized early and cured.

RAT-BITE FEVER ACQUIRED FROM A DOG

HERBERT S. RIPLEY, M.D.
AND
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CHICAGO

Rat-bite fever, or sodoku, from the Japanese *so* (rat) and *doku* (poison), has been recognized as a clinical entity in India for many centuries. Row¹ quotes a description of the disease by Wagabhata, an ancient Indian who lived 2,300 years ago. Early modern reports of cases were made by Wilcox² and by Watson³ in 1840. Miyake⁴ described the symptomatology in detail in 1899. Excellent reviews have appeared recently, notably those of Robertson,⁵ who gives a summary of the etiologic aspects of the disease and appends a good bibliography, McDermott,⁶ who studied the biologic characteristics of the organism, and Bayne-Jones,⁷ who reviewed the cases reported in the United States.

Rat-bite fever is widely distributed over the world. Perhaps the disease is more common than is generally recognized. Many people die after the bite of a rat without a definite diagnosis. Neel⁸ reports that, after the clinical entity had been called to the attention of the local medical profession, five cases were diagnosed in one county in South Carolina during 1929.

SYMPTOMATOLOGY

The history of a bite by a rat is usually given. Cases caused by bites or scratches of other animals have been reported. The wound heals cleanly unless there is secondary infection. The incubation period commonly is from one to four weeks. With the onset of systemic manifestations there is pain, swelling, redness and vesicle formation. In some cases an ulcer develops in the center of the primary lesion, with a serous discharge from which the causative agent has been isolated. Pus is not present unless there is a mixed infection with organisms such as streptococci, staphylococci or streptothrix, all of which have been recovered from the regional lymph nodes in typical cases. Lymphangitis and local and generalized lymphadenopathy occur.

Chills, fever, rapid pulse, prostration, anorexia, generalized aching of the muscles, headache, stupor and delirium commonly characterize the onset. After a few days there is a remission, followed by regular or irregular paroxysms of fever with intervals of from three to eight days between attacks. As the disease progresses, each subsequent attack tends to be less severe than the preceding one. There is considerable variation in the type of temperature curve, as shown in figure 1. The chart of case 1 is more typical of the average course than that of case 2. During remissions, all symptoms except weakness usually disappear.

Early in the disease, nodules resembling those of erythema nodosum and measuring from 0.5 to 5 cm. in diameter are present. At first they are bright red and moderately indurated and they blanch on heavy pressure. Soon they develop a purplish hue and the induration disappears. Finally there is a brownish discoloration and a fine flaking desquamation, which may last several weeks. A diffuse erythema with an irregular margin frequently is present with the febrile attacks. The blood shows a slight to severe anemia and a leukocytosis most marked during rises in temperature.

PROGNOSIS

The mortality in untreated cases in Japan is reported as 10.5 per cent by Miyake. With the advent of arsphenamine therapy, deaths have been rare. Most fatal cases occur during the first severe febrile attack, but some follow later from nephritis or other complications. The possibility of double infection by Streptothrix or other micro-organisms must be remembered. If response to arsenic is not prompt, such a complication is likely.

TREATMENT

Arsphenamine therapy, which was introduced by Hata⁹ in 1912, is specific. Since recurrences are common when less than three injections are given, a course of from three to six injections seems advisable.

ETIOLOGY

Since Futaki and his collaborators¹⁰ in 1916 discovered in Japan the spiral organism which they named

From the Department of Medicine, University of Chicago.
1. Row, R. Cutaneous Spirochetosis Produced by Rat Bite in Lombay. Bull. Soc. path. exot. 11: 188-195 (March) 1918.
2. Wilcox, W. Violent Symptoms from the Bite of the Rat. Am. J. M. Sc. 26: 245-246, 1840.
3. Watson, J. Injury from the Bite of a Rat. New York J. Med. & Surg. 3: 363, 1840.
4. Miyake, H. Ueber die Rattenbisskrankheit. Mitt. a. d. Grenzgeb. d. Med. u. Chir. 5: 231, 1899.
5. Robertson, Andrew. Spirillum minus. Carter, 1887, the Aetiological Agent of Rat Bite Fever. A Review. Ann. Trop. Med. & Parasitol. 24: 37-408 (Oct.) 1930.
6. McDermott, E. N. Rat Bite Fever. A Study of the Experimental Disease with a Critical Review of the Literature. Quart. J. Med. 21: 433-458 (April) 1927.
7. Bayne-Jones, Stanhope. Rat Bite Fever in the United States. Internat. Clin. 3: 235-253 (Sept.) 1931.

8. Neel, G. P. Sodoku. J. South Carolina M. A. 26: 34 (Feb.) 1930.
9. Hata, S. Salvarsantherapie der Rattenbisskrankheit in Japan. Munchen med. Wchnschr. 50: 854-857 (April) 1912.
10. Futaki, K., Takaki, I., Taniguchi, T. and Osumi, S. The Cause of Rat Bite Fever. J. Exper. Med. 23: 250 (Feb.) 1916.

Spirochaeta morsus-muris and described as the causative agent of rat-bite fever, their work has been confirmed by several others in various parts of the world. Though the classification of the organism as a spirochete or a spirillum is still more or less under discussion, the organism found in cases in different parts of the world seems to be identical with the one discovered by the Japanese workers and the name *Spirillum morsus-muris* (or *Spirillum minus*) has been rather generally accepted. A review of the literature and an excellent bibliography dealing with the etiology of the disease and the nomenclature of the organism are given by Robertson.⁶

In the review of rat-bite fever in the United States by Bayne-Jones, a report is made of seventy-five cases which he considered genuine rat-bite fever, in five of which *Spirillum morsus-muris* was recovered. The streptothrix reported by Schottmuller,¹¹ Blake,¹² Dick and Tunnichiff,¹³ and others and the sporothrix reported by Anderson and Spector¹⁴ probably were secondary invaders.

REPORT OF CASES

CASE 1—C. A., a man, aged 26, married, a second year medical student entered the University of Chicago Clinics,

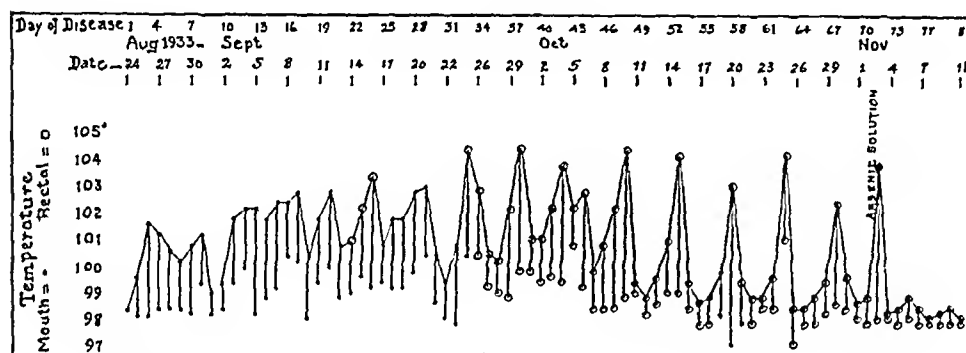


Fig. 1 (case 1)—Temperature chart. Each line represents the range in temperature for one day.

Aug. 24, 1933, complaining of a sore on the finger of the right hand. August 17, while he was performing an operation on a dog, a ligature slipped and cut the skin on the right fifth finger at the distal interphalangeal joint. This cut healed in two days. On the third day the site of the lesion became red and painful, but these symptoms subsided when hot soaks were applied, only to flare up again on the following day, when they were again relieved by heat. On the fifth day the lesion became red, swollen and tender, and no relief was obtained from hot soaks. On the seventh day he came to the clinic. An incision was made and no pus was obtained. The tissue was found to be tough and similar to cartilage in its resistance to the knife. The patient was sent to the hospital.

On physical examination the positive manifestations were a painful, swollen, tender, inflamed right fifth finger with an incision along the medial aspect and a palpable, tender lymph node in the right axilla.

The white blood cells numbered 6900, the red blood cells, 5,200,000 with hemoglobin, 80 per cent. The urine was normal.

From August 24 to October 10 the patient had an intermittent fever with rises and falls at irregular intervals. From October 10 to November 3 the fever was definitely relapsing in type with sharp rises every five days (fig. 1). Accompanying the elevations in temperature were chills, prostration, generalized aches and pains, leukocytosis reaching as high as

33,200, anorexia, headache, erythema on the chest and abdomen, nosebleeds, frequent irrationality and mental depression. Although the patient was weak, he felt remarkably well between attacks of fever.

August 30 there appeared numerous firm, inflamed tender areas 2 cm in diameter extending from the right fifth finger to 5 inches above the elbow. Similar lesions later appeared on the back, chest and legs. These lesions were more inflamed during the febrile periods. After October 1 they faded gradually and left a brownish discoloration of the skin, which was almost imperceptible at the time of discharge from the hospital.

His weight fell from 160 to 109 pounds (72.6 to 49.4 Kg). The primary lesion on the right fifth finger remained inflamed for months and was not completely healed until November 4. An acute episcleritis developed in both eyes. On several occasions he had nausea and vomiting and nosebleeds during relapses. Lymphadenopathy became generalized. There was slight enlargement of the epididymides.

November 3, two days after the laboratory examination had confirmed the diagnosis of rat-bite fever, solution arsenical compound No. 16 (Lilly),¹⁵ 0.3 Gm. which contains 0.009 Gm. of arsenic, was given intravenously. Four hours after the injection, nausea and vomiting developed, followed by weakness and a rise of temperature to 104°. The following day he had no symptoms. November 5 and 7, 0.45 and 0.5 Gm., respectively, of the same drug were given without untoward effect. November 11 he was discharged from the hospital, feeling

weak but otherwise in good general condition.

CASE 2—F. H., a man, aged 22, single, a second year medical student, entered the University of Chicago Clinics, Oct. 14, 1933, complaining of fever, malaise and muscle soreness.

During August he had worked on the same animals as patient 1 in the physiology laboratory. About August 24 there developed a red, swollen, firm sore on the distal phalanx of the left thumb. No abrasion of the skin at this time or previously was noted.

Moist hot applications were administered for several days. Since no marked change occurred, the lesion was incised and a small amount of blood tinged serum, but no pus, was expressed. Healing was prompt after incision.

During the last week of August he drove from Chicago to his home in San Diego, Calif. The long journey left him completely exhausted. After five days in bed he felt well for several days. About September 1, soreness developed in the muscles of his arms and legs. Four nodules about 2 cm in diameter which soon became red and tender, appeared on the extensor surface of the left forearm. At first there was no discoloration of the skin. Later there was a brownish color, which disappeared slowly. He had night sweats, chills, fever and weakness which kept him in bed for three weeks. The temperature is said to have remained below 102° F.

The first week in October he came back to medical school. At this time he felt well. Several days after his return he had a recurrence of the malaise and fever. During the first two weeks of October his temperature was between 100 and 102° F, which was usually higher in the afternoon. There was soreness in the muscles of the extremities, slight stiffness of the neck, a tired feeling in the arms without exercise, and red, slightly itchy lesions on the back of the thorax. His weight had fallen from 160 to 140 pounds (72.6 to 63.5 Kg).

The only unusual observations at physical examination were a palpable spleen felt about 1 cm below the costal margin, a faint blowing systolic murmur in the pulmonic area, muscle tenderness of the arms and legs and a small nodule at the head of the left epididymis.

¹⁵ This is a temporary name for this product and will be used until a permanent name has been adopted.

¹¹ Schottmuller H. Zur Aetiologie und Klinik der Bisskrankheit. Dermat. Wchnschr. 58: 77, 1914.

¹² Blake F. G. The Etiology of Rat Bite Fever. J. Exper. Med. 23: 39-60 (Jan.) 1916.

¹³ Dick G. F. and Tunnichiff Ruth. A Streptothrix Isolated from the Blood of a Patient Bitten by a Weasel (*Streptothrix Putorius*). J. Infect. Dis. 23: 183-187 (Aug.) 1918.

¹⁴ Anderson N. P. and Spector Bertha K. Rat Bite Fever As associated with Sporothrix. J. Infect. Dis. 50: 344-349 (April) 1932.

The white blood cells numbered 9,050, the red blood cells 3,670,000, with hemoglobin 67 per cent (Sahl). The urine was normal. Blood smear showed normal cells and no parasites. The differential count was polymorphonuclear neutrophils, 84 per cent, lymphocytes, 13 per cent, monocytes, 2 per cent, eosinophils, 1 per cent.

The temperature course is shown in figure 2. With each rise in temperature there was an increase in the white blood cells up to as high as 23,600, diffuse mottled macular erythema on the chest, generalized muscle soreness and stiffness that

were most marked in the legs, loss of appetite, slight conjunctivitis, sweating, twitching of small groups of muscles and flushing of the face. On two occasions small, firm red papules, which developed pustular centers and were followed by persistent brownish discoloration of the skin, were noted on the back of the thorax. Although malaise was never severe the patient felt much better between attacks.

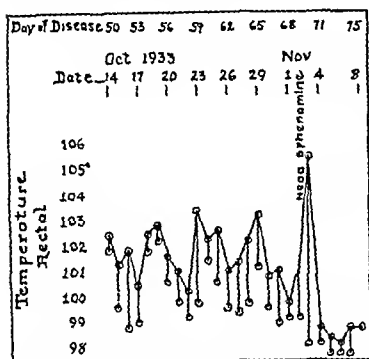


Fig. 2 (case 2)—Temperature chart. Each line represents the range in temperature for one day.

Under iron therapy (45 Gm pills of ferrous carbonate) the hemoglobin rose from 67 per cent to 82 per cent (Sahl).

Following the injection of 0.45 Gm of neoarsphenamine on November 3, the temperature rose from 100 to 105.5 F within six hours. There was profuse sweating, drowsiness, a feeling of lightness in the head, and vague substernal discomfort. Two additional injections of 0.5 and 0.6 Gm of neoarsphenamine were given on successive days without reactions.

LABORATORY OBSERVATIONS

Several agglutination tests for tularemia and undulant fever were negative in both cases and repeated blood cultures on various culture mediums showed no growth. Stool and urine cultures were essentially negative and wound cultures in case 1 showed *Staphylococcus aureus* or *albus*, nonhemolytic streptococci or no growth.

The serum in case 1 gave a positive Weil-Felix agglutination 1:320 repeatedly with X19 while that in case 2 was positive only 1:40 X19. The serum of both patients gave positive agglutinations with *Bacillus typhosus* and *B. paratyphosus* A and B. Both had had TAB vaccine.

The Wassermann and Kahn tests gave interesting results in both cases as shown in table 1. Because of the strongly positive Kahn tests a spirochetal disease was suspected. This led to animal inoculations which gave positive results, confirming the diagnosis of rat-bite fever (table 1).

ANIMAL INOCULATIONS

Animal inoculations were made with blood of the patients as follows:

Case 1. September 22, two guinea-pigs received 4 cc each of venous blood intraperitoneally. October 20, three guinea-pigs received 4 cc each of venous blood intraperitoneally, three mice received 1 cc each of venous blood intraperitoneally and one dog received 5 cc of venous blood into the femoral vein.

Case 2. October 18, two mice received 1 cc each of venous blood intraperitoneally. October 19, three more mice were inoculated in the same manner. In addition, three guinea-pigs and one dog were inoculated as in case 1.

RESULT OF ANIMAL INOCULATIONS

Mice—All mice inoculated with blood from each patient showed *Spirillum morsus-muris* in the peripheral blood by dark field and stained smear. They appeared on the eleventh day after inoculation in one case and on the thirteenth day in the other. The mice for the most part, remained apparently healthy except for occasional loss of hair and conjunctivitis. The spirilla have been carried on in mice to the fifth series and have been found in the peripheral blood on the seventh day after inoculation from mouse to mouse.

Guinea-Pigs—All guinea-pigs succumbed to the disease within two months after inoculation. Spirilla were never demonstrated in the peripheral blood or any, though search was made repeatedly after the eighth day. The animals remained apparently well until a few days before death, when they suddenly became weak and emaciated. They usually showed conjunctivitis and keratitis and, occasionally, loss of hair. Temperatures showed a slight elevation.

Little was noted grossly on autopsy with the exception of catarrhal enteritis. Smears from various organs showed no spirilla. Spirilla were found only in smears of discharge from the eyes and then in only three cases.

The Wassermann and Kahn tests done on two guinea-pigs a few days before death were negative.

Mice inoculated with heart blood from three of these guinea-pigs showed no spirilla, though examination was made at intervals for thirty-seven days.

Dogs—The dog in case 1, which received 5 cc of blood in the femoral vein on October 20, had a temperature between 102 and 104 for thirty-three days. On the thirty-third day the animal was found dead.

On the fourteenth day after he was inoculated, mice were injected with blood from this dog and after about two months spirilla were found in their peripheral blood. A guinea-pig inoculated November 15 with blood from the dog developed the typical disease and died after one month. Spirilla were found in smears of the discharge from the eyes. The Wassermann and Kahn reactions on this dog, November 13, were both negative.

TABLE 1—Results of Kolmer, Wassermann and Kahn Tests

Case 1	9/9	Wassermann negative	Kahn negative
	10/24	Wassermann negative	Kahn 2-3-2
	10/25	Wassermann negative	Kahn 1-2-1
	11/3	Specific therapy	
	11/7	Wassermann negative	Kahn 4-4-4
	11/13	Wassermann weakly positive 1-1	Kahn 4-4-4
Case 2	11/20	Wassermann negative	Kahn 4-4-4
	10/17	Wassermann anticomplementary	Kahn 4-4-4
	10/23	Wassermann weakly positive 0-1	Kahn 1-4-4
	10/27	Wassermann weakly positive 0-1	Kahn 4-4-4
	11/3	Specific therapy	
	11/7	Wassermann negative	Kahn 4-4-4
	11/13	Wassermann weakly positive 0-1	Kahn 4-4-4
	11/16	Wassermann negative	Kahn 4-4-4
	11/20	Wassermann negative	Kahn 4-4-4
	1/3/24	Wassermann negative	Kahn 3-3-1
	1/23/24	Wassermann negative	Kahn 3-3-1

At autopsy the dog showed ulcers in the colon and purulent pneumonia. Other organs were grossly normal. A search for spirilla in various organs, namely, the spleen, lymph nodes, liver, lung and kidney, by dark field and stained smears, gave negative results.

The dog inoculated on October 19 with blood from case 2 showed similar changes in the temperature and pulse. Mice inoculated with blood from this dog December 1, were positive for spirilla after eighteen days.

The results of the Wassermann and Kahn tests are given in table 2

December 22, treatment was begun on this dog. His weight was 4 Kg. He received 0.3 Gm of solution arsenical compound No. 16 (Lilly)¹⁵ intravenously. Jan. 2, 1934, his temperature dropped to normal.

TABLE 2—Results of the Wassermann and Kahn Tests

11/13	Wassermann negative	Kahn negative
12/1	Wassermann anticomplementary	Kahn strongly positive 4-4-4
12/22	Wassermann weakly positive 1-1	Kahn strongly positive 4-4-4
1/18	Wassermann strongly positive 4-4	Kahn positive 3-4-4

January 18 he received 0.5 Gm of No. 16 intravenously in the right leg and has since shown no symptoms.

It is interesting to note in this connection that Mooser¹⁶ was able to demonstrate spirilla in the blood of a dog and cat after inoculation, while we obtained,



Fig. 3—*Spirillum morsus muris* in blood of inoculated mice

on several occasions, negative results with both dark field examination and stained blood smears on dogs.

THERAPEUTIC INOCULATION

A patient with dementia paralytica, on whom arsenic, bismuth compounds, diathermy and typhoid therapy had been ineffective was inoculated intravenously with 0.75 cc of blood from a mouse infected with blood from patient 1. After twelve days, swelling, redness and tenderness appeared at the site of injection and developed into a bluish gray area with puckering of the skin. No spirilla were found in smears from vesicles at the margin of the lesion or in mice inoculated with this patient's blood. However, a guinea-pig inoculated intracutaneously developed a typical local lesion and succumbed to the disease. The patient developed characteristic clinical rat-bite fever with muscle soreness, chills, red nodules and a temperature curve similar to that in case 1 with variations between 99.5 and 104 F.

Six weeks after inoculation the disease was terminated by means of the arsenical used in case 1. Rat-bite fever therapy for dementia paralytica was first used by Solomon¹⁷ in 1926.

DISCUSSION OF LABORATORY OBSERVATIONS

There are three interesting points in the laboratory observations in these cases: (1) the fact that the Kahn tests were consistently positive and the Kolmer Wassermann tests occasionally positive, (2) the failure to demonstrate spirilla in the peripheral blood of guinea-pigs and (3) the fact that dogs were experimentally infected.

There is considerable variation in the Wassermann reactions in cases reported in the literature. Arkin¹⁸ reports a negative Wassermann reaction in his own case and states that Kitagawa and Mukoyama report a negative reaction and Kunusaki found one positive case in five. Costa and Trouser,¹⁹ Mauriac,²⁰ Caldwell and Templeton²¹ and Briggs²² have reported cases with positive Wassermann reactions. Ward²³ found a case with a four plus Wassermann reaction when cholesterinized antigen was used and a negative reaction with other antigens. Bayne-Jones found fifteen cases with negative and three with positive Wassermann reactions in eighteen American case reports and felt that there was a possibility of a coincident syphilis in the positive cases. Blum and Clement²⁴ state that they found reports of fourteen cases with positive and twelve with negative Wassermann reactions. They cite a case with a negative reaction before and a positive one after rat-bite fever infection. McDermott mentions that he obtained a positive Sachs-Georgi test on inactivated blood of an infected rat, while the Wassermann and the Sachs-Georgi test on infected guinea-pigs were negative. Bayne-Jones also states that he never found a positive Wassermann reaction to occur with the blood serum of experimentally infected guinea-pigs.

The two guinea-pigs that we tested gave negative Wassermann reactions, while the dog that survived gave first a positive Kahn and later a positive Kolmer Wassermann as well.

The failure to find spirilla in the peripheral blood of guinea-pigs is not unlike experiences encountered by other workers. McDermott states that differences have been described in the infections in guinea-pigs produced by various strains of human origin. Mooser²⁵ describes latent infection in guinea-pigs in which no clinical signs of illness developed. Frequent examination of their blood gave only negative results, though spirilla were harbored in their lymph nodes.

Futaki and his collaborators²⁶ state that mice are the best experimental animals, especially when human

17 Solomon H. C., Berk A., Theiler M. and Clay C. L. The Use of Sodoku in the Treatment of General Paralysis. A Preliminary Report. *Arch. Int. Med.* 38: 391-404 (Sept.) 1926.

18 Arkin, Aaron. Rat Bite Fever. Report of a Case, *Arch. Int. Med.* 25: 94-111 (Jan.) 1920.

19 Costa S. and Trouser J. Un cas de sodoku (fièvre par morsure de rat). *Bull. et mem. Soc. med. de hop. de Paris* 40: 1931-1916. Nouveau cas de sodoku. *Spirochaetes a l'examen direct du sang* *ibid.* 42: 616-1918.

20 Mauriac P. Rat Bite Disease. *J. de med. de Bordeaux* 89: 93 (April) 1918.

21 Caldwell Ruth and Templeton Frederic. Case of Rat Bite Fever. *Wisconsin M. J.* 31: 705-707 (Oct.) 1932.

22 Briggs N. Treatment of Rat Bite Fever, *Brit. M. J.* 1: 185-186 (Feb. 4) 1922.

23 Ward J. L. Rat Bite Fever. Case Report. *South M. J.* 19: 182-183 (March) 1926.

24 Blum Paul and Clement Robert. A propos de la réaction de Bordet Wassermann dans le sodoku. *Progres med.* March 14 1925, pp. 390-395.

25 Mooser Herman. Experimental Studies with a Spiral Organism Found in a Wild Rat and Identical with the Organism Causing Rat Bite Fever. Second Paper. *J. Exper. Med.* 42: 539-559 (Oct.) 1925.

26 Futaki K., Takaki J., Taniguchi T. and Osumi S. *Spirochaeta Morsus Muris* N. Sp. the Cause of Rat Bite Fever. Second Paper. *J. Exper. Med.* 25: 33-44 (Jan.) 1917.

16 Mooser Herman. Die Katze als Ueberträgerin von Sodoku. *Arch. f. Schiff's u. Tropen Hyg. (Beiheft I)* 29: 253-260 1925.

material is to be inoculated directly into animals, white rats are next best, and guinea-pigs and monkeys frequently yield no results

ANIMAL VECTORS

Cases have been reported in which the animal vector has been other than the rat. Our cases are unusual in that the animal transmitting the disease was the dog. In one case the ease with which the causative organism invaded the tissues is of particular interest because there was no noticeable scratch or abrasion of the skin, yet a typical local lesion developed.

Yamada,²⁷ Sano²⁸ and Mock and Morrow²⁹ have reported cases following the scratch or the bite of a cat. Smallwood³⁰ reported a case, diagnosed on clinical signs, following the bite of a young pig. Cazamian³¹ recorded a case following the bite of a dog and mentions references in his article to other case reports following the bite of a cat, a mad dog, a squirrel, a ferret or a weasel. Burnford³² has also recorded a case in which the subject was bitten by a ferret. A case in which Dick and Tunnichiff³³ found *Streptothrix putorii* gave a typical history of rat-bite fever following the bite of a weasel.

MORPHOLOGY OF THE SPIRILLA

The organism found by us agrees in morphology with that described and shown in photomicrographs by others. The forms varied in length from 1.5 to 6 microns with about 1 spiral per micron. The motion, as studied under dark field examination, was extremely rapid. As Francis³⁴ points out, a person searching for spirochetes and accustomed to the slow backward and forward motion of *Spirochaeta pallida* might fail to recognize the significance of *Spirochaeta morsus-muris* with its darting forward motion. When the preparation had stood for some time or the organisms had become obstructed by clumps of platelets, definite flagella could be seen. These were further demonstrated by Burri's india ink method. Other flagella stains were tried, namely, Adachi's, Bailey's and Zettnow's, without success. Only a single flagellum was seen at each end of the organism.³⁴

CONCLUSIONS

- 1 From two cases of rat-bite fever, *Spirillum morsus-muris* has been isolated.
- 2 The animal vector was apparently the dog.
- 3 The experimental disease has been produced in dogs.
- 4 Kahn tests were strongly positive on both patients and the experimental dog that survived, while the Kolmer Wassermann reaction was usually negative or weakly positive.
- 5 A patient suffering with dementia paralytica was inoculated with the spirilla and developed a typical lesion and symptoms of rat-bite fever.

6 Flagella were demonstrated only with Burri's india ink method.

7 The mouse proved to be a better diagnostic animal than the guinea-pig.

8 In one case, infection was contracted when no skin abrasion was noted, suggesting ease of penetration of the organism.

9 The clinical course of the disease showed marked variation.

10 A course of from three to six treatments with arspenamine seems advisable.

EXTENSION OF MALIGNANT TUMORS OF THYROID INTO GREAT VEINS AND RIGHT HEART

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Malignant tumors of the thyroid gland may involve neighboring veins and extend as tumor thrombi into the superior vena cava and right side of the heart. Four cases have been reported and are here assembled. This report adds another case studied by me. It is unique in that the tumor thrombosis invaded both venae cavae and the right auricle.

GENERAL CONSIDERATIONS

Malignant tumors of the thyroid gland constitute between 1 and 2 per cent of all goiters and are found about once in every thousand necropsies in the United States. The greatest number of cases occur in the fifth decade. Women are afflicted in from two thirds to three fourths of all cases.¹ Adenomatous goiter precedes malignant conditions of the thyroid in more than 90 per cent, and over 90 per cent is of epithelial origin.² Clinical signs of toxic adenoma are present in about half of all cases. Exophthalmos is present in very few cases. A malignant condition is an accidental and unexpected finding at operation or in the pathologic laboratory in over half of the cases.^{1b}

Operative removal results in about 6 per cent immediate mortality, and an additional 60 per cent of the patients die within three years of recurrence. An additional 20 per cent have a recurrence as late as thirteen years after operation.³ When the diagnosis can be made before operation, the tumor has broken through the capsule of the gland and complete removal is only rarely possible. Papillary cystadenomas, adenocarcinomas and small alveolar carcinomas are amenable to radiation therapy and fortunately constitute about 83 per cent of all malignant tumors of the thyroid.⁴ Sarcomas and so-called mixed types are rapidly and universally fatal. Malignant adenomas treated by combined surgery and radiation yield a 25 per cent three year cure rate, whereas papillary cystadenomas give a 50 per cent three year cure. Results depend on the

27 Yamada K. Rat Bite Fever Due to Scratch of Cat. *Saikingaku Zasshi* 1917 No. 265 p. 877 (abstr. *Trop. Dis. Bull.* 13 338 1919).
28 Sano T. Rat Bite Disease? Case Report. *Iju Shimbun* 1917 No. 981 p. 1153 (abstr. *Trop. Dis. Bull.* 12 8 1918).

29 Mock H. E. and Morrow O. R. Rat Bite Fever Transmitted by a Cat. *Bite Illinois M. J.* 61 67 70 (Jan.) 1932.

30 Smallwood R. P. Rat Bite Fever from the Bite of a Pig (Memoranda). *Brit. M. J.* 1 1159 (June 29) 1929.

31 Cazamian P. Fièvre par morsure de chien. *Bull. et mem. Soc. med. d'hop. de Paris* 45 268 273 1921.

32 Burnford J. Rat Bite Fever. *West London M. J.* 23 204 207 (Oct.) 1925.

33 Francis Edward. Relapsing Fever and Rat Bite Fever in the United States. *abstr. J. A. M. A.* 99 70 71 (July 2) 1932.

34 We are indebted to Dr. Edward Francis of the National Institute of Health for his opinion regarding these spirilla which he considered no different from those he recovered from a typical case of rat bite fever in Richmond, Va. in 1931.

1 (a) Balfour D. C. Cancer of the Thyroid Gland. *M. Rec.* 94 846 850 (Nov. 16) 1918. (b) Graham A. Malignant Epithelial Tumors of the Thyroid with Surgical Reference to Invasion of Blood Vessels. *Surg. Gynec. & Obst.* 39 781 790 (Dec.) 1924. (c) Pool E. H. Malignancy of the Thyroid Gland. *Nelson's Loose Leaf System of Medicine* 3 303 310B (Nov.) 1928. (d) Simpson W. M. Malignant Neoplasms of the Thyroid. *Ann. Clin. Med.* 4 643 667 (Feb.) 1926. (e) Wilson L. B. Malignant Tumors of the Thyroid. *Ann. Surg.* 74 129 184 (Aug.) 1921.

2 Ewing James. *Neoplastic Diseases*. Philadelphia W. B. Saunders Company, 1928.

3 Balfour J. Wilson J.

4 Clute H. M. and Smith L. W. Cancer of the Thyroid Gland. *Arch. Surg.* 18 120 (Jan.) 1929. Craver L. F. Present Day Treatment of Thyroid Cancer. *Ann. Surg.* 82 833 853 (Dec.) 1925. Dinsmore R. S. Prognosis and Treatment of Malignant Goiter. *West. J. Surg.* 39 828-838 (Nov.) 1931. Wood F. C. Radium and Roentgen Ray Therapy. *J. A. M. A.* 92 894 897 (March 16) 1929.

type of tumor. Those tumors which most closely resemble the structure of the normal thyroid have the best prognosis. Treatment should consist of combined surgery and radiation or radiation alone.

Metastases are in evidence in 20 per cent of necropsies on patients showing a malignant condition of the thyroid gland and take place chiefly by way of the blood stream.⁶ Metastases involve the lungs and mediastinum in about half of these cases, and the bones are the next most frequent site.

The tendency of thyroid tumors to extend into the neighboring veins has been reported by Graham in this country and by Billroth, Kaufmann and others in Europe.⁷ Graham and Weinlechner report invasion of the thyroid veins only. Billroth, Kaufmann, Springer

nodular mass in the neck, edema of the upper half of the body, marked cyanosis of the face and engorgement of the superficial veins of the neck. She died two months later.

Autopsy showed a mass the size of two fists in the left lobe of the thyroid with extension into the thyroid, internal jugular, subclavian and innominate veins on both sides and into the superior vena cava and right auricle. The lumen of these veins was distended and completely occluded by the tumor thrombi. The chamber of the right auricle was filled with the polypoid tumor mass. Metastases were present in the cervical lymph nodes, mediastinum and lungs. Microscopic examination confirmed the gross changes.

2 Billroth's case, quoted from Springer.⁷ A woman, aged 51, with a large nodular goiter was found at operation to have neoplastic thrombi of the neck veins. At autopsy the tumor thrombi were found to extend from the thyroid into the superior vena cava and cavity of the right auricle.

3 Springer's case. M. M., a woman, aged 44, in February 1898 had noticed a lump in the left side of the neck for a year. She had suffered a gradual loss of strength and increasing dyspnea for several months and had been aphonic for four weeks. She showed a nodular mass the size of two fists in the thyroid region, increased retrosternal dullness, edematous swelling of the face and arms, paralysis of the vocal cords, stenosis of the trachea, and a loud systolic heart murmur at both the apex and the base. Choking attacks made a tracheotomy necessary. During this operation, tumor thrombi of the tracheal veins were noticed. The patient bled profusely from ulcerated areas in the larynx and died two months later, very anemic and poorly nourished.

At autopsy the patient presented sarcoma of the thyroid penetrating and stenosing the trachea, involving the pharynx, larynx and esophagus and extending as venous thrombi from the thyroid veins into both innominate and subclavian veins, the superior vena cava and the chamber of the right heart. A tumor thrombus hung as a polyp from the orifice of the superior vena cava, extended through the tricuspid opening to the bottom of the cavity of the right ventricle, then bent upward to the conus arteriosus, 10 cm long in all. On contraction of the ventricle the tumor polyp must have been pushed against the pulmonic valve ring. The hypertrophy of the right heart was not unusual for an anemic patient. The left ventricle was also hypertrophied. No metastases were found elsewhere.

4 Wylegischann's case. K., a woman, aged 52, seen in 1926 by Prof. N. K. Gorjajew, presented at that time a greatly enlarged nodular tumor of the thyroid. The cervical lymph nodes were enlarged and hard, and the thyroid tumor was fixed to surrounding structures. There was edema and cyanosis of the upper half of the body and dilatation of the superficial veins of the trunk. Malignancy of the thyroid and obstruction of the superior vena cava were diagnosed. Increasing cough and dyspnea developed and the patient died in November 1927.

Necropsy showed a large nodular thyroid tumor that had invaded the adjacent sternothyroid and sternohyoid muscles and the cervical and bronchial lymph nodes and had extended as tumor thrombi through the thyroid, the internal jugular and innominate veins, the superior vena cava and upper portion of the azygos vein and into the right auricle. The cavity of the latter was markedly enlarged and almost completely filled with a tumor thrombus, which was firmly attached to the posterior wall of the auricle. There was a tumor nodule on the posterior tricuspid leaflet. The atrioventricular opening was partly obstructed by the tumor mass. Microscopic examination of the tumor showed it to be a carcinoma arising from a malignant nodule in the thyroid gland.

5 Author's case. E. B. M., a white man, aged 72, native born, admitted to the Western Pennsylvania Hospital, Jan. 7, 1931, in the surgical service of Dr. F. R. Bailey, complained of a painful swelling of the neck for one year and choking attacks for three months. His family history was of interest in that his mother had had a swelling of the neck and choked to death at the age of 77. The patient's enlargement of the neck had been steadily increasing for a year, but according to the patient it had not been preceded by any goiter. He had lost 18 pounds (8.2 Kg.) within the year, had become nervous and had frequent severe headaches and attacks of weakness.



Fig. 1 (case 5)—Right side of the heart, showing tumor thrombi occluding the venae cavae and filling the right auricle. A, entrance of superior vena cava into the right auricle; B, tumor mass in the inferior vena cava; C, mass in the right auricle.

and Wylegischann report extension of the tumor thrombi into the superior vena cava and the right side of the heart.

CASES COLLECTED FROM THE LITERATURE

1 Kaufmann's case. A woman, aged 58, with a history of goiter since the age of 30, had noticed an increase in the size of the goiter during the six months preceding admission to the hospital. She complained of great dyspnea and also difficulty in swallowing. On examination she presented a large

5 Haagensen, C. D. Radiosensitivity of Thyroid Cancer, *Am. J. Cancer* (supp.) 15: 2063-2105 (July) 1931.

6 Graham, Nichols, B. H. Location of Metastases. *Proc. Inter. State Post Grad. M. Assemb. North America* 6: 234-236, 1931.

7 Graham, Kaufmann, C. Die Struma maligna primares Sarcoma und Carcinoma strumae, pathologisch-anatomisch und klinisch bearbeitet. *Deutsche Zeitschr. f. Chir.* 11: 401-485 (May 15) 1879. Springer, C. Neoplastische Thrombose der Vena cava superior und des rechten Herzens nach Sarcom der Glandula thyroidea, *Prag med. Wchnschr.* 26: 213-215, 1901. Weinlechner, Medullares Carcinoma der Schilddrüse mit ausgebreiteter gleichartiger Erkrankung der Lymphdrüsen mit Ueber greifen auf die benachbarten Muskeln und Venen secundäre Carcinome in den Lungen, Duodenalcatarrh mit heftigem Icterus. *Tod. Aerztl. Ber. k. k. allg. Krankenh. zu Wien* (1886) 1888 p. 213. Wylegischann, N. J. Ein Fall von ausgebreiteter Schilddrüsenkrebswucherung durch die Blutgefäße in den rechten Vorhof. *Frankfurter Zt. chr. f. Path.* 40: 51-63, 1930.

On physical examination he was found to have a pulsating nodular mass the size of two fists in the anterior and lateral portions of the neck. The mass was attached to the trachea but not to the skin. There was a soft systolic murmur at the apex of the heart. The rest of the positive physical changes were not noteworthy. The basal metabolic rate was plus 22 per cent. Roentgen examination of the chest showed increased width of the mediastinal shadow interpreted as a probable mediastinal mass. A diagnosis was made of inoperable carcinoma of the thyroid with extension into the mediastinum. High voltage roentgen therapy was given in the physical therapy department by Dr. Heinz Langer. The mass in the neck responded well and the patient was discharged to the physical therapy outpatient department after ten days, much improved.

Treatment was continued for six months while he was an outpatient. About 3,200 roentgens of filtered rays (0.5 mm of copper and 30 mm of aluminum, 200 kilovolts) was given by cross firing at the tumor in the neck. Half of this dosage probably reached the tumor tissue. Over the mediastinum 2,400 roentgens was given. The spine was given 1,600 roentgens. When seen in March 1931 the mass in the neck had decreased 75 per cent in size, the patient had gained 8 pounds (3.6 Kg) and coughing had stopped. In June 1931, six months after beginning treatment, the patient felt perfectly well and the mass in the neck was smaller and softer. Treatment was stopped because the patient insisted that he was cured and was unwilling to come in for treatment. He did return in August 1931 for another roentgen examination of the chest which showed a decrease in the width of the mediastinal shadow. Barium by mouth at this time showed no retention in the esophagus, and the trachea was not displaced. The patient was not seen again until January 1933, when he came in answer to a letter. At this time a basal metabolic rate determination was done and found to be minus 13 per cent. A small dose of dried thyroid gland substance ($\frac{1}{8}$ grain [0.013 Gm] three times a day) was given him. He had gained 19 pounds (8.6 Kg) and there was no evidence of renewed activity of the small mass in the neck. The patient returned a month later, complaining of dyspnea. The heart action was rapid but regular. The dosage of thyroid was decreased. The size of the neck seemed unchanged.

Four days later, February 26, the patient was readmitted to the surgical service of Dr. F. R. Bailey. The patient complained of severe dyspnea, a generalized swelling of the neck, weakness and coldness of the right arm and edema of the legs. The right arm had been growing weak for a month. The edema of the legs had been present for three weeks. All symptoms, but especially the dyspnea, had become much worse in the four days preceding admission. On physical examination he showed great respiratory distress and marked cyanosis of the head, neck and right arm. There was a small mass in the right lobe of the thyroid and the surface of the gland was nodular. The examination of the lungs showed nothing noteworthy. No enlargement of the heart or mediastinum could be made out. No murmurs were heard. The heart rate was 84 and the rhythm regular. The superficial veins over the left side of the chest anteriorly were noticeably but not remarkably enlarged. Those of the right side of the chest anteriorly were less notable. There was no enlargement of the superficial vessels of the abdomen. Dulness was present in the flanks and there was marked pitting edema of both legs. The right arm and hand were cold and bluish, sensation in this region was slightly impaired, and movements of the hand were very slowly executed.

Vigorous supportive treatment for circulatory failure was given but the pulse rate, dyspnea and cyanosis rapidly increased. The blood pressure was well maintained, being 120 systolic, 60 diastolic, as compared with 130 systolic, 70 diastolic during his previous admission. Dr. T. T. Sheppard saw the patient in consultation on the second day and raised the question of probable abdominal as well as mediastinal metastases. The patient died on the third day when the pulse rate and blood pressure fell.

Autopsy was performed twelve hours after death by Dr. W. S. Nettroir, and his observations will be given in some detail.

A small firm, immobile mass was felt in the region of the sternoclavicular notch. Dulness was present on percussion of

the dependent portions of the thorax. There was flatness to percussion in the flanks and the abdomen was markedly distended. The inferior border of the liver was 3 cm below the right costal margin. There was marked edema of both legs. Each pleural cavity contained about 500 cc of clear straw-colored fluid. Old pleural adhesions were present. The right pleura was firmly attached to a mediastinal mass, which occupied the posterior mediastinum, penetrated the pericardium and completely encircled the great vessels. The lumen of the superior vena cava was distended and occluded by a tumor thrombus, which continued into the right auricular chamber, was prolonged downward into the inferior vena cava, upward into the innominate veins of both sides and into the right subclavian, internal jugular and thyroid veins. In the inferior vena cava the mass had extended down to the level of the entrance of the hepatic veins. Just below the level of the hepatic veins there was a large mural tumor thrombus firmly attached to the wall of the inferior vena cava. The mediastinal mass was continuous with the lower pole of the right lobe of the thyroid. Very small blood-filled clefts were visible, traversing the tumor thrombi in both venae cavae, suggesting canalizations. Polypous tumor tissue hung free in the chamber of the right auricle, almost completely filling it. The tumor



Fig. 2 (case 5) —Section of tumor mass

masses were adherent to the wall of the cavity in several places. The valves were not involved. There was moderate cardiac hypertrophy, especially of the left ventricle.

On section all portions of the tumor, including the tumor mural thrombus in the inferior vena cava, had a uniform pinkish white opaque appearance and firm consistency. The remainder of the thyroid gland showed adenomatous changes. No further metastases were found. The microscopic examination showed adenocarcinoma of the thyroid arising from a malignant adenomatous nodule. All portions of the tumor, including the portion in the inferior vena cava, were of essentially identical structure.

COMMENT

The changes found at autopsy in the case reported here justify interesting observations on the development of physical signs and symptoms, especially as related to the mechanics of circulation. The cyanosis and weakness of the right hand and arm were probably due to extension of the mass into the right subclavian vein, blocking the entrance to the right internal mammary vein and thereby much of the collateral venous return.⁸ The left internal mammary vein was still unobstructed at death, which accounts, perhaps, for the greater prominence of the superficial veins over the left side of the chest anteriorly. The edema of both legs was doubtless due to obstruction of the inferior vena cava. The immediate cause of death was cardiac

⁸ Hallett, C. H. Collateral Circulation After Obstruction of the Venae Cavae. *Edinburgh M. & S. J.* 69: 269-292, 1848.

failure due to obstruction of both venae cavae. Autopsy indicated that the rising heart rate was an effort to compensate for falling stroke volume secondary to obstruction to venous return. It is remarkable that the patient was able to walk into the hospital three days before he died. It seems unlikely that the tumor grew much more rapidly in the last few days of the patient's life. It seems more likely that a much smaller cardiac output is necessary to permit moderate activity than is generally thought. The administration of thyroid begun a month before death was probably not a factor in the terminus.

This case is unique in that the tumor thrombosis of the inferior vena cava occurred by direct extension from a site above the level of the heart.⁹ Simpson collected all the reported cases of tumor thrombosis of the inferior vena cava up to 1924. In all cases the primary site of the tumor was below the level of the heart.¹⁰ He stresses the fact that edema of the legs was almost invariably present but that dilatation of the superficial veins of the abdomen was noted in less than half of the cases.

Fishberg¹¹ was the first to make the diagnosis of tumor invasion of the right auricle during life. He reported two cases in 1930 in which auricular flutter and fibrillation developed in the presence of known mediastinal tumor and led to this diagnosis, later confirmed at autopsy. The involvement of the right auricle and inferior vena cava was not even thought of in our own case. The cardiac rhythm remained normal. The edema of the lower extremities was thought to be due to circulatory failure, probably of myocardial origin in spite of little evidence of organic heart disease.

The absence of further metastases was an unexpected finding. Tumor polypoid masses hung free in the right auricle. It is hardly conceivable that no tumor cells broke loose to enter the lungs. A diligent search was made in the lungs, including fifty sections that were examined microscopically, but no evidence of metastases were found. This observation raises the question as to how often tumor emboli are completely resorbed from the lungs.

CONCLUSION

1 Malignant thyroid tumors have a tendency to invade adjacent veins and extend in them toward and also away from the heart.

2 Four cases of extension of thyroid tumor thrombi into the great veins and right heart have been collected from the literature.

3 A case of tumor thrombosis of the right auricle and both venae cavae is probably a unique finding. Some observations are made on the development of signs and symptoms and the mechanics of the circulation.

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⁹ Goldstein. Tumors of the Heart. *M Rec* 115: 158-161 (Feb. 1) 1922. Mattes-Fritz. Ueber Verschluss der beiden Hohlvenen Freiburg, Br., 1911. Meyer. A Case of Complete Obstruction of Both Venae Cavae. *M Rec* 63: 806-810 (May 23) 1903. Wood.¹⁰ Wood.¹¹ Fishberg. A. M. Auricular Fibrillation and Flutter in Metastatic Growths of the Right Auricle. *Am J M Sc* 180: 629-634 (Nov.) 1930.

The Feeding Habits of Races—Observations of the feeding habits of various races of mankind have established the fact that even if these conditions are fulfilled the human species may be content to go on from generation to generation making use of dietaries which are incapable of producing perfect physical development or of maintaining individuals in a state of normal health—Colwell, S. J. Vitamins in Clinical Medicine, *Practitioner* 132: 15 (Jan.) 1934.

MALIGNANT ULCERATIVE GONOCOCCIC ENDOCARDITIS

FATAL FIVE DAYS AFTER APPEARANCE OF
CARDIAC INVOLVEMENT

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Boyd¹ in 1931 stated that "a rare form of acute bacterial endocarditis is that produced by the gonococcus." Though at first it would appear that this form of endocarditis is not so rare, judging by the number of cases reported in recent years, when one contrasts the incidence of gonococcic endocarditis to the prevalence of gonococcic infection in the male and female, it may truly be said that cardiac involvement by the gonococcus is a rare occurrence. Hoffman and Taggart,² in reviewing the literature since 1922, report that they could find only eight authentic cases of endocarditis caused by the gonococcus and add their own case. Since we can prove the source of the infection in our cases together with the finding of gonococci in smears from the vegetations taken from the aortic valve, plus a strongly positive gonococcus complement fixation test in one of the cases, we feel privileged to add our cases to those in the literature. The unusual features in our cases are that death occurred only five days after the first evidence of cardiac involvement and that bilateral hydrothorax was found in each case.

REPORT OF CASES

CASE 1—C. K., a man, aged 42, admitted to the surgical service, March 11, 1931, complained of swelling and pain in the left hand of one week's duration. Three weeks before the patient had fallen, injuring the left hand, but the hand did not trouble him until two weeks later, when it became painful and swollen. The patient was well developed and well nourished, the only positive finding being that the left hand was tensely swollen and reddened from the wrist down, with extreme pain on movement at the wrist. It was thought at this time that the patient had an infection of the hand, and it was incised between the metacarpal bones and drained. After three or four days there was a small amount of pus draining, but the wound showed no signs of healing. At the end of one week the signs of acute inflammation had subsided and the hand showed marked improvement. The temperature on admission was 101 F and for the next two weeks varied between 98 and 100 F, reaching 103 once on the tenth day after admission. The pulse during this time ranged between 70 and 100, and the respiration rate was 20 per minute.

March 25, two weeks after admission, the patient suddenly had a severe chill, lasting twenty minutes, and the temperature shot up to 104 F, and the pulse to 120. Three days later, March 28, the patient complained of pain in the right shoulder, with limitation of motion. A blood count on this day showed 13,600 white blood cells and 65 per cent polymorphonuclears, and a blood culture was taken. Salicylates were given up to the saturation point, but there was no effect on the painful shoulder. Beginning March 25, the temperature course became septic in type, with daily peaks of 102 and 104 F in the afternoon. The patient gradually became worse, the pulse fluctuating with the temperature between 80 and 120. April 1 the patient began to cough, expectorating a yellowish sputum, he became very restless and a difficulty in breathing developed. Dulness with diminished fremitus and crackling rales over both bases posteriorly was noted.

¹ Boyd, William. The Pathology of Internal Diseases. Philadelphia: Lea & Febiger, 1931, p. 59.
² Hoffman and Taggart. Gonococcus Endocarditis. *Ann Int Med* 5: 1397-1403 (May) 1932.

April 6, for the first time, there was heard a double murmur over the entire precordium, loudest over Erb's point. At this time it was also discovered that the patient had had a gonorrheal epididymitis with urethral discharge three months previously. Two days later another blood culture was taken. During the next few days the patient rapidly became more toxic, having daily chills and profuse perspiration with increasing dyspnea. The pulse became more feeble and two days before death the respiration increased to from 40 to 50 per minute. The next day Cheyne-Stokes respiration appeared, the patient became cyanotic, and he died, April 11.

Both blood cultures were reported as showing no growth at the end of five days. The blood count, April 7, showed 8,000 white blood cells, with 87 per cent polymorphonuclears, reported as very toxic.

Autopsy was performed by Dr. Peters. There were no petechiae in the skin and no subconjunctival hemorrhages. When the abdomen was opened there was about 50 cc. of clear serous fluid in the peritoneal cavity but no evidence of peritonitis. When the chest plate was removed about 600 cc of slightly blood-tinged fluid was found in each pleural cavity. There were no adhesions in the pleural cavities and the lung was crepitant except for areas in the lower lobe, which on section showed passive congestion. The heart was moderately enlarged, weighing 500 Gm. The right auricle was markedly dilated and filled with a postmortem clot. The first part of the aorta showed no abnormality, but the cusps of the aortic valve presented a fairly large recent ulceration in the central portion of the left posterior cusp, with the edges of the ulcerated area covered by soft vegetations.

A smear taken from the vegetations on the valve showed the presence of numerous biscuit-shaped gram-negative diplococci resembling gonococci. The spleen was slightly enlarged, weighing 250 Gm, and slightly softer in consistency.

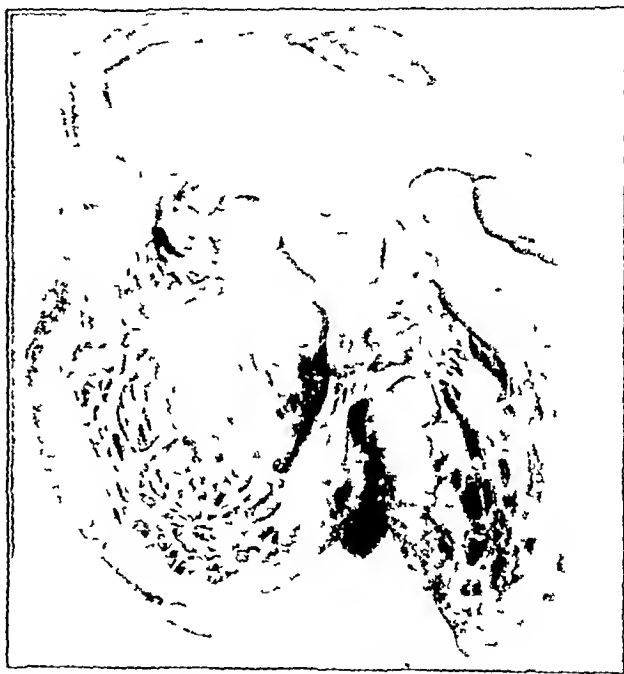
CASE 2.—M. Q., a woman aged 39, admitted to the Bridgeport Hospital, Oct. 26, 1933, in the surgical service of Dr. H. B. Lambert, complained of vaginal pain of several years' duration and of low abdominal pain for the past few months. There was no pain on urination nor intermenstrual discharge. The menses were normal and regular. The patient had been separated from her husband for several years but continued to consort with men. On examination, there was elicited moderate pain and tenderness over both lower quadrants of the abdomen. Pelvic examination showed a retroverted uterus and ulcerated cervix. In the right fornix was felt a large knobby, tender mass suggestive of a pelvic abscess. The patient was in the hospital fourteen days. On admission the temperature was 103, which dropped to 98 on the third day and remained afebrile. The vaginal discharge was very slight and smear showed many pus cells with a few gram-positive cocci and bacilli. The blood Wassermann and the Kahn test were negative. The ulcerated cervix was treated with electrocoagulation and the patient felt improved and was discharged, November 9.

November 23 the patient was readmitted to the medical service of Dr. F. W. Pyle, complaining of generalized aches over the body and pain in the right wrist. She stated that one week after her discharge from the hospital she began to have chills and at one time had a fever of 105 F. A few days later she had another chill and fever. About the time of the first chill there was some burning on urination. November 20 a severe pain developed in the right wrist, which became swollen and reddened, and two days later the right knee became painful and swollen. The patient was acutely ill, with a temperature of 102 F. The lungs were clear and the heart was normal, no murmurs were heard. There was no vaginal discharge and no tenderness in the vaginal fornices. The right wrist and right knee were swollen, red, hot and very tender to palpation. In the course of the illness on the fifth day the temperature dropped to 98.8 and remained normal. The swelling of right knee subsided in a few days, so that all pain disappeared. One week after the day of admission the acute inflammation of the right wrist subsided and physical therapy was instituted. At the end of the second week the right wrist had improved greatly, with all pain gone and a great deal of motion possible. During this admission the white blood count was 15,700, with 81 per cent polymorphonuclears, the red blood count was 4,460,000 and the hemoglobin 88 per cent by

the Sahli method. The patient was discharged as improved, December 7.

It was at about this time that we discovered that a friend of our patient was being treated by a local physician for a gonorrheal urethritis. The man insisted that he had contracted the infection from the patient in the interval between her admissions to the hospital. After discharge from the hospital the patient was apparently well until December 12, when she had a severe chill lasting one hour, followed by a high fever.

December 13 the patient was readmitted with the complaints of chills and fever. Physical examination at this time showed the patient to be acutely ill, with a temperature of 101 and pulse of 120. The right wrist had improved and showed no evidence of inflammation. There were no positive manifestations, as the lungs were clear and no murmurs were heard on careful examination of the heart. The blood count, December 14, showed 13,550 white blood cells, with 72 per cent polymorphonuclears and a hemoglobin of 80 per cent. In the next few days the patient complained of frequent headaches and chilly sensations, with the temperature ranging between 101 and 104 F. Five days after admission the patient began to



Aortic valve showing typical vegetations of acute gonococcic endocarditis, with ulceration of the leaflet.

cough, and some dullness with diminished breath sounds were found over the left lower lobe posteriorly. A blood culture, was taken, December 18, but was reported negative at the end of five days. The blood count, December 18 showed 10,400 white blood cells, with 83 per cent polymorphonuclears, and 4,200,000 red blood cells, with 75 per cent hemoglobin (Sahli method). During the next two and one-half weeks the patient showed no signs of improvement, the temperature remaining elevated between 102 and 104 F, the pulse between 90 and 120 and the respirations from 20 to 30 per minute. The patient was gradually becoming more and more toxic. Jan. 2, 1934 the blood count showed 23,700 white blood cells with 90 per cent polymorphonuclears. The respiration rate ranged between 40 and 50, the pulse was 120 and the temperature fluctuated between 102 and 104 F. This same day, for the first time, Dr. C. W. Gardner heard a distinct diastolic murmur, loudest in the left fourth interspace. Another blood culture was taken, January 4, which did not show any growth at the end of five days. January 5, a gallop rhythm developed, there was tubular breathing at both bases and abdominal distention. Several petechiae were noted in the skin of the chest. The patient became increasingly more dyspneic, the pulse became feeble and rapid, 132 per minute, the patient lapsed into unconsciousness and died January 7.

Other laboratory data included a sedimentation rate of 25 minutes, the urine on repeated examinations showed a specific gravity of 1.009 to 1.016, faint traces of albumin and many white blood cells and a few red blood cells. Blood taken, January 4, for the complement fixation test was returned January 8 strongly positive for gonococci.

An autopsy was performed one hour after death by Dr. Horn. The body was 5 feet 6 inches (167 cm) tall and weighed 125 pounds (56.7 Kg). The conjunctivae were clear, the abdomen was slightly distended and tense, and the nail beds were cyanotic. There were two petechiae in the skin, one over the right upper portion of the chest and one over the left lower part of the abdomen. When the abdomen was opened there was from 50 to 100 cc of amber fluid. When the chest plate was removed, about 500 cc of turbid amber fluid was found in each pleural cavity and the lungs appeared to be collapsed with a few fresh adhesions between the lungs and the chest wall. When removed, the left lung was partially collapsed, the upper lobe gray and crepitant, the lower lobe purplish and fleshy. On section, the cut surface of the lower lobe was slightly moist but there was no exudate visible nor expressed. The appearance was that of compression atelectasis. The lower lobe of the right lung showed a similar appearance.

The pericardium, when opened, contained about 30 cc of clear amber fluid. The right auricle was moderately dilated. The heart was normal in size, weighing 325 Gm and was moderately soft, and the epicardial surface over the root of the pulmonary artery presented a bloodshot appearance. The positive changes were restricted to the aortic valve which are shown in the accompanying illustration. Involving the left posterior cusp of the aortic valve were seen several large friable vegetations. Some of the vegetations were smooth, thick yellow masses dangling from the valve leaflet while most of the vegetations both on the leaflet and within the sinus of Valsalva were coarsely verrucous and cauliflower in appearance. The valve leaflet itself presented an irregular ulcerated hole about 1 cm in diameter, the edges being covered by the vegetations. The left coronary artery had its origin about 1.5 cm above the upper level of the valve leaflet, while the right coronary artery opening was in its normal position.

The spleen was somewhat enlarged, weighing 215 Gm, bright red and moderately soft. The liver was enlarged, weighing 2,050 Gm.

In the pelvis was found a right pyosalpinx. The right fallopian tube was adherent to the right ovary and both were bound down in the culdesac.

Some of the verrucous vegetations from the aortic valve were crushed and the smear stained, revealing many pus cells and gram-negative extracellular and intracellular diplococci, evidently gonococci.

COMMENT

The reported cases present several points in common. A chronic gonococcal infection was present in both. The man had had gonorrhea and a gonococcal epididymitis three months previously, the woman had had a pelvic infection with a pyosalpinx, most probably gonococcal in origin. In both, arthritic manifestations developed and the joint primarily involved in each case was the wrist. In each the process became malignant in that death occurred only five days after the cardiac involvement. In both, the aortic valve was involved, the appearance of the vegetations was similar, being bulky and ulcerative, and in each case we obtained positive smears directly from the vegetations showing gonococci.

In view of these conditions we feel that these cases may be regarded as proved cases of gonococcal endocarditis. In support of this view, we have the strongly positive complement fixation test in case 2. That the infection, once involving the heart, was highly malignant is evidenced by the fact that, only five days after the first physical finding of cardiac involvement, death occurred and by the gross appearance of the aortic valve, showing the extensive ulcerations of the valve leaflets.

Another unusual finding in both our cases was the presence of bilateral hydrothorax.

SUMMARY

1 In two proved cases of malignant ulcerative gonococcal endocarditis there was a positive history of gonococcal infection.

2 Smears from valve vegetations showed gram-negative, biscuit-shaped, intracellular diplococci, evidently gonococci.

3 In one case the positive manifestations were strengthened by a positive complement fixation test.

4 Both cases were rapidly fatal in five days after the first evidence of an endocarditis.

5 Bilateral hydrothorax was present in both cases.
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RIGHT AXILLARY EMBOLECTOMY

RECOVERY WITH RECURRENCE ONE MONTH LATER

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The operation of arterial embolectomy and its results have aroused a great deal of interest among surgeons during the last decade. The number of cases reported is continuously increasing. Recently, several reports have appeared in the European and American medical literature in which the accumulated collective experience of a large series of cases reported by a diversified group of surgeons was tabulated and an attempt was made to draw some definite conclusions as to the prognosis and mode of treatment from the end results. Many successful arterial embolectomies, limited to one or two cases, have also frequently appeared in the literature, but the ultimate end results weeks or months after the operation are not stated. In some so-called successful cases in which the circulation has been completely restored, which are listed as cures, secondary emboli may have developed, followed by gangrene or death. It is fair to assume that an equal or a greater number of cases in which the operation was unsuccessful were not reported, since often successes are more likely to be reported than failures. The widespread interest in the subject prompts us to report another case of arterial embolectomy, which has many points of interest from a diagnostic and prognostic standpoint.

REPORT OF CASE

CASE 1—E. S., a widowed housewife aged 62, a Russian, was seen by one of us (C. H. G.) in a typical attack of coronary thrombosis, Oct. 14, 1931. The patient suffered from dyspnea and severe precordial pain. Her pulse was barely perceptible. Morphine was administered and an ice bag applied to the precordium, and the following day she was admitted to the Newark Beth Israel Hospital suffering with auricular fibrillation and marked cardiac decompensation. Under prolonged rest and medication her condition improved. She was discharged from the hospital and transferred to a convalescent home.

Oct. 20, 1932, she was again admitted to the hospital markedly decompensated and also suffering with diabetes mellitus. The blood sugar was 333 mg and glycosuria 8 per cent. Under the proper diet and insulin she became sugar free and was discharged from the hospital one month later.

From the Surgical Service, Newark Beth Israel Hospital.

During the winter of the same year the patient was sent to the Newark City Hospital because of a marked right-heart failure. During her stay at the hospital psychotic symptoms of a paranoid nature developed, which disappeared after several weeks' treatment.

Roentgenologic examination of the heart at that time showed it to be enlarged and of the mitral type. There was also hilar and pulmonary congestion. During the early part of November 1933 the patient was admitted to the Lincoln Private Hospital with evidence of left ventricular failure and auricular fibrillation. Compensation was soon restored by maintenance doses of digitalis and small doses of morphine. She complained of occasional vague and irregular pain in both lower extremities. There was no evidence of sclerosis in the peripheral and retinal arteries.

November 19, at 12:30 a. m., she was seized with an agonizing pain in the right shoulder and upper arm. It was knifelike in character and did not radiate. The forearm and hand became immediately cold and anesthetic. When examined by one of us at 1:45, she was in shock. Her face was ashen, she was bathed in sweat, and the pulse was irregular, with a rate of 140. The whole right upper extremity was cold and had the appearance similar to a neonatal asphyxia pallida. There was complete absence of brachial or radial pulsation in the right arm and forearm. There was a marked pulsation at the upper third of the axillary artery but none below that point, and there was forceful pulsation in the subclavian artery. Hypodermic injection of morphine, given immediately, failed to relieve the pain. The diagnosis of axillary arterial embolus was made, which was verified in consultation with Dr. Max Danzis, and immediate operation was advised.

Under local block anesthesia, operation was begun at 3:45 and completed at 4:30. An incision 3 inches (7.6 cm.) in length was made directly over the course of the axillary and brachial arteries. The axillary vessel was identified and separated from the brachial nerves. A tape, dipped in saline solution, was carried around the upper portion of the brachial artery. Another tape was similarly carried around the axillary artery, proximal to the obstructed segment. The upper part of the brachial artery was gently compressed, its contents were milked upward and the artery was then constricted by tying the tape with a slip knot. The clot could be distinctly felt within the lowermost portion of the axillary and could be easily moved in both directions. The proximal tape was then also tied with a slip knot and a longitudinal incision was made in the arterial wall, between the two tapes about two thirds inch in length. Three small thrombi, each about 1 cm. in length, of a firm consistency, yellowish red in appearance, were removed. The knot in the upper tape was then released and blood spurted freely and forcibly from the axillary artery. No other clots were expelled in that blood stream. The tape was then retied and the incision in the artery was closed by five No. 0 silk sutures dipped in petrolatum. Both the upper and lower tapes were removed, blood flowed freely through the artery, and pulsation of the brachial artery was immediately visible and palpable. The cessation of pain and the return of the circulation took place with a dramatic suddenness. The pallor of the hand disappeared and it resumed a normal appearance. In spite of the apparent circulatory restoration to the entire forearm and hand pulsation in the radial could not be felt. This would presuppose a return of circulation through the anastomotic branches around the elbow joint. The soft parts were closed with interrupted silkworm-gut suture and a dry dressing was applied.

The patient was returned to bed in good condition but with an irregular pulse. One-fourth grain (0.016 Gm.) of morphine was given hypodermically to combat shock and restlessness. The arm was kept in a moderately abducted position, on a soft pillow, and an anterior splint, well padded, was applied so as to prevent unnecessary motion for the first forty-eight hours. The subsequent postoperative course was uneventful. Sutures were removed on the tenth day. The circulation was well maintained. There was no disturbance of sensation or motion. The pulse was 96 but irregular. The cardiac compensation was well maintained while she was at rest. There was no difference in the appearance of the two upper extremities.

The patient was transferred to the Newark Beth Israel Hospital, November 29, with a diagnosis of cardiovascular disease. Progress notes, December 1, show "general condition of patient good, embolectomy incision well healed, heart beats very irregular, suggesting advanced conduction defect and myocardial damage." December 7 the condition was fair and the pulse was weak and irregular, there was no dyspnea and no pain. December 14 and 17 there were no complaints, the condition was good.

During her stay at the hospital the circulation of the arm and forearm was good, the brachial pulsation was present all along the course of the artery, but the radial pulse could not be felt during the first three weeks following operation. After that, irregular radial pulsation was present. The patient was able to use her arm freely. There was no numbness or visible circulatory disturbance.

December 18, when the patient was lying comfortably in bed, she suddenly complained of a faint feeling, followed by pain in the right arm, forearm and hand. The circulation of the hand was immediately disturbed, and the same subjective and objective symptoms, similar to those of the first onset, were present. The pain, however, was not as severe at this time as in the first attack. It seemed not to have been as sudden in its onset. Pulsation in the brachial and axillary was again absent. There was distinct pulsation of the axillary artery but none below. The diagnosis of recurrent embolus of the axillary artery, or the beginning of the brachial artery, was made. Reoperation was advised.



Clots removed from right axillary artery at time of first operation Nov. 19, 1933. These were reddish yellow and nonfriable, approximately 1 cm. in length. Sections showed formed thrombi.

Under local anesthesia, the upper portion of the brachial and axillary arteries were exposed. We encountered considerable difficulty in isolating the axillary artery on account of very thick and firmly adherent scar tissue around that vessel, as a result of the previous operation. Strands of silk, which were used in the former arteriotomy closure, were still visible in the scar. Pulsation was visible above the scar and none below. After the segment of obstructed vessel was liberated from its bed of scar tissue, distinct diminution in the caliber of the vessel was noticeable. On palpation, a thrombus was felt at that point. An incision was made and two small thrombi were evacuated and the constriction was then released. This was followed by a spurt of blood and the expulsion of another small thrombus. The blood was allowed to spurt intermittently for several seconds. The tapes surrounding the vessel were then tied by a slip knot and the incision was closed by very fine silk suture dipped in petrolatum. There was no restoration of circulation in the brachial artery after the closure. The forearm and hand remained blanched. Owing to the marked constriction of the vessel, it was deemed inadvisable to reopen the sutures to search for any new clots, because repeated incision and manipulation is most likely to cause further narrowing of the lumen. The general condition of the patient at this time also became very poor, and the operation was therefore terminated by merely closing the incision with through and through silkworm gut sutures, in the hope that the circulation of the forearm and hand might be reestablished through the collateral vessels.

The patient was returned to bed in a state of shock. The arm was kept in the abducted position, heat applied and general stimulation administered. The following day the symptoms of circulatory disturbance became aggravated. Within the next three days definite signs of dry gangrene appeared at the tip of the fingers and hand. No pulsation could be felt at the brachial artery. The general condition of the patient became very poor and many dark blotches appeared on the forearm, showing the progressive extension of the gangrene. Amputation was considered, but the patient's general condition contraindicated any surgical intervention at that stage. The patient died, Jan. 5, 1934, seventeen days after the operation, from cardiovascular disease and toxic absorption from the gangrenous limb.

COMMENT

The vascular constriction found at the operation caused some speculation in the mind of one of us as to the exact cause of the circulatory obstruction. Was it due to the lodgment of a new embolus? Or did the small thrombi, which we removed from the vessel, form slowly within the lumen of the artery, as a result of the constriction at that point? The latter assumption is supported by the clinical history, that the onset of symptoms was not as sudden and the pain not so severe as in the first attack. This may indicate that the obstruction could have been gradual and the symptoms became most pronounced only when the size of the thrombus at the constricted portion of the artery became sufficiently large to cause complete occlusion of the lumen at that point. On the other hand, the fact that during the four weeks that intervened between the first and the second operation the patient experienced no symptoms suggestive of local circulatory disturbance in the arm or forearm and that the pulsation of the brachial artery was well maintained from the time that the clot was removed, and the fact that radial pulsation also returned at about the third week indicate that there was no interference with the arterial flow of blood as a result of thrombus formation. The sudden faint feeling experienced by the patient immediately preceding the onset of local symptoms, the sudden marked change in the appearance of the hand and forearm, and the sharp pain, although not as acute as in the preceding stage, would also indicate a sudden circulatory obstruction, most likely due to another embolus.

The importance of early diagnosis and prompt surgical intervention in cases of arterial obstruction due to emboli has been stressed by many writers. It has definitely been shown that the danger of circulatory obstruction by an embolus is greater than that caused by ligature, because, in the former, thrombus formation rapidly takes place not only in the parent vessel but also in the arterial branches that are given off at the embolic site, causing complete occlusion of the main trunk and its branches, whereas in obstruction due to a ligature, the branches that are given off below the point of ligation are not obliterated, and the circulation of the limb may therefore be maintained through these collateral anastomotic branches.

Experimental ligation of the subclavian, axillary and brachial arteries gave an incidence of gangrene varying between 15 per cent in the axillary and 48 per cent in the brachial, whereas the incidence of gangrene as a result of circulatory obstruction due to emboli, based on a study of twenty-nine cases, proved to be 30 per cent. In most of these cases operation was performed soon after the onset of the disease.¹

It was definitely shown that the degree of infiltration of the intima of the blood vessels and the size of the thrombus within the lumen of the artery are in direct proportion to the length of time allowed to elapse between the onset of the disease and the operation. If the embolus is allowed to remain within the vessel for a considerable length of time, it will cause ulceration and necrosis of both the intima and the media at the point of obstruction. The thrombus formation will then extend from the principal vessel at the point of obstruction to its collateral branches, causing a complete occlusion of the arterial canal and its branches.

The importance of early operation was definitely shown in an analysis of the postoperative end results of a large series of cases. Of those in which operation was done within from one to four hours there was a complete circulatory restoration in 62 per cent of the cases. Of those in which operation was performed within from four to eight hours there was only 50 per cent circulatory restoration. The percentage of circulatory restoration decreased in direct proportion to the operative time. There is no authentic case of complete circulatory restoration in the vessels of the lower extremities in which operation was done forty-eight hours after the onset of the disease. There are several reports in the literature of circulatory restoration in the vessels of the upper extremity in which the operation was performed forty-eight hours after the onset of the disease, but in these cases the circulation was probably restored through the collateral branches.

In a study of the end results of ten cases of embolectomies performed on the vessels of the upper extremity in which the circulation was restored, no radial or brachial pulsation could be felt nor could a blood pressure reading be obtained weeks and months after the operation. This would definitely indicate that the collateral branches play a most important part in the circulatory restoration of the vessels of the upper extremity.¹

One may ask. If the collateral branches play such an important part in circulatory restoration, particularly in the vessels of the upper extremity, why resort to embolectomies, particularly in debilitated patients? The answer is obvious. As was stated before, if the embolus will be allowed to remain at its point of lodgment, particularly if it is near the bifurcation of a vessel or at a point where the collateral branches are given off, the thrombus formation will extend into these collateral branches and deprive the patient of whatever chances he may have of circulatory restoration through these anastomotic branches.

The incidence of emboli is less frequent in the upper than in the lower extremities. In a group of 129 cases¹ there were 29 of the upper extremity and 100 of the lower extremity. The cause of this marked difference is not definitely known. The relative frequency between the lodgment of an embolus in the right or the left upper extremity has not been estimated with any degree of accuracy. The experience of some writers shows that emboli are apt to lodge more frequently in the left arm than in the right. The cause of this condition is attributed to the difference in origin of the subclavian arteries on either side. When an embolus leaves the left side of the heart and is propelled by the blood stream into the arch of the aorta, it may enter into the lumen of one of the three large vessels originating from the arch. If it enters the innominate artery and is not arrested at its bifurcation into its two branches

¹ Danzis, Max. Arterial Embolectomy. *Ann. Surg.* 98: 249 (Aug.) 422 (Sept.) 1933.

(right subclavian and right common carotoid), it may enter either one of these two vessels. But if the embolus propelled by the force of the blood stream passes by the first two openings and enters the left subclavian, it can be propelled only into the axillary. On the other hand, one may take the opposite view that, since the direction of the arch of the aorta is from right to left, the innominate artery arising from the right side of the arch is logically the first vessel that an embolus would encounter in its course after being driven off by the blood stream from the left ventricle and should most likely find entrance into the lumen of that vessel first, and therefore the incidence of right-sided axillary emboli should be greater than or at least equal to that of the left side. However there is no definite physiologic proof adduced at present to substantiate either one of these two assumptions. Out of twenty-nine cases of embolus of the upper extremity¹ reviewed in the literature, including the cases reported by one of us and also the case we are reporting at present, the right side seems to predominate. In Key's² personal experience the left side predominates.

The interesting points in this case are (a) Complete circulatory restoration in the right arm following axillary embolectomy about two and one-half hours after onset. Evidently the circulation was well maintained for a period of one month through the regular arterial channels, as evidenced by the immediate restoration of pulsation in the brachial artery and the restoration of radial pulsation later on. (b) A recurrence of an embolus in the same vessel and almost at the same site, which is rather unusual. Many cases of recurrent emboli, subsequent to embolectomies, are reported in which the emboli lodged in vessels other than those on which the embolectomy was performed. Cases are also reported in which there were concomitant emboli lodged in different parts of the body at the same time. The incidence of other embolic deposits preceding, associated with or following the operation of embolectomy were shown to be very frequent in the group of 129 cases reported in the literature. A repeated lodgment of an embolus, at the same site, is rather unusual.

The advisability of operative intervention, under such circumstances, may be questioned, particularly in an artery of moderate size. The periarterial scar formation following the first operation makes the localization and isolation of the segment of the vessel in which the embolus has lodged very difficult. The already narrowed vascular lumen at the site of the previous arteriotomy incision may be further reduced in size by the second operation, causing a complete blockage of the arterial circulation at that point. Since it has been clinically proved that circulatory restoration has been definitely reestablished in several cases of axillary and brachial arterial emboli in which no operation was performed, the possibility of circulatory restoration—if not complete, at least partial—may be expected, and nonoperative expectant treatment may be given consideration.

We realize that it is impossible to draw definite conclusions as to the choice of method of treatment from such a limited experience. Further study of the operative end results of a larger group of similar cases is necessary before a more positive method of treatment can be arrived at.

HUMAN THALLOTOXICOSIS

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In connection with an outbreak of thallium poisoning in California¹ the question arose regarding the frequency of human thallium poisoning. General reviews of the pharmacology of thallium,² as well as a number of scattered articles, have reported only single or a few cases. In the preparation of this compilation, efforts have been made to consult original articles pub-

TABLE 1—Injuries Following Industrial Exposure to Thallium Compounds

Reference	Factory Number	Product Handled	No of Workers Affected	Effects Reported	Outcome
Buschke and Langer ³ Meyer ⁴ Rube and Hendricks ⁴ Teleky ⁴	1	Pyrites	6 15 to 23 years	Fatigue loss of appetite epilation pains in knees and legs eosinophilia and lymphocytosis in all cases posterior synechia of iris 1 albuminuria 2	Recovery
Buschke and Langer ³	2	Dust	4	Epilation pains in legs, albuminuria eosinophilia and lymphocytosis in all cases double optic atrophy after 3 months in one	One lost sight two chronic albuminuria
Buschke and Langer ³	3	Thallium salts	2	Lymphocytosis one after 2 days another after 1 day a exposure monthly for 3 months	Recovery
Buschke and Langer ³	4	Thallium salts	None		
	5		None		
	6		None		
	7		None		
	8		None		
Author unpublished data	9	Dust	None		
Author unpublished data	10	Thallium salts	None		
Total			12 affected	no deaths	

TABLE 2—Injuries in Children Following Proper Administration of Thallium Acetate as a Depuratory

Dose Reported Mg per Kg	Number of Patients	Number Poisoned	Number of Deaths
4.0	1	1	0
5.0	516	2	0
6.0	2	0	0
6.5	1 618	2	0
7.0	211	2	0
7.5	33	1	0
7.75	61	2	0
8.0	3 648	219	6
8.25	127	1	0
8.5	231	50	0
8.75	354	127	1
9.0	393	0	0
10.0	6	0	0
Not stated	830	15	1
Total	8 006	447	8

lished prior to January 1934. Reports in the literature are difficult to evaluate, since general statements regarding numbers of patients may include specific cases recorded by other writers.

From the Biological Survey U S Department of Agriculture
1 Ginsburg H M and Nixon C E Thallium Poisoning A Preliminary Report of Eleven Cases at the General Hospital of Fresno County California J A M A 98 1076 1077 (March 26) 1932
Munch J C Ginsburg H M and Nixon C E The Thallotoxicosis Outbreak in California ibid 100 1315 1319 (April 29) 1933 Munch J C Thalliosulfat Massenvergiftung in Kalifornien Samml u Ver giftungs 4 229 230 1933
2 (a) Buschke A and Peiser B Die biologischen Wirkungen und die praktische Bedeutung des Thalliums Ergebn allg Path u path Anat 23 157 1931 (b) Munch J C and Silver James The Pharmacology of Thallium and Its Use in Rodent Control technical bulletin 238 U S Dept of Agriculture April 1931

² Key Einar Embolectomy in Embolic Disturbances of the Extremities Lyon chir 25 269 281 (May June) 1928

POISONING FROM INDUSTRIAL PRACTICE

Following the original reports of Crookes in 1861 and of Lamy in 1863, thallium has been obtained from various ores, and from the flue dust of plants roasting pyrites or raw sulphur in manufacturing sulphuric acid.^{2b} Prussian plants handling thallium answered questionnaires regarding industrial poisonings sent by Buschke³ at the request of the minister of health. In addition, reports have been made⁴ covering accidents following industrial exposure (table 1). Five German chemical manufacturers handling thallium salts and compounds on a commercial scale reported that no evidence of thallotoxicosis had been observed among their employees. Twelve persons employed in three other plants have developed thallium poisoning, nine of these recovered when the exposure was terminated,

dysentery caused alopecia. Clinical studies⁵ led to the use of thallium compounds (usually thallous acetate) for the production of cranial alopecia, as a preliminary step in the treatment of favus, trichophyton and microsporon infections of the scalp. A definite quantity of thallous acetate (most frequently 8 mg per kilogram of nude weight) is administered in a single dose to a healthy prepubescent child. An interval of from two to six months (usually three months) has been recommended before readministration of thallium compounds.

The dose of thallium acetate has varied from 4 to 10 mg per kilogram. Results reported in the literature have been consolidated in table 2. It is probable that a dose of 8 mg per kilogram was used in those instances in which the dose was not stated. Reports

TABLE 3—Injuries Following Improper Administration of Thallium Acetate as a Depilatory

Reference	Dose Mg per kg	Sex	Age	Effects	Outcome	Comment
Merkel ¹³	5.0	S L boy	12	Muscle pains	Death 13th day	Undernourished recovering from influenza given 0.8 mg per kg daily for 7 days
	0.5	R P boy	11	Muscle pains	Death 17th day	Previously encephalitic undernourished given 0.9 mg per kg daily 3 days then 27 mg per kg once
	0.0	X R boy	10	Muscle pains	Death 16th day	Undernourished 12 mg per kg daily for 5 days
Rubenstein M W Arch Dermat & Syph 23 477 (March) 1911	7.0	P L R Negro boy	7	Encephalitis peripheral neuritis septicemia	Death 26th day	Syphilitic pneumonia acute nephritis necrosis of liver
Szentkiralyi ¹⁰	8.0	Boy	13	Peripheral neuritis lymphocytosis secondary anemia	Recovered	Given in two doses
Bachkvalch M and Prokoptchouk A Ann de dermat 10 383 1929	8.0	Man	20	Epilation albuminuria hallucinations delusions	Recovered	
Stumpke Dermat Wehnschr 85 105 1927	8.0	Men	23 43	Polyneuritis respiratory involvement	Both recovered	
Willcox William through Lynch and Scovell ¹⁷	8.0?		5	Peripheral neuritis collapse	Recovered	Given in two doses at weekly intervals
	8.0?		8	Coma psychoblastic blindness	Recovered	Given in three doses at two week intervals
	8.0?	Child		Paralysis	Recovered	Given in three doses at weekly intervals
Lynch and Scovell ¹⁴	8.0		7-16	Myeloencephalitis	13 of 16 treated died within 3 weeks	Dose correct but scales inaccurate Granada Orphanage
	85.0	C T boy	10	Castro enteritis apnea	Death 36 hours	Fatty degeneration of heart and liver necrosis of kidneys
	85.0	L T boy	7	Castro enteritis apnea	Death 36 hours	Fatty degeneration of heart and liver necrosis of kidneys
	85.0	J T	5	Gastro enteritis apnea	Death 3 days	Fatty degeneration of liver necrosis of kidneys
Lenartowicz Przegl dermat 22 230 1926	9.0	Woman	33	Disturbances of vision nosebleed	Recovered	
Buschke and Langer ³	80.0		Child		Death 24 hours	
Testoni ¹⁸	126.0	P G boy	6		Death 5th day	Given daily for 5 days
Total 33 affected 29 deaths						

two showed chronic albuminuria, and one employee lost his sight.

Two American dealers in thallium report no evidence of thallotoxicosis among their personnel. No report of death from thallium poisoning following industrial contact has been found.

POISONING FROM CLINICAL USES

Internal Use of Thallium Acetate as Depilatory—Apparently the first connection between the internal administration of thallium and the loss of cranial hair was made by Sabouraud in 1897. Pills containing thallium acetate administered for the treatment of

on 8,006 cases were found. Intoxications were produced in 447, or slightly over 5.5 per cent. Eight deaths are reported. Following the administration of 8 mg per kilogram, six deaths have been recorded: (a) Two boys, aged 5 and 7 years, developed myeloencephalitis and pneumonia and died on the sixth and tenth days; (b) three boys, aged 7, 10 and 10 years,

³ Buschke A and Langer E. Die forensische und gewerblich hygienische Bedeutung des Thalliums. München med Wehnschr 74 1494 1497 (Sept 2) 1927.

⁴ Meyer Selma. Changes in the Blood as Reflecting Industrial Damage. J Indust Hyg 10 29 55 (Feb) 1928. Rube and Hendricks. Gewerbliche Thalliumvergiftung. Med Welt 1 733 1927. Telek, Gewerbliche Thalliumvergiftung. Wien med Wehnschr 78 506 508 (April 14) 1928.

⁵ Sabouraud Raymond. L'acetate de thallium contre le duvet chez la femme. Rev internat de med et de chir 23 322 1912. Entrétiens dermatologiques 1913 p 432. Sur le danger des pommades à l'acetate de thallium prescrites contre l'hypertrophie. Bull soc franc de dermat et syph 36 12 18 (Jan) 1929. Diagnostic et traitement des affections du cuir chevelu. Ibid 39 148 1932. Richet C. De la toxicité du thallium. Compt rend Soc de biol 1 252 253 1899. Cicero R. El tratamiento de las tiñas por el acetato de talio. Rev Puebla No 8 1919. Arch f Dermat u Syph 150 438 1919. Gonzales Uruena Jesus. Las tiñas en Mexico su tratamiento por el acetato de talio. Bol Univers nacional Mexico 1 309 1922. Le traitement des teignes par l'acetate de thallium. Paris Masson & Cie 1928. Psychose epileptiforme apres acetate de thallium. Ann de dermat et syph 10 1210 1212 (Nov 29) 1929. Eine weiteres Jahr Thalliumerfolge. Dermatologia (Budapest) 3 135 139 1929 through Zentralbl f Haut u Geschlechtskr 33 816 1930. Treatment of Ringworm with Thallium Acetate. J A M A 89 2217 (Dec 24) 1927.

⁶ Gleich Morris. Thallium Acetate Poisoning in Treating Ringworm of Scalp. J A M A 97 851 (Sept 19) 1931.

TABLE 4—Injuries Following External Application of Thallium Ointments as Depilatories

Relative Intensity of Symptoms of Thallium Poisoning											
Reference	Case	Name	Age, Years	Amount Used, Oz	Weeks Before Symptoms	Alopecia	Gastro Intestinal Irritation	Vision	Lower Extremities		Cerebral Involvements
									Poly neuritis	Atrophy	
Koremku											
Austrian C R Personal communication	1		26	?	5	Unknown	Marked	Definite	Severe	Unknown	Marked
Bessett S H Personal communication	2	D S	24	?	2	Unknown	Unknown	Unknown	Severe	Unknown	Unknown
Better Business Bureau Personal communica- tion	3		?	?	?	Unknown	Unknown	Unknown	Severe	Unknown	Unknown
Bloemel C S Personal communication	4	A B	31	10	3	Slight	Definite	Slight	Severe	Marked	Slight
Brenana P A Personal communication	5	C M	?	?	?	Unknown	Unknown	Unknown	Unknown	Definite	Unknown
Duncan and Crosby °	6		27	?	4	Unknown	Unknown	Unknown	Marked	Unknown	Unknown
Duncan and Crosby °	7		39	?	?	Unknown	Unknown	Unknown	Definite	Unknown	Unknown
Duncan and Crosby °	8		28	?	5	Definite	Definite	Unknown	Definite	Unknown	Marked
Duncan and Crosby °	9		24	?	2	Definite	Marked	Unknown	Marked	Definite	Slight
Caasbeek G H Van Personal communication	10		?	?	?	Unknown	Unknown	Unknown	Marked	Marked	Unknown
Goodman °	11	G	30	5	32?	Unknown	Unknown	Unknown	Unknown	Unknown	Slight
Greenbaum and Schamberg °	12	I S	24	5	7	Definite	Unknown	Unknown	Unknown	Unknown	Unknown
Haft H H Personal communication	13	P J	30	24	4	Unknown	Definite	Retrolubular neuritis	Marked	Marked	Unknown
Harris, H K Personal communication	14		?	?	?	Unknown	Unknown	Unknown	Severe	Unknown	Unknown
Kilboa E P Personal communication	15	C M	?	?	4	Unknown	Definite	Unknown	Marked	Unknown	Slight
Short C L J A M A 97 101 (July 11) 1931	16	M S	31	10	8	Marked	Unknown	Unknown	Severe	Unknown	Unknown
Lansbury °	17	I A	38	3	5	Definite	Marked	Unknown	Definite	Unknown	Unknown
Lansbury °	18	Wis	46	7	20	Unknown	Unknown	Retrolubular neuritis	Slight	Unknown	Slight
Lansbury °	19	Ind	30	22	2	Unknown	Definite	Retrolubular neuritis	Definite	Definite	Unknown
Lansbury °	20	L H	32	5	2	Slight	Marked	Retrolubular neuritis	Severe	Marked	Perma- nent
Lansbury ° Little and Parker °	21	V K	30	5	4	None	Marked	Retrolubular neuritis	Marked	Definite	Unknown
Lansbury ° Little and Parker °	22	Miss	27	20	20	Definite	Unknown	Retrolubular neuritis	Definite	Unknown	Slight
Lehman and Gaffney °	23		28	5	3	Definite	Marked	Unknown	Marked	Definite	Definite
Little and Parker °	24		39	?	?	Definite	Unknown	Unknown	Marked	Unknown	Unknown
Little and Parker °	25	D A	27	6	3	None	Marked	Unknown	Marked	Definite	Unknown
Lewis A T Personal communication	26	Neh	?	2	?	Unknown	Slight	Slight	Slight	Unknown	Unknown
Mackenzie Smith Mitchell and Bruce Personal communication	27	C P	?	2?	?	Unknown	Slight	Slight	Definite	Unknown	Unknown
Mackenzie, Smith Mitchell and Bruce Personal communication	28	S H	?	2?	?	Unknown	Slight	Slight	Definite	Unknown	Unknown
Mahoney °	29	B G	27	21	4?	Definite	Unknown	Retrolubular neuritis	Definite	Unknown	Unknown
Mahoney °	30	L L	29	?	16	Definite	Unknown	Retrolubular neuritis	Definite	Unknown	Slight
Mahoney °	31	E G	30	4	9	Definite	Unknown	Retrolubular neuritis	Definite	Definite	Slight
Mahoney °	32		?	2	4?	Definite	Unknown	Retrolubular neuritis	Definite	Unknown	Slight
McCormick, E V Personal communication	33	E S	23	6	4	Slight	Definite	Unknown	Definite	Unknown	Unknown
McCormick, E V Personal communication	34	H S	20	2	2	Marked	Definite	Unknown	Definite	Slight	Slight
Munch J C Unpublished observation	35	M P	20	4	4	Slight	Definite	Slight	Slight	None	Slight
Parter H B Personal communication	36		?	2?	12	Marked	Unknown	Unknown	Unknown	Unknown	Unknown
Pusey W A Personal communication	37	K C	?	3	4	Unknown	Definite	Unknown	Definite	Unknown	Slight
Pusey W A Personal communication	38	M F	?	3	4	Unknown	Slight	Unknown	Definite	Unknown	Unknown
Ruby Abraham New England J Med 207 1151 (Dec 22) 1932	39		29	2	4	Slight	Definite	Unknown	Slight	Unknown	Unknown
Greenbaum and Schamberg °	40	R R	29	?	8	Definite	Definite	Unknown	Slight	Unknown	Slight
Sellers O W Personal communication	41	M E	?	2	?	None	Definite	Unknown	Slight	Unknown	Unknown
Sherry M Personal communication	42	I F	?	?	?	Unknown	Unknown	Unknown	Slight	Unknown	Unknown
Smith Callahan and Carlson Personal com- munication	43	A F	?	?	?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Stanton F M Personal communication	44		21	?	?	Definite	Definite	Unknown	Definite	Slight	Slight
Stenn M D Personal communication	45	V L	?	?	?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Stine G H Am J Ophth 17 949 (Oct) 1932	46	Z B	47	?	8	Unknown	Definite	Retrolubular neuritis	Definite	Slight	Unknown
Strauss A Personal communication	47	D G	?	6	2	Marked	Definite	Unknown	Slight	Unknown	Slight
Twohy J F Personal communication	48		?	?	4?	Definite	Definite	Slight	Slight	Unknown	Unknown
Waring T P J A M A 97 703 (Sept 5) 1931	49	D L	28	4	5?	Definite	Definite	Unknown	Slight	Unknown	Unknown
Waring T P J A M A 97 703 (Sept 5) 1931	50		?	?	?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Wolman Samuel Personal communication	51		?	?	?	Unknown	Unknown	Marked	Unknown	Unknown	Unknown
Other Thallium Ointments											
Gm											
Hudclo Presse méd 37 146 1929	1	Q	?	?	3	Marked	Unknown	Unknown	Unknown	Unknown	Unknown
Olmer D and Tian A Compt rend Acad d sc 57 494 1908	2	Q	27	?	4?	Marked	Definite	Unknown	Definite	Unknown	Unknown
Ramand, Louis Presse méd 37 691 1929	3	Q	20	100 24%	3	Definite	Definite	Slight	Marked	Definite	Slight
Sluyters A Nederl tijdschr v genesesk 2 2678 (Aug 10) 1929	4	Q	19	30 5%	1	Slight	Definite	Definite	Marked	Unknown	Slight
Vignola L Monatsh f prakt Dermat, 1905	5	Q	9	?	2	Unknown	Unknown	Unknown	Slight	Unknown	Unknown
Vignola L Monatsh f prakt Dermat 1906	6	Q	16	?	2	Unknown	Definite	Unknown	Unknown	Unknown	Slight
Watrln J Bull Soc franc de dermat et syph 18 72 1931	7	Q	21	?	16	Unknown	Unknown	Unknown	Definite	Unknown	Definite
Buzzo A and Gandolfo C F Arch de med leg 150 1932	8	Q	19	100 3% 100 5% 100 10%	2	Marked	Marked	Unknown	Definite	Unknown	Definite
Total 50 affected no deaths											

died on the seventh twelfth and fifteenth days, (c) in a boy, aged 6, convulsions developed followed by death on the sixth day.⁵ Globus⁹ reported the death

⁷ Nicoletti F. Su tre casi di morte in equito a ommentrazione terapeutica di acetato di thallio. Arch di antropol crim (suppl) 50 1593 1597 1930.

⁸ Varadi Pal. Todliche Thalliumvergiftung. Ortosz hetil 1 628 1930 through Zentralbl f Haut u Geschlechtskr 36 63 1931.

⁹ Globus J. 150 Falle von Pilzkrankungen des Kopfes bei Kindern die mit Thallium acetatum behandelt wurden. 8 internat kongr Dermatol Kopenhagen Aug 5-9 1930 through Zentralbl f Haut u Geschlechtskr 36 63 1931.

of a boy, aged 4 in status thymicolymphaticus twenty-six hours after administration of 875 mg per kilogram. In discussing this paper, Lapin¹⁰ stated that a girl, aged 8, vomited many ascarides and died following the administration of thallium acetate.

Ingram¹¹ concluded that there is no evidence of danger following the clinical use of the proper dose of

¹⁰ Lapin in discussion on paper by Globus.
¹¹ Ingram J T. Thallium Acetate in the Treatment of Ringworm of the Scalp. Brit M J 1 810 (Jan 2) 1932.

thallium acetate as a depilatory Percival¹² was unable to find any evidence of impairment in the growth of seventy-six children following its use as a depilatory.

Thallium poisoning has followed clinical administration under what authors have suggested to be "improper clinical conditions" (table 3). Merkel¹³ reports the death of three undernourished boys, aged 10, 11 and 12 years, following the administration of from 55 to 6 mg per kilogram, not as a single dose but in divided doses over five, four and seven days. Poisoning followed 8 mg per kilogram given to a boy, aged 13, in two doses,¹⁴ also three children given a "full epilating dose" two or three times at weekly intervals.¹⁵ A Negro boy, aged 7, died on the twenty-

after the fifth daily dose of 125 mg per kilogram. Of thirty-three patients affected, twenty-two died.

External Application of Thallium Ointments as Depilatories—Sabouraud⁵ reported the possibility of using an ointment containing not over 1 per cent of thallium acetate in the treatment of hypertrichosis. Under medical supervision a quantity not exceeding 2 grains (0.13 Gm) of wheat is applied. The danger of using thallium ointments as depilatories has been pointed out by a number of dermatologists.¹⁶ Detailed records of injury following the use of such ointments are included in table 4. Abnormal conditions developed at different rates, possibly because of differences in the concentration of thallium and the rate of absorption. The duration of the injuries varied similarly.

A number of cases of thallium poisoning have been reported²⁰ during the last two years, following the application of a thallium ointment, "Koremilu Cream". Analysis of different lots of this material have been reported, indicating that the thallium acetate content falls between 3 and 8 per cent. Case histories of fifty one women poisoned by this product are given in table 4.²¹

The external application of ointments containing thallium compounds produced the same symptoms as the oral administration of thallium acetate. No claim is made that this list is complete, most probably it is not. The fifty-nine patients listed were those treated by physicians and recognized as suffering from thallium poisoning, the number of cases of poisoning not diagnosed, patients exhibiting mild thallotoxicosis who failed to apply for aid, and those in whom definite evidence of thallium poisoning did not develop can hardly be estimated. No death has been found directly attributable to thallium poisoning following the use of thallium ointments.

Miscellaneous Medicinal Exposures—A number of cases of poisoning have been collected in which thallium salts were taken internally (table 5). A total of 153 cases are considered, excluding an indeterminate number of cancer cases reported by Copeman.²² One boy died following the ingestion of 2.5 Gm of thallium solution intended for incorporation in a vehicle for external application to the scalp.²³

Recapitulating, 692 persons have been poisoned in connection with medicinal uses of thallium compounds, in thirty-one cases, death resulted.

TABLE 5—Miscellaneous Thallium Poisoning

Reference	Amount Mg	Sex	Age	Effects	Outcome
Bullard W M M & S Rep Boston 13 73 1902	130 260	♂	27	Diarrhea, muscular weakness, polyneuritis, alopecia	Recovery, lead and arsenic in urine
Crookes William Chem News London 8 159 1893	60 130	♂	?	No toxic reactions observed	Recovery
Debrille W Bull Soc anat physiol Bordeaux 19 150 1893	400	♂	39	50 mg b i d 4 days alopecia	Recovery
Fridl 23	2 500	♂	?	Bulbar paralysis, ptosis	Death 2d day
Giovannini S Dermat Ztschr G 69 1899	400	?	10	Polyneuritis	Recovery
	500	?	32?	Polyneuritis	Recovery
Giot M L and Braun S Presse med 41 235 1929	?	♂	49	Optic neuritis	Recovery
Gulnard A J de med de Paris 10 572 1893	4.0	?	?	Nine 50 mg pills alopecia	Recovery
Guttman M Hecht H and Langecker H Klin Wchnschr 10 1149 (June 13) 1931	1 100	♂	27	Polyneuritis	Recovery 5 months
Jeanseime E Ann de dermat et syph 9 999, 1896	2.0	♀	40	30 mg t i d 3 days gastroenteritis alopecia	Recovery
Lamy A Compt rend Acad d sc 57 442 1863	?	♂	?	Pains in legs	Recovery
Neuda Paul Wlen Klin Wchnschr 41 482 1923	?	58 ♂ 31 ♀	?	Polyneuritis 48 males 69 females	Recovery
Sabouraud 5	?	♀	?	Pills treatment dysentery alopecia	Recovery
Vassaux L Inaug dls Paris 1895	100	?	?	Pains in legs polyneuritis	Recovery
	200	?	?	Pains in legs polyneuritis	Recovery

Total 153 affected 1 death

sixth day following the administration of 75 mg per kilogram, syphilis, pneumonia, nephritis and necrosis were complications. Another boy developed secondary anemia.¹⁶ Thirteen of sixteen orphans died in a Granada orphanage; it appears that a dose of 80 mg per kilogram was desired, but inaccurate scales introduced errors in the body weights of the patients.¹⁷ Through an error in the decimal point, 80 mg was given to one child, causing death in twenty-four hours,³ also of three boys, aged 5, 7 and 10.¹⁷ Testoni¹⁸ reports the death of a boy, aged 6, very soon

12 Percival G H Thallium Acetate in Treatment of Ringworm of the Scalp. A Statistical Investigation of Subsequent Nutrition Brit M J 1 375 577 (April 4) 1931.

13 Merkel Hermann Ueber Todesfälle im Gefolge von therapeutischen Massnahmen Deutsche Ztschr f d ges gerichtl Med 13 237 249 1929 Thalliumacetat Vergiftung medizinale Samml u Vergiftungsf 1 85 86 1930.

14 Ciambellotti E Contro le pomate depilanti all acetato talloso Riforma med 45 980 982 (July 20) 1929.

15 Wintcox William in discussion on paper by Lynch and Scovell 17 16 Szentkraly S von Sekundäre Anämie nach einer Thallium acetatum Epilation Dermat Wchnschr 85 1083 1085 (July 30) 1927.

17 Lynch G R and Scovell J M S The Toxicology of Thallium Lancet 2 1340 1344 (Dec 20) 1930.

18 Testoni P Il tallio (3 Avvelenamento acuto da acetato talloso Alcuni riievi sulla tossicologia del metallo Arch internat de Pharmacodyn et de therap 42 48 64 1932.

19 Sabouraud 5 Ciambellotti 14 Criado F Trichophytie behandelt lokal mit Thallium, Actas dermatoflogr 19 264 265 1927 through Zentralbl f Haut u Geschlechtskr 30 359 1929 Pacini A Lacetato di Tallio nella cura delle Tigne Giornal di dermat e sif 67 287 291 1926 through Zentralbl f Haut u Geschlechtskr 21 450 1927 Prieto J G Ueber die behauptete alopecierende Wirkung der Thallium salze bei lokaler Anwendung Actas Dermosiflogr 19 490 491 1927 through Zentralbl f Haut u Geschlechtskr 30 637 1929.

20 Bureau of Investigation Koremlu—A Dangerous Depilatory Containing Thallium Acetate J A M A 96 629 631 (Feb 21) 1931 Koremlu The Life History of a Viciously Dangerous Depilatory ibid 99 407 409 (July 30) 1932 Duncan W S and Crosby E H A Case of Thallium Poisoning Following the Prolonged Use of a Depilatory Cream ibid 96 1866 1868 (May 30) 1931 Greenbaum S S and Schamberg J F Reports of Thallium Acetate Poisoning Following the Use of Koremlu ibid 96 1868 (May 30) 1931 Goodman Herman Thallium Acetate Its Toxicity and Depilatory Action New York State J Med 32 (Nov 15) 1932 Lansbury John A Case of Thallium Poisoning Proc Staff Meet Mayo Clin 5 323 324 (Nov 12) 1930 Lehman James and Gaffney Leo Thallium Poisoning A Report of Three Cases Ann Int Med 6 60 64 (July) 1932 Little W I and Parker H L Retrobulbar Neuritis Due to Thallium Poisoning J A M A 98 1347 1349 (April 16) 1932 Mahoney William Retrobulbar Neuritis Due to Thallium Poisoning from Depilatory Cream Report of Three Cases ibid 98 618 620 (Feb 20) 1932.

21 I am indebted to the physicians attorneys and business men who have cooperated by making this information available for inclusion in this report.

22 Copeman M Treatment of Cancer with Thallium through Buschke and Peiser 2 p 48.

23 Fridl R Ueber die jodometrische Bestimmung des Thalliums auch in Gegenwart von Ferri Eisen, Deutsche Ztschr f d gerichtl Med 15 478 488 (July 10) 1930.

POISONING FROM TOXICOLOGIC EXPOSURE

Homicidal, suicidal and inadvertent exposure to thallium products in foods have been reported. Two of a family of seven died following the consumption of food containing thallium and zinc.²⁴ Six unsuccessful attempts at suicide have been reported, in which from one-half to one and one-half tubes of "Zello" paste were ingested. Since this product contains about 2 per cent of thallium sulphate, this would represent a probable dosage of between 300 and 900 mg of thallium sulphate per person. Two cases of murder have been found. 1. A mother murdered her child by administering an unknown amount.²⁵ 2. A wife murdered her husband by feeding him between two and one-half and three tubes in his food.²⁶ "Thalgrain" containing 1 per cent of thallous sulphate was ground and the flour used in a preparation of tortillas in California in 1932

of high toxicity, and is without taste, smell, or other warning property. It should not be recommended to the public as a rodent poison. Where the use of thallium is found necessary for the control of highly resistant species of rodents, it should be entrusted only to persons who understand its dangerous qualities and who will exercise appropriate care in handling it. By using proper precautions, no case of thallium poisoning has ever been observed among the personnel of those official agencies preparing thallium baits for rodent control.

A definite field has developed for thallium pastes and syrups in the control of certain species of ants, particularly in the Southwest. Correspondence with a number of manufacturers and state entomologists reveals that three cases of accidental human poisoning have been reported,²⁷ with no deaths.

TABLE 6—Toxicologic Poisonings

Reference	Product	Amount	Sex	Age	Effects	Outcome
Althoff ²⁴	?	?	♂ ♀ ♀ ♀ ♀	66 26 22 20 24 29 64	Polyneuritis alopecia Polyneuritis alopecia Polyneuritis alopecia Polyneuritis alopecia Suicidal polyneuritis, alopecia lymphocytosis	Death 5 weeks Death 5 weeks Recovery Recovery Recovery
Boeckmann München med Wehnschr 76 129 1929	Sulphate	10 mg per kg	♂	34	Suicidal emesis poly neuritis achlorhydria alopecia	Recovery
Buschke A and Klopstock E Deutsche med Wehnschr 52 1500 1926	Nitrate	10 mg per kg	?	?	Suicidal polyneuritis gastro-enteritis	Recovery
Redlich Fritz Wiesl Klin Wehnschr 40 694 1927	Acetate	10 mg per kg	♀	30	Suicidal albuminuria alopecia polyneuritis achlorhydria amenorrhea	Recovery
Greving and Gagel, through Lynch and Scovell ¹⁷	Zello paste	1/4 tube	♀	19	Suicidal polyneuritis alopecia eosinophilia	Recovery
Lubnanu Ztschr f Med Beamte 41 106 1928	Zello paste	2/3 tube	♀	18	Suicidal polyneuritis alopecia	Recovery
Garl München med Wehnschr 78 84 1931	Zello paste	1 tube	♀	20	Suicidal alopecia Suicidal alopecia albu minuria	Recovery Recovery
Stein R O Wien Klin Wehnschr 41 212 1928	Zello paste	1 tube	♂	?	Suicidal polyneuritis atrophy of both legs, alopecia, falling vision	Death
Zimmer L Zentralbl f Haut u Geschlechtskr 22 1927	Zello paste	1 tube	♀	23	Murdered by wife 1 1/2 tubes in food polyneuritis emesis hospitalized improved returning home another tube fed retro bulbar neuritis dementia	Death
Helmchen W Samml v Vergiftungs f 2 27 1931	Zello paste	1 1/2 tubes	♂	29	Infant murdered by mother paste in Karotte	Recovery
Haberda ²⁵ Kaps ²⁶	Zello paste	2 1/2 3 tubes	♂	14	Suicidal headache obstipation, alopecia	Recovery
Stumpke Dermat Ztschr 58 10 1930	Zello grain	?	♀	18	Suicidal gastro enteritis alopecia polyneuritis	Recovery
Lehmert E Samml v Vergiftungs f 2 25 1931	Zello grain	Several spoonfuls	♂	27	Suicidal gastro enteritis alopecia polyneuritis	Recovery
Deutsch J Klin Wehnschr 8 20,2 1929	Zello grain	50 Gm	♀	?	Suicidal polyneuritis constipation alopecia albuminuria amenorrhea	Recovery
Werner H Med Klin 27 263 1931	Zello grain	40 Gm	♀	?	Thirty one ate tortillas from ground grain alopecia, polyneuritis	2 males 4 females died
Glasburg and Nixon ¹ Munch Glasburg and Nixon ¹	Thalgrain	?	♂ & ♀	2-43		
Total 53 affected 10 deaths						

These thalliferous tortillas were consumed by at least thirty-one Mexicans. Symptoms developed in twenty, and six died from primary thallotoxicosis within sixteen days.¹ A total of fifty-three persons have been poisoned by thallium compounds under this classification, and ten have died.

POISONING FROM RODENTICIDAL AND ENTOMOLOGIC USES

The use of thallium as a rodent poison apparently originated with "Zello" about 1920. Our investigations²⁸ led to the use of thallium compounds (usually thallium sulphate) for the control of rodents, under restricted conditions. "Thallium is a cumulative poison

1. Thallium compounds have been used by commercial agencies engaged in the extermination of rodents "varmints" and pests. Only one case of human poisoning has been reported in this country following such use. Sandwiches of bread and peanut butter containing crude thallium sulphate were exposed by an extermination company. Children placed part of a sandwich in the carriage of a 19 months old child, who ate it. Death occurred on the eleventh day, after the appearance of typical symptoms of thallium poisoning²⁸ (table 7).

2. Poisoning following thallium pastes has been reported in foreign literature. A 2 1/2 year old child died twenty-nine hours after consuming an unknown quantity of bread coated with thallium paste exposed

²⁴ Althoff Sieben Fälle von Thalliumvergiftung in einer Familie Deutsche Ztschr f d gerichtl Med 11 478 481 1927

²⁵ Haberda A Giltmord durch Thallium Beitr z gerichtl Med 7 19 1928

²⁶ Kaps L Kriminelle Todliche subakute Thalliumvergiftung Wien Klin Wehnschr 40 967 970 (July 28) 1927

²⁷ Personal communications to the author

²⁸ Rambar A C Acute Thallium Poisoning Report of a Case Due to Accidental Ingestion of Rat Poison Containing Thallium Sulphate J A M A 98 1372 1373 (April 16) 1932

as a rat poison, a 4½ year old child also ate some of the material but survived²⁹

3 Following the consumption of 'Zelio' grain, which contains approximately 2 per cent of thallium sulphate, four persons have been affected, and two deaths resulted³⁰

Five children have been poisoned following accidental consumption of thalgrain but completely recovered³¹ In another instance,³² a family of six consumed a mush containing thalgrain as one constituent, and all were poisoned the five adults recovered but the 15 months old baby died with atypical symptoms

Rodenticidal and entomologic baits have poisoned twenty-one human beings, and five died

TABLE 7—Human Poisoning with Rodenticides

Reference	Product	Sex	Age	Effects	Outcome
Personal communication ²⁷	Ant syrap	♂	3 men		Recovered
Rambar ²⁸	Thallium sulphate	?	2	Ate cracker coated with paste placed in carriage	Death 11 days
Luhrig ²⁹	Zelio paste	?	2½	Accidentally ate bread coated with paste collapse	Death 29 hours
	Zelio paste	?	4½	Accidentally ate bread coated with paste	Recovery
Brieger ³⁰	Zelio grain	?	3	Respiratory involvement convulsions (mixture with strychnine)	Death 1½ hours
Frank ³¹	Zelio grain	?	16	Polyneuritis	Death 10th day
		?	17	Polyneuritis alopecia albuminuria	Recovery
Löhe Zentralbl f Haut u Geschlechtskr 36 167, 1931	Zelio grain	♂	28	Polyneuritis alopecia	Recovery
Author Unpublished data	Thal grain	11 ♂ 15 mo and to 50 ♀ years		Polyneuritis alopecia	One boy death (15 months) 10 recovered
Total 21 affected 5 deaths					

SUMMARY

1 An extensive search of the literature prior to January 1934 has been made to learn the extent of human poisoning from thallium compounds and the number of deaths resulting therefrom

2 Following industrial exposure twelve persons have been poisoned, but none died

3 Following clinical use, 692 persons have been affected and thirty-one deaths resulted

4 Toxicologic literature records fifty-three human beings poisoned by thallium compounds, with ten deaths

5 Following the rodenticidal and entomologic use, twenty-one human beings have been poisoned and five died

6 Reports have been found on 778 human beings poisoned with thallium compounds, forty-six (6 per cent) died of thallotoxicosis

29 Luhrig H. Leber einen Vergiftungsfall durch ein Thallium präparat Pharm Zentralhalle 68 561 562 1927

30 Brieger Thallium Strychninvergiftung Deutsche Ztschr f d gerichtl Med 10 634 637 1927 Gessner Otto Strychnin und Thallium Vergiftung gleichzeitige durch Mauseweizen Samml u Vergiftungs f 2 23 24 1931 Frank H Vergiftung mit Mauseweizen (Thallium) Ztschr arztl Fortbild 28 122 1931 through Zentralbl f Haut u Geschlechtskr 37 489 1931

31 Kohn Frank Personal communication to the author

32 Robinson J W and Tuck E W Personal communication to the author

Clinical Notes, Suggestions and New Instruments

DESENSITIZATION TO INSULIN ALLERGY

LEONA M BAYER M.D. SAN FRANCISCO

This is the report of a case in which increasingly severe constitutional reactions to insulin were shown, which largely subsided after an intensive course of desensitization. There being a growing recognition of the occurrence of insulin allergy, and the constitutional type of reaction being more difficult to control than the local wheal, it was thought that an account might be of practical interest. The literature on the subject is by this time quite extensive, although there appear to be only some ten cases of generalized reaction on record. Three articles, in English,¹ French² and German,³ respectively, cover the subject to date and among them list a large bibliography.

REPORT OF CASE

Mrs H S, aged 48, came of a family in which diabetes developed in the mother and each of three siblings between the ages of 35 and 54. Her own involvement manifested itself at the age of 40 by polyuria and polydipsia, but except for brief dietary control at the age of 42 necessitated by a siege of pruritus vulvae, the disease was ignored until the age of 45, when a moderately severe pyorrhea brought the patient under dental and medical observation.

At that time, April 1930, the patient weighed 176 pounds (80 Kg), being about 40 pounds (18 Kg) overweight. The blood pressure was 150 systolic, 80 diastolic. There were pyorrhea and small cryptic tonsils. Laboratory work showed three plus glycosuria in all samples of urine, no diacetic acid, and a blood sugar of 198 mg per hundred cubic centimeters. The basal metabolic rate was -7 per cent. Otherwise the examination was normal.

By November 1933 the weight was 165 pounds (75 Kg) net, and the pyorrhea was cured, otherwise the patient's physical status remained the same. The diabetes had grown steadily more severe, but she had never shown an acidosis.

The glycosuria was at first easily controlled by a diet of approximately carbohydrates 40 Gm, protein 50 Gm and fat 100 Gm, totaling 1,260 calories, which was adhered to very indifferently but which could be counted on to clear up within forty eight hours any sugar that appeared after dietary sprees. This type of high fat diet was resorted to after higher carbohydrate values failed to clear up the sugar and in the face of persistent aversion to the use of insulin.

The first necessity for insulin came when, in March 1932, there was a rather severe paronychia and cellular infection of one thumb which resulted at first in the loss of the nail, although finally a completely normal finger was restored. A severe glycosuria failed to clear up appreciably on strict diet for twenty-four hours, and it was desirable to control the diabetes immediately. At this time, therefore, 5 units of insulin Mulford (20 units) was taken once or twice a day for a period of ten days, as dictated by urine tests. There were no allergic manifestations. After stopping insulin, the patient continued usually sugar free for some months on the old diet.

In April 1933 she reappeared with a general feeling of malaise and a marked glycosuria, which this time resisted fairly strict adherence to a diet of some 900 calories for about a month. The blood sugar was 300 mg four hours after a small breakfast. Since the patient wished to go on a two weeks auto trip in June, it seemed imperative to return to insulin. She was started May 10 on 4 units of insulin Mulford (40 units) twice a day, with dosage increasing to 14 units twice a day. This did not completely control the glycosuria. Moreover there was a gradually increasing occurrence of wheals at the site of injection, and therefore on May 22 a

From the Department of Medicine of the Stanford University School of Medicine

1 Allan F N and Scherer L R Insulin Allergy Endocrinology 16 417 (July Aug) 1932

2 Cade A Barral P and Roux J Accidents de sensibilisation a l'insuline Presse med 39 1917 (Dec 30) 1931

3 Hansen K and Eyer H Klinische Studien über allergische Krankheiten V Insulin Allergie Deutsches Arch f klin Med 174 133 (Oct) 1932

change was made to insulin-Lilly (U-40) This was tried for a few days, but wheals continued to appear not only at the injection site but also over the remainder of the body from fifteen to thirty minutes after every dose, and especially at previous injection sites There was also at times a generalized macular itching rash May 30, the patient stopped injections for one week When on June 6 she took one 5-unit dose, it was followed in twenty minutes by violent abdominal cramps, a macular itching rash over her whole body, diarrhea, and a sense of choking Recovery was spontaneous Meanwhile the glycosuria continued uncontrolled

SKIN TESTS

The history of the patient revealed no other symptoms of allergy in herself or her family except that she vaguely recalled that perhaps she had a few hives in early childhood

The following skin tests were therefore made in the hope of finding a brand or special type of insulin to which the patient was not sensitive In each test, 0.01 cc was injected intradermally into the skin of the inner forearm

June 9, insulin (40 units) Squibb's regular preparation, Stearns' regular preparation, Lilly's pure beef preparation, Mulford's regular preparation All reacted with wheals at least 3 cm in diameter within fifteen minutes of the test

*Desensitization Process June 15 1933**

Unit*	Time	Reaction
1/100	0 10 a m	++
1/100	9 45	++
Sterile distilled water	9 47	0
1/500	10 16	+
1/700	10 46	++
1/400	11 20	++
1/1 000	11 42	+
1/1 000	12 20 p m	±
1/500	1 30	+
1/250	2 03	±
1/125	2 32	±
1/63	3 04	±
1/50	3 36	0
1/25	4 02	0
1/10	4 16	±
1/5	4 30	±
1/2	4 45	±
1	5 01	0
5 (hypodermically)	5 20	0

* ++ denotes wheal of at least 1 cm with surrounding hyperemia + wheal of less than 3 mm with surrounding hyperemia ± no wheal but hyperemia 0, no reaction

Pseudopods and hyperemia surrounded the test area There were no constitutional symptoms

June 13, insulin (20 units) Lilly's pure pork A similar reaction occurred

DESENSITIZATION

A desensitization program planned to be effective in one day was now undertaken Lilly's regular Insulin (U-40), made up with sterile distilled water to suitable dilutions, was chosen, this being a commonly available brand known to contain both beef and pork

The original intention was to start with $\frac{1}{100}$ unit intradermally and to increase the dose each half hour as rapidly as tests without reactions could be procured However, $\frac{1}{100}$ unit proved too strong, causing a small wheal and pseudopodia, so that a retreat had to be made to $\frac{1}{1 000}$ unit before physiologic desensitization actually began

The day's program, as it developed, is given in the accompanying table Epinephrine hydrochloride, 1 cc, was kept at hand in a hypodermic syringe but was not required

RESULT

June 15, another dose of 5 units of insulin was given in the office for safety The next day the patient gave herself 5 and 10 units at home and was sugar free on two premeal urine tests June 19 she started on her trip, during which she kept to her diet despite hotel and highway stops, and on 10 to 15 units of insulin daily she remained sugar free almost throughout During all this time there were no allergic symptoms

July 1 the patient returned to San Francisco and that day there began a gradual recurrence of mild generalized itching

and 2 cm hives all over her body, which followed within thirty or forty minutes after injections A new bottle of insulin had been started two days before return The patient was advised to cut down the dose to 2 units per injection for a few days The hives became less but continued to appear occasionally

By October 2 the patient had unfortunately slipped completely from her diet again but had returned to between 5 and 15 units of insulin daily The glycosuria was again uncontrolled but the hives now occurred only at the site of injection or on the arms, only two or three times a week, and that not regularly More especially, the patient observed the reaction during the days after each new bottle was started

A skin test with Lilly's regular insulin, which the patient was then using was repeated at this time and was negative

COMMENT

This case has a bearing on several of the points most frequently discussed in connection with insulin allergy, namely

1 Concerning the occurrence of the phenomenon, these factors deserve emphasis

(a) The patient gave no history of any other allergic tendency This appears to be the most common condition although cases are reported with a definite story of other sensitivities By most authors, insulin hypersensitiveness is classed as an acquired status similar to drug and serum allergies

(b) Supporting the latter view is the quite characteristic fact that the allergic manifestations did not appear at the first exhibition of insulin but came on gradually, increasingly, and more particularly after irregular use of insulin

2 Concerning the reactions themselves, it may be noted that this case presented most of the kinds of reactions that are known to occur These are essentially of two types local and general Local reactions may consist in mild wheals or severe swellings even leading to sterile abscesses, general reactions may either be confined to the skin or involve the whole constitution This case illustrates the mild local reaction, the general urticarial reaction, which is characteristically most marked at the site of previous injections, and the severe constitutional reaction It is also characteristic that the occurrence of shock was preceded for a considerable period by the milder disturbances Other disturbances reported but not shown by this patient are extensive edemas, sometimes with stiffness of joints Death has not been reported

3 On the question of the identity of the provocative agent, whether it is insulin itself or accompanying protein impurities, this case throws no further light That either or both factors may be responsible has been proved by previous writers and the fact that the original skin tests were positive with all brands of insulin suggests that this is one of the cases in which insulin itself was the main cause of difficulty

4 Concerning treatment, the method here used of desensitization with a diluted insulin, the dosage being increased at frequent intervals is one of the many methods that have been employed It differs from other reports only in that the process was begun with a smaller dose and carried through a more complete range of doses before the return to undiluted insulin Other means of treatment consist of desensitizing with a crystalline insulin dilution or in switching from one brand of insulin to another The latter method appears to be successful in cases that present only local reactions and not in cases in which generalized reactions have occurred

The using of a commercial product, as was here done, seems to be simpler than the resort to pure extracts and, for practical purposes, more logical as well

5 Concerning the success of the desensitization process, it is also characteristic that the cure was not complete—that slight local and even mild general skin reactions recurred at intervals The negative skin test after treatment has been found by some authors, while others report positive cutaneous reactions, even with uneventful insulin injections It would seem dangerous in this case, in view of the occasional reactions and in spite of the negative test, to permit any interruption in the administration of insulin unless there is good reason to believe that it could be permanently discontinued, and the latter contingency seems unlikely

6 As in many cases reported, there was a real necessity here for desensitization so that insulin could be used The uncon-

trolled state of the patient's diabetes at that time, even without acidosis, made a potential life hazard out of a trip such as she contemplated, or out of any common infection. In several cases on record the need has been even more acute. Insulin allergy, although rare, may present a very urgent problem when it occurs.

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A COMPARISON OF ERYTHROCYTE COUNT, TOTAL HEMOGLOBIN AND CORPUSCULAR HEMOGLOBIN IN SMOKERS AND NONSMOKERS

ORVILLE S. WALTERS, A. M. LAWRENCE KAN

As a basis for explaining a difference observed in the mean hemoglobin level of subjects in the United States and in London, Price-Jones¹ suggested that the motoring habits of American subjects may have produced a slow chronic poisoning by carbon monoxide, as a result of which the oxygen pressure is constantly being slightly reduced and the bone marrow is compensating for the useless carboxyhemoglobin by making more red cells and hemoglobin and producing a relative polycythemia.

Nasmith and Graham² found that guinea-pigs living continuously in a dilute carbon monoxide atmosphere were able to increase the quantity of hemoglobin and the number of erythrocytes to compensate for the loss in oxygen-carrying capacity. This was confirmed by Egdahl,³ who also noted a polycythemia

Comparison of Erythrocyte Count, Total Hemoglobin and Corpuscular Hemoglobin in One Hundred Smokers and Nonsmokers

Series 1 Sampled After Random Activity				
	No. of Subjects	Erythrocytes (Million)	Total Hemoglobin (Gm. per 100 Cc. of Blood)	Corpuscular Hemoglobin (Milli-micrograms)
Nonsmokers	28	4.77 ± 0.0419	15.23 ± 0.1589	$32.1 \pm 0.4.38$
Smokers	11	$4.88 \pm 0.0.83$	14.01 ± 0.2943	29.9 ± 0.6288
Difference		0.11 ± 0.0714	0.72 ± 0.3344	2.2 ± 0.7704
Series 2 Sampled After a Half Hour Rest				
Nonsmokers	20	4.59 ± 0.0432	13.46 ± 0.0914	29.6 ± 0.3134
All smokers	36	4.58 ± 0.0342	14.01 ± 0.1303	30.6 ± 0.2293
Heavy smokers	20	4.02 ± 0.0406	13.86 ± 0.1804	30.7 ± 0.3264
Difference smokers and nonsmokers		0.01 ± 0.0501	0.50 ± 0.1604	1.0 ± 0.3863
Difference Heavy smokers and non smokers		0.07 ± 0.0657	0.40 ± 0.2022	1.1 ± 0.4024

in human subjects after repeated exposures to small or moderate amounts of carbon monoxide. Experiments by Sayers, Yant, Levy and Fulton⁴ in which six men were exposed from four to seven hours daily over a period of sixty-eight days to mixtures containing two, three and four parts of carbon monoxide in 10,000 parts of air showed that a distinct increase in hemoglobin and red cells occurs under such conditions.

Jenkins,⁵ after investigating the blood of workers exposed to motor exhaust fumes, found that chronic or intermittent exposure to carbon monoxide tends to raise the hemoglobin concentration but he considers the stimulus inadequate to account for the difference cited by Price-Jones.

Gettler and Mattice⁶ after a careful study of the carbon monoxide content of the blood of various groups of subjects, came to the conclusion that smoking is apt to be the most conspicuous factor in determining the carboxyhemoglobin of

an individual under normal conditions when he is not exposed to obvious high percentages of the gas. Hanson and Hastings⁷ found that the hemoglobin of smokers was from 3 to 4 per cent saturated with carbon monoxide, while that of nonsmokers averaged 15 per cent saturation.

The present study compares the mean erythrocyte count, total hemoglobin and corpuscular hemoglobin in smokers and non-smokers, the subjects being 100 healthy male university students between the ages of 20 and 30. Erythrocyte counts are the average of two pipets agreeing within 100,000 cells, and hemoglobin values were obtained with a Newcomer apparatus standardized by the oxygen capacity method. The figures used in this comparison were taken from data gathered for studies of a somewhat different nature.⁸

In practically all smokers studied, the habit was of two or more years' duration, and virtually all used cigarettes exclusively. Those using one package of twenty or more a day have been designated for convenience as "heavy" smokers. The subjects have been chosen from two groups. In series 1, blood samples were drawn at random with reference to physical activity, while in series 2 the subjects were sampled after a half hour rest period in bed.

The data of the accompanying table indicate that neither the differences between smokers and nonsmokers nor those between "heavy" smokers and nonsmokers are significant, since no difference observed is greater than four times its probable error.

SUMMARY

In a group of 100 healthy men, no significant difference was found between smokers and nonsmokers in erythrocyte count, total hemoglobin and corpuscular hemoglobin.

A CASE OF NONFILARIAL ELEPHANTIASIS TERMINATING WITH ALEUKEMOID ANEMIA

RALPH C. LARRABEE, M.D. AND JAMES H. PEERS, M.D.
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The combination of chronic edema and hypertrophy of the genitalia and extremities has been a well known disease entity in the tropics from remote antiquity. Probably the first recorded case is that of a woman pictured in an Egyptian bas-relief on a temple wall at Deir el Bahr.

In modern literature the reported cases of elephantiasis, excluding those of the neurofibromatosis of von Recklinghausen, fall into three main classes: the tropical cases of proved filarial origin, the instances of the hereditary elephantiasis of Milroy,¹ and the sporadic nonfilarial cases occurring in temperate climates. In practically all the reported instances longevity has been the rule, and the authors have dealt almost exclusively with the methods and results of surgical treatment.

The case here reported belongs to the sporadic group and is of unusual interest because of its progressive course and fatal termination with profound anemia, with a blood picture suggestive of leukemia, and because of the extreme rarity of postmortem examinations in cases of elephantiasis.

REPORT OF CASE

History—W. F., an American schoolboy, was first admitted to the Boston City Hospital in June 1924 at the age of 13, complaining of swelling of the left thigh of three months' duration. His family history contained no suggestion of elephantiasis. In 1922 an abscess in the right groin had been opened, but no details are available. Swelling of the left thigh began three months before admission. At first soft and painless it had later become brawny, with dull inconstant pain. Five days before admission a soft swelling appeared on the inner surface of the right thigh, just above the knee. Examination on admission disclosed a marked brawny swelling of the entire left thigh sharply demarcated at the knee.

7. Hanson, H. B. and Hastings, A. B. The Effect of Smoking on the Carbon Monoxide Content of Blood. *J. A. M. A.* 100: 1481 (May 13) 1933.
8. Walters, O. S. Normal Erythrocyte Hemoglobin and Packed Cell Volume Standards in Young Men. *J. Lab. & Clin. Med.* to be published. The Erythrocyte Count, Quantity of Hemoglobin and Volume of Packed Cells in Normal Human Subjects During Muscular Inactivity. *Am. J. Physiol.* 108: 118 (April) 1934.
J. Wilroy, W. F. An Undescribed Variety of Hereditary Edema. *New York M. J.* 56: 505 1892.

From the Department of Physiology, University of Kansas School of Medicine.

1. Price-Jones, C. The Concentration of Hemoglobin in Normal Human Blood. *J. Path. & Bact.* 34: 779 1931.

2. Nasmith, G. G. and Graham, D. A. L. The Hematology of Carbon Monoxide Poisoning. *J. Physiol.* 35: 32 (Dec. 29) 1906.

3. Egdahl, Anfin. Chronic Carbon Monoxide Poisoning. *J. A. M. A.* 81: 282 (July 28) 1923.

4. Sayers, R. R., Yant, W. P., Levy, Edward and Fulton, W. B. Effect of Repeated Daily Exposure of Several Hours to Small Amounts of Automobile Exhaust Gas. *Pub. Health Bull.* 186 March 1929.

5. Jenkins, C. E. The Hemoglobin Concentration of Workers Connected with Internal Combustion Engines. *J. Hygiene.* 32: 406 (July) 1932.

6. Gettler, A. O. and Mattice, Varjorne R. The Normal Carbon Monoxide Content of the Blood. *J. A. M. A.* 100: 92 (Jan. 14) 1933.

There was also slight soft edema of the inner surface of the right thigh and lower abdominal wall. A faint systolic murmur was heard at the base of the heart. There is no note in the records made at this time of any involvement of the genitalia, or of pallor or other abnormality in general appearance.

With rest in bed and ordinary hospital care the edema of the abdominal wall and right thigh soon subsided, but the brawny swelling of the left thigh persisted. The patient returned to school, and in spite of steady increase in size of the thigh, did perfectly well until June 1925, when the genitalia began to swell.

On readmission in February 1926 the left thigh was about twice the size of the right, not tender, and pitted only slightly on pressure. The lower abdominal wall and right thigh showed a much slighter degree of edema. The penis was definitely edematous, and the scrotum was the size of a grapefruit. For the first time the records speak of "pallor of the skin and mucous membranes."

In March 1926 an exploratory laparotomy was performed by Dr. F. B. Lund with negative results: no tumor, no glandular enlargement and no evidence of filariasis were found in either the abdomen or the pelvis. However there followed some decrease in the swellings, and the patient was able to return to active life.

A minor injury to the scrotum, with resulting infection, brought him to the hospital again in October 1929. The size of the left leg was about as before. The penis was three times normal size, and the scrotum was as large as a football. The lower abdominal wall, genitalia, and upper half of both thighs were acutely inflamed and tender. He also had a discharging ear and tenderness over the mastoid region. The acute inflammatory conditions subsided and after a month he was again discharged.

Pain in the left groin brought him back to the hospital in June 1931. The enlargement of the genitalia had increased somewhat and the left thigh and leg above the ankle were greatly swollen. In July 1931 Dr. H. B. Loder removed a large elliptic section of the scrotum weighing about 5 pounds (23 Kg.). The tissues were found infiltrated with clear fluid which escaped freely at each incision. After several inches of this edematous subcutaneous tissue had been separated, the left testicle was identified, with a hydrocele as large as an orange. The right testicle, without a hydrocele, was also located. Following operation the patient's temperature remained elevated and irregular for a fortnight and then fell to normal.

When examined by the senior author in August 1931, the patient was moderately emaciated and extremely pale, without any characteristic tinge. The area of cardiac dullness was somewhat enlarged to the left, and a loud systolic murmur was heard all over the precordium. Neither spleen nor liver was palpable. The penis was 12 inches (30.5 cm.) in length and $3\frac{1}{2}$ inches (9 cm.) in diameter. What the surgeon had left of the scrotum was several times normal size. The entire left thigh was enormously enlarged. Especially over the genitalia the skin was greatly thickened, brawny and coarsely folded, with a sparse but foul discharge from the folds.

During the month after operation, the patient's general condition improved considerably. This was no doubt due, in part at least, to three transfusions, but the effect of these was transitory. During this period he had occasional slight hemorrhages from the gums.

He improved enough to return to his home September 20, but he was again readmitted October 3, complaining of increasing weakness, dyspnea and fainting spells. There had been no material change in the condition of the genitalia and thighs. On the day of admission there occurred a severe nosebleed lasting three hours. Epistaxis recurred from time to time and there was considerable oozing from the gums. The hemorrhagic tendency was not materially influenced by five more transfusions. October 23, a small retinal hemorrhage was noted in the right eye. The anemia progressed without remission in spite of all treatment and the patient died, Dec. 15, 1931, after an illness of over eight years.

The Blood.—During his various admissions to the hospital the patient's blood was examined many times both day and night, for filariae always with negative results. Of the many hematologic studies made only a few need be given in detail.

Aug. 9, 1924, the hemoglobin was 70 per cent. The red cells numbered 3,620,000 and the leukocytes 5,200, of which 44 per cent were polymorphonuclear neutrophils, 47 per cent lymphocytes, 8 per cent monocytes and 1 per cent mast cells. No immature forms were recorded.

Feb. 1, 1926, the hemoglobin was 85 per cent. Leukocytes numbered 7,000, of which 77 per cent were polymorphonuclear neutrophils, 20 per cent lymphocytes, 2 per cent monocytes and 1 per cent eosinophils. Platelets were normal.

Aug. 10, 1931, the hemoglobin was 25 per cent. Red cells numbered 1,060,000, platelets, 124,000 (Buckman-Hallisey method), and leukocytes 10,450, of which 68 per cent were polymorphonuclear neutrophils, 21 per cent lymphocytes, 1 per cent monocytes and 10 per cent immature cells. The last were mononuclears of rather large size. Their cytoplasm was scanty, nongranular and dense, and it stained deep blue with Wright's stain. Some had short pseudopodia. The nuclei were large and round or more or less indented and stained deeply, frequently presenting one or more large nucleoli. While they were obviously immature forms, their origin could not be precisely determined. Unfortunately the oxidase reaction and supravital staining were not done. The icteric index was 4. The reticulocytes were 2 per cent and the mean diameter of the erythrocytes by eriometer 7.9 microns.

Aug. 14, 1931, the hemoglobin was 28 per cent. Red cells numbered 1,350,000, leukocytes, 3,400, of which 28 per cent were polymorphonuclear neutrophils, 39 per cent lymphocytes, 1 per cent monocytes, 1 per cent eosinophils and 31 per cent immature cells like those seen previously. There was moderate anisocytosis, slight poikilocytosis, and no achromia, polychromatophilia or stippling. The platelets appeared to be greatly reduced.

Subsequent examinations need not be detailed. It is enough to say that, in spite of eight transfusions between July 14 and Nov. 16, 1931, varying in amount from 350 to 500 cc., the anemia steadily advanced. The lowest figures were hemoglobin 13 per cent and red cells 810,000, December 4. The leukocytes varied irregularly from 1,900 to 5,150. The immature cells persisted, though never again reaching the high figure seen in August, the highest recorded thereafter being 6 per cent, December 4. Platelets remained low. Changes in the red cells became more marked as the anemia progressed, but nucleated reds were never recorded.

Other Laboratory Examinations.—The urine showed no essential abnormalities and chyluria was never present. The blood chemistry was normal. Roentgen studies of the bones of the pelvis, legs and skull, made on several occasions, showed no pathologic changes, and one gastro-intestinal series was likewise negative.

Treatment.—In addition to the surgical procedures and transfusions already mentioned, the patient received at various times large doses of iron, liver in various forms, including extract intramuscularly, and arsenic, all without apparent effect.

Pathologic Observations.—The pathologic service had three opportunities for examining material from the patient. The first was the appendix, removed incidentally to the abdominal exploration in March 1926. It was grossly and microscopically negative.

In July 1931 the tissue removed by plastic operation on the scrotum was submitted to the laboratory. It was a large mass of very edematous connective tissue partly covered by epithelium, 30 by 20 by 15 cm. in size, and weighing 2,770 Gm. A large amount of clear lymph exuded on pressure from the cut surface. Unfixed pieces were placed in the incubator over night and subsequently examined for filariae, but none were found. Microscopically the tissue consisted simply of very edematous fibrous tissue with no evidence of chronic inflammation, filariae or mucoid degeneration.

An autopsy was performed one and one-half hours after death. The body was very pale and poorly nourished. The thighs and genitalia were as described. There was slight edema of both feet and ankles, and a hydropericardium and bilateral hydrothorax of moderate degree. The lungs were heavy and soggy and on section presented a small patch of organization in the right apex and a small abscess 1.5 cm. in

diameter in the upper portion of the left lower lobe. The liver was of normal size and was rusty yellowish brown. The other viscera were grossly negative. The bone marrow, both femoral and vertebral, was brownish yellow. No enlarged lymphatics were seen anywhere during the dissection. The greatly enlarged genitalia were found on section to owe their bulk to massive edema of the subcutaneous tissue of the same character as seen in the previous surgical specimen. The testes, when isolated from the great scrotal mass, appeared grossly negative. Examination of the head was not permitted.

Microscopically the lungs showed in addition to edema and old organization, a rather large patch of early pneumonia. The spleen and liver were loaded with brown granular pigment giving the iron reaction, chiefly in monocytes, but there was no evidence of hematopoiesis. The stomach mucosa was well preserved and normal. The testes showed early atrophy, with thickening of the basement membrane of the tubules. Spermatogenesis had completely ceased. There were no spermatozoa in the ducts and no mitoses in the germinal epithelium. Sections of the scrotal wall and penis showed the same edema as in the surgical specimen. No filariae were present, and there was only slight evidence of chronic inflammation, with a few lymphocytes and polymorphonuclears in the penis. The iliac lymph nodes showed some dilatation of the sinuses, which contained serum and a few monocytes and eosinophils but no filariae. The thyroid was microscopically normal.

The microscopic appearance of the bone marrow agreed fairly well with the blood picture during life, as far as its aplastic features were concerned, but it failed to explain clearly the occurrence of immature leukocytic forms repeatedly observed. The marrow was fairly cellular but was not active, as few mitoses were seen. It presented essentially the same structure in vertebra and femur. The cells present were almost all of the granulocytic series, and the great majority were eosinophils, about equally divided in number between mature leukocytes and myelocytes. There were numerous promyelocytes singly and in small clumps. Stem cells were rarely seen, and the erythroblastic series was represented by only a few small clumps of nucleated red cells. Scattered lymphocytes were present. As in the liver and spleen, there were numerous pigment-filled monocytes, an expression, apparently, of severe and prolonged blood destruction. Some of these monocytes contained leukocytes, vacuoles suggesting partially digested red cells, and occasional oval red staining crystalloid bodies. There were but few megakaryocytes.

Cultures taken post mortem from lung and heart blood showed no growth.

COMMENT

Several features of this case are of interest. The existence of nonfilarial elephantiasis is generally admitted and, though rare, our case is not in this respect unique. The senior author saw in 1915 a woman of 22 who had for several years a very large elephantiasis of the left leg. She had never lived in any district where elephantiasis prevailed, all efforts to find filariae in the blood failed, and the condition was not otherwise explained. Then, too, negative blood examination in some reported cases may not be absolutely conclusive. Tissue from at least one case, supposedly nonfilarial, submitted to the laboratory, yielded a single filaria after prolonged search of serial sections.

The swelling of the subcutaneous tissues in tropical elephantiasis is not due so much to the physical obstruction resulting from the presence of the adult parasites in the lymphatic channels as to the more diffuse chronic lymphangitis set up by injury and liberation of embryos. Anything else that can cause a similar chronic inflammation of the lymph vessels may produce similar swelling distal to the obstruction. Thus tuberculous lymphangitis has been described as the etiologic condition in some cases, and massive obstruction by malignant growth or by surgical removal of regional nodes is a relatively common cause of localized elephantiasis. Some cases have been attributed to even a single inflammatory episode or to trauma of war wounds.

In 1892 Milroy reported several cases of a type of elephantiasis that has since become known by his name. It is of congenital origin and is definitely hereditary apparently as an

irregularly dominant (?) mendelian trait. It is generally limited to one or both feet, it is permanent, and it is not associated with constitutional or local symptoms. There appear to be no characteristic finer pathologic changes.

It is difficult to align our case with any of these forms of elephantiasis. There was no discoverable evidence at autopsy of any obstructive lesion of the lymphatics. Clinically it bore some resemblance to Milroy's disease, but it was associated with progressive and constitutional symptoms, it involved the genitalia, and the hereditary factor was lacking. It seems hardly likely that the gross swellings in this case were the sequelae of the abscess in the groin, since it was on the side opposite the initial lesion and antedated it by two years.

Another feature of interest is the changes in the blood during life compared with the appearance of the bone marrow post mortem. While we were unable to identify the immature cells to our complete satisfaction, we regarded them as probably belonging to the lymphocytic series. We thought we were dealing with lymphatic leukemia or, rather, aleukemia. In view of the aplastic rather than frankly leukemic nature of the marrow changes, perhaps the term "leukemoid" would be more appropriate or—to be still more meticulous—"aleukemoid." There was nothing in the blood during life to correspond in any way with the large number of eosinophils afterward found in the marrow.

As to the relation between the elephantiasis and the changes in the blood and marrow, we can only speculate. These changes may have been merely a terminal event in a long continued cachectic state, with no specific relationship to the elephantiasis as a cause of the cachexia except that there were several septic episodes. But one is tempted to speculate further by the fact that both the hematopoietic phenomena and the elephantiasis concerned the lymphatic and reticulo-endothelial systems, and to ask, Was there a common underlying factor?

SUMMARY

A case of nonfilarial elephantiasis in a boy terminated fatally after an illness of eight years. During the last five years there was progressive anemia, becoming hemorrhagic toward the end with leukopenia, thrombocytopenia and numerous immature cells, probably of the lymphocytic series. Autopsy disclosed no cause for the enormous swellings. The marrow showed aplasia of the erythroblastic series and large numbers of eosinophilic cells, mature and immature.

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RICHTER'S HERNIA REPORT OF TWO CASES

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In 1778 Richter described a "small rupture" in which only a portion of the intestinal wall was incarcerated, and recognized this as being different from the similar appearing Meckel's diverticulum hernia, which was described by Littre in 1700. In 1899 Fowler¹ reported two cases of his own and found ninety-four references in the literature. Between Fowler's paper and one by Rhodes in 1928 there were forty-five additional references, many of which turned out to be Littre's hernia. Two cases were reported in 1929 by Bissell² and one in 1930 by Orr.³ Cattell⁴ in 1933 reported two additional cases and also gave an excellent summary of the literature. He also states that but fourteen operations for this particular type of hernia were reported between 1899 and 1933.

Richter's hernia is described⁵ as "a catching of a portion of the circumference of the bowel, usually a portion of the lower ileum. It is most frequently found in the inguinal femoral, and obturator regions. In about 50 per cent of the cases no lump can be felt."

I am adding two more cases, one because it was almost of the textbook type and ended fatally, the other because it was

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2. Bissell, A. H. *Richter's Hernia*. *Am. J. Surg.* **7**: 864 (Dec.) 1929.
3. Orr, T. G. *Richter's Hernia*. *J. Kansas M. Soc.* **31**: 165 (May) 1930.
4. Cattell, R. B. *Richter's Hernia*. *Surg. Gynec. & Obst.* **56**: 700 (March) 1933.
5. Da Costa, J. C. *Modern Surgery*, ed. 9. Philadelphia: W. B. Saunders Company, 1926.

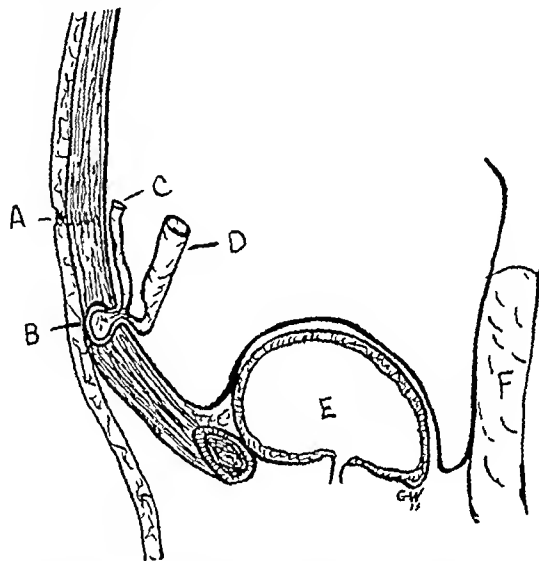
of a most unusual type and symptomatology but ended very happily

CASE 1—Mrs E J, an American born widow, aged 75, was seen at home by her family physician, Nov 1, 1932, at which time she complained of pain in the abdomen, swelling of the abdomen, vomiting and obstipation of five days' duration. She stated that about five days previously she had experienced a sudden, but not unduly severe, pain low in the right lower quadrant of the abdomen. Two days later she ceased having bowel movements and began to vomit. Late on the night of the fourth day the family physician was called but did not see the patient until early in the morning of the fifth day, at which time he immediately sent her to the hospital, where physical examination revealed that she was exceedingly emaciated and shriveled. She lay quiet in bed, too weak to move. All her teeth were out, the tongue was heavily coated, the breath was foul, the heart was enlarged to the left midaxillary line, the rate was very rapid and irregular, and the sounds faint. The abdomen was distended well above the level of the pubes and costal margin, rather tense, tympanic throughout and most tender in the right lower quadrant. Peristalsis was visible constantly. No inguinal or femoral hernias were palpable. Rectal examination showed a mass the size of an orange, probably an ovary, pressing into the rectum from above and to the left. A diagnosis of intestinal obstruction was obvious and preparation made for immediate operation, although no favorable prognosis could be offered the family. Under low spinal anesthesia a 4 inch infra-umbilical midline incision was made. A large cystic left ovary was found impacted between the uterus and the rectum, the pedicle was ligated and the mass was removed. A right femoral hernia, incarcerated and of Richter's type, was found involving the lower ileum, with marked angulation of the bowel at the point of incarceration. There was almost complete obstruction at this point. The intestine delivered readily and presented a dark blue area about 30 mm in diameter, which had been held by the hernial ring. The color returned to this area rapidly and it appeared to be viable. A purse string suture was put about the femoral ring, and because of the patient's precarious condition the abdomen was closed without further manipulation. The condition of the patient did not improve and she gradually expired thirty hours after the operation, expelling gas and liquid feces for some hours before her demise. Autopsy revealed a perforation through the incarcerated area with 300 cc of liquid intestinal contents in the pelvis, but with no fibrin or other sign of peritoneal reaction.

CASE 2—T K., a man, aged 56, a bookkeeper, seen in the outpatient department of the Harborview Hospital, Oct 7 1932, complained of palpitation and loss of weight from 178 pounds (81 Kg) a year before to 145 pounds (66 Kg). He was treated medically and got along quite well until March 1933 when he returned with a complaint of bilateral inguinal hernias, for which a truss was recommended. Again he felt well and was not seen until May 20, when he was brought into the emergency ward in a state of collapse. He said that that evening, after eating a bowl of mush, he suddenly felt faint and vomited up a cupfull of bright red blood. He immediately fainted but was revived and brought to the hospital. On admission he complained of cramplike pains in the epigastrium, perspired freely and vomited up a basin full of coffee-ground material and again collapsed. A diagnosis of carcinoma of the stomach was made and he was sent to the medical wards. On the 21st his condition was worse, but he did not vomit again although the abdominal pain persisted. A surgical consultation was requested and I saw the patient that day. The patient was pale, perspiring and very ill. He lay on his right side groaning with pain, which he localized to the epigastrium and said was intermittent in character. The abdomen was slightly distended, especially in the left upper quadrant, tympanic throughout and with definite shifting dullness in the flanks. Rectal examination was negative. There was a small gland in the left supraclavicular region. The temperature was 98 F by mouth and the pulse rate was 100. Red blood cells numbered 4,900,000, white blood cells 6,000, with 72 per cent polymorphonuclears and hemoglobin 78 per cent. A diagnosis of carcinoma of the stomach with probable perforation was made. Preparations for a transfusion were begun and the patient was sent to the operating floor.

Following a transfusion in the morning the patient rallied somewhat, and in the afternoon under infiltration with procaine hydrochloride and gas-oxygen analgesia a 4 inch left midrectus muscle splitting incision was made. When the peritoneum was opened about 300 cc of bloody fluid escaped, but gas was not present. The stomach was somewhat dilated and distended but did not show pathologic changes. The jejunum was markedly distended, and at about the jejunoileac junction there was an incarcerated supravesical hernia of Richter's type. The anterior wall of the intestine was pushed into a sac about the size of a walnut, lying in the right supravesical fold about 3 inches below the umbilicus and extending through the muscles to the anterior sheath of the rectus. It could not be felt from the outside. There was considerable angulation at the point of herniation with a lumen barely the width of a pencil left to the bowel. The hernia was reduced, the incarcerated area appeared viable and the abdomen was closed without drainage.

For the first forty-eight hours after operation the patient's condition was quite grave. Then he demanded food ate, and



Semidiagrammatic sketch showing portion of intestinal wall incarcerated and passing through abdominal wall to posterior surface of anterior sheath of rectus abdominis. A, umbilicus; B, rectus sheath; C, distal loop; D, proximal loop; E, bladder; F, rectum.

made a most uneventful recovery, leaving the hospital on the fourteenth day after operation. One month after leaving the hospital he had gained 10 pounds (4.5 Kg) and is still gaining.

COMMENT

The first case is interesting because of the age of the patient, the long duration of the low obstruction, and the lack of external evidence of a femoral hernia. Some criticism may be offered for not resecting the incarcerated area or doing an enterostomy, but the surgeon and both assistants felt that the area was viable and that the sole chance of saving the patient depended on closing the abdomen as rapidly as possible and returning the patient to bed. There was no peritoneal reaction about the perforation or the bowel contents and it would seem as if the perforation was really more or less incidental to an already fatal issue.

The second case is interesting because of the peculiar onset of hematemesis in a man who had already lost 48 pounds (22 Kg) during the previous year. The "satellite gland" also was misleading, as was the epigastric pain and the free fluid below. The presence of a readily reducible hernia in each inguinal canal could not be overlooked. I cannot find any reference in the literature to a supravesical hernia of Richter's type.

SUMMARY

Two cases of Richter's hernia were seen. One was of the usual femoral type in a woman, aged 75, who had had partial obstruction for five days and who died after operation with perforation through the incarcerated area. The second

case occurred in a man, aged 56, who had bilateral inguinal hernias, a "satellite gland," a weight loss of 48 pounds during the preceding twelve months, and whose first symptom was rather massive hematemesis followed by epigastric pain and distention. At operation he had a Richter's type incarcerated supravescical hernia with almost complete obstruction.

509 American Bank Building

Therapeutics

THE THERAPY OF THE COOK COUNTY HOSPITAL

EDITED BY BERNARD FANTUS, M.D.
CHICAGO

NOTE—In their preparation these articles are submitted to the members of the attending staff of the Cook County Hospital by the director of therapeutics Dr. Bernard Fantus. The views expressed by the various members are incorporated in the final draft prepared for publication. The series of articles will be continued from time to time in these columns.—ED

THERAPY OF AMEBIASIS

Prophylaxis—This must at present be confined to controlling the spread of the cysts outside the body by 1. Disinfection of the feces and their sanitary disposal, as well as disinfection by boiling of possibly infected water and milk. 2. Avoidance of contaminated foods, such as raw fruits and raw vegetables, and prevention of food contamination by excluding flies and other insects and by periodic examination for cysts of the stools of all persons handling food. 3. Adequate treatment if such persons are found to be carriers of cysts.

Treatment—General principles. As the amebas are embedded in the intestinal wall and in certain cases also in the liver, a remedy may be required that reaches them through the blood stream. This is preeminently furnished by the injection of emetine. As amebas are also free in the alimentary tract and these must be reached by the amebicide passing down through it, it is also necessary to administer by mouth either chiniofon or acetarsone. As these agents are also absorbed into the blood stream, they furnish a combined treatment that generally suffices in all but the most severe cases. The treatment must be continued intermittently for quite some time until the stools are free from cysts in order to prevent relapses and transmission of the disease to others. Besides this, the ulcerative colitis requires careful dieting and oral as well as in its later stages, colon medication. Finally, the patient's general condition must be improved, as these patients are often undernourished and healing does not readily occur until general nutrition has been improved. It is necessary to distinguish between the treatment of (a) severe cases, (b) mild cases and (c) cases in which there is liver abscess.

(a) *Severe Cases*—1. "Specific" remedies are best given in courses.

First period. Emetine hydrochloride is most valuable for the control of the dysenteric symptoms. It is given (prescription 1) in sterile physiologic solution of sodium chloride hypodermically in doses of 0.06 Gm. Usually seven doses suffice for the control of the acute symptoms, but twelve doses should not be exceeded. A course of emetine should be followed by a period of

rest of at least a month. Emetine may cause diarrhea, which must not be confused with that of dysentery. It may also be responsible for peripheral neuritis, and even cardiac deaths have occurred as a result of excessive emetine therapy. Hence emetine treatment should be discontinued at the first evidence of weakness, which may manifest itself earliest in the neck.

Second period. As emetine fails to cure in about two thirds of cases, one should on the sixth day, while the emetine injections are still being continued, give the patient one of the following drugs by mouth: chiniofon (jaten, anayodin or quinoxy) (prescription 2), or vioform an analogous substance (prescription 3). If further experience substantiates the claims made for it, vioform should be preferred because it is considerably cheaper. If these fail to give a satisfactory result, one may prescribe, as succedaneum carbarsone (prescription 4), which is possibly somewhat more toxic. The carbarsone treatment must not be repeated for ten days and each dose of the second course should be watched for possible arsenic intoxication: gastro-intestinal irritation, respiratory tract congestion, neuritis, renal damage and visual disturbance. If motile forms persist, carbarsone retention enemas (2 Gm to 200 cc) in warm sodium bicarbonate (2 per cent) solution, preceded by sodium bicarbonate cleansing enemas repeated every other night for five times, unless in the meantime the symptoms subside. During this period the drug should not be given by mouth for fear of too great arsenic absorption.

PREScription 1—Emetine

R Emetine hydrochloride hypodermic tablets 0.06 Gm
No vi
To be dissolved in 2 cc of sterile physiologic solution of sodium chloride and injected hypodermically (Price index for course 71)

PREScription 2—Chiniofon

R 100 chiniofon enteric pills 0.25 Gm
Four three times a day for one week (Price index for course 370)

PREScription 3—Vioform

R Vioform 15.0 Gm
Divide into 60 capsules. One three times daily for ten days. Repeat course after a week's rest period (Price index for course, 125)

PREScription 4—Carbarsone

R 20 Carbarsone capsules 0.25 Gm
One capsule twice daily after meals for ten days (Price index for course 102)
Children's dosage:
From 2 to 4 years 0.06 × 3 × 10
From 5 to 8 years 0.09 × 3 × 10
From 8 to 12 years 0.12 × 3 × 10
May be given in milk, orange juice or jelly

Third period. For three months the patient should be given one full day's treatment each week to prevent a relapse.

The essential thing in the successful treatment of amebiasis is that each course must be complete in itself until three stools are free from amebas and their cysts. A relapse must be treated as fully as the original attack, except that emetine must not be used repeatedly.

2. Absolute rest in bed is necessary, even if symptoms are not extremely severe, with use of the bed pan. A rubber sheet should be placed below the patient, and warm coverings used. Proper care should be given the skin, especially to prevent bed sores.

3. The diet for the first twenty-four hours should consist of nothing but water, then clear liquids, rice and barley water, whey, albumin water, soups and tea may be given. Sugars should be avoided, saccharin being used. Later, cereal gruels, toast, eggs, cocoa and scraped meat may be given, with a gradual return to a

normal low residue and vitamin rich diet. Fruits must not be given until late, except orange and lemon juice.

4 Evacuation of the bowel at the onset and for the first two or three days should be assured, either castor oil or a saline cathartic being given. A saline cathartic or liquid petrolatum is also important during convalescence to prevent irritation of ulcers by hardened feces.

5 Absorbents and protectants should be given during the next stage of treatment. Bismuth subcarbonate, 0.5 Gm hourly up to 4 Gm every three hours, may be administered, and, as the disease process is chiefly low down in the colon, kaolin or charcoal enemas, or bismuth subcarbonate, 15 Gm in warm sweet oil, 250 cc, or, possibly best, powder insufflation of equal parts of bismuth subcarbonate and of calomel applied through a powder blower.

6 For sedatives, one should preferably use atropine and epinephrine for relief of colic. If these do not suffice to secure rest, especially during the night, one should use an opiate, which may be added to the bismuth subcarbonate or given in a suppository. It is well to combine it with atropine. Bowel movements must not be diminished to too great an extent, as this may increase systemic intoxication. Against tenesmus due to ulceration, iodoform in olive oil (prescription 5) may be useful.

PREScription 5—Iodoform in Olive Oil

R Iodoform	8.00 Gm
Olive oil	90.00 cc

Keep on ice. Inject one tablespoonful into the rectum every four to six hours. Morphine subcutaneously may be required.

7 As symptomatic treatment for collapse, in the choleraic type, physiologic solution of sodium chloride, Ringer's solution or 10 per cent dextrose phleboclysis may be used. (See also collapse.) During convalescence, one should treat anemia.

(b) *Mild Cases*—Rest in bed, a special diet and laxatives may not be required in mild cases and emetial toxicity. This leaves chimofon or vioform as the treatment of choice in cases that lack careful supervision.

(c) *Cases in Which There is Hepatic Abscess*—Hypodermic emetine injection in the presupplicative stage may prevent the necessity of operation and in most cases should precede the consideration of surgical treatment. After roentgen examination to determine the location, repeated aspirations followed by injection of the cavity with emetine may suffice to cure abscesses not infected with bacteria and to prevent bacterial infection, which so commonly supervenes. In obstinate cases and—if mixed infection is present—at the very first, free incision and drainage are demanded.

Graham Lusk's Student Days—The Munich of the day of which I speak was a simple old-fashioned German town. The first summer that I spent there I lived on the Karlstrasse, having taken a room above a beer hall at five dollars a month. The good frau who rented the room gave me a roll without butter and a cup of coffee in the morning for five cents.

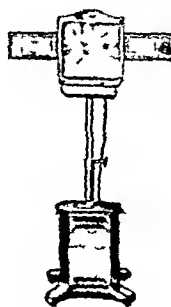
I could live on \$50 a month, but my average was \$75 monthly. I well remember the ceremony of moving from one lodging to another. A diensman brought a small hand cart. On this were placed my worldly goods including my books and my beer mugs. A German student lamp with a green shade crowned the load. While escorting this picturesque vehicle I met Mr and Mrs Henry Holt old family friends who had a hearty laugh over the scene.—Lusk. Graham quoted by Light A. E. Graham Lusk *Yale J Biol & Med* 6:487 (May) 1934.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS
H. A. CARTER, Secretary

HI-ARC CARBON ARC LAMP ACCEPTABLE

The Liebel-Flarsheim Company, Cincinnati, manufactures and offers for sale to the medical profession an ultraviolet generator designed for therapeutic purposes and known as the Hi-Arc.



HI-ARC Ultra
violet Lamp
Acceptable

It is a carbon arc lamp and the arc burns within a closely confined refractory chamber open only in front. Radiant energy is emitted through this oval opening. The electric arc, therefore, takes place within a relatively chemical inert atmosphere, sealed from the air by emerging gases formed when the materials in the carbons vaporize.

One Hi-Arc unit was investigated in a laboratory acceptable to the Council on Physical Therapy. The report indicated that the ultraviolet energy emission met the requirements of the Council. The power consumption is approximately 900 watts and the shipping weight is 200 pounds.

The unit was examined in a clinic acceptable to the Council and it was found that it gives satisfactory service. The Hi-Arc, therefore, is included in the list of accepted devices.

LINDE OXYGEN THERAPY REGULATOR TYPE R-51 ACCEPTABLE

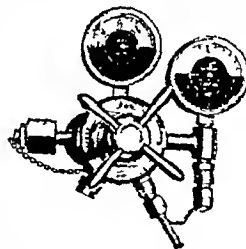
The Linde Oxygen Therapy Regulator Type R-51, manufactured by the Linde Air Products Company, New York City, is a diaphragm reducing valve, of the two stage or double reduction type. The company recommends it for use with nasal catheters, nasal inhalers and face masks, oxygen tents and oxygen chambers. The principal elements, such as the body and cap, are pressure forged bronze. The regulator is provided with a threaded union nut and nipple with ball seat for attachment to standard commercial oxygen cylinders.

The regulator has two outlets, both of which are equipped with silencers. The A outlet is used for flows up to eight liters per minute. The B outlet is used for flows of from 3 to 24 liters per minute. A plug attached to the regulator is used to close the outlet not in service.

There are two pressure gages. The cylinders contents gage indicates the supply of oxygen in the cylinder in liters, cubic feet and fractions of a full cylinder. The flow indicator registers volume delivery from either of the two outlets. However, the calibration of the gage dial in relation to the outlet orifices of known diameter makes it possible to show delivery in terms of liters per minute rather than in pounds per square inch.

The regulator is provided with a safety release of the bursting disk type, which will relieve any possible excessive pressure in the low pressure side of the regulator.

The first reduction stage automatically reduces the full cylinder pressure of 2,000 pounds per square inch to less than 200 pounds per square inch with the result that the second stage, that which is responsible for the delicate control of the amount of oxygen flowing to the patient, is working against a constant pressure of 200 pounds rather than against a pressure that varies between 0 and 2,000 pounds. By setting the flow adjusting screw, which actuates the valve in the second stage, this pressure of 200 pounds per square inch is further reduced until the proper liter flow is secured by its passage through a carefully calibrated orifice. Of course, when the cylinder pressure falls below 200 pounds the first stage valve remains open so that the cylinder can be emptied of oxygen.



Linde Oxygen Therapy
Regulator Type R-51

The regulator was investigated in a clinic acceptable to the Council. It was used for about six months and proved satisfactory from the standpoint of flow as checked by a water-flow meter and a float-type meter.

The Linde Oxygen Therapy Regulator is included in the Council's list of accepted devices.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary

AMINOPHYLLINE (See New and Nonofficial Remedies, 1934, p. 439)

Aminophyllin-Dubin—A brand of aminophylline-N N R. Manufactured by the H E Dubin Laboratories Inc New York. No U S patent or trademark.

Ampules Solution Aminophyllin Dubin 0.24 Gm, 10 cc

Ampules Solution Aminophyllin Dubin 0.48 Gm, 2 cc

Suppositories Aminophyllin Dubin 0.36 Gm

Tablets Aminophyllin Dubin 0.1 Gm

DIPHTHERIA TOXOID, ALUM PRECIPITATED (REFINED)—(See New and Nonofficial Remedies 1934, p. 393)

The Gilliland Laboratories, Inc., Marietta, Pa.

Diphtheria Toxoid, Alum Precipitated (Refined)—Prepared from a veal broth culture of *B. diphtheriae* which yields toxin having an L-t dose of not more than 0.2 cc. The toxin is treated with 0.4 per cent U S P formaldehyde until the toxicity is so reduced that five human doses will cause no local or general symptoms of diphtheria poisoning when injected subcutaneously into guinea pigs weighing 300 Gm. The toxoid is precipitated with a solution of aluminum and potassium sulphate. The precipitate is washed and then suspended in physiologic solution of sodium chloride. The finished product contains merthiolate in a concentration of 1:10,000. The product is tested for antigenic potency according to the method prescribed by the National Institute of Health. Guinea pigs weighing 500 Gm. given one human dose must produce at the end of six weeks at least two units of diphtheria antitoxin in each cubic centimeter of blood serum. Marketed in packages of one 1 cc vial (one immunization), ten 1 cc vials (ten immunizations), one 10 cc vial (ten immunizations).

REPORTS OF THE COUNCIL

NUMEROUS INQUIRIES ARE ADDRESSED TO THE COUNCIL CONCERNING ALKALINE OR NEUTRAL PREPARATIONS OF PROCAINE AND CONCERNING STABILITY OF THE SOLUTIONS. THE COUNCIL ON DENTAL THERAPEUTICS OF THE AMERICAN DENTAL ASSOCIATION PUBLISHED A REVIEW IN ANSWER TO SIMILAR QUERIES RECEIVED BY THAT COUNCIL UNDER THE TITLE STOCK SOLUTIONS AND MIXTURES FOR LOCAL ANESTHESIA (J A D A JUNE 1932, PP 1046-1051). THE COUNCIL ON PHARMACY AND CHEMISTRY HAS DEEMED IT EXPEDIENT TO AUTHORIZE PUBLICATION OF THE FOLLOWING ABSTRACT OF THE REPORT OF THE COUNCIL ON DENTAL THERAPEUTICS IN DOING SO THE COUNCIL MAKES GRATEFUL ACKNOWLEDGMENT TO THE COUNCIL ON DENTAL THERAPEUTICS FOR PERMISSION TO USE THIS MATERIAL.

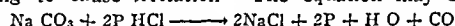
PAUL NICHOLAS LEECH Secretary

INFILTRATION ANESTHESIA

There have been and are a multitude of solutions for local or infiltration anesthesia on the market. These are of such variation in reaction (pH), nature of preservative, and so on, as to render impossible any determination of the cause of unsatisfactory results or reactions, whether due to the product, to the method employed or to idiosyncrasy of the patient. In recent years, except for sporadic or regional though evanescent popularity of other compounds, procaine hydrochloride, either alone or with epinephrine, has come into almost universal use. For many years such solutions were made up when needed with the use ordinarily of either sterile water or physiologic solution of sodium chloride. During that period it was not unusual to find stock solutions under proprietary names marketed, ordinarily, in large bottles, which rendered them unsatisfactory through the need of employing undesirable amounts of preservatives. The stability and sterility of such solutions were usually questionable and there seems to be no justification for the use of chemical sterilizing agents since boiling is so effective.

The ampule and its rubber-tipped or rubber-stoppered hermetically sealed counterpart appeared next and offered the advantage of smaller amounts of the solution, avoiding the old age that the contents of a larger bottle might attain. However, preservatives are as necessary in such containers and either the preservative, the container or both became the main advertising feature of such products though the active drugs remained the same.¹ Such preparations had a natural appeal, of course, in that they saved time, particularly for the dental practitioner, that otherwise would have been consumed in preparing his own solutions. All such preparations present two common disadvantages in that some preservative (of a potentially irritating nature) must be used and a considerable degree of acidity must obtain. Over long periods of time, or when exposed to adverse conditions of heat and light, the sterility and potency of these solutions become questionable.

It was shown by O Gros in 1910 (confirmed by A Laewar in 1912 and Sollmann in 1918) that solutions of procaine hydrochloride alkalinized with sodium carbonate possess from two to four times greater penetrating power on nerve sheaths and mucous membranes.² Other investigators have noted the same results using different alkalinizing agents. Apparently, in the attempt to produce permanent solutions it has become the custom to use a pH as low as 3.3 in order to postpone the decomposition of epinephrine. This has been the subject of criticism because of the wide discrepancy between the reaction of the stock solutions and the pH of normal tissue fluids, and it might seem to be equally subject to the objection that the added penetrating powers of procaine base are not used to advantage. It is thus pointed out that not enough is known concerning the stability of alkaline solutions of procaine, and they should therefore be freshly prepared. Many clinics and hospitals prefer the use of a fresh solution which may be made by the hospital pharmacist, or by the nurse. A solution of 1 Gm of sodium carbonate or sodium bicarbonate in a liter of water is boiled thoroughly and set aside under sterile precautions. When a 2 per cent solution of procaine is desired there is added for every 5 cc of the foregoing solution a tablet of procaine hydrochloride 0.1 Gm (1½ grains). While such a solution liberates but one fourth of the available procaine as base, it has the advantage that there will be no excess carbonate remaining to cause irritation. The equation may be stated



The pH of such a mixture is about 7.8 only slightly higher than that of tissue fluids, and operative anesthesia is said to be produced in about one-third the time required with an acid preparation. It has the possible disadvantage of requiring immediate use since cloudiness appears an hour or so after preparation. Procaine borate requires no alkalinization other than the liberation of its own anion by hydrolysis, and it is said to be equally efficient. Until the manufacturers who are now attempting to produce stable alkaline stock solutions succeed the foregoing method should recommend itself. In making such solutions it is quite obviously of great importance to know the exact composition of all tablets and a statement to that effect should appear in plain, clear type on all containers. Sealed glass ampules, but not bottles with a complete statement of composition and date of manufacture may be considered satisfactory within a reasonable length of time after marketing. Concerning preservatives and antioxidizing agents it may be said that proof of their harmlessness, worth and composition should devolve on the manufacturer alone and not on the trial and error routine of indiscriminate clinical use. Until a satisfactory preservative is found, it is suggested that bacteriologic studies be made from time to time of products obtained from the open market. The *Journal of the American Dental Association* concludes

"In summary it may be said that recent experiences point to the desirability of using freshly prepared alkaline solutions of procaine hydrochloride and epinephrine for local anesthesia. Stock solutions in bottles, ampules or cartridges are not without objection. The burden of proof rests upon those who would claim the contrary."

¹ At present a mixture of sodium sulphite and hydrochloric acid is commonly used though the quantity is secret and varies with the manufacturer.

² This property was shown to depend on the formation of procaine base.

Committee on Foods

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING
REPORT
RAYMOND HERTWIG Secretary

NOT ACCEPTABLE

MENN'S BUTTER-FLAKE BREAD (Sliced)

The Menn's Baking Company, Austin, Texas, submitted to the Committee on Foods a white bread called Menn's Butter-Flake Bread, prepared by the sponge dough method. It contained white flour, water, sucrose, shortening, dry skim milk, salt, malt syrup, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

Discussion of Name—The name "Butter-Flake Bread" indicates that the baking formula contains sufficient milk fat or butter to impart to the bread a distinctive and characteristic butter flavor and nutritional values inherent to butter, making the bread different from the usual white bread. Butter, however, is not an ingredient and the skim milk used contributes little milk fat. The name, therefore, is inappropriate and misleading. Names for foods should truthfully identify their nature and not misrepresent their composition or nutritional values.

The analysis submitted showed a moisture content of 49 per cent for the entire loaf, 11 per cent in excess of the maximum set by the United States Department of Agriculture definition and standard for bread.

The manufacturer was informed of this opinion but has not manifested willingness to change the name or properly reduce the moisture content in accordance with the Committee's recommendations. This bread will therefore not be listed among the Committee's accepted foods.

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMOTION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG Secretary

CAREY-IZED SALT

PIONEER BRAND TABLE SALT

Manufacturer—The Carey Salt Company, Winnfield, La.

Description—Table salt containing approximately 1 per cent added magnesium carbonate. The same as Carey's Salt (Free Running) (THE JOURNAL, Aug 26, 1933, p 676).

Claims of Manufacturer—For table and cooking uses of salt. The added magnesium carbonate tends to preserve the free running qualities. Does not cake or harden in the package.

(a) WATSON'S CRYSTAL WHITE TABLE SYRUP

(b) ROYAL 'W' GOLDEN SYRUP

Distributor—The Watson Wholesale Grocery Co., Salina, Kan.

Packer—Bliss Syrup and Preserving Co., Kansas City, Mo.
Description—(a) A table syrup, corn syrup sweetened with sucrose syrup and flavored with vanilla.

(b) A table syrup, corn syrup flavored with refiners' syrup.
Manufacturer—(a) Same as Bliss Pancake Crystal White Brand Syrup (THE JOURNAL Nov 18 1933 p 1635).

(b) Same as Bliss Pancake Brand Golden Syrup (THE JOURNAL, Oct 28 1933, p 1393).

Claims of Manufacturer—Recommended for use as an easily digestible and readily assimilable carbohydrate supplement to milk in infant feeding and as a syrup for cooking, baking and the table.

STOKELY'S FOR BABY SPECIALLY PREPARED STRAINED APRICOTS

SWEETENED WITH SUGAR, CONTAINS SULPHUR DIOXIDE
Manufacturer—Stokely Brothers & Company, Inc., Indianapolis

Description—Sieved dried "sulphured" apricots, slightly sweetened with sugar, largely retaining the vitamins and all the minerals of "sulphured" dried apricots.

Manufacture—Choice dried "sulphured" apricots are carefully inspected to eliminate unsuitable material, washed twice, and soaked over night in cold water, the swelled apricots and juice are transferred to a steam jacketed, closed kettle, heated at approximately 91 C until soft, and are drawn off and sieved in a steam atmosphere through a screen with openings of a size to produce the desired fineness and texture. A definite amount of sugar and hot water are added for sweetening and adjusting the consistency. The batch is heated to filling temperature, immediately filled into enamel lined cans and processed.

Analysis (submitted by manufacturer) —

	per cent
Moisture	75.8
Total solids	24.2
Ash	1.0
Fat (ether extract)	0.1
Protein (N X 6.25)	1.3
Reducing sugars as dextrose	14.2
Sucrose	0.5
Crude fiber	0.8
Total acidity as malic acid	1.2
Carbohydrates other than crude fiber (by difference)	21.0
Sulphur dioxide	0.02
Alkalinity of ash (cc. normal acid per gram ash)	7.2
pH	4.3

Calories—0.9 per gram 26 per ounce

Vitamins—The natural vitamin content is retained in large measure in the manufacturing process by the use of equipment and procedure which exclude incorporation of air, the fruit material is exposed to steam only.

Claims of Manufacturer—Supplementary to the infant milk diet, and valuable for children and adults on soft diets. Has smooth consistency and supplies desirable bulk without roughness. The straining renders the nutrient content readily available for digestion. Scientifically prepared to retain in high degree the natural flavor, mineral and vitamin values. Seasoned to bring out full flavor and packed in enamel lined cans. Requires only warming for serving.

VITAMIN D FORTIFIED PASTEURIZED MILKS

- (1) BROCK-HALL
- (2) EDGEMAR
- (3) FOX'S GUERNSEY DAIRY
- (4) GOLDEN GUERNSEY DAIRY CO-OPERATIVE'S
- (5) JOHNSTOWN SANITARY DAIRY COMPANY'S
- (6) SIBLEY FARMS MODIFIED
- (7) FARMERS DAIRY ASSOCIATION
- (8) UECKE DAIRY COMPANY'S

Distributors—(1) Brock-Hall Dairy Company, New Haven, Conn., (2) Edgemar Farms, Venice, Calif., (3) Fox's Guernsey Dairy, Waukesha, Wis., (4) Golden Guernsey Dairy Co-Operative, Milwaukee, (5) Johnstown Sanitary Dairy Company, Johnstown, Pa., (6) Jersey Milk Service, Inc., Worcester, Springfield, Mass., (7) Farmers Dairy Association, Portland, Ore., (8) Uecke Dairy Company, Eau Claire, Wis.

Bottler—(3) and (4) Vitek Laboratory, Milwaukee

Description—Bottled pasteurized milk fortified with vitamin D (vitamin D concentrate prepared from cod liver oil), contains 400 U S P X (Revised 1934) vitamin D units per quart.

Preparation—The milk complies with legal requirements and is pasteurized by the standard holding method. See THE JOURNAL July 1, 1933, page 34, for description of fortification with vitamin D.

Vitamins—The vitamin D concentrate used and the fortified milk are regularly tested biologically. Clinical investigation shows this milk to be a reliable antirachitic agent if proper amount is used.

Claims of Distributors—Vitamin D fortified, antirachitic pasteurized milk having otherwise the flavor and food values of usual pasteurized milk.

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SATURDAY, JUNE 9, 1934

A CRYSTALLINE HORMONE FROM THE SUPRARENAL CORTEX

In his classic memoir "On the Constitutional and Local Effects of Disease of the Suprarenal Capsules," published in 1855, Addison remarked that practically nothing was known of suprarenal physiology. Marked advances have been recorded since that time. First is the clear understanding that ablation of the suprarenal glands or their destruction through disease results in death. Thus they are definitely established as organs indispensable to life. The suprarenal medulla is the largest mass of chromophil tissue present in mammals. The discovery that it elaborates a potent substance, epinephrine, promptly directed attention to the medullary portion of the suprarenal structures. Despite the value of epinephrine—a product now readily synthesized in the chemical laboratory—in medicine and its demonstrated physiologic role, notably as a sympathomimetic substance, it can no longer be regarded as the presumptive life-saving hormone. The latter honor belongs to some constituent of the suprarenal cortex. The cortex is not embryologically related to the medulla, and the juxtaposition of the two has not yet received an adequate explanation.

Several American investigators have made great strides in the preparation of highly potent concentrates of the cortical principle. This follows the general research program and progress employed in the case of several other hormones. Some of these products have been effective in replacement therapy and have already found application in practical medicine. Efforts have been made to "standardize" the cortical extracts in terms of their effect on suprarenalectomized animals. The work of Stewart and Rogoff in Cleveland, of Hartman in Buffalo, of Swingle at Princeton and of Britton of the University of Virginia, together with that of their various co-workers, has greatly advanced our knowledge. Of late there have been rather embittered debates as to the modus operandi of the hormone. Its alleged effects on metabolism, carbohydrate mobilization and the blood sugar level, blood volume, water

exchange and related phenomena have been drawn into the somewhat acrimonious discussion.

Whatever may be the final conclusion as to the nature of the action of the cortical hormone, a great step in advance seems to have been made in the isolation in crystalline form, of the essential principle. This is, as always, the first step in the direction of the desired goal of the synthesis of physiologically important substances. Success in the case of the suprarenal cortical hormone is due to Dr. E. C. Kendall and his collaborators¹ at the Mayo Clinic. It will be recalled that Kendall was the first to isolate thyroxine from the thyroid gland. Grollman² had previously separated the cortical hormone in crystalline form, but it is doubtful, Kendall believes, whether the substance was obtained in pure form. The empirical formula is $C_{26}H_{20}O_6$, with a molecular weight of 350. The complete chemical identification and eventual synthesis of this cortical hormone remain to be accomplished. Biochemistry may well be proud of the great advance already made. It is a noteworthy achievement.

NATURAL PIGMENTS AND VITAMINS

In accordance with recent studies in nutrition there is a growing tendency to associate highly pigmented natural foods with peculiar nutritive potency¹. The information on which this view is based has become available largely through the laboratory investigations involving the use of experimental animals—the so-called biologic assay. Perhaps the most striking correlation between natural coloring material and nutritional value that has thus far been established relates to carotene. This natural pigment accounts for the vitamin A potency of many fruits and vegetables, occurs in butter and, on the basis of quantitative measurements, is transformed into vitamin A in the animal body to a noteworthy extent. Along with these more strictly biologic studies on carotene there has been carried out a series of intensive experiments dealing with the chemical constitution and relationships of a series of other plant and animal pigments. The account of progress in this direction leads directly to one of the greatest biochemical achievements of the present decade—the determination of the chemical structure of the vitamins.

In a summary of recent investigations on the carotenes and flavines, Kuhn² has emphasized the nutritional significance as well as the chemical relationship of certain members of these groups of compounds. Carotene is a compound of carbon and hydrogen, it,

¹ Kendall E. C., Mason H. L., McKenzie B. F., Myers C. S. and Koelsche G. A. Isolation in Crystalline Form of the Hormone Essential to Life from the Suprarenal Cortex. Its Chemical Nature and Physiologic Properties. Proc. Staff Meet. Mayo Clin. 9: 245 (April 25) 1934.

² Grollman Arthur and Firor W. M. Observations on the Hormone of the Adrenal Cortex. Am. J. Physiol. 101: 46 (June) 1932.
¹ Pimenton Peppers and Vitamin A. Current Comment. J. A. M. A. 101: 1972 (Dec. 16) 1933.

² Kuhn R. J. Soc. Chemical Industry. 52: 981 1933.

together with lycopene found in tomatoes and the xanthophylls occurring in egg yolk and in many plants, is insoluble in water but dissolves in fats and fat solvents. The entire group constitutes the so-called lipochromes. Several isomeric carotenes have been prepared, these differ among themselves in such physical constants as melting point, specific optical rotation and spectral absorption. However, the most striking difference from the biologic point of view is that relating to vitamin A potency. Beta-carotene is more effective as a source of vitamin A than is either the alpha or the gamma form. Beta-carotene consists of two carbon rings of the beta ionone type attached to a chain of nine conjugated double bonds. When it is symmetrically divided into two parts, the primary alcohol derivative of each part becomes a molecule of vitamin A. Both alpha and gamma carotene have only one of the ionone rings, which accounts, on the basis of structural organic chemistry, for their inferiority as sources of vitamin A. The same argument explains the failure of lycopene to show any vitamin A activity. Not all of the natural pigments so far examined have as large a molecule as does carotene, but it has been shown that several of them—the pigments in annatto and in saffron, for instance—bear definite structural relationship to it.

The flavines constitute a second group of natural pigments that have received considerable attention. In contrast to the lipochromes, this group (the lyochromes) is soluble in water and contains nitrogen. These substances are widely distributed in nature among plant and animal tissues, and attention has recently been called to the fact that there is a close similarity between their occurrence and that of vitamin G, sometimes referred to as the pellagra-preventive factor. Ovoclavine from egg white and lactoflavine from milk have been prepared in the form of beautiful orange brown needles. Chemical and physical examination of the crystals indicate that the coloring material from these two sources is identical. When this material was given to experimental animals whose growth had been restricted because of a lack of vitamin G in the ration, resumption of growth was brought about by as little as 0.000005 gram. This is of the order of magnitude of the quantity of beta-carotene needed to cause the symptoms of vitamin A deficiency to disappear, and it appears that the crystals of flavine either are identical with vitamin G or carry this food factor as a contaminant. There seems little reason to doubt that with the final chemical characterization of ovoclavine and lactoflavine another of the vitamins will have been completely identified.

In the past a close collaboration between the biologic and the organic chemical laboratory has been productive of much fundamentally valuable research notably in connection with proteins and amino acids and also with hormones. Recent investigation in the field of vitamins shows again that history will repeat itself in scientific endeavor as well as in other fields of interest.

The close connection between certain of the natural pigments and indispensable nutritional factors emphasizes again the wisdom of a wide choice of foods and of consuming some foods in the uncooked natural state.

PAIN IN GASTRIC AND DUODENAL ULCERS

Pain is the chief clinical symptom of ulcer. This fact is sufficient to indicate why it is important to ascertain the mechanism by which the pain is brought about. It is far more difficult to investigate the sensibility and the sensations of internal organs than to study these features in the cutaneous areas that are more readily subjected to direct observation and experiment. According to most writers, pain is not produced in the viscera by handling or even by cutting, it appears to be associated with excessive action, stretching, and inflammatory conditions that involve the sensitive parietal layer of the peritoneum. Perhaps this is why the pain of gastric ulcer has been attributed so often to pylorospasm. One reads, for example, that the production of ulcer pain because of hypersecretion of hydrochloric acid is highly improbable, for it is alleged that the pain may be severe when the acid secretion is diminished, and vice versa. That is why Brown¹ has asserted that the relief which follows ingestion of food and soda is in all probability due to relaxation of the pylorospasm that facilitates emptying of the stomach. The view has perhaps been fortified by demonstrations that so-called hunger pangs are due to pronounced motor activity of the stomach.

In contrast with this is the contention that hydrochloric acid is the irritant normally present in the gastric content, which constitutes an adequate stimulus to the pain-producing mechanism of a sensitive peptic ulcer. Years ago B. W. Sippy, an ardent student of gastric ulcer, stated that the pain and discomfort of uncomplicated ulcer are due to the irritative action of hydrochloric acid on the nerves exposed in the ulcer. Despite this there are recurrent statements in the literature of gastro-enterology intimating that varying amounts of hydrochloric acid in concentrations up to at least 0.2 per cent have been introduced into the empty stomach without producing distress either in normal persons or in patients with ulcer. Thus the pendulum of opinion has been swinging between two conflicting views in a long succession of clinical investigations since before the beginning of the century. The methods employed have included clinical observation of the acidity of the gastric content during spontaneous distress, the production of ulcer pain by physiologic solutions of hydrochloric acid and by stimulation of gastric secretion with histamine hydrochloride, kymographic and roentgenologic studies of the stomach during distress, and observations on the effect of atropine sulphate and of calcium chloride on ulcer pain.

¹ Brown, T. R. *Cecil's Text Book of Medicine*. Philadelphia: W. B. Saunders Company, 1930, p. 691.

Accepting ulcer pain as a fact, it must be admitted that there is a lesion present, that the nerve supply is abundant, and that in some way an adequate stimulus is applied to some nerve mechanism with consequent perception of pain. On this basis Palmer and Heinz² of the Department of Medicine at the University of Chicago have devoted attention to the manner in which pain arises, to its site of origin and to the nature of the adequate stimulus, rather than to the type of nerve or nerve ending excited, the pathway of the pain or the manner in which it is referred. The championship of the theory of chemical sensibility is forcefully sustained. According to their studies, ulcer pain arises at the site of the lesion. It is not directly dependent on pylorospasm, gastric motility or intragastric pressure but depends on the presence of an adequate stimulus acting on an irritable pain-producing mechanism located in or adjacent to the lesion itself. The enhanced irritability of the tissue in or about the lesion is dependent on the presence and continued action of acid gastric juice, conversely, desensitization may be produced by continued neutralization. According to Palmer and Heinz the adequate stimulus may be either (a) mechanical, due to peristaltic traction or local spasm, or (b) chemical, due to the acid reaction of the chyme. The usual stimulus is the free hydrochloric acid of the gastric content. The action of the stimulus, be it mechanical or chemical, is probably exerted directly on nerves rendered hyperirritable by inflammation resulting from the destructive effect of acid gastric juice.

Current Comment

MOTION PICTURES OF BACTERIA

Since the introduction seventy-five years ago of the word Schizomycetes, the simpler bacteria have been generally regarded as unicellular plants multiplying solely by symmetrical cell division. The possibility of asymmetrical fission, with the production of daughter cells or different hereditary characters, has been denied. Reproduction by budding rather than by simple cell divisions has not been considered possible. Yet both of these bizarre types of reproduction are common, if one is to credit the photographic evidence recently reported by Wyckoff¹ of the Rockefeller Institute. To follow the finer details of bacterial growth, he studied motion pictures of pathogenic bacteria planted on agar-coated cover slips. With certain species he found that proliferation is invariably in accord with the classic nomenclature, or by an equivalent process of "coccoid division." Under certain environmental conditions, however, multiplication of many species occurs not by this conventional method but by single or multiple budding or sprouting. Rup-

ture apparently occurs of one or more portions of the cell wall. Small amounts of protoplasm are extruded and develop into new bacteria before being pinched off. Intracellular granules are readily demonstrated in many senescent bacteria. Bacteria in which such granules are just beginning to appear proliferate normally if transplanted to fresh culture medium. Unlike nuclei, however, these granules are distributed asymmetrically to the resulting daughter cells, and these young cells soon become internally homogeneous. In bacteria with fully formed granules, however, no proliferation is demonstrable. Nor is proliferation even observed with individual granules freed by disintegration of bacteria. Wyckoff therefore regards the granules demonstrable by photographic methods as nonviable "bits of coagulated protoplasm." They are apparently neither nuclei nor precursors of the hypothetical "virus phase."

THE IMPROVEMENT OF MILK SUPPLIES IN THE UNITED STATES

The response of the American people to the propaganda for the liberal use of milk may be measured by the fact that its use is continually increasing. Our present average national consumption amounts to approximately 55 gallons per person yearly, or not quite a pint daily. It is stated¹ that in some parts of the United States, particularly in the larger cities, this average is maintained and even occasionally exceeded, but in too many places it is not reached at all, so that an utterly inadequate amount of milk and dairy products is used for family consumption among a vast portion of our population. There may be some debate as to the optimal consumption, especially for the different age groups. The uncertainty has been reflected in occasional discussions among physicians. A few persons are unable to consume milk because they are allergically hypersensitive to some ingredient of it. Almost every one, however, is today convinced of the importance of pure milk supplies. As Tobey¹ has remarked, for years health officials and physicians have been teaching the public to demand pure milk. As a result of this entirely proper instruction, the people want clean and safe milk, a product which the dairy industry has been and is anxious to give them. Obviously, it does not pay to produce milk which can and does spread disease. One epidemic traced to a dairy farm or milk route means that the farmer or dealer goes out of business, and he may even be so unfortunate as to make himself liable to criminal prosecution or to civil suits for damages. The campaign for purer milk has thus been projected to inspire confidence in the cleanliness and safety of dairy products, it is an effort to "improve the almost perfect food." Some indication of how well this has succeeded is afforded by a recent report of a typical Eastern city of less than 200,000 inhabitants. The results of official laboratory examinations of four unbroken samples of milk taken from each producer during the first three months of

² Palmer W L and Heinz T E. Mechanism of Pain in Gastric and Duodenal Ulcers. Arch Int Med 53: 269 (Feb.) 1934.
¹ Wyckoff R W G. J Exper Med 59: 381 (March) 1934.

¹ Tobey J A. Milk the Indispensable Food. Milwaukee: Olsen Publishing Company, 1933.

the year show that of the forty-three firms furnishing pasteurized milk no less than thirty-two supplied milk with a bacterial count of less than 5,000, only six exceeded a count of 10,000, and only a single dairy failed to show a count of less than 50,000. Not a single specimen of milk, whether pasteurized or supplied by thirty producers of raw milk from tuberculin tested cattle, had a butter-fat content of less than 3.25 per cent. Of the entire group of seventy-two producers, fifty-nine supplied milk exhibiting a butter-fat content of 4 per cent or over. What a contrast to the days of watered and otherwise adulterated milk! What a demonstration of the power of public opinion directed and reinforced by the leadership of preventive medicine and public health!

Association News

THE CLEVELAND SESSION

Schedule for Radio Broadcasts

MONDAY, JUNE 11

WGAR The New Deal in Appendicitis by John O. Bower M.D., 9 45 10 a. m. Eastern standard time

WHK The Present Status of Health Examinations by Wingate M. Johnson M.D. 4 4 15 p. m.

WTAM (ABC) Common Colds, by Wilson G. Smillie M.D. 5 5 15 p. m.

TUESDAY, JUNE 12

WHK (CBS) The Family Doctor by Nathan B. Van Etten M.D. 9 45 10 a. m.

WGAR Simple Cheap Happy by Thurnian B. Rice M.D. 10 10 15 a. m.

WTAM New Diabetes for Old by Priscilla White M.D. 4 45 5 p. m.

WEDNESDAY, JUNE 13

WGAR Blood Building Foods by James S. McLester M.D. 9 45 10 a. m.

WHK Cancer Is Curable by Max Cutler M.D., 4 4 15 p. m.

WTAM (NBC) Your Doctor by Walter L. Biering M.D. 4 45 5 p. m.

THURSDAY, JUNE 14

WGAR Relieving Hay Fever and Asthma by George W. Waldbott M.D. 10 10 15 a. m.

WHK (CBS) Medicine Marching Forward by Morris Fishbein M.D. 3 3 15 p. m.

WTAM Convention Highlights by Morris Fishbein M.D. 5 15 5 30 p. m.

MEDICAL BROADCASTS

National Broadcasting Company

The American Medical Association broadcasts on a coast-to-coast network each Monday afternoon. The talk on June 11 will be broadcast from Cleveland at 5 o'clock Eastern standard time, and is entitled Common Colds, by Wilson G. Smillie, M.D.

The National Broadcasting Company talks will be discontinued for the summer with the talk from Cleveland on June 11.

Columbia Broadcasting System

The Association broadcasts on a Western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4 30 to 4 45 Central daylight saving time. The June 14 broadcast will be from Cleveland from 4 to 4 15 p. m., Eastern standard time. The next three broadcasts will be as follows:

June 14 Medicine Marching Forward Morris Fishbein M.D. (from Cleveland)
June 21 Mischievous Misconceptions W. W. Bauer M.D.
June 28 Motor Touring and Camping W. W. Bauer M.D.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Poliomyelitis Prevalent—All activities other than routine school work were forbidden in the elementary schools of Los Angeles, June 1, because of the spread of infantile paralysis, according to the *Chicago Tribune*. During May in Los Angeles County 259 cases of the disease were reported.

New Health Officers—Dr. Harry N. Hensler has been appointed health officer of San Anselmo, succeeding Dr. Lloyd G. Tyler. The city health department of Menlo Park has been taken over under contract by the San Mateo County Health Department, of which Dr. Harold E. Morrison is health officer. Mr. Edward H. Hart has served as health officer of Menlo Park. Dr. Raymond R. Scott has been named health officer of Selma, succeeding Dr. Dietrich V. Wiebe and Dr. Aghavan A. Shaghoeian of Daly City, to succeed Ferdinand P. Callen, D.D.S.

COLORADO

Fifty Years in Practice—A banquet was held by the Medical Society of the City and County of Denver, May 22, in honor of twenty-one members who have completed fifty or more years in the practice of medicine. The sixteen guests of honor who were able to attend were introduced following the dinner and presented with a certificate. The following are the physicians honored, with their dates of graduation:

William Cotterell Bane	1879	Herbert W. McLauthlin	1882
Mary E. Bates	1881	Francis H. McNaught	1878
George Beggs Crews	1883	George W. Miel	1883
Howard Roxboro Elliot	1881	Howell T. Fershing	1883
Josiah N. Hall	1882	David A. Strickler	1881
Clinton G. Hickey	1884	Charles B. Van Zant	1884
Edward Jackson	1878	Herbert B. Whitney	1881
Robert Levy	1884	Horace G. Wetherill	1878
Hugh F. Lorimer	1883	Newton Wiest	1884
George N. Macomber	1878	Andrew K. Worthington	1883
Samuel R. McElvey	1884		

FLORIDA

Society News—The health department of Lakeland is conducting an immunization clinic for typhoid and diphtheria for persons unable to pay for treatment. Dr. Robert M. Faver, Miami, addressed the Dade County Medical Society in Huntington, May 4, on "Diagnosis and Treatment of Glaucoma," and Dr. Ralph A. Gowdy, Miami, "Different Types of Surgery for Peptic Ulcer."

State Medical Election—Dr. Homer L. Pearson Jr., Miami, was inducted into the presidency of the Florida Medical Association at its annual meeting, May 2. Dr. Herbert L. Bryans, Pensacola, was chosen president-elect, and Dr. Shaler A. Richardson, Jacksonville, reelected secretary. Stewart G. Thompson, D.P.H., was appointed business manager, a newly created position. The next annual session will be held in Ocala in 1935.

A Short Graduate Course for Practitioners—The Florida Medical Association is sponsoring a short course at the University of Florida, June 25-30, the purpose of which is to present to Florida physicians the latest discoveries in medical science. The state board of health plans to set up a model laboratory such as would be required by physicians in general practice, with a technician in charge. There will be exhibits by the Florida Dermatological Association and the Florida Roentgenological Association. Participating in the course will be the following physicians:

William Wayne Babcock	professor of surgery	Temple University
School of Medicine	Philadelphia	
Horton R. Casparis	professor of pediatrics	Vanderbilt University
School of Medicine	Nashville	
Chevalier Jackson	professor of bronchoscopy and esophagoscopy	Temple University
School of Medicine		
Edward L. King	professor of obstetrics	Tulane University of Louisiana
School of Medicine	New Orleans	
John A. Kolmer	professor of medicine	Temple University
School of Medicine		
Oliver C. Wenger	surgeon	U. S. Public Health Service
National Park	Ark.	

The registration fee for the course is \$5. Further information will be supplied by the secretary of short courses and institutes, General Extension Division, University of Florida, Gainesville.

GEORGIA

Personal—Dr Charles L Ridley has been appointed superintendent of the Macon Hospital—The Georgia Medical Society held a banquet for Dr Eugene R Corson Savannah, April 30, to honor him as the oldest physician in years of practice in the society, Dr Corson has practiced more than fifty years Dr Henry L Lexington, president of the society, presided at the banquet

Dr Redfearn Awarded Prize—Dr James A Redfearn, Albany, has been awarded the Lamartine Griffin Hardman Cup, it was announced at the annual meeting of the Medical Association of Georgia in Augusta, recently, for his "outstanding work in bringing about the malaria control program in Dougherty County" Dr Redfearn is the second physician to have his name inscribed on the cup, which was presented to the Georgia Medical Association by Dr Hardman when he was governor of the state (THE JOURNAL, July 8, p 146) The cup, which is kept on display at the capitol in Atlanta, marks a contribution to the field of public health or discovery in medicine

ILLINOIS

Society News—The St Clair County Medical Society was addressed in East St Louis May 3, by Dr Arthur H Deppe on "Reflexes, the Method of Elicitation and Their Interpretation," and in Belleville, April 2, by Dr Duff Allen, St Louis, on "Thyroidectomy and Treatment of Heart Disease" Dr John Albert Key, St Louis, addressed the society, April 5, on "Certain Fractures Which Involve Joints"—At a meeting of the Shelby County Medical Society at Shelbyville April 27 Dr Clarence F G Brown Chicago discussed "Treatment of Pneumonia" and "Clinical Aspects of Peptic Ulcer"

Chicago

Lectures at Century of Progress—Six lectures will be given each week in the South Room, Hall of Science, at a Century of Progress by members of the Chicago Medical Society Dr Austin A Hayden gave the introductory address, May 28, on "Conservation of Hearing" Other speakers during the week were Drs Leon Unger, "Hay Fever", Frank F Maple, "Prenatal Care" Hilmer William Elghammer, "Rheumatic Infection in Children" Laurence E Hines, "Heart Disease," and Gilbert Fitz-Patrick, "Is Cancer Curable?"

Fifteen Years for Passing Counterfeit Money—Valentine G Burtan, M.D., New York, and a native of Russia was sentenced, May 25, to fifteen years in Leavenworth penitentiary and fined \$5,000 on charges of possession and distribution of counterfeit money He was found guilty in federal court in Chicago, May 4 Motion for a new trial was overruled Henry Dechow, alias Count Enrique von Buelow the principal witness in the case, was, according to the newspaper reports formerly one of Burtan's patients to whom Burtan is said to have proposed the disposal of bills which he had received from a gangster patient About \$25,500 of this counterfeit money was passed through Chicago banks Burtan admitted accompanying Dechow to Mexico City in 1932 According to Dechow the object of the trip was to pass counterfeit money but Dr Burtan stated it was to sell munitions to the Mexican government Records of the American Medical Association show a Vladimir Gregory Burtan born in Odessa, Russia, in 1897 He graduated from University and Bellevue Hospital Medical College, New York in 1923, and served as an intern at French Hospital, New York until 1924, since which time he has been practicing internal medicine in New York City

IOWA

Society News—Dr William J Mayo, Rochester, instead of Dr Charles H Mayo addressed the Linn County Medical Society, June 7, on "Some of the Physical Aspects of Water," and Dr James T Priestley Jr, Rochester on "Current Conception of Nephrolithiasis"—The Four County District Medical Society was addressed in Cherokee May 22 among others, by Dr Joseph E Dvorak Sioux City, on strabismus and its treatment, and Dr Robert B Armstrong, Idagrove toxemia in pregnancy

State Medical Election—Dr Thomas A Burcham Des Moines was chosen president-elect of the Iowa State Medical Society at its annual meeting in Des Moines May 11 Dr Gordon F Harkness, Davenport was installed as president Vice presidents are Drs Frank B Dorsey, Keokuk, and James C Hill, Newton, Dr Robert Parker Des Moines was reelected

secretary Davenport was selected for the annual session in 1935 It was recommended at this meeting that the state legislature enact a basic science law

Twenty-Eight Typhoid Cases Traced to Carrier—Twenty-nine cases of typhoid were reported in Newark township, Webster County, from 1905 to 1933, in all but one of which it was possible to trace the source of infection to a woman carrier This was revealed in a recently completed typhoid survey of the township, the state medical journal states Five deaths occurred during this period Laboratory analysis revealed typhoid bacilli present in the specimen of a woman aged 65, who, with her husband, had acquired typhoid in Oklahoma in 1901 Six of the cases occurred among the woman's relatives and four among farm hands who were employed at different times on her husband's farm Six persons developed typhoid following church or school picnics at which the woman helped with the preparation and serving of food In addition, six patients represented secondary cases occurring in various homes, making the total number of twenty-eight In 1927, the state medical journal reports, it was suspected that this woman was a carrier, but laboratory specimens failed to demonstrate the fact

KANSAS

State Medical Election—Dr John F Hassig, Kansas City, for many years secretary of the Kansas Medical Society was chosen president-elect at the society's recent annual meeting in Wichita Dr William F Bowen, Topeka, will retire from the presidency, December 31 Dr Howard L Snyder, Winfield was elected vice president, effective in January and Dr Harry L Chambers, Lawrence, was named secretary Dr George M Gray, Kansas City, was reelected treasurer The next annual meeting will be held in Salina May 8-10 1935 The house of delegates unanimously voted to employ a full time executive secretary and editor with offices in Topeka and referred the matter to a committee of seven who shall make a selection about November 1

LOUISIANA

Personal—The cross of a chevalier of the French Legion of Honor was recently conferred on Dr Amedee Granger professor of radiology, Louisiana State University Medical Center, New Orleans

Society News—Ernest C Faust, Ph.D. professor of parasitology Tulane University of Louisiana School of Medicine, New Orleans, was elected vice president of the New Orleans Academy of Sciences recently—Speakers before the Orleans Parish Medical Society in New Orleans May 14, were Drs Howard R Mahorner on 'Jaundice Associated with Hyperthyroidism' John T Sanders "Treatment of Acute Pelvic Infection with Special Reference to the Elliott Treatment" and Upton W Giles, 'Rational Treatment of Diabetes Mellitus'—Dr William T Pride Memphis addressed the New Orleans Gynecological and Obstetrical Society, April 19, on 'Analgesia and Anesthesia in Obstetrics'

MASSACHUSETTS

Medal to Dr Conant—James Bryant Conant, Ph.D., Shelton Emery professor of organic chemistry and chairman of the department, Harvard University has been awarded the annual medal of the American Institute of Chemists for "outstanding service to chemistry" According to the announcement, 'Dr Conant has done notable work in establishing the chemical structure of many complicated organic compounds, including among others, hemoglobin of the blood substance, chlorophyll, the green coloring matter found in plant life and a number of other coloring substances occurring in flowers and feathers The medal was presented to Dr Conant May 21 In 1932 Dr Conant was awarded the Chandler Medal by Columbia University and the William H Nichols Medal by the New York Section of the American Chemical Society

Survey of Internship Facilities—The committee on medical education and medical diplomas of the Massachusetts Medical Society recently completed a preliminary survey of intern training in the state to ascertain the internships available how they are filled and how they may be improved In 1933 thirty-one Massachusetts hospitals offered this training to 312 graduate medical students the majority of whom were from Tufts, Harvard and Boston University medical schools In addition thirty-six other American medical institutions were represented two Canadian institutions and three foreign schools Ten women interns were enrolled In a consideration of the intellectual level, it was stated that half the interns graduated in

the upper third of the scholastic classes, while only one fifth graduated in the lower third. Of the three internships that are generally offered, rotating services are much more frequently presented than the straight "medical or surgical." Great variability in the number of hospital beds for each intern was apparent in the survey, several hospitals being so understaffed that interns are expected to cover more than fifty beds per man while two institutions are so arranged that they have an intern for each eleven beds.

MINNESOTA

Personal—Dr Frederick A Erb, Minneapolis was recently reelected president of the Hennepin County Tuberculosis Association. —Dr Lawrence J Leonard Minneapolis has been admitted to the bar in Minnesota, according to the *Journal-Lancet*.

Named Director of Indian Service—Dr Langdon R White of the U S Public Health Service has been named medical director for the Indian service of Minnesota, Wisconsin, Michigan, Iowa and North and South Dakota. His headquarters will be in Minneapolis.

Program on Internal Medicine—The sixteenth semiannual session of the Minnesota Society of Internal Medicine was held at Rochester, April 23. Included among the speakers were the following physicians:

George E Brown Rochester Extracts of Skeletal Muscle in the Treatment of Intermittent Claudication and Other Types of Muscular Pain
Richard M Johnson and Hobart A Reimann Minneapolis Calcium Balance and Plasma Protein Studies in Myeloma
Frederick A Willis and Harry L Smith Rochester, Factors Concerned in the Production of Cardiac Hypertrophy
Hugh O Altow Minneapolis Hepatic and Splenic Enlargement in Renal Amyloidosis
Bayard T Horton Rochester Diagnosis of Congenital Arteriovenous Aneurysm
Cecil J Watson Minneapolis Porphyrin Excretion in Certain Anemias

MISSOURI

State Medical Election—Dr Caius T Ryland Lexington, was installed as president of the Missouri State Medical Association at its annual meeting May 9. Dr Edwin Lee Miller, Kansas City, was chosen president-elect, and Dr Edward J Goodwin, St Louis was reelected secretary. The next annual session will be held at Excelsior Springs.

NEW YORK

Stop Tuberculin Tests to Avert Milk Shortage—The testing of dairy cattle for tuberculosis was suspended, June 1 in an effort to prevent a shortage of milk in the state this summer it was reported. It was pointed out that 45,000 tuberculous cows have been killed in the state since February 1, for which farmers have received nearly \$2,000,000. About one half of this amount is paid by the federal government. Unusual weather conditions, resulting in extremely dry pastures make it evident "that there is a possibility of a severe shortage of milk within a comparatively short time." A protest was sent to the state commissioner of agriculture by the Hospital Association of New York State, contending that the order is dangerous to the public and especially to hospital patients.

Epidemic of Vincent's Angina—More than 500 cases of Vincent's angina have occurred during the past three months in the village of Dansville, and cases have also been found in Geneseo, Livonia and rural areas in Livingston County. According to the state health department the majority of cases have been typical clinically, the disease being characterized by fairly extensive ulceration of the oral or pharyngeal mucous membrane, sometimes accompanied by fever and constitutional symptoms. A few patients have been seen with symptoms like those of bronchitis. About two thirds of those attacked are school children. The Livingston County laboratory has records of positive throat smears from 443 persons all of whom are said to have the disease. The local health officer has taken active steps toward the control of the outbreak and has informed the public regarding it through the newspapers. The village board of Dansville has appropriated funds for neocarsphenamine to be used in treating patients who are unable to pay for this drug.

New York City

Personal—Dr Thomas A McGoldrick, a police surgeon since 1907, was appointed acting chief surgeon of the police department, May 3, to succeed the late Dr Daniel J Donovan. —Dr Charles Gordon Heyd has been appointed professor of clinical surgery and executive officer of the department of sur-

gery at Columbia University College of Physicians and Surgeons. —Dr Oscar M Schloss has resigned as full time professor of pediatrics at Cornell University Medical School and pediatrician in chief of New York Hospital but will continue as professor of clinical pediatrics and attending pediatrician to the hospital. —Dr Haven Emerson has recently been made an honorary fellow of the Royal Sanitary Institute of England. —Dr Isaac Ogden Woodruff, professor of clinical medicine, Columbia University College of Physicians and Surgeons, was elected president of the New York Tuberculosis and Health Association, May 22, succeeding the late Dr Linsly R Williams. —Dr Thomas Howell has been appointed superintendent of the New York Hospital-Cornell Medical Center to succeed John R Howard Jr., resigned. —Dr David Warshaw has been appointed associate surgeon of Trinity Hospital Brooklyn.

Hospital News—Dr James W Smith, assistant professor of ophthalmology, New York Post-Graduate Medical School, delivered a lecture on "Eye Diseases of Interest to the General Practitioner" at the West Side Hospital and Dispensary, April 12. —Beth-El Hospital, Brooklyn, held a three-day seminar, May 8-10, to show in condensed form work done within the institution by its attending staff, combined with summaries of recent advances in medicine and surgery by the consulting staff. Dr Maurice J Dattelbaum was chairman of the committee which planned the innovation. —St Joseph's Hospital, Yonkers, recently opened a new addition with a capacity of eighty-five beds. —A committee has been appointed by Dr Sigismund S Goldwater, commissioner of hospitals, to make a complete survey of the city psychiatric service. Dr Charles A McKendree is chairman and members are Drs Frederick Tilney, Henry A Riley, Charles Diller Ryan, Israel Strauss, Mortimer W Raynor and Clarence O Cheney. —Mount Sinai Hospital has begun publication of a journal to be devoted principally to case reports. In addition, special lectures given at the hospital will be printed. Dr Joseph H Globus is editor of the new publication, which will be known as the *Journal of the Mount Sinai Hospital*.

OHIO

Society News—Dr Henry B Freiburg, Cincinnati, addressed the Clinton County Medical Society, May 1, on prostatic resection. —Dr Arthur S Jones, Huntington, addressed the Washington County Medical Society, Marietta, May 9 on "Peripheral Nerve Injuries." —Dr J Isfred Hofbauer, Cincinnati, addressed the Mason County Medical Society, May 9 on "Advances in Early Diagnosis and Pathogenesis of Uterine Carcinoma." —Dr Martin H Fischer, Cincinnati, addressed the annual meeting of the Montgomery County Medical Society Dayton, June 1, on "Art and Practice."

PENNSYLVANIA

Clinical Demonstration of Cancer—The Pittsburgh Skin and Cancer Foundation presented its second annual clinical demonstration at its dispensary, May 23. About eighty patients were exhibited with carcinoma of the skin, mucous membrane and the mammary glands and with lymphoblastomas, bone tumors, tuberculosis of the skin and numerous common skin diseases. Four papers were presented in the evening. Drs Edwin P Buchanan, on carcinoma of the breast, Joseph A Perrone, carcinoma of the larynx, Forrest L Schumacher, recent advances in x-rays, and George J Kastlin, adjuvant medical treatment in carcinoma.

Philadelphia

Drawings Depict Hospital Activities—Designed to serve as a record for future generations, the hospital routine of the present time has been arranged in pictorial form, according to *Hospital Management*. The activities of Hahnemann Hospital have been studied by the artist and have been set down in oil, charcoal, wash drawings and water colors. Forty sketches complete the series and will be displayed at the Century of Progress. Later they will be returned to the hospital. Scenes are being made from all floors of the hospital, the laundry, kitchens, engine room, morgue and all clinics so that a complete picture of every activity and every phase of hospital life will be a matter of record.

Second Professorship of Medicine Created—The executive board of trustees of the University of Pennsylvania voted, May 25, to establish a second professorship of medicine at the university, the first time since the founding of the school of medicine 169 years ago that a provision has been made for more than one professor of medicine. Dr Oliver H Perry Pepper professor of clinical medicine, was appointed to fill the

new position Dr Pepper graduated from the school of medicine in 1908 and since that time has been affiliated with it in various teaching positions. He is the third member of his family to be elected professor of medicine at the university. His grandfather, Dr William Pepper, held the position from 1860 to 1864, and his father, Dr William Pepper, who died in 1898, was also professor of medicine for a number of years as well as provost of the university. At this meeting of the board, the term of Dr Alfred Stengel, present professor of medicine, was extended for three more years, although Dr Stengel has reached the age of retirement after forty-one years on the medical faculty. He will continue also as vice president of the university in charge of medical affairs, which position he has held since 1931.

SOUTH DAKOTA

Personal—Dr Emilie E Rauch, Belvidere, has been appointed health officer of Jackson and Washabaugh counties.—Dr Raymond P Frink, Wagner, has been appointed physician to Indians on the reservation near Greenwood, during an illness of Dr Andrew Ritan.

State Medical Election—Dr William G Magee, Watertown, was installed as president of the South Dakota State Medical Association at its annual meeting, May 16, and Dr Albert S Rider, Flandreau, named president-elect. Dr John F D Cook, Langford, was reelected secretary. The next annual session will be held at Pierre.

Society News—Drs Paul R Billingsley, Sioux Falls, and Walter H Karlins, Webster, addressed the Whetstone Valley District Medical Society in March on "Endometriosis" and "Functional Treatment of Fractures," respectively.—Dr Porter P Vinson, Rochester, Minn., addressed the Seventh District Medical Society, Sioux Falls, May 8, on "Value of Bronchoscopy in Diagnosis and Treatment of Pulmonary Diseases."

VIRGINIA

Society News—Dr Henry B Mulholland, University, addressed the Bath-Alleghany County Medical Society, recently, on "Newer Treatment of Diabetes Mellitus."—Drs Edward C Joyner and William T Gay, Suffolk, addressed the Second District Medical Association in Suffolk, April 18, on "Skull Fracture" and "Traumatic Rupture of the Kidney," respectively.—At a meeting of the South Piedmont Medical Association in South Boston, April 17, the general topic of discussion was endocrinology. Among speakers were Drs James Edwin Wood Jr, University, Regina C Beck, Manfred Call III, and Thomas F Wheelon, Richmond, and Jesse M Shackelford, Martinsville.—Drs James C Flippin and James R Cash presented a joint paper before the Richmond Academy of Medicine, April 24, on "Autopsy Findings in Certain Cases of Jaundice," John H Neff, "Renal Calculi," and Sydney W Britton "Physiology of the Suprarenal Gland." Dr Flippin also addressed the North Virginia Medical Society at Hunt Hill, April 26, on "Clinical Diagnosis of Digestive Disorders."

WASHINGTON

Graduate Lectures at State University—The eighteenth annual course of graduate lectures and clinics offered by the University of Washington, Seattle, will be presented July 16-20. Lecturers will be Drs Edmund Andrews, Chicago, on surgical subjects, Jay Arthur Myers, Minneapolis, tuberculosis, Harold E Robertson, Rochester, Minn., pathology, and Francis Scott Smyth, San Francisco, pediatrics.

WISCONSIN

Society News—Dr Robert L Eagan, LaCrosse, was elected president of the Seventh District Medical Society in Whitehall, May 16, speakers included Drs James T Priestley Jr and Joseph G Mayo, Rochester, Minn., on "Present-Day Management of Prostatic Obstruction" and "Secondary Anemias," respectively. Dr and Mrs William J Mayo were guests of honor at the meeting.—Dr Horace Kent Tenney Jr, Madison, addressed the Brown-Kewaunee-Door County Medical Society, Green Bay, recently, on empyema.—Drs Charles W Mayo and Edward H Rynearson, Rochester, Minn., addressed the Fond du Lac County Medical Society, Fond du Lac, March 14, on "Newer Surgical Treatment of the Thyroid Gland" and "Newer Methods of Medical Treatment of the Thyroid Gland," respectively.—Dr George W Hall, Chicago, addressed the Outagamie County Medical Society, Appleton, April 3, on "Newer Things in Neurology."—At a meeting of the Racine County Medical Society, Racine, March 15, Dr Edmund H Mensing, Milwaukee, discussed intestinal obstruction.

GENERAL

Honorary Membership in American Urological Association—At the annual session of the American Urological Association held in Atlantic City, Mr Fred Wappler, New York, son of the late Reinhold Wappler, was made an honorary member of the association. Because of his contributions to urology, a similar honor was bestowed on the father.

Warning Against Unauthorized Salesman—A Texas physician reports that his office bought two office coats from a salesman giving the name of H A Wilson and purporting to represent Durastyle Apron and Uniform Company, St. Louis, March 14. When the order was not delivered on the date promised, inquiry was made of the firm, which replied that Mr Wilson had left its employ some time previously and that they had not received such an order. The man carried sample books and order blanks of this firm.

Dr Cannon Receives Award—Dr Walter B Cannon, George Higginson professor of physiology, Harvard University Medical School, Boston, was presented with a gold medal of the National Institute of Social Sciences at the institute's annual dinner, May 10, "in recognition of distinguished services for the benefit of mankind through contributions to medical science and education." The presentation speech was made by Dr John A Hartwell, director of the New York Academy of Medicine. A graduate of Harvard, Dr Cannon is a member of several scientific societies. He is the author of many contributions to medical literature.

Scientists Honored—Gold medals were presented by the American Institute at a meeting in New York, May 3, to Oscar Riddle, Ph.D., investigator, Carnegie Institution Station for Experimental Evolution, at Cold Spring Harbor, L I, for his endocrine research, and to Elmer V McCollum, Ph.D., professor of biochemistry, Johns Hopkins University School of Hygiene and Public Health, Baltimore, in recognition of his work on nutrition. Henry C Sherman, Ph.D., professor of chemistry, Columbia University, New York, made the presentation to Dr McCollum and Allan Winter Rowe, Ph.D., professor of chemistry, Boston University School of Medicine, Boston, to Dr Riddle.

Yellow Fever Volunteer Dies—Albert W C Covington, staff sergeant, U S Army, retired, one of the volunteers in the yellow fever experiment in Cuba in 1900-1902, died in the Canal Zone, April 20. Sergeant Covington, following his inoculation, fell ill, Oct 19, 1901, with a typical case of yellow fever but recovered completely and returned to duty. Born in Laurinburg, N C, July 1, 1878, he served almost continuously in the regular army from his enlistment in 1899 until his retirement in 1920. With the death of Covington, there remain about thirteen survivors of the experiment, which was directed by Major Walter Reed. In 1929, Congress authorized the presentation of gold medals and a monthly pension of \$125 to these volunteers.

Pacific Northwest Medical Association—The tentative program of the annual session of the Pacific Northwest Medical Association, to be held in Salt Lake City, June 21-23, includes the following speakers, each of whom will make several addresses:

Dr John S Lundy, Rochester, Minn., obstetrics and anesthetics
Dr Ray M Balyeat, Oklahoma City, migraine, seasonal hay fever and asthma and food sensitization
Dr Joseph L Miller, Chicago, chronic rheumatism, undulant fever and anemia
Dr Frank Hinman, San Francisco, urinary infection, prostatism, oliguria and anuria
Dr Alton Ochsner, New Orleans, appendicitis, ileus and cranio-cerebral injuries
Dr William C MacCarty, Rochester, Minn., cancer, surgical pathology of the stomach and duodenum, and ovarian cysts
Chauncey D Leake, Ph.D., San Francisco, depressant drugs, drugs for diagnostic tests and chemotherapy of syphilis and amebiasis.

Medical Bills in Congress—Changes in Status S 433 has been favorably reported to the Senate, directing the retirement of acting assistant surgeons of the United States Navy at the age of 64 years (S Rept 1187). S 2974 has passed the House, amending the longshoremen's and harbor workers' compensation act. Among other things, the bill proposes to authorize the deputy commissioner to suspend the payment of compensation during any period in which the employee unreasonably refuses to submit to medical or surgical treatment. S 1587 has been favorably reported to the House, amending an act entitled "An act to recognize the high public service rendered by Maj. Walter Reed and those associated with him in the discovery of the cause and means of transmission of yellow fever," by including Roger P Ames among those honored by the act (H Rept 1757).

Society News—Dr Herbert E. Randall, Flint, Mich., was elected president of the Northern Tri-State Medical Association at its annual convention in Flint, recently. The next annual session will be held in Lima, Ohio. Indiana is the third state included in the tristate group. The American Association of the History of Medicine will meet at the Hotel Carter, Cleveland, June 11. Dr Edward J. G. Beardsley, Philadelphia, is secretary. The Mississippi Valley Conference on Tuberculosis and the Mississippi Valley Sanatorium Association will be held at Cedar Rapids, Iowa, September 27-29, with headquarters at the Hotel Montrose. Dr Robert C. Bryan, Richmond, Va., was inducted into the presidency of the American Association of Genito-Urinary Surgeons at its annual session May 16, and Dr James D. Barney, Boston, was chosen president elect. Dr Henry L. Sanford, Cleveland, was reelected secretary.

The Safety Program in CWA Project—Preliminary reports on the safety program in connection with the Civil Works Administration indicate that only half the expected number of deaths from accidents occurred during the period of the projects. As many as 800 deaths were anticipated among the 4,000,000 men employed, but reports indicated that the number would be about 400. The chief cause of fatal injuries was falling objects, which accounted for 113 deaths. Other important causes were vehicles, chiefly trucks, 98 deaths, falls 58 and explosives, 11. State safety directors were appointed, who in turn appointed county safety directors, incidentally taking the campaign of instruction, inspection and first aid to areas which would normally not have had any contact with the safety movement for many years. The American Red Cross cooperated in training 60,000 workers in first aid, between 80,000 and 90,000 first aid kits were available and about 80,000 pairs of goggles were used on the projects.

Changes in Status of Licensure—The Iowa State Department of Health reports that

The license of Dr. Clarence Henry Hanson, Bode was reinstated March 13.

The Massachusetts Board of Registration in Medicine reports the following:

Dr. Percy W. Carr, Boston, license revoked for his conviction in court for administering medicine to produce an abortion. Dr. Carr has been committed to the Massachusetts State Prison (THE JOURNAL, May 5 p. 1505).

The Minnesota State Board of Medical Examiners reports the following:

Dr. Arthur W. Eckstein, formerly of Mankato, license revoked May 8 following his conviction March 31 of the crime of abortion. Dr. Eckstein is serving two years in the state prison at Stillwater.

Dr. Milton G. Brown, Dakota, license revoked, May 8 for habitual use of morphine. Dr. Brown had been before the board on two previous occasions for the same offense.

The Indiana State Board of Medical Registration and Examination reports the following:

Dr. John A. Newhouse, license revoked March 30 for his conviction in the U. S. Iowa District Court for violation of the Harrison Drug Act, fined \$500 and costs. Convicted in April 1933 and deported to Canada June 25, 1933.

CANADA

New Dean at Laval University—Dr. P. Calte Dagneau, professor of clinical surgery, Laval University Faculty of Medicine, Quebec, has been appointed dean to succeed the late Dr. J. M. Arthur Rousseau. Dr. Dagneau was chief surgeon at the Hotel-Dieu from 1914 to 1927 when he became chief surgeon at St. Sacrament Hospital, Quebec. He was graduated from Laval in 1901.

Hospital Burned—Parry Sound General Hospital, Parry Sound, Ont., on Georgian Bay, a frame structure built about fifty years ago, was burned beyond repair April 25. Twenty-six patients were rescued from the burning building and valuable hospital equipment was saved. It was expected that patients would be transferred to Bracebridge Hospital, twenty-five miles away, but they were temporarily cared for in an abandoned apartment building in Parry Sound.

Dr. Banting is Knighted—On the sixty-ninth birthday of King George of England, June 3, Frederick Grant Banting, since 1923 professor of medical research, University of Toronto School of Medicine, Toronto, was made a knight, in recognition of his discovery of insulin. Born in 1892 in Alliston, Ont., Dr. Banting graduated from the University of Toronto School of Medicine in 1916. He practiced until 1921 when he commenced his research on the internal secretion of the pancreas. During the year 1920-1921 he was affiliated with Western University, Ontario, as part time assistant in physiology. He was awarded the Nobel Prize in 1923 and the Scott Medal in 1924.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 12, 1934

So-Called Mucous Colitis

In a discussion at the Royal Society of Medicine on the treatment of mucous colitis, Dr. A. F. Hurst, senior physician to Guy's Hospital, showed that the term was misleading and that specialism in therapeutics had dangers even greater than those in other branches of medicine. An expert in any line of treatment was tempted to accept the diagnosis already made in cases sent to him and to apply treatment without sufficiently full consideration. Thus, if a patient diagnosed as suffering from mucous colitis was sent to a bacteriologist he would be treated with vaccines if he was sent to a spa, he would be treated with Plombieres douches, if sent to an electrotherapist, diathermy would be used. Yet a fuller investigation might show that the so-called mucous colitis was the result of achlorhydria and could be rapidly cured by gastric lavage or administration of hydrochloric acid, or that it might be the first manifestation of carcinoma of the pelvic colon, and while useless treatment was being applied pass into the stage of inoperability. Dr. Hurst had seen many examples of these mistakes. When invited to open the discussion he was inclined to reply, "There is no such thing as mucous colitis, so I cannot open a discussion on its treatment." But then he thought that he might explain why he objected to the diagnosis and at the same time discuss what disorders of the colon were suitable for physical therapy. Mucous colitis meant inflammation of the colon associated with the passage of excess of mucus. It was therefore necessary to consider in what conditions an excess of mucus was passed. The secretion was increased in response to mechanical and chemical irritants. Hard feces in the pelvic colon and rectum acted as mechanical irritants. Consequently the dry scybala passed in dyschezia (a common form of constipation) were covered with mucus that contains no inflammatory products, such as leukocytes or red corpuscles. Endoscopy showed a perfectly healthy mucous membrane. Therefore the diagnosis of mucous colitis should not be made.

The most common chemical irritants of the colon were purgatives. They produced an excess of mucus but again no inflammatory products. The mucus protected the colon so efficiently that colitis resulted only when large doses of purgatives were taken for long periods. In such case the diarrhea induced by the purgatives persisted after they were discontinued. Therefore excess of mucus with soft or liquid feces in a patient taking aperients did not justify the diagnosis of mucous colitis.

Another cause of chemical irritation of the colonic mucous membrane was the use of irritating suppositories, enemas and douches. Glycerin suppositories and enemas, though useful under exceptional conditions always called forth an abundant secretion of mucus, without, however, any evidence of proctitis. Soap and all kinds of medicated enemas and douches caused similar but less intense irritation. So did most natural waters used for douching at spas. Physiologic solution of sodium chloride was almost the only fluid that did not stimulate the secretion of mucus. In what the Americans call "colon laundries" where intestinal lavage was practiced, reports such as this were made. "The first twelve pints brought away loose feces but no mucus but after that a large quantity of jelly mucus was passed." Here 12 pints of fluid was required to irritate the healthy mucous membrane to secrete mucus. Patients were often diagnosed as suffering from mucous colitis.

although they never passed mucus until irritated by the Plombieres douche. Lastly, when excess of undigested food reached the colon, as in achlorhydric gastritis and in enteritis, the colonic mucous membrane might respond by secreting mucus, although no colitis was present. Indeed, achlorhydric gastritis was the most common of all causes of chronic diarrhea, with excess of mucus.

Only the exceptional cases of true mucous colitis remained, in which liquid stools containing excess of mucus and of leukocytes with sometimes a few red corpuscles were passed, and the sigmoidoscope revealed inflammation. With regard to so-called mucomembranous colitis, the membrane was formed of coagulated mucus and did not contain inflammatory material. The condition should be called mucomembranous colic (as suggested by Ewald) and had many features in common with asthma. It depended on abnormal irritability of the sympathetic nerve supply of the colon and was occasionally allergic, the mucous casts representing the Curschmann spirals of asthmatic patients.

Having done his best to demolish "mucous colitis" as a clinical entity, Dr Hurst turned to the practical question of the many persons with uncomfortable colons, which are organically normal but functionally inefficient. Their condition is often the result of abuse of aperients, occasionally the abuse of enemas. A similar irritable colon is a common sequel of intestinal infections, especially those contracted in the tropics, and may persist for years after the specific dysenteric or other organism has disappeared from the bowel. Mucomembranous colic and the various forms of colon spasm, not secondary to some organic disease, such as ulcerative colitis or diverticulitis, may be included in this group. Such cases are suitable for physical therapy. One form of this, diathermy, Dr Hurst has found of the utmost value in the treatment of the frequent functional disorders of the intestine that result from abnormalities of the anal canal. These include a congenitally small canal, a by no means uncommon cause of constipation; acquired stricture following operations on hemorrhoids, anastomosis with or without hemorrhoids, and anal ulcer and achalasia of the anal sphincter, which Dr Hurst believes to be the cause of megacolon. All these conditions can be relieved and often cured by diathermy, applied by means of a straight electrode, when no obstruction is present and a conical one when there is spasmodic or organic obstruction or achalasia. Such treatment is infinitely preferable to cutting operations.

Auto-intoxication resulting from stasis in the colon, which is regarded as an indication for much treatment of different kinds, Dr Hurst regards as a myth. He holds that untreated constipation may cause local discomfort and be a source of much anxiety to the patient, but that it is rarely the cause of toxemia, as hard dried feces do not undergo bacterial decomposition and, even if they did, the mucous membrane would not absorb anything from them. Only when incompletely digested food is driven by purgatives into the colon, there to undergo putrefaction, does intestinal toxemia result. Apart from the abuse of aperients, the absorption of toxins from putrefaction is not uncommon in the small intestine, especially as the result of achlorhydria, but it is rare in the colon except in specific infections, such as bacillary dysentery.

Chiropody and the Medical Profession

Organizations for instruction in chiropody and the provision of chiropodial treatment have been springing up all over the country. The council of the British Medical Association thought it desirable that the profession should determine its future relation with chiropodists. Inquiry was made of the Incorporated Society of Chiropodists, which was anxious to secure some recognition of its members, as to its attitude toward the following limitations of the field of work of

chiropody: "Chiropody means the treatment of abnormal nails and all superficial excrescences occurring on the feet, such as corns, warts, callosities and bunions. Each of the members undertakes: 1 To confine his practice to the above mentioned conditions. 2 Not even within the above field to operate for (a) any congenital or acquired deformity, (b) any condition requiring either a general or local anesthetic given by injection, (c) any condition involving any structure below the level of the true skin. 3 Not to deal with any patient who at the time is under the care of a physician without his knowledge and consent." The society agreed to this definition and conditions, and accordingly the proposal was made to the council of the British Medical Association that the medical profession should accord a measure of recognition to approved chiropodists and that their names should be included in the National Register of Medical Auxiliaries. It was pointed out that there had been great developments in the field of chiropody and that hospitals and organizations for instruction had sprung up. If some form of recognition of these practices should be accorded, a good opportunity would be given for the control of the craft. Two members of the council took exception to inclusion of bunions as "superficial excrescences." Another member said that the proposal was contradictory to the policy previously sanctioned by the council—that no person who had not passed through the discipline of the medical curriculum could be countenanced as competent to recognize and treat disease. On the other hand, it was pointed out that chiropodists were performing extremely useful work and developing into an important body, and that it would be in the interest of the public that the medical profession should train them along suitable lines. An attempt of the profession to insist that the public could obtain these various auxiliary services only through physicians would be riding for a fall. The council agreed by 16 votes to 12 to recommend to the representative body of the British Medical Association that the medical profession should accord a measure of recognition to approved chiropodists who accepted the definition of their work as given.

PARIS

(From Our Regular Correspondent)

April 18, 1934

New Treatment for Sprains

Professor Leriche of Lyons has contended for some time that in sprains there is no lesion of the ligaments, even when there is an edema and a marked subcutaneous hemorrhagic suffusion. The dominant symptom is the pain caused by the contracture. He affirms also that any sprain can be quickly cured if one allays the pain of the tissues. For this purpose he uses injections of procaine hydrochloride, deep in the painful area. By this method he brings about the disappearance of all the symptoms of sprain within a few hours. In a communication to the Societe de chirurgie he stated that a sprain is essentially a traumatism of the nerves of the ligaments and that these nerve terminals are the point of origin of a reflex acting on the articular trophism and on the vascularization of the motor muscles. He verified the local and the more remote action of the injection of procaine applied to the painful ligaments. He emphasized the need of giving an early injection before the appearance of edema and hydrarthrosis. An application of this method was made at Bordeaux by Courboules, Mandillon and Georget in two cases of traumatic arthritis of the shoulder that developed in young persons. They applied periarticular and intra-articular injections of a 1 per cent solution of procaine hydrochloride, in doses of from 20 to 30 cc. After from three to five injections they noted the total disappearance of all functional symptoms and a complete restoration of articular mobility.

Admission of Wealthy Patients to Charity Hospitals Stopped

The admission of wealthy patients to the *hopitaux de l'Assistance publique* was the subject of an important session of the municipal council of Paris. The grievances of the medical profession were ably supported in vigorous attacks on Mr Mourier, director of the *Assistance publique*, for granting favors to wealthy patients in hospitals under his control. Formerly, consultations and hospitalization were given only to persons registered in a charitable organization. Since the war, conditions have changed. Many persons have had financial losses owing to the devaluation of the franc to 20 per cent of its former value, and that has been further aggravated by the conversion of government bonds and reduction of the interest rate. The economic crisis has hastened this development. On the other hand, the hospitals of the *Assistance publique* have become modernized. Patients now receive excellent care, and the bourgeoisie no longer feels the same repugnance as formerly about applying for treatment, especially since the private hospitals have raised their prices, likewise the physicians' fees have been increased, which is the logical effect of higher rents, higher taxes and the higher cost of living in general. Many salaried persons have not sufficient income to pay the costs of an operation or a long period of sickness in a private hospital. Hence they prefer to seek treatment in the hospitals of the *Assistance publique*. As a result, the administration of the *Assistance publique* has found its expenditures enormously increased. It has built new hospitals. The population of Paris consists at present of more than 20 per cent of foreigners and immigrants from the provinces. To provide funds for the increased expenditures the director of the *Assistance publique* has accepted reasonable fees from persons able to pay who requested consultations or hospitalization, while only persons absolutely without means were treated gratuitously. Every person who receives a salary or who has any other source of income must pay. With a constant increase of expenditures, the fee schedule applicable to persons with funds has been gradually raised. Today the fee for consultation is 6 francs, or \$0.36; the per diem room charge is 36 francs, or \$2.16, in the medical department, and 52 francs or \$3.12, in the surgical department; these prices include the fees of physicians and surgeons, which are apportioned annually by the administration, which takes due account of the fact that their connection with the *hopitaux de l'Assistance publique* increases their prestige among their private clientele. The inevitable result has been that, once the principle of accepting pay for services rendered to the nonindigent was accepted by the city hospitals the well-to-do middle class, and even many persons of considerable wealth, have claimed the right to be treated in these hospitals. The fees asked are much lower than the actual cost of the service rendered. The difference is made up from their own budget, which is a part of the regular budget of the city of Paris. Often eminent physicians and surgeons find themselves deprived of the usual fees of their private clientele, since their wealthy clients prefer to go to the hospital, where they find their regular physician or surgeon who is obliged by the regulations to treat them without exacting any special fee. The director of the *Assistance publique* is not inclined to refuse admittance to wealthy patrons since he increases thereby his receipts. The physicians are protesting vigorously, and rightly so. The controversy flamed up anew at a recent meeting of the municipal council in connection with the vote to be taken on the budget of the *Assistance publique*. Mr Raoul Brandon cited some scandalous facts. Rich patrons pay 6 francs (\$0.36) for a hospital consultation while their luxurious car is parked in a neighboring street. Some patients call an eminent surgeon in private con-

sultation. The surgeon decides that an operation is needed but the patient does not go to the private clinic indicated by the surgeon but gains admittance, at 52 francs (\$3.12) a day, to his department in the hospital, where he is surprised to discover him the day following and is obliged to operate on him. It has been discovered, however, that in certain cases it was the family physician himself who sent his patient to the city hospital, realizing that he would not receive at home the necessary care or be able to provide day and night nurses. The council passed a resolution that no more patients be admitted to the city hospitals without presenting evidence of indigence either a card showing that they are out of work or have social insurance or without presenting their income tax book for inspection, in order that persons who have sufficient funds to pay their physician may be eliminated, an exception being made in emergency cases due to accidents occurring on the public highways. If a charge of fraud can be established, a fine will be imposed representing twenty times the normal fee.

BERLIN

(From Our Regular Correspondent)

April 16 1934

The Government's Attitude Toward Lay Practitioners

According to a recent decree, all persons practicing the art of healing are required to register for incorporation in the new organization of science and industry. Future practice of the healing profession demands the registration of all persons engaged in the treatment of the sick or in health service in general. This is the natural consequence of the decision of the professional leagues of physicians, pharmacists, dentists, druggists, lay practitioners (*heilpraktiker*), veterinarians and the organizations that aid in medical and social service (nurses, practical nurses, midwives) to declare their adherence to the reorganization plans of the new government. In addition, the *Reichszentrale für Gesundheitsführung*, a subdepartment of the federal ministry of the interior, to which all the federal mergers concerned with health administration belong, will be merged with the new health division that will take over the practical sanitary organization of the government's field work. All the organizations and professions that contribute to the uplift of public health and associated fields of endeavor will be merged to cooperate in the promotion of emergency field work.

The question of the *heilpraktiker*, or lay practitioners, will not be solved so quickly as was expected at first. The deliberations on the law pertaining to *heilpraktiker*, the general plan of which was explained in *THE JOURNAL*, March 10, page 781, will not be completed for some time. Certain regulations, however, have been adopted to eliminate at once certain bad practices. For example the director of the *Heilpraktikerbund Deutschlands* has issued an order prohibiting all *heilpraktiker* from resorting to any form of unethical advertising, whether through notices in newspapers or by the distribution of printed matter. He states that it is not compatible with the dignity of the *heilpraktiker* profession to refer in advertisements to testimonials (even in a roundabout way) or to laud the merits of "cure-alls." Such forms of solicitation must be omitted. All *heilpraktiker* are instructed to report immediately advertisements of this nature that appear (after Feb 5 1934) in order that such practitioners may be proceeded against with all vigor. The only advertising that a *heilpraktiker* may employ is the insertion of a notice in which, after his full name he calls attention to his practice (or, if need be to a change of address) the only details that are permissible

being the mode of treatment, the special fields of practice, and the office hours

How difficult the "incorporation of the heilpraktiker" as planned by the government will be, and what propaganda these lay practitioners are resorting to, is evident in a request of the federal minister for popular education, addressed to the "leader" of the medical profession, Dr. Wagner, asking him to call the attention of the heilpraktiker, the "nature doctors" and the "life reformers" to the fact that attempts to increase their clientele by playing on the government's newer demographic plans will not be permitted. All propaganda must be carried on in closest agreement with the competent provincial or federal propaganda center of the ministry.

Another plan of the league of heilpraktiker, to give 450,000 free treatments for the winter aid society, suffered shipwreck. The offer was made without the knowledge or desire of the director in charge of all matters pertaining to public health and was rejected by the Winterhilfswerk. It has now been decreed that all meetings of heilpraktiker, together with the distribution of circulars and other printed matter, must be approved by the director of the Heilpraktikerbund of Germany. This league alone has still the free right of assemblage.

Bathing and Drowning

Professor Eckert-Mobius, in addressing the *Verem der Aerzte, Halle-on-Saale*, said that disorders of the ear and upper air passages resulting from bathing are seldom caused by a long stay in the water but by neglect to keep the body warm before or after bathing. Such colds are usually induced by drafts, which cause rapid cooling of the wet skin, either before or after the bath, in persons who are predisposed to colds. Occasionally, an infection develops as a result of the entrance of water into the mouth and nose. Swallowing of the water or sneezing may carry germ-laden water (the germs being in the water itself or in the nasal flora) into the sinuses or middle ear. The best protection against such things is a correct swimming technic and avoidance of swallowing water. Mouth breathers should refrain from swimming entirely. In persons who have a perforation of the tympanum, an acute otitis may develop also through the entrance of water by the external meatus. Temporary hardness of hearing occurring after bathing is usually due to the swelling of a pellet of ear wax from the invading water. Finally, traumatic injuries of the ear may be considered. Comparatively frequent are contusion and laceration of the tympanum, resulting from violent compression of the air column in the external meatus in connection with poorly organized jumping, and particularly with the headspring. The contusion may be complicated by an infection of the tympanum or by an acute otitis media. Much more dangerous are irritations of the vestibular apparatus, which may develop through the entrance of cold water through a perforation of the tympanum or a large defect left after a radical operation. Such irritations cause disturbances of the equilibrium, which, in swimming under water, make it next to impossible to find one's way back to the surface. In sudden death resulting from jumping or diving, the possibility of such a "vestibulum death" should be considered. In case a swimmer has an impaired tympanum, it is wise to put in the ear a tight-fitting tampon of greased cotton, before entering the water.

Professor Walcher pointed out that the entrance of infection into the sinuses and middle ear may be facilitated by vomiting and the expiratory efforts that occur in persons saved from drowning. Lacerations of the gastric mucosa may sometimes be due to this increase of pressure. Sudden death in the water may occasionally be due to shock. Consideration must be given also the marked changes of pressure within the chest and to disturbances in the blood flow to the heart due to severe struggles in the water, possibly with upward displace-

ment of the diaphragm, and to filling of the gastro intestinal tract with chyme, gas or air, favored by the pressure of the water, particularly on the abdominal wall. At necropsy, experts always look for lacerations of the tympanum. In deciding whether drowning or sudden death in the water occurred, all the circumstances of the case must be studied and if there were witnesses they must be closely questioned. In many cases, when the body is not discovered until some time after the accident, no certain decision can be reached. In the absence of pronounced evidence of drowning, one should not immediately assume that a heart attack occurred in the water, a rule that plays an important part in expert decisions bearing on insurance. Many cases cannot be clarified from a purely morphologic point of view.

Incidence of Suicide, 1925-1932

According to a report issued by the federal bureau of statistics, 18,625 persons in Germany committed suicide in 1931, which is an increase of 745 over 1930. A conservative estimate places the number of suicides for 1932 at 18,000. The number of suicides recorded for the eight-year period from 1925 to 1932 was 134,933. The incidence of male suicides ranges around 70 per cent, whereas in 1931 the total female suicides (5,491) amounted to 30 per cent. In connection with the increase in the number of suicides for the year 1931, as compared with that of 1930, it should be noted that a large portion of the men were more than 60 years old. The juvenile suicides declined considerably, reaching about the low figures for 1913.

BUCHAREST

(From Our Regular Correspondent)

May 8, 1934

Association Establishes a Syndicate Office

The board of the national medical association resolved to establish an office to deal with all disputed problems of the profession. The office will include a legal section, which will be at the disposal of practicing physicians. The office will form an integral part of the association, but it will work quite independently. The reasons for the foundation of the syndicate office are as follows. The financial crisis has affected the medical profession. The association has found that many private patients try to evade their obligations to pay the doctor's fees. It will be the duty of the syndicate office to settle disputes between physicians and the families of patients. Another activity of the syndicate will be to act as counsel before the courts for physicians against whom legal proceedings have been brought for professional offenses or for matters connected with their professional responsibility. As in most such cases reasonable judgments can be brought only by hearing experts in the various specialties, the syndicate will send a representative to every trial and, if necessary, the representative will force a hearing from the standpoint of the national medical association. It will be the task of the syndicate to study all drafts of new bills concerning the profession.

A Law on the Cumulation of Medical Positions

The principal paragraphs of a new law are as follows. No one shall be allowed to fill more than one position that pays a salary, wage, daily or extra allowance by the state or by a county, parish, monopoly, sick club or similar institution, the budgets of which are subject to the approval of the government, a county, a city or a clerical suzerainty. Scientific staffs adjuncts, assistants and junior dressers who work at scientific institutes and devote their whole time to scientific work, without practicing may occupy a second salaried position. Any official physician may occupy other paid positions, if these are not declared incompatible with the law and the

sum total of his pay does not exceed 16,000 lei monthly (about \$150). Disobedience to the law will be punished with loss of positions and also a fine of three times the amount of the illegally received annual payments.

Medical Advertisements in Newspapers

Since 1931, a medical chamber organization has been functioning in Rumania as a blessing to private practitioners. By strict execution of the law on the cumulation of positions, the chamber has helped more than 400 physicians to acquire employment. The chamber, however, has been indulgent of the offenses of advertising in daily papers and even of placing posters on the streets. Leaflets have been pasted up in Bucharest, with the following text: Medical Consultation Bureau, 250 Sos Stefan cel Mare. Cures genito-urinary diseases with guaranty. Diathermy. Ultraviolet rays. All kinds of injections, surgical operations and dressings. Open from 8 a m to 9 p m. The medical chamber took energetic measures to stop these anomalies. It is drafting a bill to require that all advertisements of a medical character shall before publication come before the special censoring office of the chamber. It is expected that this bill will be passed by the chamber of deputies early next month.

The Sale of Gluside Becomes a Monopoly of the State

The draft of a bill has been passed to the national assembly providing for a monopoly of the purchase and sale of gluside. The reason is that lately the consumption of sugar has diminished immensely because large quantities of gluside are smuggled into the country from Czechoslovakia. If only the monopoly office may import gluside and sell it only to pharmacies, smuggling will come to an end, but it will make gluside very expensive, for a tax will have to be paid to the treasury on each kilogram. The medical periodicals object to this exorbitant tax on a drug, which is indispensable to a great number of patients, who have to use it for years.

RIO DE JANEIRO

(From Our Regular Correspondent)

March 28, 1934

Kymography

Cabello Campos and Dante Pazzanese presented to the Society of Medicine and Surgery of São Paulo results of a careful roentgenologic study of organs in movement. Of known clinical entities, the kymogram is particularly interesting in aortic insufficiency. Generally it presents ample waves in the region of the aorta, owing to the great expansion and retraction of the vessel in this disease. In tricuspid insufficiency there is increase of the movements of the right auricle and of the venous movements. In aortic stenosis it shows waves of slight amplitude in the region of the left ventricle and of the aorta. In mitral lesions it has no characteristic aspect. In disturbances of rhythm the kymogram allows the diagnosis of a large number of arrhythmias through the analysis of the auricular and ventricular waves and of the time relations between them. For instance, in total block there are six, seven or eight auricular waves for three or four ventricular waves. In complete arrhythmia all waves are irregular in form, amplitude and aspect. In taking kymograms in arrhythmias it is advisable to diminish the speed of the film in order to obtain a larger number of beats. In cases of tumors of the mediastinum the kymogram contributes much to the clearing up of doubtful diagnosis. The advantages of the method extend to the diagnosis of sclerosis of the vessels, of pericarditis with effusion, of adherences of the pericardium and like conditions.

The authors give an outline of kymography taken from the original work of Stumpf, *Das Roentgenographische Bewe-*

gungsbild und seine Anwendung 1931, and present a series of kymograms, which they think are the first to appear in Brazil, obtained with an apparatus constructed under their direction.

The New Hospital of São Gonçalo

The Hospital of São Gonçalo in the state of Rio with the cooperation of the state government and the municipality has just been finished. The hospital consists of two wards for men and women, a ward for children, a maternity ward and private rooms. There is an x-ray room, pharmacy, laboratory, and the following clinics: medical, surgical, pediatric, gynecologic, ophthalmologic, otorhinolaryngologic, odontologic, venereologic and phthisiologic for outpatients. A school for nurses is being founded by the direction of the hospital.

The Exploitation of Physicians

Owing to the economic crisis, which is made worse by the ever increasing work of the socialization of medicine, there has been some agitation among physicians of the large Brazilian cities to find a means to diminish the exploitation of physicians. Gratuitous medical services exist in all kinds of associations, in so-called orders, having thousands of members, which are in fact rich corporations that pay small fees to physicians. Besides the Brazilian Medical Syndicate, which aims to defend the interests of the profession, a large number of young physicians have decided on an intensive campaign to serve better the medical class. They hold well attended meetings in an effort to vindicate the physicians harmed by those who try every means to exploit the medical profession. This campaign of the young physicians is awakening much sympathy. It aims at uniting the interests of a noble profession against the constant and increasing exploitation of rich societies that remunerate physicians in an insignificant way for their services.

JAPAN

(From Our Regular Correspondent)

April 11, 1934

Japan's Greatest Medical Meeting

The ninth general meeting of the Japan Medical Society was held April 1-5, after an interval of four years, at the great hall of the Tokyo Imperial University, with Dr Tatsukichi Irisawa in the chair, 5,620 members were present and 2,512 papers were read, of which 159 papers were read in the section on microbiology and 158 in the section on pathology. These two sections were the first in number of papers. It was the greatest medical meeting ever held in this country. A number of guests from China proper, Manchuria and India delivered addresses.

In his opening address, Dr Irisawa recalled that this society originated at a gathering in 1890 of a few medical men in Tokyo. There was a second conference in 1893, and then, for the first time, all the medical societies united and the Japan Medical Society came into being. The first general meeting of the society was held in 1902, with sixteen sections. The number of the sections gradually increased and at the seventh meeting there were twenty-four. At the eighth meeting there were twenty-eight, but this year there were thirty-two sections each having its meeting. This indicates a rapid progress in medicine in this country in a short period.

On the first day Dr Y. Fujikawa delivered a special lecture on "A Historical View of Medicine." He treated the subject from the scientific, philosophical and moral points of view. He acknowledged the essential part of science in medicine but pointed out the danger to which too much reliance on mere science is apt to lead, without remembering that man has a soul. He referred to the important influence of philosophy on modern medicine. He concluded that medicine should be an art of the highest order and that medical education should be

based on this principle. The next special lecture was delivered by Dr. Kenji Takagi of the Imperial University, on the progress of orthopedic surgery and the treatment of cripples. Dr. T. Goda, surgeon general, spoke on the military medical service in the recent Manchurian trouble, and he exhibited many appliances and instruments that were used on the field of battle. The thirty-two sections held their meetings on and after the second day. Various prizes were awarded to celebrate strenuous years of study and research. The scholarship founded by the late Dr. Asakawa was awarded to Drs. Hata, Matsumura and Ishihara for their experimental study of disinfectants. The Imperial Gift was conferred on Drs. N. Onodera and S. Kanegae for their research on the gastric movements.

In the section on pathology, Dr. T. Kimura read a paper on morphologic examinations for glycogen in animals. There were heated discussions for and against his point of view from the 600 members present. The pathology of rice disease and beriberi in infants were among other subjects discussed in the 158 papers read before the section. In the section on medicine a paper was read by Dr. F. Sakuragawa on high and low blood pressure. He critically reviewed all the so-called causes of high blood pressure to the greatest satisfaction of all present. Fifty-three papers were read in three days. Vitamin B deficiency disease, beriberi, heart disease and Manchurian fever were important considerations. A subject proposed for the next meeting is diseases of the red and white blood corpuscles.

One of the most successful meetings was that of the section on surgery. Drs. M. Nakata and E. Karasawa's paper on idiopathic gangrene, reporting work of especial significance, was allowed over one hour for reading, while others were granted only ten minutes apiece. An important report on surgery of the chest was given by Dr. Sewo of Chiba Medical College and his colleagues. Surgery of the sympathetic nerves was a popular study in every college, and many papers were read.

In the section on pediatrics, beriberi in infants was discussed by Dr. T. Ota, who said that there are two diseases found only in Japanese medical books—"nurslings' beriberi and nurslings' encephalitis." The latter was demonstrated by Dr. Hirai to be lead poisoning from face powder used by the mother. The cause of the former condition has not been definitely established but the disease is considered to be a nutritional disturbance caused by vitamin B deficiency. Arguments arose on every side that it was caused by poisoning by the milk from mothers who have beriberi, as well as by vitamin B deficiency. Neither side would yield, earnest debates proceeding without end. Yet Hirai's thorough investigations of how this disease affects the infant stomach, intestine, breathing, blood nerves and nutrition, is said to be the most important literature available on this disease.

In the section on hygiene were discussions of research on the contents of rain and snow and their relation to purification of the air, architecture and humidity, on the amount of sunlight in Tokyo, on soy bean powder and its use, and on social insurance in this country.

In the section on tuberculosis there were discussions about the relation of diabetes and tuberculosis. Dr. Kakinuma's paper on treatment was the most striking feature of this section.

In the section on pathology, among many papers, the report of Dr. Mitamura of the Epidemic Research Institute on the cause of smallpox again brought forth a fervent discussion. A paper on jaundice and one on the cause of tsutsugamushi disease attracted much attention. Professor Kimura of the Tohoku Imperial University reported that he had discovered a nerve fiber which, when severed from the cell from which it originates, does not always undergo degeneration. The problem of anatoxin was discussed in a special round table in the section on microbiology, the chief points of interest were

the effects of anatoxin, the interval of vaccination and the proper age and season to vaccinate against diphtheria. The discussions will be printed in pamphlet form in the near future, to be distributed among the members.

The problem of blood types and temperament was a matter of earnest discussion in the race hygiene section, which for the first time held its sectional meeting during this general meeting.

On the last day, April 5, Dr. T. Sasaki read a paper before the general meeting on future methods of research. He insisted that between the special branches there was a gap, which tends to prevent the thorough study of medical science. To be successful there should be established a close relationship. Chemistry and pathologic anatomy, for instance, ought to be studied much sooner in close relation with each other.

The Best Age at Which to Marry

Become a father at 30 or a mother at 24 was the advice given by Mr. Shigeru Ohotomo of the Osaka Educational Research Institute before the society of applied psychology at the Kyoto Imperial University. At those ages, one's chances of having brilliant children are 94 out of 100. Mr. Ohotomo studied 12,104 primary school children in Kobe and graded the pupils into five classes of intelligence. He found that the majority of boys that had the highest grades had 30 year old fathers and 24 year old mothers. The ages of the parents of the girls having the highest grades varied a little from those of the boys. Those girls usually had fathers aged 39 and mothers of 26 or 27 when they were born. Children with low intelligence rating often had parents of advanced ages. Another deduction made by him was that the difference in age between husbands and wives had a great bearing on the intelligence of their children. He said that 45 per cent of the children in the highest group had parents whose ages differed from four to seven years.

Smallpox

The total number of cases of smallpox in 1933 in this country is reported to have been 376 of which 56 were fatal. In the prefectures where the army returned home from Manchuria, comparatively more cases broke out. The source of this epidemic is reported to have been China, Manchuria and Korea. Of seventy-three cases found out in Tokyo, most of them were among Koreans, who are prevented by ignorance and superstition from being vaccinated. Compulsory inoculation among the native born Japanese is easy, but as the Koreans are often without any fixed residence, regular inspection and vaccination are almost impossible.

Marriages

FREDERICK PILCHER JR., Rochester, Minn., to Miss Marjorie McGuire of Petersburg, Va., March 24.

WYATT EARLE ROYE, Richmond, Va., to Miss Anne Estelle Taylor of Bowlers Wharf, March 22.

HERMAN STUART FLETCHER to Miss Helen Louise Overmann both of Richmond Va., April 4.

JAMES WOODFIN KEEVER to Miss Beulah Icard Streetman, both of Hickory, N. C., May 20.

WESLEY G. FORSTER Taylorville, Ill., to Miss Calista Rose Cleary in Chicago, May 19.

KAGEYAS WAT AMANO to DR. FUMIKO YAMAGUCHI, both of Los Angeles, May 14.

JAMES ASA SHIELD to Miss Frances Richardson, both of Richmond Va., April 14.

JACOB JACOBOWITZ to Miss Ruth Lepostat both of New York, April 15.

ALLEN W. LANE to Miss Frances Barrow, both of Blackstone, Va., April 7.

FRED T. HAUSER, Bland, Va., to Miss Juanita Shannon, February 22.

Deaths

Frederick Erasmus Franchere, Sioux City, Iowa, University of Minnesota College of Medicine and Surgery, Minneapolis, 1890, member of the Iowa State Medical Society, past president of the Woodbury County Medical Society member of the American Academy of Ophthalmology and Otolaryngology, fellow of the American College of Surgeons formerly professor of nervous diseases and secretary of the faculty and professor of ophthalmology and otolaryngology, Sioux City College of Medicine, at one time coroner of Watonwan County, Minn., and health officer of St James, Minn. on the staffs of the Lutheran and St Vincent's hospitals, aged 67, died, April 28

George Paul La Roque ♂ Richmond, Va University of Pennsylvania School of Medicine, Philadelphia, 1902, professor and head of the department of clinical surgery, Medical College of Virginia, since 1928, and associate professor of surgery, 1910-1927, member of the Southern Surgical Association, fellow of the American College of Surgeons surgeon to the Memorial, Dooley and St Philip hospitals and the Retreat for the Sick, aged 57, died suddenly, May 16, in Cincinnati, of heart disease

Raoul Arthur Amador, Paris, France College of Physicians and Surgeons in the City of New York, Columbia University, 1897, veteran of the Spanish-American War Consul General for Panama in New York, 1905-1907 president of the League of Nations Council and Panama's Minister to France secretary of the Legation of Panama in France officer of the Legion of Honor, aged 59, died, March 23, of pneumonia

Albert John Hoskins, Albuquerque, N M, College of Physicians and Surgeons, Baltimore 1904 commissioned in the U S Army in 1911 and resigned in 1917, commissioned in the U S Public Health Service in 1917 and served in different capacities aged 58 medical officer to the U S Veterans' Administration Hospital, where he died, April 28 of cerebral hemorrhage

George Frank Wilbur, Asbury Park, N J, University of Pennsylvania School of Medicine, Philadelphia, 1882, member of the Medical Society of New Jersey, member of the board of health for six years and for many years school physician, member of the board of medical examiners, 1894-1895, 1899-1900 and president 1897-1898, aged 77, died, April 1

Daniel Joseph Donovan ♂ New York College of Physicians and Surgeons in the City of New York, medical department of Columbia College, 1887 past president of the International Association of Police and Fire Surgeons, chief surgeon of the police department, aged 68, died, May 2, in a local hospital, following an operation for appendicitis

Charles Wendell Townsend, Ipswich, Mass, Harvard University Medical School Boston 1885, member of the Massachusetts Medical Society, formerly on the staffs of the Massachusetts General, Boston Lyng-In and the Children's hospitals, Boston, and the Seashore Home for Sick Children, Winthrop, aged 75, died, April 3, in Boston

Alexander Hayden Lindsay, Amarillo, Texas, Memphis (Tenn) Hospital Medical College, 1898, member of the State Medical Association of Texas past president of the Potter County Medical Society, formerly on the staffs of St Anthony's and Northwest Texas hospitals, aged 72, died, March 25 of chronic myocarditis

James Albert Davis, Covington Ky Pulte Medical College, Cincinnati, 1893 at one time professor of anatomy and lecturer on orthopedics at his alma mater served during the World War for many years on the staff of the Bethesda Hospital, Cincinnati, aged 67, died, March 23, of cerebral hemorrhage

John Henry Flynn ♂ Brooklyn, Tufts College Medical School Boston, 1913, fellow of the American College of Surgeons served during the World War, aged 45 surgeon to St Mary's Hospital where he died March 28 of black water fever, which developed while on a cruise to the West Indies

Grant Sherman Peck ♂ Denver University of Michigan Homeopathic Medical School, Ann Arbor 1890, at one time professor of otology, rhinology and laryngology, and treasurer of the Denver College of Physicians and Surgeons aged 69 died April 21 in Rochester, Minn. of carcinoma of the stomach

Spencer Allen Colliom ♂ Texarkana Texas Kentucky School of Medicine, Louisville, 1892, fellow of the American College of Surgeons, on the staffs of the Texarkana (Texas)

Hospital and St Louis Southwestern Hospital, Texarkana, Ark., aged 67, died suddenly, April 26, of heart disease

Arlington Clare Holland ♂ Colorado Springs Colo., Starling Medical College, Columbus, 1896, past president of the El Paso County Medical Society, formerly registrar of vital statistics in Ohio, on the staff of the Beth-El Hospital, aged 60, died, April 28 of coronary thrombosis

Thomas Scott Hening, Jefferson, Va., Medical College of Virginia, Richmond, 1894, for many years member of the state senate, county board of health, county coroner and judge of the juvenile court, aged 61, died, April 29, of carcinoma of the cardiac end of stomach and esophagus

Carle Lee Felt, Philadelphia, University of Pennsylvania School of Medicine, Philadelphia, 1894 member of the Medical Society of the State of Pennsylvania, for many years on the staff of the Stetson Hospital aged 64, died May 2, of hypertension and cardiac hypertrophy

Jane Nye Gilliford, Pomeroy, Ohio, Kansas Medical College, Medical Department of Washburn College, Topeka, 1899 Pulte Medical College, Cincinnati, 1900, member of the Ohio State Medical Association, formerly county health officer, aged 66 died, April 23

Albert Leroy Beahan, Canandaigua, N Y, Bellevue Hospital Medical College New York, 1879, served with the American Red Cross in France during the World War formerly member and chairman of the county board of supervisors, aged 79, died, March 23

Joseph L De Cock, Green Bay Wis Milwaukee Medical College, 1907 member of the State Medical Association of Wisconsin county physician, on the staffs of the Bellin Memorial, St Mary's and St Vincent's hospitals, aged 53, died April 14

Clarence Irvin Britt ♂ Columbus, Ohio, Ohio State University College of Medicine Columbus, 1920 on the staffs of the Grant, St Francis, White Cross and the Columbus Radium hospitals, aged 41, died, May 4, in Trudeau, N Y, of tuberculosis

Isaac George Babcock ♂ Cumberland Wis, Bellevue Hospital Medical College, New York 1888, past president and secretary of the Barron-Washburn-Sawyer-Burnett Counties Medical Society, aged 70, died, May 9, of heart disease

George Bennett Fielding, Brooklyn, Long Island College Hospital, Brooklyn, 1899, member of the Medical Society of the State of New York, aged 59, died, April 3 in the Doctors Hospital, New York, of carcinoma of the larynx

Charles Gordon Bohannon ♂ South Norwalk, Conn, University of the City of New York Medical Department 1878, formerly mayor of South Norwalk, on the staff of the Norwalk (Conn) Hospital, aged 81, died, April 19

Jesse C Bennett, Jefferson, Ga, Atlanta Medical College, 1890, member of the Medical Association of Georgia, secretary of the Jackson-Barrow Counties Medical Society, aged 65, died suddenly, April 19, of diabetes mellitus

Thomas J Conley ♂ Chicago, Rush Medical College Chicago, 1885, on the staff of the Westside Hospital and formerly on the staff of the Cook County Hospital, aged 75, died May 13, of coronary thrombosis

William Marshall Friend, Park Ridge, Ill Washington University School of Medicine, St Louis, 1895 member of the Illinois State Medical Society, aged 63, died, May 6, of uremia and chronic nephritis

Joseph Stevenson J Manning ♂ New York, College of Physicians and Surgeons in the City of New York, Medical department of Columbia College, 1890, aged 64 died, April 25, of coronary thrombosis

Edwin Daniel Frear, Danbury, Iowa, State University of Iowa College of Medicine, Iowa City 1882 formerly professor of hygiene and dermatology, Sioux City College of Medicine, aged 79, died, March 19

Vincent Aloysius Callery ♂ Pottsville, Pa University of Pennsylvania School of Medicine Philadelphia 1925 on the staff of the Lemos B Warne Hospital, aged 39, died, April 28 of pneumonia

Charles Wilhelm Eisenhower ♂ York, Pa Jefferson Medical College of Philadelphia, 1903 past president of the York County Medical Society, aged 61, was found dead, May 21, of a bullet wound

Herbert Wyche Cruik-Shank, Cleveland, Harvard University Medical School, Boston 1895, superintendent of the General Hospital Clinic, aged 65, died, March 31, of hypertension and uremia

Robert Y. Ferguson, Pontiac, Mich., Detroit College of Medicine, 1896, member of the board of education, on the staff of the Pontiac General Hospital, aged 63, died, March 20, of heart disease

Robert J. Hillis Ⓢ Altoona, Pa., College of Physicians and Surgeons, Baltimore, 1886, on the staff of the Mercy Hospital, aged 71, died, February 25, in the Bradenton (Fla.) General Hospital

Joel Carlton Brown Ⓢ Lewistown, Mo., Rush Medical College, Chicago, 1886, past president of the Lewis County Medical Society, aged 72, died recently, in Columbia, of angina pectoris

Shirley H. Lapp, Mount Morris, N. Y., University of Buffalo School of Medicine, 1921, member of the Medical Society of the State of New York, aged 36, died, April 8, of pneumonia

Robert Thomas Bailey, Central City, Ky., Louisville National Medical College, Medical Department State University, 1910, aged 54, died, April 17, of phenol poisoning, self-administered

Charles Hercules Dale, Springport, Mich., University of Michigan Homeopathic Medical School, Ann Arbor, 1877, aged 82, died, April 24, of hemiplegia, diabetes mellitus and chronic myocarditis

Samuel Saffield Rodgers, Pittsburgh, University of Pittsburgh School of Medicine, 1931, aged 28, resident physician to the Children's Hospital, where he died, March 1, of bronchopneumonia

Albert R. Halsted, Marion, N. Y., University of Michigan Homeopathic Medical School, Ann Arbor, 1881, aged 75, died, April 21, of thrombosis, arteriosclerosis and bronchopneumonia

John E. Golden, Walnut Grove, Miss., University of Louisville (Ky.) School of Medicine, 1874, formerly postmaster of Walnut Grove, aged 84, died, April 4, in a hospital at Jackson

Charles Linn Hathaway, Winslow, Ariz., Keokuk (Ia.) Medical College, College of Physicians and Surgeons, 1902, aged 61, died, March 25, of chronic myocarditis and diabetes mellitus

Walter Scott Johnston Ⓢ Pueblo, Colo., Medical College of Ohio, Cincinnati, 1904, on the staffs of the Parkview Hospital and St. Mary Hospital, aged 62, died, May 15, of heart disease

Thomas Hammond Crawford, Coldwater, Kan., University of the City of New York Medical Department, 1881, aged 75, died, March 26, in Steubenville, Ohio, of cerebral hemorrhage

Harry Alfred Zimmerman, Youngstown, Ohio, Miami Medical College, Cincinnati, 1888, member of the Ohio State Medical Association, aged 74, died, April 26, of heart disease

Thomas J. Wolfe, Bowie, Md., Baltimore Medical College, 1890, served during the World War, aged 71, died, in April, at the University of Maryland Hospital, Baltimore

Ludwig A. Kierulff, Chicago, Northwestern University Medical School, Chicago, 1893, member of the Illinois State Medical Society, aged 70, died, May 9, of heart disease

Joseph Sanders, Beaver Dam, Wis., Medical College of Indiana, Indianapolis, 1884, aged 74, died, May 3, in St. Saviors General Hospital, Portage, of uremia

Jesse Franklin Davidson Ⓢ Crawfordsville, Ind., Medical College of Indiana, Indianapolis, 1880, aged 80, died, March 30, of chronic myocarditis and arteriosclerosis

Albert Milton Buzard, Tyrone, Pa., Western Pennsylvania Medical College, Pittsburgh, 1891, aged 78, died, April 16, in the Philipsburg (Pa.) State Hospital

Charles Wellington Fitch, Southington, Conn., Yale University School of Medicine, New Haven, 1874, aged 82, died, March 26, of cardiovascular renal disease

William R. C. Booher, Bristol, Tenn., University of Tennessee Medical Department, Nashville, 1889, served during the World War, aged 67, died, April 4

F. L. Tracy, Anderson, Ind. (licensed in Indiana, year unknown), aged 78, died, January 30, in St. John's Hospital of myocarditis and hypostatic pneumonia

J. B. Whitehead, Voss, Texas (licensed in Texas under the Act of 1907), aged 83, died, February 1, in a hospital at Wichita Falls of cerebral hemorrhage

Nellie Frances de Hay Nunan, Tehri, Tehri-Garhwal, India, Woman's Medical College of Pennsylvania, Philadelphia, 1913, aged 53, died, March 12

Mariam E. Kimball Frisbie, Binghamton, N. Y., Woman's Medical College of Pennsylvania, Philadelphia, 1892, aged 65, died, March 14, of diabetes mellitus

Gilbert La Fayette Clark, Centerville, Pa., Miami Medical College, Cincinnati, 1875, aged 85, died, April 19, in Parkersburg, W. Va., of arteriosclerosis

John James Wade, Coe Hill, Ont., Canada, Queen's University Faculty of Medicine, Kingston, 1906, aged 52, was found dead in his office, March 24

Eustis Randolph Marshburn, Marianna, Fla., Atlanta Medical College, 1914, medical officer of the Western Florida district, aged 47, died, March 25

Robert Alonzo Burke, Dyersburg, Tenn., Vanderbilt University School of Medicine, Nashville, 1894, aged 67, died suddenly, May 6, of heart disease

Arthur L. Nichols, Knowles, Okla., College of Physicians and Surgeons, Keokuk, Iowa, 1895, aged 66, died, February 7, of rheumatism and heart disease

Charles Vinton Artz, Los Angeles, State University of Iowa College of Medicine, Iowa City, 1882, aged 76, died, February 14, of prostatic disease

John N. Taylor, Crawfordsville, Ind., Indiana Medical College, Indianapolis, 1876, aged 84, died, April 26, of gastroenteritis and arteriosclerosis

Vernon Grossenor Danford, Athens, Ohio, Illinois Medical College, Chicago, 1900, served during the World War, aged 57, died, March 15

Beverly Caldwell, China Spring, Texas, University of Louisville (Ky.) School of Medicine, 1881, aged 80, died, April 21, of myocarditis

William R. Bolbaugh, Osceola, Iowa, Drake University Medical Department, Des Moines, 1892, aged 76, died, April 18, of diabetes mellitus

Harry Arthur Boyde, Indianapolis, University of Louisville (Ky.) School of Medicine, 1913, aged 46, died, April 16, of coronary thrombosis

William Harris Daniel, McEwen, Tenn., Vanderbilt University School of Medicine, Nashville, 1891, aged 65, died, April 15, of nephritis

David A. Nunn, Halls, Tenn., University of Louisville (Ky.) School of Medicine, 1871, aged 83, died, April 1, of hypostatic pneumonia

Dick Allison Taylor, Lethbridge, Alta., Canada, McGill University Faculty of Medicine, Montreal, Que., 1901, aged 58, died, March 27

William Rice Barton, Ypsilanti, Mich., Homeopathic Hospital College, Cleveland, 1881, formerly county coroner, aged 77, died, April 17

Samuel O. Burris, Lafayette, Ind. (licensed in Indiana in 1897), aged 86, died, January 13, of chronic myocarditis and arteriosclerosis

David Wesley Johnston Jr., Detroit, Loyola University School of Medicine, Chicago, 1931, aged 30, was shot and killed, May 21

Perley Newel Barker Ⓢ Troy, Pa., Medico-Chirurgical College of Philadelphia, 1887, aged 77, died, April 4, of chronic endocarditis

Joe Asa Fowlkes, Dyersburg, Tenn., University of Nashville (Tenn.) Medical Department, 1879, aged 77, died, April 5, in Jackson

Cummins Van Norman Emory, Hamilton, Ont., Canada, Homeopathic Hospital College, Cleveland, 1879, aged 83, died, March 16

William Delaney, Quebec, Que., Canada, Laval University Faculty of Medicine, Quebec, 1886, aged 75, died, January 2

William Alfred Dulaney, Blountville, Tenn., University of Nashville Medical Department, 1880, aged 84, died, April 9

Jacob Aaron Flexner, Louisville, Ky., Louisville Medical College, 1902, aged 76, died, April 13, of angina pectoris

Anthony Michael Thometz, Chicago, Rush Medical College, Chicago, 1895, aged 63, died, May 13, of myeloma

Carl V. Barnes, Huntsville, Texas, Memphis (Tenn.) Hospital Medical College, 1902, aged 58, died, April 5

H. L. Cook, Quitman, Ga., Atlanta Medical College, 1893, aged 66, died, January 18, of chronic myocarditis

George T. Newbill, Atwood, Tenn. (licensed in Tennessee in 1889), aged 85, died in March

Bureau of Investigation

CYSTEX

A "Patent Medicine" of the Kidney and Bladder Cure Type

"Cystex" is a nostrum sold for the self-treatment of self-diagnosed disease conditions of the bladder and kidneys. It is a "shot gun" mixture whose composition, like many "patent medicines," has varied with time. Its present alleged formula is seemingly based on the alternate acid and alkaline treatment of infections of the urinary tract, although it contains neither enough acid nor alkali to be effective.

HELP KIDNEYS

don't take drastic drugs

Good Kidney Action P. See You
Blood—Often Removes the Real Cause
I Get Up Night Nerve
rains and Rheumatism
Quiet Jumpy Nerves and 10 Year
You Feel 10 Years Younger

FAVORITE kidney and bladder
cure of men and women
and young people
suffer from urinary troubles
and that is often the real cause
of feeling tired, nervous, getting
up at night, rheumatic pains
and other troubles
If poor kidney and bladder function
causes you to suffer from any
of the following symptoms:
Getting Up at Night, Backache, Leg
Pains, Nervousness, Lumbago, Stiff
ness, Headaches, or Rheumatic Pains
Dark Circles Under Eyes, Headaches,
Frequent Colds, Burning
Smarting or Itching Acidity, you can't
afford to waste a minute. You
should start testing the Doctor's
Prescription called Cystex (pronounced
Sis-tex) at once.

Dr. H. T. Allen
New York Doctor
Famous Cystex

Cystex
It's
Guaranteed

Greatly reduced photographic facsimile of a Cystex advertisement—1934 vintage

Like most of the "patent medicines" today, Cystex is advertised under claims that are implied rather than stated. An advertisement (see illustration) occupying two-thirds of a page in a motion picture magazine, details the alleged virtues of Cystex in these words:

If poor Kidney and Bladder functions cause you to suffer from any symptoms such as loss of Vitality, Getting Up at Night, Backache, Leg Pains, Nervousness, Lumbago, Stiffness, Neuralgia or Rheumatic Pains, Dizziness, Dark Circles Under Eyes, Headaches, Frequent Colds, Burning Smarting or Itching Acidity, you can't afford to waste a minute. You should start testing the Doctor's Prescription called Cystex (pronounced Sis-tex) at once.

In the same advertisement the public is told that Cystex is not only a "gentle and to the Kidneys," but, in addition it "soothes and tones raw, sore, irritated bladder and urinary membranes." While the general trend of the advertising is to recommend it for conditions already described, the circular that goes with the trade package also suggests that women use it, as it is "of great value during the menstrual period." In the same circular the public is told to take Cystex for "head colds."

The theme that the stuff is a cure for kidney diseases" is played up thus:

Clean Out Your Kidneys. Win Back Your Pep. Good Kidney Action Purifies Your Blood—Often Removes the Real Cause of Getting Up at Night. Neuralgia and Rheumatic Pains—Quiets Jumpy Nerves and Makes You Feel 10 Years Younger.

The exploiters of Cystex seem to have made a practice of publishing as part of the trade package (which comes under the purview of the National Food and Drugs Act) a list of the ingredients of Cystex (no quantities given) and have comparatively recently, in a drug journal, published what is alleged to be the quantitative formula of this "patent medicine." Like so many "patent medicines," the composition of Cystex has changed, although the name has remained the same. As has been emphasized before, when one buys a "patent medicine," one buys a name rather than a thing.

Cystex comes in tablet form, the package containing two kinds of tablets, gray and brown. Prior to 1929 the gray tablets were claimed to have the following ingredients:

Hexamethylenamine	Calcium phosphate
Powdered Extract of colchicum	Thyroid substance

Later the thyroid substance was dropped out of the formula, but for a while the other three ingredients were retained. Today the gray tablets have a very different composition, as will be shown shortly.

The brown tablets, prior to 1929, were said to contain the following substances:

Extract of hydrangea	Potassium bicarbonate
Extract of buchu	Boric acid
Extract of corn silk	Atropine sulphate
Extract of tritium	

The composition of these brown tablets has not undergone the drastic changes that the manufacturers have made in the gray tablets, although the extract of hydrangea has been dropped, sodium borate has taken the place of boric acid, and caffeine has been added.

In a publication, *Drug Topics* for October, 1933, there was a full-page advertisement headed "Cystex Has No Secrets." There was given in this advertisement what purported to be the "actual working formula" of Cystex. This read as follows:

GRAY TABLETS	
Hexamethylenamine	2 1/4 grains
Extract Nux Vomica	1/4 grain
Acid Benzoic	1/2 grain
Atropine Sulphate	1/800 grain
BROWN TABLETS	
Extract Buchu 14	1/2 grain
Extract Corn Silk 15	1/4 grain
Extract Tritium 13	1/2 grain
Potassium Bicarbonate	1 grain
Sodium Borate	1 1/2 grains
Atropine Sulphate	1/800 grain
Caffeine	1/8 grain

This, then, presumably represents the quantitative formula of Cystex as sold today. The directions for taking Cystex are to take six gray tablets a day (two after each meal) for five days, then six brown tablets a day for three days, and keep this dosage up, alternating with five days of six gray tablets each day and three days of six brown tablets a day.

In addition to the extensive advertising campaign in magazines and newspapers, it appears that Cystex is also being advertised by radio. In the latter part of March a letter came in from Dr. F. G. Benn, Chairman of the Interprofessional Relationship Committee of the Hennepin County (Minneapolis) Medical Society. He sent with his communication a letter that had been sent to a Minneapolis druggist and was evidently one of many sent rather generally to druggists in that locality.

The letter was on the stationery of broadcasting station KSTP, owned and operated by the National Battery Broadcasting Company of St. Paul, and was signed Ford Billings, General Sales Manager. Mr. Billings' letter stated that more than five hundred local druggists had been given free advertising by the makers of Cystex in the series of Cystex broadcasts and that Mr. Billings was writing to the druggist to whom his letter was addressed, extending to that druggist free publicity on a certain program. The letter went on to state that on a certain date mentioned in the letter, if the druggist was willing, the announcer would give the druggist's name and business address at the start of the program as sponsoring the following statement:

I wonder how many of you listeners realize that your kidneys work while you are asleep or awake? The kidneys must remove poisonous wastes and uric acid from the blood or your system becomes slowly but

surely poisoned That is why functional kidney disorders are often the real cause of your sleep being ruined nervousness leg pains, stiffness burning acidity, neuralgia or rheumatic pains lumbago loss of vitality and many other troubles But you must be careful not to take drastic, irritating drugs which may endanger the kidneys I think the best prescription for functional kidney and bladder disorders is Cystex It works fast circulating through the system in 15 minutes I know the formula and that Cystex is safe and pure For these reasons and because it is guaranteed to fix you up or money back I always recommend Cystex to my customers

In order, apparently, to allay any qualms that druggists might have regarding the matter, Mr Ford Billings, following the quotation of the statement that was to be sponsored, went on to state

This statement has been approved by the American Medical Association and by your own trade association A prominent physician makes a similar statement at the end of the program

Needless to say, the claim that any such statement as the one quoted had been approved by the American Medical Association is a crude and gratuitous falsehood It appears, also, from Dr Benn's letter that the claim that the statement had been endorsed by the Retail Druggists Association was equally without foundation The owners of KSTP were written to telling them that the statement "approved by the American Medical Association" was 100 per cent false and they were asked for an explanation This letter was written March 29 1934 and was acknowledged by the secretary of Mr Stanley E Hubbard Vice-President and General Manager of the company It was stated that Mr Hubbard was out of the city "but the matter will receive his attention immediately upon his return which will be within a few days" This was two months ago No letter or explanation has been received

As part of the present advertising of Cystex, there appear the inevitable testimonials by physicians Among the testimonials that grace the Cystex advertisements is one credited to a Dr N T Abdou of New York City According to the files of the American Medical Association, this is Nagib Tannous Abdou of New York City, who was born in Syria in 1875 and holds a diploma from the School of Medicine and Surgery of Montreal Faculty of Medicine of the University of Laval, issued in 1900 He was licensed in New York in 1915 and in Colorado in 1917 It is hardly necessary to state that he is not a member of his local medical society

Another Cystex testimonial is stated to be from "Dr Charles Z Rendelle" of San Francisco So far as the records show, there is no man of this name who is a licensed physician There is, however, a Charles Q Rendell of San Francisco whose name appears in various unsavory connections in the files of the Bureau of Investigation This man holds a diploma from the Albany (N Y) Medical College for 1914 and is licensed in New York and California He is not a member of his local medical society or of the American Medical Association Information on file indicates that Dr Rendell three or four years ago was connected in some way with a cancer quackery operated by one W F Hoque of San Jose, who was found guilty of violating the medical practice act of the State of California and fined \$500 Dr Rendell's name also appears in connection with a testimonial for "Kruschen Salts" According to official reports received from California, Rendell was in 1927 connected with a quackish concern known as the Gilbert Thayer Health Foundation which seemed to be made up mainly of chiropractors and osteopaths

A third testimonial for Cystex bears the name of Dr W R George, who is described as a graduate of Indiana University and former health commissioner of Indianapolis Dr Walter Reid George holds a diploma from the Medical College of Indiana, 1895 and was licensed in Indiana in 1898 He, of course, is not a member of his local medical society or of the American Medical Association In 1931 Dr George's name appeared in connection with a large and blatant advertisement for "Sargon" So much for the professional standing of the three physicians who testified to the virtues of Cystex

The objection to Cystex is simple and fundamental There is no legitimate place for the self-treatment of pathologic conditions of the kidneys or bladder It is sheer madness for persons who have the symptom complex described in the Cystex advertisements to attempt to treat themselves and waste what well may be vitally valuable time before seeking competent treatment based on a rational diagnosis

Correspondence

THE PHYSICIAN AS MAN OF LETTERS, SCIENCE AND ACTION

To the Editor—In THE JOURNAL, May 12, page 1637, appeared a book notice dealing with the recent work on this subject by Dr Thomas Kirkpatrick Monro of Glasgow, containing some criticism because mention of certain names, chiefly contemporary, is omitted May I point out that not all this criticism is warranted? In the first place, Monro clearly states in the preface that "no living persons are included in these biographies" and thus quickly accounts for the omission of such names as those of A J Cronin, W Somerset Maugham and Francis Brett Young among the writers of fiction, and those of Geddes and Ramon y Cajal among ambassadors and statesmen, since all these persons were alive when the book was written "One seeks in vain under dramatists for the name of Arthur Schnitzler" further complains your reviewer, but had he consulted the biographic index he would have found the eminent Viennese author of "Flight into Darkness," who died in 1931, adequately mentioned in another section

Why no mention of Virchow occurs I do not know, unless it be that his political life was so eclipsed by his preeminence as a man of science, for it seems to have been Monro's intent to emphasize more particularly the examples of physicians who became distinguished in other fields rather than to mention those who had merely become deeply interested Be that as it may, it would seem that Virchow's career as a public official should entitle him to a place in the book, the incompleteness of which is further attested by the fact that there is no mention of Theodor Billroth close friend of Brahms and himself a keen musician and author of a classic on the psychophysiology of music, published posthumously, or of Alexander Borodin, eminent Russian composer whose work was so highly praised by Liszt and who first practiced medicine and then limited his scientific efforts to teaching and research in chemistry, becoming the discoverer of aldol

I fully agree with your reviewer that Monro's book is "an interesting beginning of what might be developed into an important work" The subject deserves more systematic attention than it has received in the past

GILBERT COTTAM, M.D., Minneapolis

LEUKOCYTE COUNTS AND BARBITURATES

To the Editor—I feel that some comment should be made relative to the article of Hardwick and Randall that appeared in THE JOURNAL, May 12 page 1558 These authors studied the leukocyte counts of fifty-nine women who had been given pentobarbital sodium as an obstetric analgesic and concluded that the drug had no effect on the leukocyte count I am in complete agreement with their conclusions since I have also made the same observations relative to all types of the so called barbiturates

The authors state, however, that "there has been some discussion in the literature recently concerning the possible relation between the administration of barbiturates and the production of granulocytopenia" Since I have just completed a review of the literature on this subject I must state that the discussion has centered around the relationship to granulocytopenia of drugs containing the benzene ring and that the barbiturates have not been involved in this conception of the etiology of the disease Pentobarbital sodium is a straight chain carbon compound, does not contain the benzene ring, and has never been suspected of being an etiologic factor, so

far as I know, except possibly in the report of C H Watkins (*Proc Staff Meet, Mayo Clin* 8 713 [Nov 22] 1933) In my original publication on this subject in 1932 (*Am J Clin Path* 2 11 [Jan] 1932) I brought out the observation that eight of nine patients with granulocytopenia had taken drugs containing the benzene ring prior to the clinical onset, and in other publications (*U S Nav M Bull* 30 16 [Jan] 1932, *Am J Clin Path* 1 385 [Sept] 1931) I brought out the same association and I wish to emphasize that in no instances have the barbiturates alone ever been suspected of an etiologic role in this disease

Hardwick and Randall state further, "Madison and Squier reported thirteen cases in which they think granulocytopenia was probably due to the use of benzene chain derivatives" It seems that they have misinterpreted the report of Madison and Squier, since these authors stressed the fact that their thirteen cases had been preceded by administration of a drug which contained the benzene ring and not a carbon chain

Since my first report on this subject there have now accumulated over fifty cases of granulocytopenia in the American literature in which the clinical onsets were preceded by the administration of benzene ring drugs and in no instance, with the exception of the report by Watkins, has the barbiturate group been incriminated There are many preparations, of course, in which the barbiturates and the benzene ring drugs, such as allonal and amylal compound, are combined

Finally I would like to emphasize that my chief purpose in this communication is to call attention to the possible confusion that may exist as to the differences between these two classes of drugs There has been much evidence accumulated to show that many cases of granulocytopenia are probably caused by the indiscriminate administration of benzene ring drugs, and more specifically by those containing the ring with an attached amine group (Kracke and Parker *J Lab & Clin Med*, May 1934) It seems especially indicated at this time that careful distinction should be made between the group of drugs containing the benzene ring and that group under the heading of "barbiturates" which do not contain the benzene ring

ROY R KRACKE, M D, Emory University, Ga
Professor of Pathology, Emory
University School of Medicine

OVULATION AND MENSTRUATION

To the Editor—I should like to be given the opportunity of replying to Dr Novak's letter in *THE JOURNAL* dated April 21

I agree with Hartman that the disintegration changes in the endometrium during the anovular cyclic hemorrhage of the macaque and during menstruation in the human female are almost identical Probably in metropathia haemorrhagica the same process is also at work So far as the macaque is concerned the disintegration changes seem to be the same whether the cycle is ovular or anovular and one is justified in assuming that the final cause of the bleeding is of a similar nature in these two cases and during menstruation in the human female Robert Meyer and Schroder have suggested that the word "menstruation" should be restricted to the ovular cyclic bleeding and that the term pseudomenstruation should be used for anovular cyclic bleeding The distinction may appear trivial especially as the factor controlling bleeding from the endometrium is probably the same in the two groups but to some of us it is fundamental, if for no other reason than that it distinguishes between cycles which are ovular and those which are anovular I myself feel that the time honored definition of menstruation was intended for women and not for the macaque, and I believe that this definition should be the

basis from which the cyclic bleeding of the macaque should be described

During the investigation which led to the publication of my paper in the *British Medical Journal* (1 7 [Jan 6] 1934) I found no evidence of anovular cyclic bleeding in women with accurately dated menstrual cycles About this time Dr Novak's paper appeared in the *British Medical Journal* in which he dismissed the distinction between "menstruation" and "pseudomenstruation" as "a mere play on words," and it was to this remark that I took particular exception, for, as I have said, the distinction seems to me to be fundamental It is true that I believe that the case for cyclic anovular bleeding in healthy women has been overstated in the American literature, and this opinion is based on studies of material during the last ten years Further, for some time I have become extremely critical of interpretations of work which has been done on the human menstrual cycle for I have become convinced that the controlling factors will prove to be far more complex than is now believed For example, little is known as yet of the atypical corpora lutea which are sometimes seen, in other cases corpora lutea may be found in women suffering from amenorrhea, and many such difficulties can be called to mind

I am most anxious to correct any impression that I have scoffed at any new idea emanating from America and my best answer is to ask those who are interested to refer to my paper in the *British Medical Journal* My friends in America know very well how I regard the work of Corner, Hartman, Allen, Evans and Hisaw among other Americans as the most important contributions to sexual physiology of the present century just as they know my profound admiration of Dr Novak's publications Indeed, I cannot recall a previous occasion when I have differed with him I should be very distressed if Dr Novak's interpretation of my article were accepted in America, for it is quite contrary to what I really believe

WILFRED SHAW, M D, London England

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed Every letter must contain the writer's name and address but these will be omitted on request

DEATHS OF BABIES OF ONE SEX AT BIRTH WITH OTHER SEX SURVIVING

To the Editor—A white woman aged 37 a farmer's wife had six children The family and past histories are negative Physical examination shows nothing of clinical value The systolic blood pressure is 134 diastolic 82 Examination of the urine gives negative results The Wassermann reaction is negative in both wife and husband She is 5 feet 9 inches (175 cm) tall and 145 pounds (66 Kg) in weight Of the six children two were boys who are living and healthy but all the girls died The first girl was born March 21 1920 lived two months and died apparently of encephalitis (the death certificate stated intracranial pressure) The second girl was born Oct 13 1922 and lived eleven days dying of meningitis The third girl was born Oct 4 1926 and lived eight days dying of intracranial pressure The mother never saw this child The fourth girl was born in October 1931 and lived only two hours All these girl babies were unable to nurse or cry as normal children and were dull in appearance They were born at full term and without instruments The skin of the last born was apparently macerated What seems to be the cause? Why are the males not affected as the females? Is it possible that she has sex hormone deficiency? What can be done to determine the sex before the birth? I have not attended to any of the births but the patient is pregnant now and under my care I need your help

M D Massachusetts

ANSWER—There is hardly anything in the literature that would explain the difficulties encountered in this case There are numerous instances on record wherein women have had abortions and dead children by one husband and healthy offspring from another, and syphilitic parents can have healthy children interspersed among the diseased ones A famous French surgeon was the eleventh child of his parents All the odd numbered children had died and when the eleventh was due the mother made no preparations for it thinking that it also would die but it lived and grew up

Recently, at the Chicago Living-in Hospital, a woman had a light bleeding toward the end of her fifth pregnancy. She had two full term labors with boys. Both died during labor. She had two live girls born and the question came up about the sex of this child. If the child was a boy, would it die in labor? If it was known to be a boy, should labor be induced before term or a cesarean section? The patient settled the questions herself by going home, and later she had a spontaneous delivery of a third living girl.

The methods of determining the sex of the child before birth are not positive, even amniography with skiodan not always being indicative.

SYPHILIS

To the Editor—What is the present status as regards a Wassermann four plus spinal fluid reaction and a negative blood Wassermann reaction in the same patient? To my way of thinking I believe the individual has cerebrospinal syphilis but a medical colleague insists that it is of no value because he obtained a negative blood Wassermann reaction after giving the same patient a provocative treatment or test. The testing in all cases was performed by the local department of health. The patient in question complains of blurred vision especially after looking at an object for any length of time, pressing frontal and occipital headache and disturbed sleep. There are no disturbances in gait or sphincters. My examination revealed a dull listless expression, pupils equal but reacting to light sluggishly, hyperactive knee jerks, slight drooping of the right side of the face and two scars on the corona of the penis that suggest a previous possibly syphilitic origin. Although I did not obtain a clear cut history as to whether or not he was treated for syphilis he possibly had some treatment in 1918. The patient otherwise appears robust and has gained in weight in the past two years. He is 39 years of age. Would a colloidal gold test help clear this question? Kindly omit my name.

M D New York

ANSWER—It is difficult to answer the question with the amount of data furnished. In a case of this sort it probably would be well to take another Wassermann reaction and do another lumbar puncture, having the test made in an accredited laboratory where one can have full confidence in the results of the tests. It is most essential that not only a Wassermann reaction but also a precipitation test be done on the blood, and with the spinal fluid there should be, in addition to the Wassermann reaction in amounts of the spinal fluid from 0.1 cc up to 1 cc, also a cell count, a globulin test and a gold chloride test. With this information one would be in a better position to decide just what the patient's condition is and what should be done for him. It would be well to do a careful physical examination, including a complete neurophysical survey. Undoubtedly the patient has cerebrospinal syphilis. Simply because of a negative blood Wassermann reaction one must not reach the conclusion that the patient does not have syphilis. One often sees patients with that type of reaction on the blood and a positive reaction on the spinal fluid.

DYES FOR CHOLECYSTOGRAPHY

To the Editor—Please discuss for me the absorption, distribution and elimination of dyes taken orally and intravenously for cholecystography. Does the physiology differ with the different dyes used for this work? Any references to the recent literature on this subject will be sincerely appreciated.

JOSEPH H. BARACH, M.D. Pittsburgh

ANSWER—Early in the experimental work on the development of cholecystography it was noted that after intravenous injection of sodium tetraiodophenolphthalein in dogs an x-ray shadow appeared in the large intestine as well as in the gallbladder. It was found that this shadow in the colon was due to the excretion of the dye by the large intestine. Abel and Rowntree had previously observed that phthaleins are excreted by the colon. However, by far the greater portion of sodium tetraiodophenolphthalein was found to be excreted by the liver, apparently without changing its original form. The kidneys are found to excrete a small percentage of dye. After excretion of the halogenated phenolphthaleins by the liver they are carried to the gallbladder by the bile, where they are concentrated. Chemical analyses show that the average concentration of the halogen per unit volume of bile in the gallbladder that produces an x-ray shadow of maximum density is several times that of the bile that does not enter the gallbladder. Analyses also reveal that there is a fairly constant rate of excretion of the halogens in the bile and that the output of the halogens is independent of the rate of excretion of the bile. Sodium phenoltetraiodophthalein, which stains the blood serum bluish red when a sample is alkalinized, disappears from the blood stream in approximately three to four hours after injection.

Recently Delario has studied more extensively the absorption and excretion of sodium tetraiodophenolphthalein. He finds that the dye is absorbed by both the small and large intestines after

oral or rectal administration. The large intestine was found to excrete about 25 per cent of the dye, the liver excreted from 60 to 70 per cent of the dye without changing it or conjugating it, and the urine excreted from 5 to 10 per cent of the dye, some of it in an inorganic state. Delario states that fat causes a greater amount of the dye to be rendered insoluble in the small intestine but causes a greater secretion of the dye and probably a greater gallbladder absorption. Mairano and Biancalana found that from 50 to 70 per cent of sodium tetraiodophenolphthalein is withdrawn from the blood circulation within an hour after intravenous injection. They found as had previously been observed, that iodine appears in the bile as early as ten minutes after intravenous injection of the dye. From their study the investigators concluded that the oral dose of sodium tetraiodophenolphthalein must be twice the intravenous dose.

Apparently the physiology of the different halogenated phenolphthaleins used for cholecystography differs little if at all.

Following are references

- Graham E. A., Cole W. H., Copher G. H. and Moore S. Diseases of the Gallbladder and Bile Ducts, Philadelphia: Lea and Febiger, 1928.
Abel J. J. and Rowntree L. G. Pharmacological Action of Some Phthaleins. *J. Pharmacol. & Exper. Therap.* 1: 231, 1910.
Delario A. J. Paths of Absorption and Excretion of Sodium Tetraiodophenolphthalein. *J. Lab. & Clin. Med.* 16: 329 (Jan.) 1931.
Mairano M. and Biancalana L. Clinical and Experimental Researches on Tetraiodophthalein. Behavior of Iodine in Blood, Bile and Urine. *Archiv. ital. di chir.* 30: 556.

CANCER AND MENTAL SHOCK

To the Editor—A man aged 45 was well until about eighteen months ago. At that time he had the misfortune of killing a child aged 9 while driving. The shock and worry of the trial that followed greatly depressed him; however, he was set free of the charge. Six months after the accident he began to complain of sour regurgitation, dyspepsia and lack of appetite and in two months he became jaundiced. A diagnosis of carcinoma of the stomach with metastasis in the liver was made and verified by roentgen examination and at exploratory operation. He died four months after the operation. My mother, aged 62, who was apparently in good health until August 1932, was a nervous woman always fearing accidents. In August 1932 she fell while crossing the street car tracks, receiving a bruised cheek bone but the fall caused her great mental shock. Apparently a street car was approaching and she thought she would be killed. She overcame her local injury. In October she began to lose weight, become anemic and lost her appetite and her abdomen began to enlarge. Several diagnoses were offered by leading specialists in Toronto. Finally an exploratory operation showed an extensive carcinoma of the ovaries. Hysterectomy was done. She died of general carcinomatosis in June 1933. What I wish to know is this: In each case what relation had the mental shock to the development of cancer? Is there a possible relationship? Has any one had similar cases of mental shock followed by carcinoma? Were the mental shocks in these two cases followed by cancer a mere coincidence? I would appreciate any sources of available literature on these points.

LIONEL MARKS, M.D. Toronto

ANSWER—A fairly complete survey of the literature on the subject of the relationship between mental shock and cancer does not reveal any information of importance. The statement has been made that the inmates of mental hospitals have a proportionally lower mortality from cancer than that which occurs in the general population. This question has been carefully examined and reported on in monograph 36, on Diet and Cancer, by Copeman and Greenwood, published in 1926 in London by the Ministry of Health. In the report, on page 29, the following conclusion is reached: "In other words there is no important difference between the rate of cancer mortality upon inmates of mental hospitals than that upon the general population." Major Greenwood, one of the authors of this paper, is a statistician and the statistical portion of the article was prepared by him.

The following are recent references on some phases of this subject:

- Laursen L. Cancer Mortality and Mental Diseases. *Ugeskr. f. Læger* 94: 238 (March 3) 1932.
Lumière and Vigne. Role of Emotions in Pathogenesis of Cancer. *Bull. Acad. de méd.* 106: 272 (Nov. 3) 1931.
Stajano C. Relation of Psychopathology of Nervous System in Cancer. *Paris méd.* 3: 125 (Aug. 8) 1931.
Forgue. Role of Mental State in Problem of Cancer. *Gaz. d. hop.* 104: 827 (May 30) 1931.
Marullar M. Essai sur l'etiologie des tumeurs. *Ann. de l'Inst. Pasteur* 45: 443 (Oct.) 1930.
Rainhill A. P. Incidence of Cancer over Period of Twenty Five Years at County Mental Hosp. *J. Ment. Sc.* 76: 234 (April) 1930.
Incidence of Cancer in Mental Patients and in General Population of England and Wales Compared. Report of Infectious Disease Subcommittee of the Research and Clinical Committee (Royal Medical Psychological Association). *J. Ment. Sc.* 76: 223 (April) 1930.

The cases cited were probably coincidences. For example in that of a man, aged 45, the cancer of the stomach must have been present at the time of the accident for when the diagnosis was made six months after the accident there were obviously

metastases in the liver. The mean duration of cancer of the stomach has been computed (report 33, Ministry of Health Reports on Public Health and Medical Subjects, on the Natural Duration of Cancer) by Major Greenwood at approximately seventeen months. This period, of course, is computed as from the first symptoms noted and is subject to considerable variations. For instance, in patients between 35 and 44 years of age the mean duration is twenty months, between 45 and 54 years of age the mean duration is about fourteen months for cancer of the stomach. It is probable therefore, that the patient had his carcinoma before he was injured.

The same is true of the woman, aged 62. Being injured in August 1932, she showed symptoms of her neoplasm in October and, as reported, the exploratory operation showed an extensive carcinoma of the ovary already present. No figures have been found on carcinoma of the ovary, but clinical experience suggests that in the beginning these growths are fairly slow and a number of patients have been known to live two or three years with fairly extensive neoplasms of this type. Again, the conclusion is justifiable that the mental shock could have nothing to do with the inception of the disease.

It is possible, of course, that worry and mental depression might lead a patient to irregular eating or to the neglect of the care of the bowels, which over a prolonged period may induce chronic gastric or rectal lesions on which a cancer might ultimately develop, but this is purely a theoretical assumption, and cancer in general afflicts both the robust and the feeble. Recent figures from the Metropolitan Life Insurance Company have even shown that those with overweight have a significantly higher cancer rate than those with underweight.

The paper by Marullaz is concerned largely with generalizations drawn purely from results obtained from the production of tumors by tar painting in animals, the effect of trauma, and the possible correlation between these conditions and that of the peripheral nerves. Marullaz thinks that the ease with which epitheliomas are produced by painting the ear of the rabbit depends on the special innervation of the ear, because painting the rabbit elsewhere does not produce tumors with the same speed. This cannot be considered a valid argument, the paper is diffuse and largely speculative.

AMENORRHEA

To the Editor—I have under my care a girl aged 18 years who has not menstruated for a year and a half. She started to menstruate at the age of 11 and continued until she was 16. The menstrual course lasted four days, was normal in amount and came every twenty-eight days. The girl apparently is perfectly healthy. She is stockily built but is not fat. She has normal appearing breast. Her genital organs are normal to palpation and inspection. Is it possible for a girl of this age to have a menopause? Can you assign any other reason for this stoppage of her menstrual cycle? Please omit name.

M D, Montana

ANSWER—The absence of menstruation, especially in a young woman, does not mean that the woman is in the menopause, because amenorrhea is only one symptom of the climacterium. True, it is the most prominent clinical phenomenon, but it is not the only one. It is unusual for a woman to undergo true change of life before the age of 35. In temperate zones about 50 per cent of women experience the climacterium between 45 and 50 years of age, and an additional 25 per cent have it between the fortieth and forty-fifth year.

It is possible that this case may be one of the rare cases of very early menopause, but it is more likely that it is a case of secondary amenorrhea. The cause may not be easy to find. Among the usual etiologic factors in secondary amenorrhea are change of climate, defective health, acute infectious diseases, nervous disorders and constitutional diseases such as pulmonary tuberculosis, anemia and diabetes. In many instances secondary amenorrhea is associated with obesity, and in such cases both the amenorrhea and the obesity have a common cause, namely, some disturbance in the glands of internal secretion. Even when there is no obesity, most cases of secondary amenorrhea result from an aberration in the function of one or more ductless glands. The glands usually involved are the pituitary, the ovaries and the thyroid. It is usually difficult to detect the responsible one. It is advisable to perform the Frank test for sex hormones to see if there is a periodic sex cycle.

The absence of menstruation per se is not anything to be alarmed about. The patient and her parents should be told that the general health in such cases is generally as good as that of menstruating women. If the Frank test demonstrates a sex cycle the patient's chances for a return of the monthly flow and for becoming pregnant are good. If there is no sex cycle the prognosis for these occurrences is doubtful.

HYDATID MOLE

To the Editor—A primipara aged 21, whose last menses occurred Oct 15, 1933, states that severe pains began Dec 10 1933 together with the discharge of large clots but no fetus or membranes. The patient was put to bed but the bleeding was markedly subdued and the pains ceased Jan 7 1934 in spite of absolute rest and medication, quite a severe bleeding with the expulsion of large clots was experienced. I then instituted measures to terminate the pregnancy with the result that no fetus was found in spite of the delivery of a placenta the size of a 3 pint jar. This consisted of a very friable structure composed of 'cells' having the appearance of Tokay grapes varying in size from 2 by 1 cm down to microscopic structures of the same consistency and appearance. The supporting structures were very fragile and would break under the slightest traction. The 'cells' were filled with a watery fluid. I have been unable to find anything in books or the literature that describes such a placenta nor did the consultant ever see anything do not publish my name.

M D, Texas

ANSWER—This was apparently a case of hydatid mole, also known as vesicular mole, the most common form of abnormal chorionic growth. The products of conception in such cases present a rounded mass more or less covered with grapelike translucent vesicular clusters of abnormal chorionic cells. In well developed cases, a fetus is usually not present.

There may be only a few vesicles, barely sufficient to warrant a diagnosis of hydatid. Such partial vesicular degeneration is frequently found in aborted ova.

The pathologic process consists in atypical rapid growth of the villous epithelium, with associated degenerative changes in which the cells undergo vesicular swelling. The placenta may disappear, the fetus more or less completely degenerate. Microscopic examination reveals that the individual cysts consist of swollen and edematous chorionic villi, the covering composed of proliferated Langhans cells and syncytium.

The etiology of this condition is still in doubt. Lesser degrees of hydatid degeneration are exceedingly frequent, but typical hydatid moles are relatively rare. The frequent incidence of lutein cysts of the ovary in cases of hydatidiform mole is well recognized.

The diagnosis of hydatid mole can be established with certainty only by passage of the mole. Yet bleeding in the early months of pregnancy together with disproportionate enlargement of the uterus and a positive Aschheim-Zondek test with greatly diluted urine is strongly suggestive. Mazer and Goldstein advocate use of only 1 cc of the patient's urine, which is diluted twelve times and injected into an isolated rabbit.

Patients who give birth to ova with lesser degenerative changes require no treatment other than continued observation. The passage of a typical hydatid mole is an indication for great watchfulness over a period of many years. Subsequent inexplicable bleeding suggests the possibility of a chorioepithelioma and is an absolute indication for careful investigation of the uterine contents. Hysterotomy may then be preferable to simple diagnostic curettage. Schumann favors hysterectomy in the more serious cases, but most authorities believe that removal of the uterus should be reserved for those instances in which there is definite evidence of a malignant condition.

DANGERS OF REPEATED SPINAL ANESTHESIA

To the Editor—Can the injection of procaine hydrochloride into the spinal canal (spinal anesthesia) be repeated at close intervals (say from four to five hours apart)? I am asking this question with specific regard to its therapeutic or prophylactic value in treating or preventing shock especially when shock is the result of abdominal injury. Please like it. Please omit name.

M D, Nebraska

ANSWER—There are cases on record in which spinal anesthesia has been repeated at short intervals without producing any unusual symptoms or causing any apparent damage (Sullivan, W M. Observations on a Patient to Whom Spinal Anesthesia was Administered Five Times Within Thirty-Eight Hours, *THE JOURNAL*, Sept 17, 1932, p 993). The procedure is not without danger. As shown by Davis, Havens, Givens and Emmett (Effects of Spinal Anesthetics on the Spinal Cord and Its Membranes, *THE JOURNAL*, Dec 12, 1931, p 1781) the spinal anesthetics in general use today have a myelolytic action on the nerve structures. In an experimental study they observed varying degrees of inflammatory reaction of the leptomeninges, passive changes in the ganglion cells of the gray matter of the spinal cord, swelling and fragmentation of the axis cylinders, and signs of degeneration of the fiber tracts of the cord. These changes were more pronounced with the larger doses. Repeated doses of a spinal anesthetic at short intervals may possibly cause an irreversible damage to the nerve structure and severe inflammatory reaction, with subsequent formation of scar tissue in the leptomeninges. There is likewise danger of an intoxication from the anesthetic drug itself from the possible accumulative effect of the repeated

doses at short intervals. The use of spinal anesthesia in the treatment and prevention of shock following an abdominal injury is a dangerous procedure. One of the manifestations of shock is a low blood pressure. Spinal anesthesia, because of its effect in lowering the vascular tone of the blood vessels, may lead to a splanchnic dilatation and a pronounced fall in blood pressure. The danger of further lowering the blood pressure of a patient in shock, following an abdominal injury, is a definite contraindication to the use of spinal anesthesia.

HIGH CARBOHYDRATE AND HYPERINSULINISM— DEXTROSE IN FURUNCULOSIS

To the Editor—In several recent articles on hyperinsulinism low carbohydrate diets have been advocated to prevent hypoglycemic reactions. Please explain the action of this diet as compared with one high in carbohydrates to utilize the excess amount of insulin. 2 Some time ago I read an article advocating the use of intravenous dextrose in the treatment of chronic cases of furunculosis. Do you know of any definite basis for this treatment and is it generally accepted? Could you supply any references? Kindly omit name.

M D, West Virginia

ANSWER—1 High carbohydrate diets have been given in cases of hyperinsulinism with the view of combating the obvious immediate cause of symptoms, i. e., the hypoglycemia. However, it is generally considered that the ingestion of carbohydrate stimulates the normal pancreas to secrete insulin, which is necessary for the disposal of the sugar. From this point of view, although the carbohydrate temporarily corrects the hypoglycemia it may also aggravate the underlying condition by stimulating the already overacting pancreas to still further secretion of insulin. The recent attempts at treatment of hyperinsulinism with low carbohydrate diets have been directed at this theoretically more fundamental mechanism. The purpose here is to remove the stimulus from an organ which is supposed to be hypersensitive to it (Shepardson, H C *Endocrinology* 16 182 [March-April] 1932).

2 Chronic furunculosis has been treated with intravenous injection of dextrose solution and high carbohydrate diets by Tauber (*Arch Dermat & Syph* 27 198 [Feb] 1933). The treatment was based on the study of blood determinations in more than 1,500 cases, 511 of which were dermatologic. His observations were not in accord with the general belief that skin disorders are commonly associated with hyperglycemia. He found most of the blood sugars to be normal, and the values in furunculosis to be low as a rule.

Tauber's observations and results are striking and must be given serious consideration. The treatment he suggests can hardly be said to be generally accepted as yet. For an example of opposing views the reader is referred to the work of J H P Paton (*Brit M J* 1 738 [April 29] 1933).

TREATMENT OF SCLERODERMA

To the Editor—I have a patient a man aged 53 who is suffering from atrophic arthritis. Within the past six months there has developed a rather generalized scleroderma associated with Raynaud's syndrome. All foci of infection have been removed and a rather badly infected pair of tonsils were enucleated about six months ago. Treatment for the arthritic condition has included dietary regulation, vaccine, hydrotherapy and physical therapy and although the basal metabolic rate was found normal on three occasions he was given thyroid extract empirically for the past month with distinct improvement in his arthritic as well as the skin condition. I should like to know whether you can suggest something that would hasten the improvement in his skin condition. I read somewhere that pancreatin is beneficial in scleroderma and should like to know how it is used in this condition. Could you also give me any references on the subject? Please omit name.

M D, Arkansas

ANSWER—The treatment of scleroderma is fraught with many difficulties. Perhaps the treatment that has proved most satisfactory is massage and hydrotherapy. Thyroid extract is the next most useful remedy. Injections of milk and other forms of nonspecific protein therapy have been recommended but have not in general been useful. Brown, O Leary and Adson have resected the sympathetic ganglions in selected cases. O Michaelis (*Brussels med* 9 560 [March 17] 1929) suggested the use of insulin and Seller (*Munchen med Wchnschr* 79 1625 [Oct 7] 1932) states that he has had some benefit from the use of pancreas extracts. The articles by Lewin and Heller (*Charite-ann* 19 763, 1894), Cassirer (*Die vasomotorisch tropischen Neurosen*, ed 2, Berlin, 1912), Osler (*J Gen-Urn & Skin Dis* 16 49, 127, 1898), Castle (*Brit J Dermat* 35 255 [July] 303 [Aug-Sept] 1923) and Brown, O Leary and Adson (*Ann Int Med* 4 531 [Dec] 1930) give considerable information concerning the disease.

SEQUELAE TO OVARECTOMY

To the Editor—A well nourished woman aged 29, was operated on for the removal of a small fibroid both ovaries and the appendix one year ago. Six months after the operation and during the customary time for the menstrual period she began to complain of pain in the back. This pain lasts about a week and is followed with a spell of hiccups. The time for the next period begins with a pain in the lower part of the abdomen which lasts for a week. Severe headache marks the beginning of the next period. Each attack is followed by hiccups forty five or fifty a minute. This has been the condition for four or five months resisting all ordinary sedatives. The blood pressure is 120 systolic 80 diastolic. The red blood cells number 2 786 000, white cells 4 700, hemoglobin is 50 per cent. Two years ago the patient received eighteen injections of neosarsphenamine and eighteen of a bismuth compound. The spinal fluid test is negative. Will you please advise me what is causing the condition? Please omit name and address.

M D Missouri

ANSWER—The distressing conditions from which the patient suffers illustrates once more the fact that, when one removes the ovaries in a young woman, serious trouble may follow. Gynecologists are agreed that ovarian function is essential to the well being of most women, and removal of both ovaries should be avoided so far as possible. This is particularly important if the woman has an instability of the nervous system or evidence of a dysfunction of various organs of internal secretion. While this incomplete history suggests an element of hysteria, there must be some physical reason for the anemia and low leukocyte count. The nature of the anemia should be determined and the condition corrected as an essential part of the treatment. A basal metabolic test is desirable, since hypothyroidism may be present and the patient may need thyroid medication.

It is stated that she does not secure any relief from the ordinary sedatives and one may wonder which drugs have been tried. Recent studies indicate that certain individuals have an idiosyncrasy for phenobarbital and the group of drugs containing amidopyrine and it is possible that the low leukocyte count may have resulted from the use of this group of drugs. This possibility should be investigated.

Patients of this type appear to be benefited at times from the use of theelin injections or from the use of the vaginal suppositories of amniotin. However on the whole, more can be expected from the use of small doses of thyroid by mouth.

FLUORINE MOTTLED ENAMEL AND SENILE DENTAL DECAY

To the Editor—A man aged 54 for the past eight years has been suffering a progressive loss of the enamel of his teeth. The beginning of this loss was approximately three months after he changed his residence and received his water supply from the same source but a different reservoir. I sent for an analysis of the water and find that it contains four parts of fluorine per million. For the last three years the condition has become stationary, but the dentin is almost everywhere exposed. Physical examination shows a hypertension with the blood pressure varying from 140 to 190 systolic. The functional kidney test, blood non-protein nitrogen, calcium and phosphorus are normal. He has a beginning hepatic cirrhosis as indicated by a slightly enlarged liver. The galactose tolerance test and indirect van den Bergh test are positive. The icterus index is 142. Repeated hemorrhage is probably from esophageal varices as roentgenograms of the gastrointestinal tract and lungs show nothing abnormal. I should be interested to know whether the fluorine content of the water is your account of this condition or whether some other cause should be searched for.

FRED S. MODERN, M.D., Los Angeles

ANSWER—Fluorine in the amount of four parts per million in the drinking water is ample to produce mottled enamel in developing teeth, but such teeth after eruption, if anything, are more resistant to dental decay and enamel destruction than the teeth of subjects who have not been exposed to the effect of fluorine. It is stated that even as little as 0.1 mg of fluorine per kilogram of body weight taken by mouth daily may produce the symptoms of chronic fluorine poisoning, such as loss of weight, loss of appetite, cachexia and brittle bones, and this is in the lower range of what will cause mottled enamel. No other effects of chronic fluorine poisoning are listed (DeEds, Floyd, *Chronic Fluorine Poisoning, Medicine* 12 1 [Feb] 1933). The mouth conditions in this case although incompletely described, do not at all resemble those found in the teeth of persons residing in mottled enamel districts. They bear a much greater resemblance to what is known as senile decay, a form of dental decay that is greatly aggravated by various types of degenerative disease. Under such conditions even resorption of the tooth roots may take place (Mueller, Emie, and Rony, H R, *Unusual Case of Resorption J Am Dent A* 17 326 [Feb] 1930). Consequently one is forced to the conclusion that the mouth conditions in this man are in part secondary to his systemic disease and that the fluorine in the water supply is without etiologic significance.

INDUSTRIAL HAZARDS OF WORKERS WITH
HOT PARAFFIN

To the Editor—Will you please give me an opinion as to whether any health hazard actually exists in the following situation. The company has been informed that no change is required legally but it will try to eliminate the hazard if it exists. Certain workmen spend their full working time with hot paraffin. There are nine tanks of the paraffin, approximately 2 by 3 feet. The paraffin is heated to about 255 by steam under 20 pounds pressure. These tanks are located in a room measuring 40 by 100 feet with no induced ventilation and poor natural ventilation. There is vapor rising from these tanks and a very definite odor from the hot paraffin. Can one consider that the lungs of these workmen suffer any ill effects from the rather constant exposure during their working period. Please omit name. M D, Pennsylvania

ANSWER—The ill effects likely to develop after exposure to the conditions described are those associated with general unhygienic work conditions rather than with any specific action of paraffin or other coal tar or petroleum derivatives associated with the paraffin. Without any artificial ventilation and with only poor natural ventilation, it seems likely that this workroom may become highly overheated, at least in summer, possibly the humidity will reach excessive percentages, odors from paraffin will give rise to nausea and to shallowness in breathing. Paraffin fumes may serve as a minor irritant to the eyes and respiratory tract. The work effectivity, the general health and the comfort of the workers exposed to these conditions will be impaired. Even in the absence of a specific occupational disease hazard it appears desirable that conditions of this character be rectified.

DIFFERENTIAL DIAGNOSIS OF BRAIN TUMOR AND
OTHER DISTURBANCES

To the Editor—A girl aged 5 years had an attack of vomiting about two months ago which subsided in one day after the intake of a little phenyl salicylate and lismuth. A month later the child who had been perfectly normal except for a temperamental anorexia was brought into the office having developed in the preceding three weeks a peculiar gait. Physical examination shows a rather poorly nourished girl who is irritable and extremely hard to examine. She walks with a lordosis and typical toe drop gait. On arising from the floor she climbs up on herself as in muscular dystrophy. The knee jerks and ankle jerks can not be elicited. A moderate atrophy is symmetrically distributed. Nose and throat cultures are negative. The stools are normal. There are no obvious foci of infection. Roentgenograms of the skull showed nothing unusual. Films of the long bones showed no evidence of lead. The blood shows 70 per cent hemoglobin and 4 620 000 red cells. There is no stippling of the red cells. Examination of the spinal fluid showed a clear fluid with normal pressure. The cell count is zero. There is a 3 plus globulin and a total protein of 185 mg per hundred cubic centimeters. The Wassermann reaction of the blood and of the spinal fluid was negative as was the tuberculin test. Is there anything further you can suggest to establish a definite diagnosis and presumptive treatment. The child is very much spoiled and cries a dozen times daily purely for attention and I feel that no small part of her condition is made up of the proverbial *malade imaginaire* and the supercare of the parents. But the case is at a standstill. What do you advise? Please omit name. M D, Massachusetts

ANSWER—The data presented in the query are not sufficient to permit attempting a definite diagnosis. From the symptoms enumerated, one would surmise that there was a disease of the brain.

The points noted in the examination of the child, such as a peculiar gait, extreme irritability and lordosis with toe drop gait, as well as absent knee jerks and ankle jerks, and a moderate atrophy of the muscles, indicate an organic nervous disease.

A three plus globulin and a total protein of 185 mg per hundred cubic centimeters in the spinal fluid are of pathologic significance. It should be recalled that the amount of protein normally present in the lumbar fluid varies between 15 and 45 mg per hundred cubic centimeters of fluid. It may also be noted that globulin does not exist in demonstrable quantities in the normal cerebrospinal fluid of infants and young children and that when a definite globulin test is present the fluid should be considered pathologic. While examining the spinal fluid it would be well to make a quantitative sugar examination. A low sugar content would speak for meningitis. A normal or high sugar content would suggest encephalitis or brain tumor.

In this particular child a detailed neurologic examination should be made including a careful inspection of the eye grounds. An attempt should be made to elicit the more familiar neurologic tests—the Babinski, Brudzinski and Oppenheim signs should be searched for.

The gait should be tested to elicit ataxia or cerebellar gait. The cranial nerves should be tested for abnormal functions. Such questions as these require solution in arriving at a diagnosis in this case.

May the child have a brain tumor in process of formation? May she have a slowly progressing tuberculous meningitis?

Could she possibly be suffering from postencephalitis symptoms? Have postdiphtheritic neuritis and botulism been fully excluded?

An examination conducted along these lines may clear up the diagnosis.

OBESITY WITH WATER RETENTION

To the Editor—May I have your suggestions for therapy in the following case of obesity. A married woman aged 42, weighs 215 pounds (97.5 Kg). The menstrual periods are regular. Three children are living, one of whom has inherited the same type of obesity. There have been no serious past illnesses. The patient has had three miscarriages. She has been on a restricted although varied, diet and has been taking desiccated thyroid for the past six months with loss of only a few pounds. She was placed on thyroid because of extreme constipation and sparsity of the hair and eyebrows. An outstanding symptom and I believe the cause of her obesity lies in the fact that she drinks large quantities of water daily—as much as 2 gallons—but there is no polyuria. Examination of the urine is negative for sugar. Please omit name.

M D, New York

ANSWER—It is presumed from the data given that this is a case of constitutional obesity and that the patient has been overweight from childhood. A tendency to retain water is encountered in many cases of obesity. The subject is discussed extensively by von Noorden (*Die Fettsucht*, ed 2, Leipzig, 1910) and was recently considered by Rowntree and Brunsting (*Water or Fat? Water Retention in So-Called Endocrine Obesity*, *Endocrinology* 17:377 [July-Aug] 1933), who saw some benefit from the use of diuretic measures. One cause of water retention in the obese is relative cardiac insufficiency. Wilder has discussed this in a paper which contains therapeutic suggestions for obesity (*The Treatment of Obesity*, *Internal Clin* 4:1 [Dec] 1933).

MEASUREMENT OF LOSS OF VISION

To the Editor—I have recently examined a patient for an industrial injury of the left eye. The question that I wish to ask is: What percentage of visual deficiency would one estimate the patient to have suffered? There is no history of previous ocular disturbance. Several days previously he was struck in the left eye with a steel bolt. There is no disturbance of motility. Central vision uncorrected is right eye 6/5, left eye 6/25. The right eye is normal in all respects. The left eye shows a dilated immobile pupil. There is a slight iridodonesis in the lower outer quadrant. The crystalline lens is clear. There is no disturbance of the vitreous body or of the fundus. A visual field test shows a scotoma at the central point. A 3 mm test object was used at a distance of 1 meter. There is contraction of the peripheral field 50 degrees above 40 degrees down, 40 degrees in 35 degrees out. The refraction of each eye discloses a low compound hyperopia. The corrected vision of the left eye is 6/10. With a pinhole disk the vision is not quite equal to 6/6. The use of a miotic drug in the left eye that will contract the pupil to the same size as the right pupil produces a much greater total astigmatism. I believe that the patient has suffered a laceration of the suspensory ligament of the lens in the lower outer quadrant which permits a twisted position of the lens with irregular astigmatism. What is a reasonable estimate of the visual impairment of this patient? Please omit name.

M D, Indiana

ANSWER—Estimates of visual loss are of course based for the most part on the loss of central and stereoscopic vision and marked restriction of the temporal field. With both eyes in use, the patient would note a limitation of his ability to see things coming from his left side and possibly would still see objects of some size in this field. There can be no estimate of loss that is at all exact in such a case but the loss is perhaps as little as 5 per cent and not more than 15 per cent.

ABSORPTION BY RECTUM

To the Editor—I should like to have information regarding the absorption of foods and drugs by rectum. The main ones are dextrose, sodium bicarbonate, quinine and sedatives. If this is not asking too much I should also like to have a list of foods and drugs that are susceptible of absorption by rectum and also the degree or percentage of food or drug that is absorbed. Please omit name and town. M D, Florida

ANSWER—Water, certain salts and volatile agents in general are the only substances that are satisfactorily absorbed from the rectum. This means that, besides water, such salts as sodium chloride, sodium bromide and sodium bicarbonate as well as alkaloidal salts such as morphine sulphate or atropine sulphate and volatile agents such as ether or paraldehyde in oil, or alcohol or chloral in aqueous solution can be administered by the rectum with expectancy of therapeutic results. Quinine is too irritative to be tolerated in sufficient dosage by the rectum for adequate systemic action. It has been shown that dextrose and other nutrients are not sufficiently absorbed for practical purposes of nutrition. In other words, that 'rectal feeding' is a delusion and a snare.

HOSPITALIZATION AFTER HYSTERECTOMY

To the Editor—Please advise me how many days a patient should be hospitalized after a hysterectomy (subtotal) for an uncomplicated fibroma uteri. When is it safe to discharge such patients and place them under the family physician? Kindly omit name.

M D, District of Columbia

ANSWER—Two weeks should be ample unless there are complications. Many patients are sufficiently recovered to leave the hospital in ten or twelve days.

As a rule, after pelvic operations performed by the abdominal route patients may appropriately be permitted to resume activities when they feel physically able. For example, out of bed on the fourth or fifth day, or perhaps not until the eighth or ninth day if the effort is too great. Return home may be permitted even before the patient walks, provided there is a feeling of well being and there are no complications. She should be urged to avoid bumping and jolting and physical efforts that produce discomfort or fatigue. If the patient can be impressed that she should do what nature tells her to and not what her ambitions prompt her to attempt she may be placed under the care of the family physician immediately on leaving the hospital. The surgeon should see the patient again after a few weeks, and preferably two or three times more during the ensuing months, until the health is normal.

USE OF X RAYS ON SALIVARY GLANDS

To the Editor—In the case of excessive salivation due to paralysis agitans what are the dangers and what are the good results of treating this condition with x rays? Are the x rays applied to the gland or to the nerve? Is there any destruction of tissue intended or desired? Please omit name, town and state.

M D California

ANSWER—Treatment of the salivation due to paralysis agitans by radiation is a highly experimental procedure. It is a common experience of radiologists in treating tumors in the region of the jaw and neck to have the patients develop dryness of the mouth and of this they complain greatly. It is probable that many patients would find such relief more distressing than the symptom itself for it is impossible to regulate the dosage so as to obtain an intermediate effect between hypersecretion and suppression of secretion. Moreover the relief obtained is only temporary, even with strong dosage. The irradiating is done over the entire gland region. It is not known whether the effect is obtained from the gland or from its innervation. Treatment sufficiently strong to produce actual destruction of gland tissue would be neither desirable nor safe.

ACUTE NEPHRITIS AFTER IMPETIGO

To the Editor—My question concerns a youth of 17 years of robust type who has had an impetigo vulgaris for some months. He then contracted bronchopneumonia of the influenza type. In one week he died. Nephritis developed during the last three days of life. During the last day of life the urine contained 2 per cent albumin. Some of the impetigo patches below the lower jaw had taken on an ecthymalike character during the last two weeks that he lived and were the sites of extensive pus pockets for some days before he died. Just how important must impetigo and ecthyma be considered? Were they probably in this case the real cause of the attack of nephritis? Please omit name and town.

M D Minnesota

ANSWER—From the evidence, it would seem that the patient developed acute nephritis. The most frequent cause of acute nephritis is infection, particularly with organisms of the streptococcus group. Most probably streptococci were present in the skin lesion, and the skin lesion in that sense represents the source of the infection that resulted in acute nephritis. There probably was no more specific relation than this between the skin lesions and the nephritis. The bronchopneumonia was another possibility of the infection inducing the nephritis.

RESPIRATORY RATE IN INFANTS

To the Editor—I have a patient an infant 1 month old who though normal in all respects as far as appearance, nourishment and weight are concerned, has a respiratory rate of about 100. This varies a little with meals and other activities but is at all times rapid. Kindly advise. Please omit name.

M D, New York

ANSWER—The respiratory rate in new-born infants is more rapid than in the adult, as well as more shallow and less rhythmic. Various tables have been compiled for the respiratory rate in infants and children. The average rate at birth is said to be about 44 per minute, at the end of the first month about 35, at 1 year about 30, and at 5 years about 26.

A respiratory rate of 100 per minute in an infant 1 month of age is definitely abnormal, and search for the cause of the condition should be made. Following birth the infant may have suffered from an aspiration pneumonia and a portion of the lung may be atelectatic. There may be a cerebral condition causing stimulation of the respiratory center in the medulla. A diaphragmatic hernia that allows a portion of the abdominal viscera to extend into the thorax, thus causing compression of the lung, may be another cause of such a compensatory rapid rate.

BONES AND TEETH OF DINOSAURS AND LIZARDS

To the Editor—Kindly tell me whether the leg bones of the dinosaurs are solid also whether if the teeth replace themselves after being removed similar to the replacement of the limb in certain species of lizards.

FRANK E. WIEDEMANN, M D, Terre Haute Ind

ANSWER—In certain groups of dinosaurs the long bones of the legs were solid to the extent that there was spongy bone in the shaft instead of a marrow cavity. This is true of the groups to which the brontosaurus and the great horned dinosaur (Triceratops) belong. In the third group many genera have hollow limb bones.

In all living reptiles (except the toothless forms, such as turtles) numerous generations of teeth are developed and usually there are two parallel ridges (dental laminae) from which the teeth normally arise throughout life. There is clear evidence of similar conditions in many dinosaurs. The regeneration of a lost limb or tail is different in that the new parts do not arise from a persistent embryonic structure like the dental lamina.

SEVERANCE OF NERVES FOR PAIN

To the Editor—Is severance of the saphenous nerve an accepted procedure for intractable pain on the medial aspect of the leg (right)? The patient has a flaccid paralysis of the entire right lower extremity following a fractured spine. Would severance of the sciatic nerve in the popliteal space alleviate painful cramps in the same leg and is this an accepted procedure? Please omit name.

M D Long Island

ANSWER—Severance of the nerve as discussed in the query may destroy forever the patient's only chance of recovery of the muscles supplied by that nerve. Pain may indicate the patient's only opportunity for return of muscle power.

VEHICLE FOR TINCTURE OF STRAMONIUM

To the Editor—Would you suggest that a mixture of syrup of glycyrrhiza and elixir of anise would be a good vehicle for tincture of stramonium? If not what would be the best vehicle?

FLOA McEWEN, M D Newark N J

ANSWER—One could hardly suggest a more pleasant vehicle for tincture of stramonium than the one mentioned unless it be "iso-alcoholic elixir" which would be obtained by a mixture of equal quantities of "aqueous elixir" and of "alcoholic elixir," formulas for which may be found in the *Technic of Medication* by Bernard Fantus published by the American Medical Association. This yields a clear solution, the vehicle being approximately of the same alcoholic strength as the menstruum used in the preparation of tincture of stramonium. The only objection to the vehicle mentioned in the query is that, owing to its strength in alcohol there is some precipitation of ingredients of the tincture of stramonium and, unless the bottle is shaken each time before taking, there may be an inequality in dosage.

GAS GANGRENE ANTITOXIN

To the Editor—Will you kindly give me some information with regard to the status of tetanus gas gangrene antitoxin? Do you recommend this to be given in all cases in which tetanus antitoxin was formerly used or only when it is believed that the wound is infected with the gas forming organisms? The combined antitoxin is more expensive and as a prophylactic measure would you recommend that this be used in the hospital in all cases in which the tetanus antitoxin seemed indicated? Will you also kindly tell me how the incubation period of gas gangrene compares with tetanus?

P F PRIOLEAU, M D Fairmount W Va

ANSWER—Gas gangrene antitoxin needs to be used only when in addition to the tetanus hazard there is judged to be a risk of gas gangrene also. In general, when there is evidence of contamination of the wound with street or farm dirt and crushing or other devitalization of tissue. The incubation period of gas gangrene is ordinarily shorter than that of tetanus—often only two or three days—while that of tetanus is rarely under eight or ten days.

TREATMENT OF OZENA

To the Editor —Please outline the most recent treatment for ozena

A G FELTER M.D., Van Meter Iowa

ANSWER—Attempts have been made in recent years to treat ozena by means of endocrines, on the basis that there is some deficiency in the secretions of certain of the ductless glands. On the other hand, efforts have been directed toward narrowing the air space in the nose by implantation of ivory into the septum, in order to prevent the rapid drying out of secretions, the formation of crusts, and their subsequent decomposition by saprophytes.

Various operations such as the Halle and Lautenschlager, have been devised with the same end in view to diminish the air space by mobilizing the nasal lateral wall and moving it closer to the septum. Since the exact etiology of ozena has never actually been determined, it is quite logical that the methods of treatment have been varied and the results unsatisfactory in many cases.

FISTULA IN ANO

To the Editor—A woman aged 30 years married has had a blind external fistula in ano for the last twelve months. This condition followed an abscess. Her blood was positive for syphilis (4+) and she has had consistent treatment since with injections of neoparsphenamine and bismuth compounds. The fistula was cured once about six months ago but continues to drain. Kindly advise what can be done to heal this condition. Please omit name.

M D New Jersey

ANSWER—It is probable that the abscess originated from a small lesion in the rectum which still persists and which is the internal opening of a fistula. This is most likely to be on the posterior wall of the intestine at the mucocutaneous line. Some of these sinuses are small and require diligent search before they can be found. If such a fistulous tract runs from the old abscess cavity into the rectum this tract must then be laid open into the intestine. It is unlikely that the syphilis has any relationship to this abscess or the persistent fistula.

ADENITIS AFTER TULAREMIA

To the Editor—What method of treatment would you advise for adenitis of the left axilla following tularemia? I recovered from the disease two months ago and since have had a lymph node in the axilla that is perhaps as large as a pigeon egg which gets in my way in using my arm but does not cause pain or discomfort. I have been taking iodides and am wondering whether x-rays or surgery would be indicated. Please omit name.

M D Indiana

ANSWER—Roentgen therapy is apparently of considerable value in hastening resolution of lymphadenopathy in such cases. Simpson and Foshay have found that the antitularense serum developed by Lee Foshay of the University of Cincinnati is effective in overcoming the lymphadenopathy. If neither of these methods should be effective, and if suppuration should occur, surgical incision and drainage would be indicated.

AIR IN PLEURAL SAC

To the Editor—Is there or is there not a minute bit of air within the pleural sac?

THOMAS W BURKE M.D. Houston Texas

ANSWER—In the normal condition the parietal and the visceral pleura are in intimate contact throughout. There is no air present. If a small amount of air is allowed to escape into the pleural cavity during the process of thoracentesis, during which there is a tendency for air to be sucked in, it is promptly absorbed. When therapeutic pneumothorax is used, refills are necessary at frequent intervals to replace the air so absorbed. Unless this is done the pneumothorax disappears completely, unless other conditions are present preventing reexpansion of the lung.

INJECTION OF FOREIGN PROTEIN AND RELAPSE IN MALARIA

To the Editor—Recently I was called to care for a man who was having a violent chill. There was a history of malarial infection about five years previously without relapse in the meantime. Five days preceding the chill he had been given a prophylactic dose of scarlet fever antitoxin when the disease broke out in his family. The diagnosis is definitely malarial relapse, the infection being tertian. May the antitoxin have been the exciting cause of the relapse? Please omit name.

M D Minnesota

ANSWER—In both human and simian malaria foreign protein or serum is known to precipitate relapses in some cases. It seems probable therefore that the antitoxin was the exciting cause in the present case.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

- ALABAMA Montgomery July 10 13 Sec Dr J N Baker 519 Dexter Ave, Montgomery
- AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY Oral Cleveland June 11 12 Sec Dr C Guy Lane 416 Marlboro St Boston
- AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY Oral (all candidates) Cleveland June 12 Sec, Dr Paul Titus, 1015 Highland Bldg Pittsburgh
- AMERICAN BOARD OF OPHTHALMOLOGY Cleveland June 11 and Butte Mont July 17 Sec, Dr William H Wilder 122 S Michigan Blvd Chicago
- AMERICAN BOARD OF OTOLARINGOLOGY Cleveland June 11 Sec Dr W P Wherry, 1500 Medical Arts Bldg, Omaha
- ARIZONA Basic Science Tucson, June 19 Sec Board of Basic Examiners Dr Robert L Nugent University of Arizona Tucson
- MEDICAL PHOENIX July 3 Sec Dr J H Patterson 320 Security Bldg Phoenix
- CALIFORNIA San Francisco July 9 12 and Los Angeles July 23 26 Sec Dr Charles B Pinham 420 State Office Bldg Sacramento
- COLORADO Denver July 3 6 Sec, Dr Wm Whitridge Williams 422 State Office Bldg Denver
- CONNECTICUT Regular Hartford July 10 11 Endorsement Hartford July 24 Sec Dr Thomas P Murdock 147 W Main St Meriden
- HOMOPATHIC New Haven July 10 Sec, Dr Edwin C M Hall 82 Grand Ave, New Haven
- DELAWARE Wilmington June 12 14 Sec Medical Council of Delaware Dr Harold L Springer 1013 Washington St Wilmington
- DISTRICT OF COLUMBIA Basic Science Washington June 25 26 Medical Washington July 9 10 Sec • Commis sion on Licensure Dr W C Fowler 203 District Bldg, Washington
- FLORIDA Jacksonville June 11 12 Sec Dr William M Rowlett Box 786 Tampa
- ILLINOIS Chicago June 26 29 Supt of Regis, Dept of Regis and Edu Mr Eugene R Schwartz Springfield
- INDIANA Indianapolis June 19 21 Sec Board of Medical Registration and Examination Dr William R Davidson Room 5 State House Annex Indianapolis
- KANSAS Topeka June 19 20 Sec Board of Medical Registration and Examination Dr C H Ewing Larned
- MAINE Augusta July 5 6 Sec Board of Regis of Medicine, Dr Adam P Leighton Jr 192 State St Portland
- MARYLAND Homoeopathic Baltimore June 12 13 Sec Dr John A Evans 612 W 40th St Baltimore Regular Baltimore June 19 22 Sec Dr Henry M Fitzhugh 1211 Cathedral St Baltimore
- MASSACHUSETTS Boston July 10 12 Sec Board of Regis in Medicine Dr Stephen Rushmore 144 State House Boston
- MICHIGAN Detroit, June 12 14 Sec Board of Regis in Medicine Dr J Earl McIntyre, 202 3 4 Hollister Bldg Lansing
- MINNESOTA Minneapolis June 19 21 Sec Dr E J Engberg 350 St Peter St St Paul
- MISSISSIPPI Jackson June 26 27 Sec. State Board of Health Dr Felix J Underwood Jackson
- MISSOURI St Louis June 14 16 State Health Commissioner Dr E T McGaugh State Capitol Bldg Jefferson City
- NATIONAL BOARD OF MEDICAL EXAMINERS The examinations in Parts I and II will be held at centers in the United States where there are five or more candidates June 25 27 and Sept 12 14 Ex. Sec Mr Everett S Elwood, 225 S 15th St Philadelphia
- NEW JERSEY Trenton June 19 20 Sec Dr James J McGuire 28 W State St Trenton
- NEW YORK Albany Buffalo New York and Syracuse June 25 28 Chief Professional Examinations Bureau Mr Herbert J Hamilton Room 315 Education Bldg Albany
- NORTH CAROLINA Raleigh June 18 Sec Dr B J Lawrence 503 Professional Bldg Raleigh
- NORTH DAKOTA Grand Forks July 3 6 Sec, Dr G M Williamson 4 1/2 S 3d St, Grand Forks
- PENNSYLVANIA Philadelphia and Pittsburgh July 10 14 Sec Board of Medical Education and Licensure Mr W M Denison 400 Education Bldg Harrisburg
- RHODE ISLAND Providence July 5 6 Dir Public Health Commission Dr Lester A Round 319 State Office Bldg Providence
- SOUTH CAROLINA Columbia June 26 Sec Dr A Earle Boozer 505 Saluda Ave Columbia
- SOUTH DAKOTA Rapid City, July 17 18 Dir Division of Medical Licensure Dr Park B Jenkins Pierre
- TENNESSEE Knoxville Memphis and Nashville June 14 15 Sec Dr H W Qualls 130 Madison Ave Memphis
- TEXAS Fort Worth June 21 23 Sec, Dr T J Crowe 918 19 20 Mercantile Bank Bldg Dallas
- UTAH Salt Lake City June 27 29 Dir Department of Registration Mr S W Golding 326 State Capitol Bldg Salt Lake City
- VERMONT Burlington June 20 22 Sec, Board of Medical Registration Dr W Scott Nay Underhill
- VIRGINIA Richmond June 20 22 Sec, Dr J W Preston 28 1/2 Franklin Road Roanoke
- WASHINGTON Basic Science Seattle July 16 17 Medical Seattle July 19 21 Dir Department of Licenses Mr Harry C Huse Olympia
- WEST VIRGINIA Wheeling July 9 State Health Commissioner Dr Arthur E McClue Charleston
- WISCONSIN Milwaukee June 26 29 Sec Dr Robert E Flynn 401 Main St LaCrosse

Wisconsin January Report

Dr Robert E Flynn, secretary, Wisconsin State Board of Medical Examiners, reports the written and practical examination held in Madison, Jan 9-11, 1934. Thirteen candidates were examined, 12 of whom passed and 1 failed. Fifteen candidates were licensed by reciprocity. The following schools were represented:

School	PASSED	Year Grad	Number Passed
Loyola University School of Medicine		(1933)	1
Northwestern University Medical School		(1933) 2	2
Rush Medical College		(1933) 2	2
University of Minnesota Medical School		(1933)	1
University of Nebraska College of Medicine		(1932)	1
New York University, University and Bellevue Hospital Medical College		(1932)	1
Marquette University School of Medicine		(1933)	1
University of Wisconsin Medical School		(1931) (1932) 2	3

School	FAILED	Year Grad	Number Failed
Julius Maximilians Universität Medizinische Fakultät Würzburg, Bavaria, Germany		(1925)	1

School	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Hahnemann Med College and Hosp Chicago	(1903), (1908)		Illinois
Loyola University School of Medicine	(1932)		Michigan
Northwestern University Medical School	(1912) 2		Illinois
Univ of Illinois College of Med	(1913) (1930)	(1932)	Illinois
State University of Iowa College of Medicine	(1930)		Iowa
Detroit College of Medicine and Surgery	(1928)		Michigan
University of Minnesota Medical School	(1931) 2		Minnesota
Barnes Medical College Missouri	(1894)		Nevada
Creighton University School of Medicine	(1927)		Nebraska
University of Wisconsin Medical School	(1931)		California

Pennsylvania January Report

Mr W M Denison secretary, Pennsylvania State Board of Medical Education and Licensure, reports the examination held in Philadelphia, Jan 2-6 1934. Forty-two candidates were examined, 41 of whom passed and 1 failed. The following schools were represented:

School	PASSED	Year Grad	Number Passed
College of Medical Evangelists		(1930)	1
Emory University School of Medicine		(1922)*	1
Rush Medical College		(1931)	1
Johns Hopkins University School of Medicine	(1929)	(1931)	2
Harvard University Medical School		(1932)	1
University of Michigan Medical School		(1931)	1
Syracuse University College of Medicine		(1932) 2	2
Hahnemann Med Coll and Hosp of Phila	(1931)	(1932) 2	3
Jefferson Medical College of Philadelphia	(1931) 2	(1932)	4
Temple University School of Medicine		(1932) 4	4
Univ of Penn School of Med	(1930) (1931) 4	(1932) 4	9
Woman's Med College of Pennsylvania	(1931) 2	(1932) 4	6
Vanderbilt University School of Medicine		(1931)	1
University of Wisconsin Medical School	(1930)	(1931)	2
University of Toronto Faculty of Medicine		(1922)	1
McGill University Faculty of Medicine		(1923)	1
Deutsche Universität Medizinische Fakultät Cze		(1928)†	1
University of Edinburgh Faculty of Medicine		(1932)	1

School	FAILED	Year Grad	Number Failed
Cleveland Homeopathic Medical College		(1908)	1

One physician was licensed by reciprocity and 2 physicians were licensed by endorsement. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
University of Pennsylvania School of Medicine		(1913)	New Jersey

School	LICENSED BY ENDORSEMENT	Year Grad	Endorsement of
Stanford University School of Medicine		(1930)	N B M Ex
University of Pennsylvania School of Medicine		(1927)	N B M Ex

* License withheld pending completion of intern credentials
† Verification of graduation in process

Vermont February Examination

Dr W Scott Nay, secretary, Vermont State Board of Medical Registration reports the written examination held in Burlington, Feb 7-9 1934. The examination covered 12 subjects and included 90 questions. An average of 75 per cent was required to pass. Seven candidates were examined, all of whom passed. The following schools were represented:

School	PASSED	Year Grad	Per Cent
Georgetown University School of Medicine		(1931)	86.1
Tufts College Medical School		(1933) \$1.4	91.6
University of Vermont College of Medicine		(1930)	88.1
(1933) \$0.2 \$2.3			
University of Montreal Faculty of Medicine		(1935)	83.5

Book Notices

New and Nonofficial Remedies 1934 Containing Descriptions of the Articles which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1 1934. Cloth Price \$1.50 Pp 510 Chicago American Medical Association 1934

"Is it in N N R?" This question is being increasingly asked by physicians concerning the preparations offered by manufacturers of pharmaceuticals. Recent decisions on the part of certain relief agencies that only Council-accepted preparations would be used in their medical activities has promoted interest in this book and in the actions of the Council, which it represents, especially on the part of manufacturers of pharmaceutical preparations. It may be a utopian wish, but one would like to envisage an era in which all physicians and manufacturers were to adopt the high ideals of rational therapeutics for which the Council stands. The names of the present membership of the Council and of the past year's consultants are representative of the best and most enlightened thought in the medical field.

New and Nonofficial Remedies, 1934, has the same format that has characterized it in past years. The enrichment of the indexing begun a few years ago, is continued and its value even increased by some desirable simplification of cross references.

The lists, appearing in the preface, of omitted products and of changes in the descriptions of retained products, as well as the references to textual changes in general articles under which individual preparations are classified, give indication of the care with which the Council makes the annual revision of the book. The general article Lactic Acid-Producing Organisms and Preparations has been practically rewritten. The chapter on arsenic preparations has undergone some revision, especially in the statement concerning neoarsphenamine. The descriptions of chiniofon and viofilm have been revised in the light of recent developments in the treatment of amebiasis. The article on ethylhydrocupreine has been revised to delete reference to optochin base, which has been omitted, optochin hydrochloride has been retained, being recommended only for external use. The description of typhoid vaccine has been revised to give the dosage of the combination of typhoid and paratyphoid organisms and to mention the use of typhoid vaccine in nonspecific protein therapy. A number of revisions of the Council's rules have been made, particularly with reference to the names of products which is one of the most frequent and troublesome of the problems with which the Council has to deal. Revisions of more or less importance occur in the following chapters: Antimeningococcic Serum, Antipneumococcic Serum, Arsenic Compounds, The Azo Dyes, Barbitol and Barbitol Compounds, Bismuth Compounds, Bromine Derivatives, Chloral Derivatives and Substitutes, Cinchophen and Cinchophen Derivatives, Creosote and Guaiacol Compounds, Digitalis Principles and Preparations, Diphtheria Immunity Test (Schick Test), Diphtheria Toxin-Antitoxin Mixture, Ephedrine, Epinephrine and Epinephrine Preparations, Ergot, Erysipelas Antistreptococcic Serum, Erysipelas and Prodigiosus Toxins (Coley), Ethylhydrocupreine, Lactic Acid-Producing Organisms and Preparations, Mercury and Mercury Compounds, New Tuberculin B E, New Tuberculin B E Dried, New Tuberculin-T R, New Tuberculin T R Dried, Pituitary Gland, Rabies Vaccine, Radium and Radium Salts, Scarlet Fever Immunity Test, Scarlet Fever Streptococcus Antitoxin, Scarlet Fever Streptococcus Toxin, Scopolamine Sensitized Bacterial Vaccines—Serobacterins, Serums and Vaccines, Silver Lactate, Tannic Acid Derivatives, Thyroxin, Tuberculin-Koch, and Typhoid Vaccine.

Among the preparations newly included in this volume are: Aminophylline, a double salt or mixture of theophylline and ethylenediamine with the advantage of greater solubility over other theophylline preparations; the new alum precipitated diphtheria toxoid Neo-Iopax, a new medium for intravenous urography; Benzadrine, an ephedrine substitute; serums containing type II pneumococcus antibodies, which the Council has recently recognized as worthy of clinical trial in view of improved preparations and technique; Autolyzed Liver Concentrate and Extralin, two new liver preparations for use in the

treatment of pernicious anemia, Metycaine, a new local anesthetic, and Sodium Morrhuate, a salt of the fatty acids of cod liver oil, proposed for use as a sclerosing agent

Medizinische Kolloidlehre Herausgegeben von Prof Dr L Liehtwitz
Dr Dr Ralph Ed Liesegang und Prof Dr Karl Spiro Direktor des
Physiologisch Chemischen Instituts der Universität Basel Lieferung 9
Paper Price 5 marks Pp 609 688 Dresden & Leipzig Theodor Steh-
kopf 1933

In this instalment, Gundo Boehm takes up the disclosures of colloid chemistry as regards muscle. These studies make it evident that the myosin exists in the form of threadlike particles, or myofibrils, whose width is less than 1 millimicron and length greater than 500 millimicrons and of a particle weight of approximately 1,000,000. These colloidal molecules, so greatly deviating from the spherical, are arranged in the form of chains and by somewhat approaching the spherical shape are capable of exerting, in their totality, the manifestations of external force characteristic of muscle contraction. Heart as well as involuntary musculature is also composed of a fibrillary structure. It is an interesting fact that the muscles, next to the skin and subcutaneous tissue, are the most important protective organs against alterations in the water content of the system. They contain almost half the total water of the body and because of this are capable of yielding to and abstracting from the system more water than any other organ with but slight alterations in the percentage of water contained in them. Thus far, colloid chemistry has not contributed much to the understanding of the pharmacology of muscles and vice versa, though great revelations may be expected in the future. In the discussion of the colloid chemistry of digestion R. E. Liesegang summarizes the "art of solution" as practiced by the gastro-intestinal tract as maximal addition of water and minimal secretion of salts and that of ions of maximum swelling capacity, repeated change of reaction (for the pepsin to react with positively charged and the trypsin with negatively laden protein ions) and great lowering of surface tension (through bile). The puzzle of the secretion of hydrochloric acid from the alkaline blood is solved at least partly by the demonstration of irreciprocal permeability and a great permeation of Cl^- with slight penetration of Na^+ ions through the gastric mucosa. Osmosis and diffusion do not suffice to explain absorption. Essential, therefore, is the recognition of the pumping action of the villi as well as immediate synthesis into nondiffusible molecules within the cells of the intestinal mucosa. This is especially true of fat. In addition, intestinal peristalsis furnishes filtration pressure.

De Venarum Ostiis 1603 of Hieronymus Fabricius de Aquapendente 1537? 1619? Facsimile edition with introduction translation and notes by A. J. Franklin D.M. Tutor and Lecturer in Physiology of Oriel College Oxford Cloth Price \$3 Pp 98 with 15 illustrations Springfield Ill & Baltimore Md Charles C Thomas 1933

Fabricius was the precursor and teacher of Harvey so his life, work and character will always be of interest to medical men. His study of the valves of the veins is especially interesting, because their study led directly to Harvey's great deduction and proof of the circulation of the blood. Franklin gives a reproduction of the Latin text of Fabricius's paper (1603), a literal translation of it, facsimiles of the eight original plates, an excellent short account of Fabricius's colorful life, an illustrated account of the famous old anatomy theater in Padua built under the direction of Fabricius, an account of the early work on valves and veins, and a reproduction of the first published illustration of them taken from a paper of Salomon Alberti, who studied under Fabricius. A good portrait constitutes the frontispiece and a picture of the statue erected to him in his native city of Aquapendente (Aucula) attests the honor paid him in his own country. The title is interesting especially "ostiola," which he uses for the valves. This term has been used by anatomists at various times, especially for the valves of the heart. Franklin gives an interesting explanation of this fact. Apparently the term was used by irrigation engineers of the time and it is translated by John Browne as "flood gates." Fabricius did not see that they were really valves; he was too much under the influence of Galen's physiologic theory. Fabricius had a picturesquely assertive character, but the intellectual power, courage and independence of Harvey

were required to see the real character and significance of these structures. The biography is delightful. Fabricius was a research man, an anatomist, a surgeon and a physician. His long life of eighty-six years was full of interest. He was naive, forceful, temperamental, quarrelsome, successful. He usually had a lawsuit in process with some one. He lectured sometimes marvelously well, sometimes wretchedly. He began to teach on a salary of \$160 a year. At his death he had \$200,000 and the admiration and love of his contemporaries, even of those with whom he had quarreled. The book throws a clear and interesting light on a plastic period of medical development that gave color and character to modern medical science. Publication in 1933 is timely. Fabricius was born in 1533.

Textbook of Physical Therapy By Heinrich F. Wolf M.D. Chief of the Department of Physical Therapy Mt. Sinai Hospital and Dispensary New York. With a foreword by Lewellys F. Barker M.D. LL.D. Chapters by William Bierman M.D. Director of Physical Therapy Beth Israel Hospital New York. Adolph A. Lillen M.D. Associate Physical Therapist Mt. Sinai Hospital. Farel Jouard M.D. Adjunct Physical Therapist Mt. Sinai Hospital. Madge C. L. McGuinness A.B. M.D. Chief of Clinic Department of Physical Therapy Vanderbilt Clinic New York. Cloth Price \$5.50 Pp 409 with 54 illustrations. New York and London D. Appleton Century Company, Inc. 1933.

This book, besides being comprehensive in scope, introduces an originality of exposition both new and timely in relation to certain discussions of physical therapy topics. It calls attention to unscientific precedents which have developed abusive methods of practice. Written in the style of the iconoclast addressing himself in flexible dialectics, the author presents a picture of a practice inconsistent with scientific medicine and points out the method of its eradication. Specifically, this work is a sharp departure from existing textbooks that stress technics of application and prescriptions for treatment of various pathologic conditions. The author contends that "physical therapy is a specialty like any other. Its practice requires not only a large number of appliances, but special training in the technic as well as its indications." The pivotal point in every specialty is diagnosis and this no less in physical therapy. Attention is directed to the dangers of routine procedures, the absurdity, and inefficiency of which is partly illustrated by the "routine followed by the spas, where nearly every patient was treated according to one rule." Instead of trying to adjust the patient to the treatment, the author advocates adjusting the treatment to the patient. Under the methods cited, it was inevitable that a reaction should follow the naive claims of the early preceptors of physical therapy. This work therefore justifies its *raison d'être* by attempting to place its discipline on physiologic principles. It reduces the uncertainty of empirical practice by the constant stressing of the scientific method and its practical application. The author therefore offers a conservative, comprehensive review of the theory and principles of physical therapy, incorporating concise discussions of every phase of its practice. The several chapters by Bierman, McGuinness, Lillen and Jouard, dealing with hyperthermia and minor electrosurgery, physical therapy in gynecology, diseases of the lower respiratory tract, and otolaryngology, give to this contribution the balance so desirable for student and practitioner. The generous praise of Lewellys F. Barker is readily understood when he says in his foreword that "Dr. Wolf has sifted his material carefully, attempting to eliminate all antiquated methods, but giving the data necessary for individualization of treatment and for the avoidance of crude empiricism in this field."

Die Entzündung des Magens Von Dr. med. Norbert Henning Privatdozent an der Universität Leipzig Paper Price 23.40 marks Pp 235 with 136 illustrations Leipzig Johann Ambrosius Barth 1934

In the past ten years a reawakening of interest in chronic gastritis has occurred. Konjetzny has correlated the anatomic changes in chronic gastritis to the etiology of peptic ulcer and H. H. Berg has presented the roentgenologic manifestations. Now Norbert Henning has carefully worked out the endoscopic observations by a new instrument, a flexible gastroscope perfected by S. Wolf. The flexibility of this instrument makes it possible to view the greater portion of the mucosa of the stomach. It is pointed out that this method possesses a great

advantage over gastrophotography, as the latter method missed a great portion of the gastric mucosa. The types of chronic gastritis are described and illustrated: the hypertrophic type with changes in the mucosa and with changes in only the submucosa, the erosive type, and the atrophic. In addition, a splendid correlation is brought out with other types of investigation of gastric function, i. e., absorption from the stomach with potassium iodide, stretching the stomach by inflation, examination of stomach flora, examination of stomach contents by histamine stimulation and the neutral red test, and examination of dried gastric juice. The differential diagnosis, prognosis and therapy of chronic gastritis are well presented. Most important, and entering on a field in which many opinions have differed, Norbert Henning quite definitely points out the clear path from chronic gastritis to peptic ulcer and gastric carcinoma. In particular this seems to be the answer to the much discussed question of ulcer carcinoma of the stomach. A chapter in which biliary tract disease is also attributed to chronic gastritis, however, does not stand on such a firm basis. The book ends with a discussion of achylia gastrica differentiated by the newer methods of the last few years. This book should be read by every one who is interested in gastroenterology. It restricts the claims of the sempsiychiatrists in medicine who have ascribed peptic ulcer to vagus changes, pituitary gland changes and body types, and it serves to bind the subject once more to physiopathology, where it belongs.

Medicine in Virginia in the Nineteenth Century. By Wyndham B. Blanton, M.D. Cloth. Price \$7.50. Pp. 466, with illustrations. Richmond: Garrett & Massie, Inc. 1933.

This volume completes the series on the history of medicine in Virginia, prepared under the direction of the Medical Society of Virginia. The two previous volumes covered the period from 1607 to 1700 and from 1700 to 1800, respectively. This volume, which covers the period from 1800 to 1900, is written and published in the same interesting and attractive style that characterized the other volumes.

The opening chapters concern the early efforts to organize medical schools. There were no medical schools in Virginia during the first quarter of the nineteenth century. Most of the Virginia students found their way to the University of Pennsylvania, from which up to 1816 there had been 4,254 students graduated in medicine from the South, and of these 1,749 were from Virginia. Likewise, many Virginians graduated from Jefferson Medical College during that period. The medical department of the University of Virginia was planned by Thomas Jefferson, who had in mind a broad cultural education of Virginia youths more than the turning out of physicians. This idea was evident as late as 1889, when the visitors went on record as favoring the subordination of clinical to theoretical instruction. So much emphasis was placed on this idea that later it became difficult to introduce the practical clinical type of instruction. The University of Virginia was further distinguished among American universities about 1840 when the policy was announced that neither the length of time nor the number of courses taken would have any bearing on the graduate's qualifications for the M.D. degree, but that a comprehensive examination would be the sole criterion for his fitness for this honor. In the last decade of the nineteenth century, clinical teaching rapidly assumed the prominence it had been denied. In 1888 the Cottage Hospital and Dispensary in Charlottesville were opened, where bedside instruction was given to students, in 1901 the nucleus of the present university hospital was opened. Seventeen physicians of Richmond and Manchester met, Dec. 15, 1820, and formed themselves into what was "to be styled the Medical Society of Virginia." About 1846 an attempt was made at state-wide organization, and the society was incorporated by an act approved Jan. 14, 1871. The American Medical Association held its fifth annual session in Richmond in May 1852 and again met in Richmond in May 1881. Virginia contributed numerous leaders in the Association's activities. Beverley R. Wellford of Fredericksburg was elected President in 1852 and Hunter McGuire in 1892. Other presidents of the American Medical Association who were born in Virginia and the dates of their election to office were Nathaniel Chapman, 1847, A. Y. P. Garnett 1888, W. W. Dawson, 1889, and R. Beverly Cole, 1896.

The first medical periodical to appear in Virginia was the *Stethoscope and Virginia Medical Gazette: A Monthly Journal of Medicine of the Collateral Sciences*, first published in 1851 and edited by Dr. Philip Gooch, who was prominent in the early work of the American Medical Association, having served as secretary of the meetings at Charleston and Richmond. He died of yellow fever in 1855. This publication was purchased from Dr. Gooch by a committee for the Medical Society of Virginia and converted into the organ of the society. It was sold at public auction in 1855 by the state society to its former publishers, however, and within a few months was amalgamated with the *Virginia Medical and Surgical Journal*. The new magazine appeared first in January 1856, with the title of the *Virginia Medical Journal*.

The history of hospitals in Virginia is taken up next. There are thirty-three hospitals operating in Virginia today which were founded before the year 1900. There is an interesting account of various epidemics that occurred during this period. Yellow fever visited Norfolk in 1800, occasioned by the arrival of three infected ships from the West Indies; other epidemics occurred in 1802, 1803, 1805, 1821, 1826 and 1852. The most memorable epidemic occurred in 1855, when there were about 2,000 deaths in Norfolk from yellow fever. Asiatic cholera made its appearance in Virginia in July 1832 and again in 1840 and 1850.

The remainder of the volume is concerned chiefly with the contributions to medicine made by Virginians and with their services in the military and public health services of the United States. The Medical Society of Virginia may well be proud of its three volumes of medical history.

Über die Darstellung des zentralen und peripheren Nervensystems im Röntgenbild. Von Prof. Dr. Walter Jacobl, Direktor der Nervenkl. im Stadt Krankenhaus Magdeburg-Südendurg. Prof. Dr. Wilhelm Lebr, Direktor der chir. Klinik des Stadt Krankenhauses Magdeburg-Alstadt und Priv. Doz. Dr. Otto Wüstmann, Chefarzt der chirurgischen Abteilung des St. Katharina Krankenhauses Königsberg. I. Pr. VII. einem pathologischen anatomischen Beitrag von Dr. Julius Hallervorden, Oberarzt an der Landesirrenanstalt Landsberg. W. Paper. Price 9.40 marks. Pp. 41 with 31 illustrations. Leipzig: Johann Ambrosius Barth, 1934.

This brief monograph records the attempt of the authors to demonstrate various structures within the body by means of a radioactive substance called Thorotrast (a 25 per cent colloidal suspension of thorium dioxide). This substance seems to be well tolerated by the tissues of the body and is concentrated in the reticulo-endothelial system. When injected into the cisterna magna of animals it causes generalized tetanic cramps. The authors have made cautious attempts to use it in the subarachnoid cavity of human beings but the results, although interesting, are not satisfactory. The authors conclude that they are not yet ready to advise its use in the diagnosis of lesions of the nervous system. It may be of use as a medium for anatomic investigation, since it is absorbed from the subarachnoid space along the tissue spaces surrounding the spinal nerves, a study of which may throw light on the spread of certain infections to the central nervous system.

The Renaissance of Medicine in Italy. By Arturo Castiglioni, M.D. Professor of the History of Medicine at the University of Padua. The Hideo Noguchi Lectures. Publications of the Institute of the History of Medicine, the Johns Hopkins University. Third Series. Volume I. Cloth. Price \$1.50. Pp. 91. Baltimore: Johns Hopkins Press, 1934.

From the University of Padua and an environment that, the author says, must force one to be interested in the history of medicine, Castiglioni came to America to deliver these three charming lectures. The word charming is used advisedly. While these lectures are serious, philosophic and richly informing, they are written in the easy flowing style of the essay, with an occasional light touch of humor and with the attractive imagery of one who is poetically minded without being unduly sentimental as is occasionally true of modern Italian writers. If his imagery is at times so involved as somewhat to obscure the thought it is pardonable because of the author's enthusiasm and sincerity. His aim is to trace the sequence of ideas rather than of facts. He regards the rebirth of medicine as but a part of the general revival of learning. He shows how it was intimately linked to other branches of science to art, to literature and to culture in general. Furthermore he points out the relation of these new ideas to modern medicine. He finds in this period of Italy's medical history the beginnings of

research and experiment, the birth of the real study of anatomy, physiology and clinical medicine. He wisely confines his more detailed discussion to the work of a few men. The leader in the rebellion against astrology and dogmatic medicine was Leonardo da Vinci the "truly universal man," the "first truly great scientist of the Renaissance." He dwells on the influence of Vesalius on the study of anatomy, and of Cesalpino in advancing knowledge of the circulation of the blood. He regards Fracastoro as the father of modern pathology, whose writings reveal many views that are almost modern not only as to the contagiousness of syphilis but as to infection and immunity in general. If Castiglioni seems to be too strongly pro Italian in presenting the claims of Italian medicine, it must be remembered that his topic is the renaissance of medicine in Italy. He is really broadminded. One interested in this topic will find these essays stimulating and refreshing.

Clinical Investigation of Cardiovascular Function. By V. Pachon. Professor of Physiology in the Faculty of Medicine of Paris and R. Fabre, Professor of Physiology, Director and Examiner in the Faculty of Medicine of Bordeaux. Translated by J. F. Halls Dally, M.A., M.D., M.R.C.P., Senior Physician to the Mount Vernon Hospital, Montreal. Cloth. Price 1.0s. Pp. 232 with 87 illustrations. London: Kegan Paul, Trench, Trubner & Company Ltd. 1934.

This volume is an attempt to present some of the instrumental methods of evaluating the functions of the heart. The aim of the authors apparently was to apply the physiologic approach to the analysis of cardiovascular disorders. A great deal of emphasis is laid on the cardiogram for registering the apex beat, a method little utilized by American cardiologists. The records used in this section and in that dealing with the jugular pulse are relatively crude. The sections on electrocardiography and roentgen examination are simple and succinct. A large section of the book is given to the development of sphygmomanometry in which the use of the oscillogram, which Pachon himself designed, is developed at great length. The determination of systolic, diastolic and mean pressures is described and the evidence for using these points evaluated. The many possible uses for which the oscillogram can be employed are developed in detail, so that one gets the impression that the authors are laboring the merits of this instrument. This method has had great vogue among French physicians and the exposition offers a quick view of its present status among French cardiologists. The presentation of the sections dealing with the capillary circulation with venous pressure and with the viscosity of the blood, are simple and clear. A number of so-called functional tests of the circulation are included but on the whole are not especially useful. The translation could have been improved in that more appropriate words might have been substituted for the literal translation of some of the French technical terms. The volume will be interesting to the internist desiring to acquaint himself with the point of view of a large part of the French school of cardiologists.

The Physician's Art: An Attempt to Expand John Locke's Fragment De Arte Medica. By Alexander George Gibson. Cloth. Price \$3. Pp. 237. New York & London: Oxford University Press, 1933.

On page 49 is the following paragraph: "Practice is based upon the principles both of the science and of the art of medicine. The principles of the art, however, must be supplemented by rules governing certain procedures for those circumstances in which many of the factors are not clear, with their aid are formed the empirical lines of conduct. But there are principles of conduct for the doctor in each of his tasks and duties towards his patient and to the patient's friends, towards the community and his colleagues, that are based on facts quite other than those of the science of medicine." The book is concerned with a discussion of principles and precepts that should guide the physician in his practice. The subject is handled in short, pithy paragraphs and covers such features as diagnosis, prognosis, treatment, the ethics and management of practice, the physician himself, and optimism. In addition there is a discriminating chapter on art and science. The introductory pages are concerned with John Locke's fragment *de arte medica* which furnished the inspiration for the writing of this volume. The scope of the work may be learned from noting the headings of a few paragraphs selected at random: art is individual, trivial signs not to be dismissed as neurotic, rela-

tive value of signs, competence in the use of drugs, the one-remedy physician, what to tell the patient, on the time to summon relatives, consultants, of fees, humanity, manners, probity. The physician who has often been perplexed by problems of practice will find many helpful hints in these pages, which are written—and well written—by one whose knowledge and wisdom have clearly been gained by a rich experience at the bedside of the patient.

Demonstrations of Physical Signs in Clinical Surgery. By Hamilton Bailey, F.R.C.S., Surgeon Royal Northern Hospital, London. Fourth edition. Cloth. Price \$6.50. Pp. 287 with 335 illustrations. Baltimore: William Wood & Company, 1933.

The fact that only six years have elapsed since the publication of the first edition proves the popularity of this comprehensive work. As the title implies, the volume describes physical signs of importance in clinical surgery. The book consists of twenty-five chapters, each devoted to the discussion of characteristic clinical signs and their elucidation according to the topographic location of the lesion. For instance, one chapter is on the thorax, another on the shoulder, arm and forearm, a third on nonacute abdominal conditions. The reader is impressed with the simplicity and clarity of the text, which is interspersed with numerous exceptionally beautiful reproductions of photographs or schematic drawings. The book is highly recommended as a reliable source of information on this important subject not only to students but also to general practitioners.

L'évolution de la lutte contre la syphilis. Un bilan de 25 ans. Nancy 1907-1932. Par Louis Spillmann, doyen de la Faculté de médecine de Nancy. Paper. Price 30 francs. Pp. 292 with illustrations. Paris: Masson & Cie, 1933.

This volume reviews what has been done at Nancy from 1907 in controlling venereal diseases, especially syphilis. As the author well states in the introduction, "the struggle must be centered around an epidemiologic base." For every new case of syphilis, the source must be found and cared for. The author reviews the situation before the World War, the changes that took place during the war in a department so close to the front as Nancy and finally the vigorous endeavors that have been carried out since the war in the antivenereal campaign. Spillmann considers clandestine prostitution rather than regulated, medically controlled prostitution to be the great spreader of syphilis. He thinks the "conspiracy of silence in regard to venereal diseases should cease." The public, instead of receiving its education in the back alleys, should get it in the form of lectures, through the press and through the use of placards, theaters and the radio. Emphasis should be placed on the early diagnosis and on thorough treatment of syphilis. Moreover, syphilis poorly treated means later great expense to the state. It means the death of many children born of syphilitic parents. Spillmann is a firm believer in careful compulsory examination of all candidates for marriage. He considers social service a necessary adjunct to any real attempt to carry on a campaign against syphilis. As is usual in most French books, the index is simply replaced by a table of contents. The book is embellished with reproductions of photographs and plates illustrating what Spillmann has succeeded in doing at Nancy in his fight against venereal disease. To the person not necessarily a physician, interested in this type of campaign, the book is interesting and helpful and is to be recommended.

Neuroanatomy: A Guide for the Study of the Form and Internal Structure of the Brain and Spinal Cord. By J. H. Globus, B.S., M.D., Associate Professor of Neuropathology and Neuroanatomy, New York University and Bellevue Hospital Medical College. Sixth edition. Fabricoid. Price \$3.50. Pp. 240 with 89 illustrations. Baltimore: William Wood & Company, 1934.

This is a laboratory guide intended to give the student specific directions for the dissection of the brain and the microscopic study of the brain and spinal cord. A chief feature is a series of fifty-three outline drawings, which the student is expected to fill in and label. When used in conjunction with textbooks and atlases giving fuller descriptions and more adequate illustrations, this laboratory guide should be helpful in those courses which follow the general plan of presentation here adopted.

Dissecting Aneurysms By T Shennan Medical Research Council Special Report Series No 193 Paper Price 2s 6d 1p 138 with 30 illustrations London His Majesty's Stationery Office 1934

This is an analysis of 300 cases of dissecting aneurysm of the aorta, including three of the pulmonary artery. A brief and interesting historical introduction is given. There are seventeen cases from the author's own experience, with complete reports and drawings of nearly all the specimens. These are summarized separately. A detailed analysis is made of the entire 300 cases, including the author's. The etiology and symptomatology are described in detail. A feature common to all is degeneration of the middle coat of the vessel, which usually gives way before the inner coat. The cause of the tear is not definitely agreed on, but it is probably the cumulative effect of toxins throughout life. Syphilis is not apparently a factor. This differentiates the ordinary variety from the dissecting type. The dissecting aneurysm usually originates in the ascending aorta, and dissection is often extensive. Death nearly always results from hemorrhage into the pericardial sac. The condition is not always fatal. About one third have died suddenly, one third within a few hours or days and one third after several days, weeks or, rarely, longer. Clinically the symptoms begin with a sudden onset in one having no previous symptoms of cardiovascular disease. Occasionally they have occurred in the second decade, although they were most common in middle life. They have been diagnosed rarely during life. The book has been made authoritative, owing to the experience of the author and his detailed descriptions.

Circumcision in Man and Woman Its History Psychology and Ethnology By Felix Bryk Translated by David Berger M.A. Cloth Price \$6 Pp 342 with 55 illustrations New York American Ethnological Press 1934

This volume, first published in 1930 purports to be a scientific, ethnologic and medical survey of the ancient rite of circumcision. It describes the methods and rituals of various races. One chapter, on "Function of the Prepuce in Coitus," is concerned more with the psychologic than with the physical phases of the problem. The book is illustrated and has a bibliography. The price considering the scope of the volume, seems to be beyond all reason.

Clinical Contraception By Gladys M Cox M.B. B.S. Medical Officer to the Society for the Provision of Birth Control Clinics. Introduction by Lord Horder of Ashford, K.C.V.O. M.D. F.R.C.P. Cloth Price 7s 6d Pp 173 with illustrations London William Heinemann Ltd 1933

This is a British contribution to one of the most rapidly developing literatures in the medical field. The author prefaces her volume with the statement that she is not commercially interested in any of the proprietary devices discussed in her book. She supports the recommendation of the occlusive pessary together with antiseptic pastes and douches as the ideal method.

Nursery Guide A Vade Mecum on Infant and Child Care By Louis W Sauer Ph.D. M.D. Associate in Pediatrics Northwestern University Medical School Chicago Ill Third edition Cloth Price \$2 Pp 208 with 18 illustrations St Louis C.V. Mosby Company 1933

This seems to be one of the better of the numerous books on infant care written for the mother. The material is presented in simple language, neatly arranged and yet scientific in every detail. In addition to feeding and general care there is much valuable material for the mother concerning the common ailments of childhood, care during sickness and the symptoms of the contagious diseases. The book would be improved by the addition of more illustrations.

La digitale Par F. Henricjean professeur à l'Université de Liège et R. Waucourt chef des travaux au laboratoire de thérapeutique de l'Université de Liège Paper Price 15 francs Pp 192 with 15 illustrations Paris Masson & Cie 1930

The authors of this monograph have apparently had much personal experience with the actions of digitalis, both in the laboratory and in the clinic although their work is but little known in America. The discussion is arranged in logical sequence. There are preliminary considerations of the anatomy and physiology of the heart. The glucosides of digitalis are briefly described. The methods of biologic standardization are given and there follow chapters on pharmacology, toxicology and therapeutic action. No new facts are presented. The

bibliography, though making no attempt at completeness, is inadequate because of the omission of key papers. The volume is not sufficiently comprehensive to serve as a work of reference or critical enough to be of value as a summary of current knowledge concerning digitalis.

The Great Physician A Short Life of Sir William Osler By Edith Gillings Reid Popular edition Cloth Price \$1.50 Pp 299, with portrait New York & London Oxford University Press 1934

This volume, first published in August 1931, passed through five printings and is now issued in a popular priced edition. Its wide distribution testifies to its merits as a sympathetic, easily readable and inspiring work.

Housing Conditions and Respiratory Disease Morbidity in a Poor Class Quarter and in a Rehousing Area in Glasgow By C. M. Smith Medical Research Council Special Report Series No 192 Paper Price 9d 1p 36 with 2 illustrations London His Majesty's Stationery Office 1931

This is a study of the morbidity for one year occurring among a population of approximately 2,000 persons in a poor district in Glasgow. Half the population under observation was housed in a representative slum area, half in a "rehousing scheme" area. The collected results show a greater morbidity in the rehousing area than in the slum quarter. Racial differences are thought to have influenced the results, and the general outcome of the inquiry is considered by its sponsors to illustrate the difficulty of reaching reliable conclusions about the relation of housing to health. During the period of observation an epidemic of influenza visited Glasgow, and interesting data are given respecting its incidence, character and influence on the general trend of respiratory diseases.

Medicolegal

Abortion, Accidental Cause of Determinable by Medical Testimony, Chiropractor as Expert Witness—The plaintiff suffered a miscarriage, which she attributed to the negligence of the defendant oil company in shutting off the gas, during extremely cold weather, by which her house was heated. As a result of this exposure, the plaintiff contended, she suffered a nervous shock, contracted a cold, became ill therefrom, and a miscarriage resulted. The jury returned a verdict for the plaintiff and the defendants appealed to the Supreme Court of Oklahoma, contending, among other things, that the plaintiff had failed to prove that her miscarriage was due to any negligent act of the defendants, that whether the plaintiff's injury was the result of the defendants' acts was a matter to be established by expert testimony and that there was no such testimony in the case. With this contention, the Supreme Court agreed. The general rule is, said the court, that where injuries are of such a character as to require skilled and professional men to determine the cause and extent thereof, the question is one of science, and must necessarily be determined by the testimony of skilled professional persons. It cannot be determined from the testimony of unskilled witnesses having no scientific knowledge of such injury. The plaintiff, continued the court, was incompetent to testify that the exposure resulting from the alleged negligent acts of the defendants caused the miscarriage. A chiropractor, called by her as an expert witness, testified as to the causes that might produce a miscarriage, but when this witness was asked the direct question as to what, in his opinion, did cause the plaintiff's miscarriage, he answered that he did not know. A jury should never be permitted to speculate on or infer what an expert witness refuses to express an opinion about.

The defendants further contended that "a chiropractor is not competent to testify concerning questions requiring knowledge of medical science." By the use of the term "medical science" said the court, the defendants unduly limited the proposition. There are many methods of treating and healing the human body, which might not be termed "medical science" yet their qualified practitioners are eligible to testify as expert witnesses within the scope of their knowledge, according to their qualifications. The practice of chiropractic, said the court as a method of treating and healing is permitted and regulated in Oklahoma by statute. The course of study and preparation

precedent to admission to practice is prescribed by law. When a duly licensed chiropractor establishes his qualifications to testify as a chiropractor, he is competent to testify as an expert witness. The question of whether his qualifications have been established and the extent to which his competence goes is a question for the trial court, in the same manner and to the same extent as any other expert witness. The weight and value of his testimony is a matter for the jury and is subject to be supported or minimized by examination and cross-examination, just as is that of any other expert witness. The judgment of the trial court was reversed and the cause remanded for further trial.—*Inter Ocean Oil Co v Marshall (Okla.)*, 26 P (2d) 390

Malpractice Workmen's Compensation Award a Bar to Malpractice Action—The plaintiff-employee suffered an injury in the course of his employment and was attended by the defendant a physician supplied by the employer. Later the employee was awarded compensation under the workmen's compensation act. He then instituted the present action against the defendant-physician, alleging negligence in the treatment of his injury. The trial court agreed with the physician's contention that the award under the workmen's compensation act operated as a bar to the present action and entered judgment in his favor. The employee thereupon appealed to the Supreme Court of Iowa.

At common law, said the Supreme Court, if a physician, called to treat an injured person is negligent or unskilful, the original wrongdoer is liable for both the original injury and for any aggravation thereof due to the physician's malpractice. It follows that where the injured person has recovered damages from the wrongdoer, he is deemed to have received full satisfaction for the injury suffered and for any aggravation due to unskilful medical treatment. He cannot thereafter bring another suit against the physician to recover damages for an aggravation of the original injury. *Phillips v Wernsdorff*, 243 N W 525

The employee, however, contended that the workmen's compensation act of Iowa authorizes him to maintain this action. In support of that contention, he cited section 1382, Iowa Code, reading as follows:

When an employee receives an injury for which compensation is payable under this chapter and which injury is caused under circumstances creating a legal liability against some person other than the employer to pay damages the employee or his dependent or the trustee of such dependent may take proceedings against his employer for compensation and the employee or in case of death his legal representative may also maintain an action against such third party for damages.

But answered the Supreme Court, the section cited permits an action against an original wrongdoer one who is liable for all the injury suffered by the employee. The injury referred to in this section is the original or substantive injury which caused the disability of the employee. Here the employee is not suing an original wrongdoer; he is suing the physician not for the original injury but for its later aggravation. He may not under the act split his cause of action and take the benefits of the workmen's compensation act as to the original injury and then proceed against the physician for his want of skill or for his negligence. The court held that the award under the workmen's compensation act worked a satisfaction of any claim against the defendant physician. The judgment of the lower court in favor of the physician was accordingly affirmed.—*Ponce v Watt (Iowa)* 251 N W 78

Accident Insurance "Disease" Defined—The appellant insurance company issued to the insured two policies providing certain benefits if he should die by external violent and accidental means. No benefits were payable if death resulted directly or indirectly from disease. Apparently, the insured's car and the insured's dead body were found in a stream. The beneficiaries brought suit on the policies alleging that the insured had been drowned. The insurer contended that the death was due to heart disease. From a judgment for the beneficiaries the insurance company appealed to the Supreme Court of Arkansas.

The insurance company argued that the trial court had erred in permitting two embalmers, who had prepared the insured's

body for burial, to testify that the death was due to drowning. These witnesses testified that they had had a number of years of experience in handling dead bodies and among the bodies so handled were deaths caused by drowning. They were competent, said the Supreme Court, to express an opinion on the subject. A nonexpert witness may testify as to his opinion after stating the facts on which the opinion is based. Their testimony was also competent because "a witness' opinion is admissible as evidence, not only where scientific knowledge is required to comprehend the matter testified about, but also where experience and observation in the special calling of the witness gives him knowledge of the subject in question beyond that of persons of common intelligence." *Little Rock and M Railway Co v Shoecraft* 56 Ark 465, 20 S W 272

The insurance company complained of the following instruction given by the trial court:

Even though you should find that some disease or bodily weakness contributed to Mr. McCombs' death by disabling him from controlling his automobile and causing it to go into the water or otherwise still if you also believe from the testimony that such disease or bodily weakness was not a settled condition to which he was subject but a temporary disturbance or enfeeblement then the court instructs you that it would not prevent a recovery by plaintiffs and if you believe from the testimony that the deceased was alive when he went into the water and his death there resulted from accidental drowning then your verdict should be for the plaintiffs notwithstanding you should find that such disease caused him to go into the water or otherwise contributed to his death.

The theory on which this instruction submitted the case to the jury, viz., that a disease which would exempt the insurance company from liability under the policies would need to be a settled condition as distinguished from a temporary disorder, was proper, said the Supreme Court. Insurance policies will be construed most favorably to the insured since the policy is couched in language chosen by the insurer. The policies used the general term "disease" to create an exception to the general coverage. The meaning of the word "disease" could have been restricted by the insurance company had it so desired, and, since there were no restrictions in reference thereto, it should be given its usual and ordinary meaning. To ascertain that meaning the court referred to Webster's International Dictionary, which defines the word as follows: "A disease is usually deep seated and permanent or at least prolonged, a disorder is often slight, partial and temporary." Consequently, the court held the instruction complained of correctly stated the law of the case.

The judgment in favor of the beneficiaries was affirmed.—*Pacific Mutual Life Insurance Co v McCombs (Ark.)* 64 S W (2d) 333

Traumatic Keratitis Attributed to Malpractice—A physician removed a chalazion from one of plaintiff's eyelids. After the operation, he dropped some liquid into the eye. A severe burning pain followed. The physician wiped out the eye, put something into it, and gave the plaintiff some medicine to take with him for use in the eve. He treated the plaintiff daily for four days but the eye continued to be inflamed and the pain persisted so the plaintiff went to a hospital. There a "large ulcerative area involving almost entire cornea" was found and a diagnosis of "ulcerative keratitis" was made. The plaintiff practically lost the sight of his eye. He sued the physician, charging negligence in putting into the eye the liquid that caused the burning pain. During the trial the physician died and his administrator defended. The trial judge directed a verdict in favor of the administrator and the plaintiff appealed to the Supreme Judicial Court of Massachusetts.

The burden said the Supreme Judicial Court was on the plaintiff, to establish a causal connection between his injury and the negligence of his physician. Negligence of a physician imports a failure on his part to have and to use the skill and care which members of his profession commonly possess and exercise under corresponding circumstances. The plaintiff, however introduced no testimony as to the care and skill generally possessed and commonly used or as to the methods generally employed, by physicians undertaking such an operation as was performed in this case. The record contains nothing on which to base a finding that the physician who

was charged with negligence did not possess adequate skill to undertake and perform the operation or that the growth was not removed with requisite skill and care

Statements made by the physician, said the court, did not warrant an inference of negligence. Before beginning the operation the physician assured the patient that he could perform it without the aid of an assistant, but there is nothing in the record to indicate that such an operation required the presence of an assistant or that the absence of an assistant played any part in what happened. Apparently, the physician, after applying the drops to the patient's eye, asked him if "caustic" had been put into his eye when similar operations were performed on him before, but that would not warrant the inference that the doctor had used a "caustic" or that the use of a caustic was improper or negligent. Two days after the operation the patient charged his physician with having ruined his eye, his life, and his business, and the physician replied, "Don't you worry. Let me worry", but such a reply to such an outburst from a suffering patient affords no basis for finding that the physician thereby admitted that his negligence was the cause of his patient's condition. In all this concluded the court, there could be found no admission of negligence.

A jury may draw an inference of negligence only from acts tending to show negligence, admitted by the defendant or established by the evidence including expert testimony, or from common knowledge and experience. Here there was no expert evidence other than what appeared in the hospital chart. The mere fact that pain, inflammation, and an ulcer of the eye followed the operation would not justify the inference of want of proper skill and care on the part of the physician or warrant the conclusion that the conditions complained of were the result of the physician's negligence. No evidence was introduced to show the nature of the liquid put into the eye, the purposes for which such liquid is commonly used, and its ordinary effects and characteristics, or to show whether it was or was not in general use by physicians after or in connection with such operations. The fact that an unidentified liquid placed in an organ as sensitive as an eye was followed by pain and inflammation would not of itself warrant the inference that its use was improper. There was no evidence as to the character or extent of injury which might cause an ulcer in the eye as to the ordinary origin, characteristics and development of such ulcers or as to causes which are commonly adequate to produce them. The record, in the opinion of the court, lacked elements necessary to a reasonable inference that the physician's negligence caused the conditions appearing in the eye after the operation. The common experience and knowledge of a jury of laymen could not supply the lack of such testimony, and the doctrine of *res ipsa loquitur* is not applicable where, as here, the common knowledge or experience of men is not extensive enough to permit it to be said that the plaintiff's condition would not have existed except for the negligence of the person charged.

The judgment in favor of the physician's administrator was affirmed—*Semerjian v Stetson (Mass)*, 187 N E 829

Workmen's Compensation Acts Streptococcus Meningitis Following Fall—In the course of his employment, on January 26, Williams fell down an icy stairway, striking his back and neck. He had severe pains in the injured parts was unable to sleep, and complained constantly. He had vomiting spells, and a discharge from his ear. On February 2 he became unconscious and two days later he died. An autopsy on the head showed no indication of external injury, and a diagnosis of streptococcus meningitis was made. At a hearing before the industrial accident board, on an action instituted by his widow under the workmen's compensation act of Montana, the physicians who attended the deceased gave it as their opinion that the fall had something to do with the fatal infection. The board awarded compensation, its award was affirmed by the district court, Silver Bow County, and the employer and its insurance company appealed to the Supreme Court of Montana.

The fact of the fall and of the immediate and continuing disability, said the Supreme Court, was not denied. That meningitis occurred and was the immediate cause of death was admitted. The only break in the sequence of clearly estab-

lished facts was the gap between the injury and the disease. Because the physicians did not testify positively that the disease was a direct result of the injury, the appellants contended that that matter was left open to conjecture and surmise on the part of the board. But the physicians testified, said the court, that in their opinion the injury had something to do with the disease and therefore, of course, with the death. Although there was no direct testimony that the disease was the result of the injury, the board had a right to consider not only the direct evidence but also all the circumstances of the case. In the opinion of the court the facts and pertinent circumstances in the record were sufficient to support the finding of the board, and the court accordingly affirmed the award of compensation made to the widow—*Williams v Brownfield Carty Carpet Co (Mont)*, 26 P (2d) 980

Medical Practice Acts Acquittal of Physician on Criminal Charge No Bar to Revocation Proceedings—The trial and acquittal of a physician, says the district court of appeal, second district, division 1, California, in a criminal action charging murder by abortion is no bar to a subsequent proceeding under the medical practice act to revoke his license to practice for producing or aiding or abetting a criminal abortion. Proceedings before the board of medical examiners looking toward the revocation of a license are not criminal in character. They are designed, rather, to protect the public by eliminating from the ranks of medical practitioners those who are found by members of their own profession to be dishonest, immoral or disreputable—*Bold v Board of Medical Examiners (Calif)*, 26 P (2d) 707. *Tiavler v Board of Medical Examiners (Calif)*, 26 P (2d) 710

Society Proceedings

COMING MEETINGS

- American Medical Association Cleveland June 11 15 Dr Olin West
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- American Academy of Pediatrics Cleveland June 11 12 Dr Clifford
G Grulee 636 Church Street Evanston Ill Secretary
- American Association for the Study of Neoplastic Diseases Baltimore
June 21 23 Dr Eugene R Whitmore 2139 Wyoming Avenue N W
Washington D C Secretary
- American Association of Industrial Physicians and Surgeons Cleveland
June 11 12 Dr Volney S Cheney Armour and Company, Union
Stock Yards Chicago Secretary
- American Association of Medical Milk Commissions Cleveland June
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Titles marked with an asterisk (*) are abstracted below.

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*Differentiation and Standardization of Certain Streptococcus Toxins and Antitoxins by Means of the Skin Test W E King and J H Conlin, Detroit—p 200
Histology After Thorium Dioxide (Thorotrast) in Hepatolienography C J Tripoli, New Orleans—p 212
Acetone Insoluble Lipoids in Relation to Antigen for the Wassermann Reaction Note J A Kolmer and Carola E Richter, Philadelphia—p 235

Recognition of Allergic State by Tissue Examination—Steinberg states that there is a distinct histopathologic picture of the mucosa of the entire respiratory tract and of the accessory nasal sinuses associated with the allergic (atopic) state. The morbid changes are of a similar nature in the atopic conditions of asthma, hay fever and rhinitis (hyper-trophic and marked secretory activity of the mucous glands, presence of a large amount of mucus in lumens eosinophils—from 15 to 90 per cent of all cells, edema of tissue thickening and hyalinization of the basement membrane and hyperplasia of the goblet cells with hypersecretory activity). In asthma, in addition to the lungs the rest of the respiratory tract including the nose and almost invariably the accessory sinuses show these morbid changes. This constant pathologic picture of the respiratory nasal and sinus mucosa permits recognition of the allergic (atopic) state involving these organs.

Differentiation of Streptococcus Toxins by the Skin Test—King and Conlin observed the results of skin tests involving the use of samples of toxins and antitoxins derived from the scarlet fever and erysipelas hemolytic streptococci and hemolytic streptococci isolated from severe cases of puerperal sepsis. The results not only confirm the conclusions which were reached by the Dicks that the soluble toxins

produced by scarlet fever and erysipelas streptococci are immunologically specific and distinct" but also suggest that the toxin produced by certain hemolytic streptococci isolated from cases of puerperal septicemia is specific and distinct.

American Journal of Diseases of Children, Chicago

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Diuresis Produced by Injection of Dextrose—Woodward induced diuresis in two normal infants by the intravenous injection of a 20 per cent solution of dextrose. She studied the urinary and fecal excretion of nitrogen, chlorides, phosphates, sodium and potassium during the period of active diuresis and for nine succeeding days. There was a rapid loss of sodium and of chlorides in the urine during diuresis, but these losses were made up rapidly in the succeeding periods by the retention of sodium and of chlorides within the body, as indicated by the marked decrease in urinary output. Fluctuations in the urinary excretion of the remaining ions during the entire period studied were insignificant. Fecal excretion of these elements, and of calcium, showed no unusual change either during or after diuresis. In these observations the use of a hypertonic solution of dextrose as a diuretic did not cause any prolonged depletion in the body of any of the elements studied.

The Schick and the Dick Tests in New-Born Infants—Rothholz and Kuttner found the Schick and Dick tests unreliable in new-born infants. No adequate explanation has been found for the discrepancies observed between the reactions of adults and new-born infants with either of these tests. It seems possible that the failure of new-born infants to react to both the Schick and the Dick test in the absence of antitoxin may be related to a nonspecific property of the skin of the new-born, which is known to be refractory to substances of primary toxicity, such as eel serum and chemical irritants.

American Journal of Hygiene, Baltimore

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- Studies in Diabetes Mellitus II Its Incidence and Factors Underlying Its Variations E P Joslin, Boston L I Dublin and H II Marks New York—p 433
- *Effect of Adrenalin on the Alimentary Lipemia of Diabetics M Sullivan and P Cameron, New Orleans—p 457
- Distribution of Sugar and Chloride in the Blood of Diabetic Individuals E S Williams and F W Sunderman, Philadelphia—p 462
- Studies on Transient Ventricular Fibrillation I Observations on the Alterations in the Rhythm of the Heart Preceding Syncopal Seizures in a Patient with Normal Sinus Rhythm S P Schwartz and A Jezer New York—p 469
- Id Observations on Alterations in the Rhythm of the Heart Preceding Syncopal Seizures in a Woman with Transient Auriculoventricular Dissociation S P Schwartz and L Hauswirth New York—p 478
- Clinical Evaluation of Lead IV (Chest Leads) Survey of Lead IV in Ambulatory Cases of Coronary Artery Disease and Acute Coronary Occlusion A A Goldbloom New York—p 489
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- Negative Results in Treatment of Sickle Cell Anemia L W Diggs, Memphis Tenn—p 521
- *Effect of Leukocytic Cream Injections in Treatment of Neutropenias M M Strumia, Philadelphia—p 527
- *Effect of Hyperpyrexia Induced by Radiation on Leukocyte Count W Bierman New York—p 545
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- Vitamin Therapy in Pulmonary Tuberculosis V Effect of Viosterol on Diffusible and Nondiffusible Calcium of the Blood and Spinal Fluid P D Cramm and J W Strayer Evansville Ind—p 557

Effect of Epinephrine on Lipemia of Diabetic Patients

—Sullivan and Cameron selected eleven diabetic patients, all of whom were aglycosuric or nearly so, and clinically well. After a fast of fifteen hours a specimen of blood was obtained from each patient and 100 Gm of cottonseed oil was administered orally. Blood samples were taken three, six and nine hours later. Total lipoids were determined by the method of Ruckert. With the exception of two cases, which continued to show a rise even at the ninth hour, the peak of absorption was reached at the sixth hour, and by the ninth hour the lipid values were approaching the fasting values. Ten days later these eleven patients were again given 100 Gm of oil after fasting fifteen hours. Blood specimens were taken just before the oil was drunk and three, six and nine hours after. At two and one-half, five and one-half and eight and one-half hours after the ingestion of the oil, 1 mg (1 cc) of epinephrine was given subcutaneously (total dosage, 3 mg in six hours). The effect of the epinephrine on the absorption curves was striking. In all except one, who was the only patient in the group taking a high fat diet, the epinephrine caused a decided lowering of the blood lipoids as compared with the values for the lipoids when no epinephrine was given. The exception was a young woman who had lost much weight, with suspected pulmonary tuberculosis, who in the epinephrine experiment became nauseated, developed tachycardia, experienced substernal pain and vertigo and was greatly distressed. Thus she should perhaps be excluded from this group, which consisted of healthy subjects on low fat diets. Although all the other patients experienced the physiologic effects of the epinephrine and commented on a "strange feeling, nervousness, dizziness and heart consciousness," this was the only patient who was distressed.

Conservative Treatment of Peripheral Vascular Disease—Starr gives the results of applying heat, desiccation and oxygen in the treatment of thirty-five consecutive patients with advanced peripheral vascular disease. In all, there was a question whether amputation was not inevitable. The marked degree of impairment of circulation is further indicated by the fact that in only two cases did the histamine puncture test on the dorsum of the foot cause a wheal or flare. In most cases the diseased foot was first placed in an ordinary foot cradle containing an electric bulb. After twenty-four to forty-eight hours, the thermoregulated cradle was substituted. If pain was not relieved within a few days other procedures were tried. These included the vasodilator drugs, acetyl- β -methylcholine or sodium nitrite, oxygen in a few cases and nerve block. Only when conservative measures failed was

amputation performed. All the patients agreed that great comfort was secured from the use of the thermoregulated cradle than from either the unregulated or the unheated type. In two cases of diabetes toes had been amputated, but healing had not occurred under hospital treatment after two and four months, respectively, it did occur slowly after the legs had been placed in a thermoregulated cradle. In two elderly patients, in whom gangrenous areas were removed below the line of demarcation, healing of the stump occurred while the thermoregulated cradle was employed. The application of from 50 to 80 per cent oxygen, together with regulated heat, had been tested in four cases, in all of which advancing gangrene was present and intense pain was felt. In only one was there any suggestion that advance of the gangrene was delayed. There was, however, a change in color in every case, together with definite partial relief of pain. Desiccation was used whenever frank gangrene was present. In fourteen cases, the toes being kept apart, the gangrenous areas became mummified and shriveled to half their original size. Even though blebs formed, the moisture dried up so quickly that sloughing and infection did not follow.

Leukocytic Injections in Treatment of the Neutropenias—Strumia employed injections of leukocytic cream intravenously in ten cases of agranulocytosis and three cases of miscellaneous neutropenias. The results indicate that an increase in the mature granulocytic cells and considerable clinical improvement may be expected in most cases in from one to four days. The author's method for the separation of the leukocytes from the blood is as follows. Not less than 150 cc of blood is withdrawn from the vein of the donor into citrate solution, divided in large tubes and centrifuged at high speed for thirty minutes. The clear supernatant plasma is withdrawn, part of which is kept for the preparation of leukocytic emulsion later. With a pipet and a rubber bulb the buffy layer of leukocytes that has formed on the surface of the packed red cells is transferred to a Babcock cream tube. Enough of the packed red cells are added to this to bring the surface of the fluid to the neck of the tube. This is centrifuged for twenty minutes at high speed. The leukocytes will now rise to the top. There are usually three well defined layers: clear plasma, suspension of leukocytes and platelets, and leukocytes mixed with some red cells. This last layer has been found to be richer in polymorphonuclears, while the topmost layer contains more lymphocytes. This material and the top layer of the packed erythrocytes are drawn off and suspended in plasma so as to make for each hundred cubic centimeters of blood used from 5 to 10 cc of suspension. The material is used intramuscularly. As a rule, the volume of the packed leukocytes is 16 per cent of the amount of blood used, and the suspension contains about two thirds of the leukocytes present in the blood used. It is essential to separate the leukocytes from the blood as early as possible after the withdrawal of the blood from the donor. The leukocytes thus prepared remain well preserved for a period of seven days at least. The citrate solution, as anticoagulant, is prepared by dissolving 20 Gm of sodium citrate in enough sodium chloride solution to make 100 cc. The percentage of the sodium chloride solution is 0.85. This solution contains 200 mg of sodium citrate per cubic centimeter, which is sufficient to prevent the coagulation of 50 cc of blood.

Effect of Hyperpyrexia Induced by Radiation on Leukocyte Count—Bierman made hourly observations of the changes occurring in the leukocyte count of patients suffering from varied diseases in whom hyperpyrexia was induced by means of radio waves of 30 meters length. An initial reduction, about 25 to 30 per cent, in the number of leukocytes regularly occurs, usually during the first or second hour of treatment. This is constantly followed by a leukocytosis whose maximum, amounting to about 80 per cent above the initial figure, occurs at about the sixth to the ninth hour. These variations are due mainly to changes in the total number of neutrophils, of which the staff neutrophils show the greatest increase. These changes, together with the appearance of other immature forms, indicate a stimulation of the bone marrow. At a later stage the monocytes and lymphocytes also increase in number. Repeated stimulation by heat is followed by a reduction in the leukocytic response.

American Journal of Physiology, Baltimore

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- Seasonal and Temperature Factors and Their Determination in Pigeons of Percentage Metabolism Change per Degree of Temperature Change O Riddle Guinevere C Smith and F G Benedict—p 333
- Studies in Influence of Exercise on Digestive Work of the Stomach I Its Effect on the Secretory Cycle Frances A Hellebrandt and Sara L Hoopes, Madison, Wis—p 348
- Id II Its Effect on Emptying Time Frances A Hellebrandt and Rubye H Tepper Madison Wis—p 355
- Id III Its Effect on Relation Between Secretory and Motor Function Frances A Hellebrandt and Lyndall L Dimmitt Madison Wis—p 364
- Id IV Its Relation to Physicochemical Changes in the Blood Frances A Hellebrandt, H D Baernstein and Sara L Hoopes Madison Wis—p 370
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- Id II Changes Induced by Injection of Hydrochloric Acid and Inorganic Salts J G Reinhold and D W Wilson Philadelphia—p 388
- Id III Effects of Administration of Sodium Taurocholate Sodium Cholate and Sodium Dehydrocholate (Decholin) J G Reinhold and D W Wilson Philadelphia—p 400
- Changes in Volume and Velocity of Blood Flow in Chronic Experimental Aortic Regurgitation and Effect of Certain Drugs in This Condition W F Hamilton I Brotman and G Brewer Washington D C—p 414
- Effect of a Deficiency of Vitamin B₁ on Central and Peripheral Nervous Systems of the Rat C O Prickett Auburn Ala—p 459
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- Comparison of Intragastric and Duodenal Factors in Lowering the Acidity of Gastric Contents C M Wilhelm I Neagus and F C Hill Omaha—p 490
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American Journal of Tropical Medicine, Baltimore

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- Cultivation and Cultural Characteristics of Darling's Histoplasma Capitulatum W A DeMombreux Nashville Tenn—p 91
- *Histoplasmosis of Darling in an Infant Case Katharine Dodd and Edna H Tompkins Nashville Tenn—p 127
- Flight Range of Funestus Minimus Subgroup of Anopheles in the Philippines First Experiment with Stained Mosquitoes P F Russell and D Santiago Manila P I—p 139
- Relapsing Fever in Texas II Specificity of the Vector Ornithodoros Turicata for the Spirochete H A Kemp W H Moursund and H E Wright Dallas Texas—p 159
- Id III Some Notes on Biologic Characteristics of the Causative Organism H A Kemp W H Moursund and H E Wright Dallas Texas—p 163
- Ameliasis Among One Thousand Prisoners Final Report A C Reed and H G Johnstone with technical assistance of (Mrs.) Jeanette Van Dalsem Anderson San Francisco—p 181
- Bacillary Dysentery in Dallas Texas Some Notes on Etiologic Agents H A Kemp and S Haberman Dallas Texas—p 191
- Granuloma Inguinale Report of Five Cases H A Poindexter Washington D C—p 195

Fungus Infection in an Infant—Dodd and Tompkins cite a case of fungus infection (histoplasmosis of Darling) that presented a generalized parasitic invasion involving the large mononuclear cells of the blood and tissues. While there were numerous specific organic changes, they were apparently due to the great increase in large mononuclear cells called forth by the parasites and the subsequent mechanical action of these cells. The large mononuclears crowded into all areas including the bone marrow, and filled so many capillary and sinusoidal spaces that there must have been considerable interference with the supply of blood to the tissues. Further they were actively phagocytic of erythrocytes and must have ingested and destroyed great numbers of red cells daily, thereby aiding in the production of the anemia. In addition to the interference with the oxygenation of the tissues which was caused by the blocking of the capillaries and by the anemia it is probable that ventilation was further disturbed by the tremendous infiltration of the lungs with the large mononuclear cells and the collapse of great numbers of alveoli. The extreme acidosis and the necrosis of the cells of the various organs especially of the liver, may well be explained by the marked reduction of oxygenation in the tissues. It is not certain how the parasites functioned in the production of the phagocytic cells or whether the latter were produced throughout the body in general, or

from the specific endothelium only. Mitotic figures were found in the septums of the lungs, in the brain and in the connective tissue of the intestinal villi, as well as in the walls of the sinusoids of the spleen, nodes and bone marrow. Since this case occurred in an infant, the authors feel certain that the saprophytic or mold form of the fungus occurs indigenously in Tennessee.

Anatomical Record, Philadelphia

58 217 320 (Feb 25) 1934

- *Artificially Induced Ovulation in the Cat (Felis Domestica) W W Greulich, San Francisco—p 217
- Anatomic Basis of Hereditary Hydrocephalus in the House Mouse F H Clark Boston—p 225
- The Iliopsoas Bursa in Man S B Chandler, Chicago—p 235
- Method for Preparing Frozen Sections of Infant Cadavers E B Ruth Rochester N Y—p 241
- Rare Cardiac Anomaly of a Human Fetus A A Zimmermann, Chicago—p 245
- Studies on Somites of Amblystoma Punctatum I Replacement of the Second Third and Fourth Somites by Corresponding Somites from Older or Younger Donors H B Adelman and Bernice L Maclean New York—p 249
- Id II Result of the Dorsolateral Reversal of the Second Third and Fourth Somites H B Adelman and Bernice L Maclean New York—p 273
- Secretory Activity of the Inner Layer of the Embryonic Midbrain of the Chick as Revealed by Tissue Culture P Weiss New Haven, Conn—p 299
- Later Development of the Bursa Pharyngea Homo T Snook Ithaca N Y—p 303

Artificially Induced Ovulation in the Cat—Greulich induced ovulation in nine of twelve domestic cats by stimulating the distal portion of the genital tract with a glass rod. The minimal length of the interval between stimulation and ovulation was found to be no more than twenty-five hours. He shows that ovulation does not invariably follow normal coitus in the cat, even if the female is clearly in heat when the mating occurs. This is interpreted as favoring the idea that the follicular cycle and the estrous cycle do not necessarily coincide in this form. Though the exact mechanism effecting ovulation in the cat remains to be elucidated, the present investigation definitely eliminates all constituents of seminal fluid as necessary causative factors in that process.

Annals of Surgery, Philadelphia

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- The Klippel Feil Syndrome DeF P Willard and J T Nicholson Philadelphia—p 561
- *Histamine Therapy of Rheumatic Affections and Disturbances of Peripheral Circulation D H Kling New York—p 568
- Indirect Inguinal Hernia in the Light of the Newer Interpretation of Anatomy M Cherner Philadelphia—p 577
- Cysts and Sinuses of Sacrococcygeal Region T H Thomason Fort Worth Texas—p 585
- Perianal Tuberculosis F B Berry, New York—p 593
- *Internal Hemorrhoids Comparative Value of Treatment by Operative and by Injection Methods Survey of Sixty Two Thousand Nine Hundred and Ten Cases N J Kibourne Los Angeles—p 600
- Preoperative and Postoperative Management of Anorectal Cases Inquiry into the Use of Certain Anesthetic Agents R R Best, Omaha—p 609
- The Pulses of the Foot Their Value in the Diagnosis of Peripheral Circulatory Disease R S Reich Cleveland—p 613
- Disability Due to Swelling Following Trauma of the Extremities Posttraumatic Periarthritic Fibrosis D Gordon New York—p 623
- Stump of the Appendix an Agent of Infection R M Harbin Rome Ga—p 633
- Drainage After Operation for Appendicitis Chiefly on the Removal of Drains C R Davis Detroit—p 637
- Appendicectomy in Cases of Ruptured Appendix Associated with Diffuse General Peritonitis E S Jones Hammond Ind—p 640
- Differential Diagnosis of Abdominal Manifestations of Acute Rheumatic Fever from Acute Appendicitis P Cuptill Rochester N Y—p 650
- *Diagnosis of Phlebitis in Varicose Veins with the Aid of the Sedimentation Rate H Biegeleisen New York—p 661
- Sclerosing Injections in Surgery V Carabba New York—p 668
- Aseptic End to Side Ileocolostomy Clamp Method Technique and Statistical Data F W Rankin Lexington Ky, and A S Graham Richmond Va—p 676

Histamine Therapy of Rheumatic Disorders—Kling states that the alteration of the peripheral circulation is the principle underlying the treatment of rheumatic conditions and disturbances of the vasomotor system, by the application of histamine to the affected parts. The effect of this treatment consists in a dilatation of the minute vessels and smaller arterioles and in an increase of the blood flow and permeability of the vessels, which causes a hyperemia and elevation

of the skin temperature for several hours. Some evidence is given of a longer duration of the capillary dilatation after considerable treatment. The author reviews the results in 554 cases collected from the literature. A definite conclusion of the value of this method is at present possible only in myalgia (myositis). Of 361 cases, 301 were either cured or improved, recurrences were noted in twenty-six. Of the author's twenty cases of myalgia, eighteen were cured or improved and two remained unchanged. Immediate relief of pain and tenderness after the first treatment is of favorable prognostic significance in this group. Thorough examination and treatment of all affected muscles and their antagonists are decisive for the success of the treatment. The material is insufficient in the other conditions to justify a definite conclusion. Secondary myalgia, after trauma, strain and due to static unbalance was benefited in a moderate number of cases. Three cases of calcified subacromial bursa were successfully treated by the author.

Treatment of Internal Hemorrhoids—Kilbourne discusses operative removal of hemorrhoids and also injection treatment. A survey of cases treated by fifty-seven proctologists shows that in 36,648 cases treated by operation there were eleven mortalities and that in 26,262 cases treated by injection there were no mortalities that could be attributed to the treatment. Hemorrhage following operation was reported in 0.573 per cent and following injection in 0.279 per cent. Stricture following operation was estimated at about 0.22 per cent, and after injection methods this group of men had practically no strictures at all. Recurrence of the hemorrhoids was much more frequent after the use of injection methods occurring in at least 15 per cent within three years. Results from the use of phenol in olive and almond oil compared favorably with the results following the use of quinine urea hydrochloride. The double chlorhydracetate of quinine and urea proved to be less likely to cause sloughs than quinine and urea hydrochloride. It is probable that proctologists who are obtaining superior results would be more inclined to answer the questionnaire than those who are having poor results. These figures show what can be attained in proctology at its best.

Diagnosis of Phlebitis in Varicose Veins and the Sedimentation Rate—Biegeleisen states that the blood sedimentation rate has been employed to estimate the degree of inflammation present in varicose veins. Other conditions must be eliminated in order to evaluate its significance properly. A positive test indicates the presence of phlebitis only in the absence of any other infection. The test is roughly a quantitative one in that it estimates the degree of inflammation present. A time interval below one hour is indicative of fairly active inflammation. Rates of two hours or more indicate the probable absence of any activity. Inflammatory conditions, especially the arthritides, influenced the sedimentation rate. In other words a rapid sedimentation time in the presence of arthritis is of no value in the diagnosis of phlebitis. A number of noninflammatory complications do not affect the sedimentation time. These include albuminuria, traces of sugar, hemia and simple goiter. The hemoglobin percentages also had little bearing on the rates, since they ranged between 70 and 100 per cent. Every case presenting a definite active phlebitis gave a definite rapid sedimentation time. In those cases in which the warning of a latent phlebitis, as evidenced by a rapid sedimentation time, was disregarded migrating reactions occurred. In cases in which injection therapy had been given prior to the test, the sedimentation time was of more rapid rate than normally. This means that the chemical phlebitis caused by sclerosive injections influenced the sedimentation rate. To secure uniform results, this test should be made before treatment is begun.

Archives of Dermatology and Syphilology, Chicago

29 485 644 (April) 1934

- Intradermal Tests in Relation to Arspenamine Dermatitis. Study Based on Two Hundred and Fifty Six Clinical Cases. A. B. Cannon and Marie B. Karelitz. New York—p. 485.
Epidermomycosis at the University of California. Study IV. R. Legge, L. Bonar and H. J. Templeton. Oakland, Calif.—p. 521.
Recurrence of Infection of the Feet Due to Ringworm Fungus. A. Strickler and W. H. McKeever. Philadelphia—p. 526.
Iodized Table Salt as an Etiologic Factor in Iododerma. P. E. Bechet. New York—p. 529.

Inhibition of Fungi in Cultures by Blood Serum from Patients with Phytid Eruptions. S. Ayres Jr and N. P. Anderson, Los Angeles—p. 537.

*Recalcitrant Pustular Eruptions of the Palms and Soles. G. C. Andrews, F. W. Birkman and R. J. Kelly. New York—p. 548.
Cutaneous Reactions with Purified Oidiomycin. R. Bailey and L. Goldman. Cincinnati—p. 564.

Lymphoblastoma (Hodgkin's Disease) of the Scalp. Report of Case. C. A. Greenhouse and V. A. H. Cornell. New York—p. 569.

*Monilia Infection of the Skin. Report of a Fatal Case. Ethel M. Rockwood and A. M. Greenwood. Boston—p. 574.

Lupus Erythematosus (Discoideus) in the Tropics. First Report of Cases from the Philippine Islands and Investigations on the Occurrence of Langhans Giant Cells. C. M. Hasselmann. Manila, P. I.—p. 585.

Pustular Eruptions of the Palms and Soles—Andrews and his associates observed fifteen patients having recalcitrant pustular eruptions of the palms and soles. Their cases seem to be similar to those described by Barber and his co-workers and termed pustular psoriasis of the extremities. Bacteriologic and mycotic examinations failed to reveal a local causative organism. The patients were unresponsive to all forms of local treatment, including roentgen therapy. In almost every case there were evident foci of infection. The patients whose foci of infection were removed were cured or showed marked improvement. The difference between these cases and simple dyshidrosis is pointed out. None of the patients had typical lesions of psoriasis that could be definitely diagnosed as such. A study of serial sections in six of the cases failed to show several important changes that are usually held essential for the histologic diagnosis of psoriasis. They did reveal, however, a fairly definite pathologic picture, which would suggest that this condition is an entity. None of the patients responded to therapeutic procedures that are generally effective in producing at least temporary improvement of psoriasis. There is a recalcitrant pustular condition of the palms and soles sometimes caused by focal infections, that resembles pustular psoriasis of the extremities but should not be classified as this disease.

Fatal Case of Monilia Infection of Skin—Rockwood and Greenwood report a fatal case of infection of the skin with *Monilia albicans*. There was a high percentage of lymphocytes constantly present in the blood. Save in lymphoma they do not know of any other disease of the skin giving a similar blood picture. Other features were repeated isolation of the organism from all the cutaneous and oral lesions, negative blood cultures, failure of the patient's serum to agglutinate his own organisms and failure of all treatment.

Archives of Neurology and Psychiatry, Chicago

31 685 892 (April) 1934

Cellular Inclusions in Cerebral Lesions of Epidemic Encephalitis. Second Report. J. R. Dawson Jr. Nashville, Tenn.—p. 685.

Peculiar Condition in Cells of External Geniculate Body, Resembling Amaurotic Idiocy. A. T. Steegmann. Cleveland—p. 701.

Parasellar Tumors. Meningeal Fibroblastomas Arising from the Sphenoid Ridge. B. J. Alpers and R. A. Groff. Philadelphia—p. 713.

Familial Organic Psychosis (Alzheimer's Type). L. Lowenberg and R. W. Waggoner. Ann Arbor, Mich.—p. 737.

Epileptic Convulsions and the Personality Setting. O. Diethelm. Baltimore—p. 755.

The Red Nucleus. Its Relation to Postural Tonus and Righting Reactions. W. R. Ingram, S. W. Ranson and R. W. Barris. Chicago—p. 768.

*Epilepsy. Treatment of Institutionalized Adult Patients with a Ketogenic Diet. J. Notkin. Poughkeepsie, N. Y.—p. 787.

Neurologic Complications of Epidemic Parotitis. Report of Case of Parotitic Myelitis. C. B. McKaig, Pine Island, Minn. and H. W. Woltman. Rochester, Minn.—p. 794.

Ketogenic Diet in Treatment of Epilepsy—Notkin treated twenty institutionalized patients having cryptogenic epilepsy with a ketogenic diet for a period of from 108 to 729 days. The average duration of the diet was 341 days. The ages of the patients ranged from 22 to 47 years. Each patient showed some evidence of mental deterioration. The acetone reaction in the urine was positive in 89.5 per cent of the total number of tests for the whole group during the entire period of treatment. With the exception of two cases there was an increase in the number of convulsions during the period of the diet. No relationship could be established between the occurrence of a convulsion or the frequency of convulsions and the acetone content in the urine. There was a loss of weight during the first two weeks of treatment followed by a gradual gain during the rest of the dietary period. In ten cases basal

metabolic readings were made prior to the institution of the diet and at certain intervals during the diet. Eight patients showed a decrease of the basal metabolic rate during the diet, sometimes reaching low values. Patients with mental deterioration may respond to the ketogenic diet in a manner quite different from that of patients showing no mental deterioration.

Archives of Otolaryngology, Chicago

19 297 414 (March) 1934

- *Cerebral (Ventricular) Hydrodynamic Test for Thrombosis of the Lateral Sinus W E Dandy Baltimore—p 297
- Sensory Disturbances Following Radical Operations on Antrums with an Evaluation of the Vertical Incision S L Shapiro N D Fabricant and R M Stephan Chicago—p 303
- Plasmacytoma of Nose and Nasopharynx F J Pollock Boston—p 311
- Calculi in the Submaxillary and Sublingual Glands and Their Duets E F Ziegelman San Francisco—p 318
- The Mastoid Cells Their Arrangement in Relation to Sigmoid Portion of the Transverse Sinus P E Meltzer Boston—p 326
- Etiology and Pathology of Paralysis of the Abducens Nerve Associated with Sinus Thrombophlebitis Report of Case of Thrombosis of Lateral Sinus and Bilateral Paralysis of the Abducens Nerve Operation and Recovery S D Greenfield Brooklyn—p 336
- Dentigerous Cysts of the Antrum Report of Two Cases A A Love Los Angeles—p 348
- Contact Allergic Coryza J Forman Columbus Ohio—p 367
- *New Technique in Surgical Treatment of Ozena A Wachsberger, New York—p 370
- Treatment of Angina Pectoris and Congestive Heart Failure by Total Ablation of the Thyroid V Importance of Laryngoscopic Examination as a Means of Preventing Bilateral Paralysis of the Vocal Cords L M Freedman Boston—p 383

Test for Thrombosis of Lateral Sinus—Dandy proposes a ventricular hydrodynamic test by which diagnosis of thrombosis of the lateral sinus can be made with the same degree of accuracy as that obtained with the spinal Tobey Ayer test. Unilateral jugular compression (each side is tested separately) will cause the pressure of ventricular fluid to rise (with exceptions) if the lateral sinus is patent, and the level of the fluid will promptly fall when the venous compression is released. If a rise of the ventricular pressure does not follow jugular compression on one side but follows compression on the other, the lateral sinus is probably occluded or absent on the former side. The use of this procedure instead of the spinal test is suggested only when a ventricular puncture is required to diagnose or eliminate the possibility of a tumor or an abscess of the brain by ventriculography. Under such circumstances it merely makes an additional spinal puncture unnecessary.

Surgical Treatment of Ozena—Wachsberger has used a modification of Lautenschlager's method in the surgical treatment of ozena since 1927. Borries' method is similar to his modification. It differs in the approach in that his operation is performed entirely through the nose while Borries uses the oral route. By reducing the volume of the nasal cavity and relatively enlarging its surface a smaller quantity of air passes over a larger surface. As a result oxidation and evaporation of the mucous membrane and the mucus it produces are lessened, and the mucosa stays moist. The normal change from positive to negative pressure with exhalation and inhalation, which is absent from the nose in ozena is restored and improves the circulation of the blood. The establishment of adhesions between the septum and the turbinates creates new anastomoses in the circulation of the blood.

Arch of Physical Therapy, X-Ray, Radium, Chicago

15 129 192 (March) 1934

- Volume Changes in Organs Induced by Local Application of External Heat and Cold and by Diathermy S Benson Chicago—p 133
- Development of Hyperpyrexia C A Neymann and S L Osborne Chicago—p 149
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- Treatment of Cardiospasm with Notes on Diagnosis and Etiology C I Jackson Philadelphia—p 172

Arkansas Medical Society Journal, Fort Smith

30 225 244 (April) 1934

- Some Phases of Mastoid Disease with Especial Reference to Diagnosis H Moulton Fort Smith—p 225
- Under Water Physiotherapy and Pool Therapy I C Martin Hot Springs National Park—p 229

Canadian Medical Association Journal, Montreal

30 353 472 (April) 1934

- *Staphylococcal Infections in Diabetes Mellitus with Especial Reference to Use of Staphylococcal Toxoid J A Gilchrist and Mary J Wilson Toronto—p 353
- The Syndrome of the Posterior Inferior Cerebellar Artery (with Two Illustrative Cases) C Russel and G W Stavaky Montreal—p 358
- Bilirubin Formation and Reticulo-Endothelial System II Anatomic Block of the Reticulo-Endothelial System R Gottheb Montreal—p 365
- Tumors of the Heart Histopathologic and Clinical Study R M Lymburner Rochester Minn—p 368
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- Diphyllobothrium Latum (Fish Tapeworm) Infestation in Eastern Canada with Particular Reference to Its Increasing Prevalence H B Cushing and H L Bacal Montreal—p 377
- Hymenolepis Diminuta (Rat Tapeworm) in Man Report of Case F W Luney London Ont—p 385
- Mercurial Poisoning I M Rabinowitch Montreal—p 386
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- Sterility in the Female W T Abbott, Winnipeg Manit—p 399
- Treatment of Syphilis in the Presence of Pulmonary Tuberculosis A S Kennedy and J H Lee Hamilton Ont—p 403
- Problem of the Squinting Child L Kazdan Toronto—p 406
- Radiation in Cancer D Quick New York—p 410
- Rumination Report of Two Cases L J Notkin Montreal—p 414

Staphylococcal Infections in Diabetes Mellitus—Gilchrist and Wilson point out that diabetic patients in the region of Toronto treated with staphylococcal toxoid show definite improvement, in spite of adverse weather conditions, in all tests that were used as criteria. This is the first time that they have been able to observe this in the winter months. They have been able to substitute a weekly dose of staphylococcus toxoid for various daily doses of insulin. The diabetic patients on insulin have all shown a reduction of insulin dosage, the rate of fall being dependent on the amount of focal infection and dampness. The authors are convinced that in most diabetic patients they are dealing with a staphylococcal factor and that by using toxoid the cause is attacked. They have been afraid to use the antitoxin because of the tremendous alterations that may occur in the diabetic state through an increase in the basal metabolic rate.

Canadian Public Health Journal, Toronto

25 53 102 (Feb) 1934

- Development of Public Health in Canada J J Heagerty Ottawa Ont—p 53
- Veneral Disease Control in Canada G Bates Toronto—p 60
- Analysis of Weekly Relief Food Orders in a Southern Ontario City July and August 1933 Margaret S McCready—p 67
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Colorado Medicine, Denver

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- Differential Diagnosis of Lesions of the Colon L S Faust Denver—p 136

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- Certain Widespread Misconceptions Concerning Preventable Disease L N Judah Urbana—p 273

Indiana State Medical Assn Journal, Indianapolis

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Iowa State Medical Society Journal, Des Moines

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Journal of Bacteriology, Baltimore

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 I A Coccoid Form of Corynebacterium Diphtheriae Susceptible to Bacteriophage Florence M Stone and Gladys L Holby New York—p 403
 Efficiency of Chlorine in Sewage Disinfection as Affected by Certain Environmental Factors W Rudolfs and J V Ziemba New Brunswick N J—p 419

Bacteria Isolated from Stools of Healthy Food Handlers—Kriebel isolated twenty-nine strains of gram negative non-lactose-fermenting intestinal bacteria from a group of healthy food handlers during a routine carrier examination. These strains produced non-lactose-fermenting colonies on eosin-methylene blue plates and on Russell double sugar, resembling the paratyphoid group. None of the strains fermented 1 per cent lactose solution in forty-eight hours, though they all fermented a considerable number of other carbohydrates. The organisms could be divided into seven groups by sugar fermentation reactions. Some groups showed identical strains. Twenty-five strains produced indole, and twenty-one strains were nonmotile. Agglutination reactions with serums of established pathogenic types were negative. Continued growth in 5 per cent lactose solution resulted in varying degrees of dissociation into lactose-fermenting variants, some of which produced typical colon colonies when plated on eosin-methylene blue agar. The chief importance of these bacteria lies in their confusing resemblance to the pathogenic intestinal organisms on the first differential mediums. The conclusion is drawn that these strains are closely related to the colon group, possibly as variants since they tend to dissociate into lactose-fermenting coli-like organisms.

Journal of Biological Chemistry, Baltimore

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Journal of Bone and Joint Surgery, Boston

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 *Effect of Sympathectomy and of Venous Stasis on Bone Repair Experimental Study P C McMaster Los Angeles and W W Roome Chicago—p 365
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Treatment of Osgood-Schlatter Disease with Drill Channels—Bozsan and O'Kane have applied drill channels for treatment of Legg-Calve-Perthes disease and of intra capsular fractures of the neck of the femur with the expectation that the fresh blood supply conducted to the diseased areas of bone would facilitate and hasten the process of repair. A small incision or stab wound is made over the affected tibial tubercle and one or two channels are drilled through the diseased area indicated on the roentgenogram into the cancellous upper end of the tibia. Immobilization in casts appears to be unnecessary. The patients are allowed to walk as soon as they are able to do so without pain. The authors treated six cases in this manner with prompt results. The clinical symptoms subsided within from three to four weeks and complete bony restoration has been demonstrated by roentgen examination as early as seven weeks after operation. During this time pain and swelling have disappeared, the patients have regained confidence in the extremity and have been able to assume a squatting position. The authors stress the fact that they recommend this operative procedure only for cases in which the handicap is severe and there has been long continued serious annoyance with recurrent attacks of pain over a long period of time and for instances in which one or more years elapse before the symptoms subside entirely.

Effect of Sympathectomy and Venous Stasis on Bone Repair—McMaster and Roome point out that the increased arterial hyperemia resulting from lumbar sympathectomy did not hasten the repair of bone in their experiments. In half of the experiments in which complications did not occur, healing was actually retarded as judged by comparison with the nonsympathectomized side. The results of these experiments, as well as of those of Pearse and Morton and of Key and Moore, cast doubt on the advisability of doing any type of sympathectomy in an attempt to hasten bone repair. The results of the authors' experiments, in which venous stasis hastened the repair of bone, confirm similar observations made by Pearse and Morton. In clinical synovial tuberculosis, hemangioma of the leg, Brodie's abscess of the upper end of the tibia, giant cell tumor of the tibia, femoral and iliac thrombosis, recurring hemarthrosis of the knee in cases of hemophilia, chronic osteomyelitis of the femur, severe trauma to soft parts with resultant and prolonged infection and ulceration, and fracture of the femur, as well as in the experimental work there occur all stages of congestion from a sluggish circulation to a marked venous stasis. Hence it appears that bones grow more rapidly and heal more promptly in the presence of venous congestion. Following lumbar sympathectomy there is present an arterial hyperemia with an increased blood flow. Consequently this operation would not be expected to stimulate bone growth or repair.

Internal Fixation of Transcervical Fractures of Femur—Wescott states that in cases of transcervical fracture of the femur immediately on admission to the hospital a Buck's extension is applied to prevent muscle spasm and overriding of fragments and to lessen shock. The forward angle, or angle of anteversion, is determined by means of a portable x-ray machine. The exact length of the nail necessary to fix the fragments is ascertained. The point of the blades must penetrate the proximal fragment deep enough to give stability without encroaching on the cartilage. The head of the nail should extend one-fourth inch beyond the cortex to facilitate the extraction of the nail at a later date. From twenty-four to forty-eight hours later, without releasing the pull of the Buck's extension, the patient is removed to the operating room. A flat Buck's diaphragm or tunnel is placed under the fractured hip and the x-ray tube is centered over the hip. Under an anesthetic the Buck's extension is removed and the fracture is reduced by internal rotation and gentle flexion of the femur at the hip. This manipulation is repeated two or three times. During flexion, sufficient traction is made to counterbalance the weight of the thigh. The leg is extended in internal rotation. Stereoscopic roentgenograms are made to prove reduction. If reduction is complete, an incision from $2\frac{1}{2}$ to 3 inches long, is made over and below the trochanter. One-half inch below the vastus muscle, a small hole is bored into the bone and narrow slits are made with an osteotome to receive the blades of the nail. The roentgenogram protractor is placed over the roentgenogram taken after reduction, with its base along the shaft, one-half inch below the vastus muscle and the lever is made to correspond with the center of the neck of the femur. The reading of the number of degrees of angulation of the neck with the shaft is made and the bone protractor is set at a like angle and clamped. The nail is driven into the flattened neck of the femur at the angle indicated by the lever of the bone protractor. The fracture is impacted and the wound is closed. Stereoscopic roentgenograms may be made if desired to check the course of the nail. The author used this procedure in twelve cases irrespective of age or general condition. In spite of the fact that several of the patients were poor surgical risks, there were no deaths that could be attributed to the operation or its after-effects.

Calcification in Fat Pads About the Joints—Ferguson cites four cases of calcification in fat pads about the joints in which roentgen examination revealed a flaky, calcareous mass. The calcareous particles appeared as short rods or dashes, which are believed to be characteristic of calcification in fat pads at the joints. The particles later became nodular and less rodlike in form. In two cases the calcareous mass was demonstrated by roentgenograms to be altered in shape and in relation to the bones by pressure and by change of position.

The fat pad was removed at operation in two cases. In one, of short duration the calcareous material dissolved in the fixing solution (formaldehyde) and the specimen was fat. In the case of longer duration the fat pad was extensively converted into masses of cartilage, with small areas of ossification. In three of the cases the onset of symptoms was preceded by trauma. In the fourth case the patient was not examined until one year after onset and she did not remember any injury. In each case only one joint was affected and the symptoms were mild, consisting of slight limitation of motion and moderate pain on use of the joint or on forced motion.

Journal of Industrial Hygiene, Baltimore

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- Determination of Mercury in Air and in Urine A M Fraser Montreal—p 67
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Effects of Inhalation of Hydrogen Fluoride I Response Following Exposure to High Concentrations W Machle F Thammann K Kitzmiller and J Cholak Cincinnati—p 129

Journal of Lab and Clinical Medicine, St Louis

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- *Effects of Low Temperature Retardation in Culture of Sterile Maggots for Surgical Use W Robinson and S W Simmons Washington, D C—p 683
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*Light Filtering Index of Blood Serum Discussion of Its Clinical Application G L Rohdenburg and R Schleussner, New York—p 705
Chronic Myelosis in Children Report of Case A A Eisenberg and H Wallerstein New York—p 713
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Culture of Sterile Maggots for Surgical Use—Robinson and Simmons investigated the tolerance of the egg, maggot prepupa and pupa to various periods of retardation in the production of surgical maggots. Eggs may be kept in a closed container in a refrigerator at from 40 to 43 F for twenty-eight hours with a mortality only slightly greater than normal, but continued storage is unfavorable and in three days results in almost complete destruction. The age of the egg when stored affects the degree of injury. The lowest mortality occurred when eggs were allowed to remain in the warm incubator an additional two or three hours after they were removed from the fly cages before being stored. Surgical maggots cannot be kept satisfactorily in cold storage. After a retardation of twenty-four hours only 40 per cent were able to resume feed-

ing, and in six days almost 100 per cent destruction occurred. The authors describe a retarding food which eliminates the need of cold storage during the sterility tests. Prepupae are best adapted to cold storage, but even in this stage the possibilities are considerably limited. They lose weight and become shrunk during cold storage. This is mostly water loss. Least unfavorable results were obtained with a relatively air tight container. In thirty-three days the mortality was from 33 to 46 per cent and in seven weeks it had increased to approximately from 38 to 55 per cent, depending on the method of storage. When prepupae were stored from three to four weeks, the females that emerged were permanently injured and their egg-laying capacity was much reduced. Pupae are unable to withstand even a moderate period of retardation. After the second week the mortality rose to about 66 per cent, and most of the eggs laid subsequently failed to hatch. Low temperature retardation of the various stages in the life cycle of the blowfly, although a convenience in cultural technique, causes such a high mortality that its use is considerably limited.

Light Filtering Index of Blood Serum—Rohdenburg and Schleussner point out that if light of differing wavelengths is passed through nonhemolyzed blood serum a definite absorption of the available light occurs. They term the rate at which the light is absorbed, when calculated for bands 100 angstrom units in width, the "light filtration index." In normal persons this index remains fairly constant over periods as long as fifteen days, minor variations occurring in consequence of simple physiologic disturbances, such as constipation and menstruation. The normal index varies between 1 and 31, with an average of 21. The index is affected by the parenteral injection of foreign proteins, by the ingestion of colloids, such as dyes, and probably by other factors. In pathologic conditions associated with fever the termination of the fever is characterized by a sharp drop in the index and convalescence by a steadily rising index. An index that remains between 22 and 26 is of good prognostic import, as is a steadily rising index. A consistently low index is of bad prognostic import. The Pulfrich photometer is employed, equipped with two filters having as their center of light filtration wavelengths (plus or minus 100 angstrom units) of 7,200 and 4,300 angstrom units. A standardized cell having a depth (thickness of serum layer) of 2.5 mm is used and this cell is so constructed that the width of the serum layer is 3 mm. The portions of the cell that are not actually the walls of the cell cavity are painted black. Blood for examination is collected in a Wright capsule after finger puncture. To give a sufficient amount of serum the body of the capsule should be 3.5 cm in length and the bore approximately 8 mm. Hemolyzed serums should be discarded. Specimens should be collected at the same relative time of day. After the serum is separated from the clot it may be examined at any time within twelve hours. The standardized cells of the photometer are filled, one with distilled water and the other with the serum to be examined. The amount of light that is passed by the serum with each of the specified filters is determined. The reading obtained with the 4,300 angstrom filter is subtracted from that obtained with the 7,200 angstrom filter. The result thus obtained indicates the amount of light of the band situated between the central points of the two chosen filters that has been blocked out. This result is then divided by the number of 100 angstrom units present in the band, i. e., 29.

Journal of Nutrition, Philadelphia

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Chronic Intussusception in the Gastro-Intestinal Tract Report of Thirty Nine Cases C W Mayo and J R Phillips Rochester—p 196
The Heart in Hyperthyroidism C A McKinlay Minneapolis—p 199

Preoperative Skin Sterilization—Richardson states that the technic of preoperative skin sterilization now in use at the University Hospital is as follows. The skin is shaved the evening before the operation, scrubbed and washed with tincture of green soap for five minutes, wiped with benzene on gauze and with ether and gauze, and a sterile alcohol dressing is applied and held in place with a sterile towel and binder. On arrival in the operating room the skin is painted with two coats of 35 per cent tincture of iodine and allowed to dry. A saturated solution of sodium thiosulphate in 70 per cent alcohol is sponged liberally over the painted area and allowed to remain a few seconds. From three to four sponges liberally saturated with the solution are used. This removes practically all the iodine and leaves the skin white. The skin is then dried with sponges and is ready for incision. This method has been in use for ten years and has proved useful and has not been accompanied by bad results.

New England Journal of Medicine, Boston

210 723 780 (April 5) 1934

- *Complete Ablation of the Thyroid Gland in a Case of Chronic Lymphatic Leukemia with Hypermetabolism W Dameshek, D D Berlin and H L Blumgart Boston —p 723
President Eliot's Relations to Medicine W B Cannon Boston —p 730
Frequency of Cancer in the Insane S Warren and Myrtelle M Cavanaugh Boston —p 739
Common Nature of Peptic Ulcer and Colitis W A Evans Jr Boston —p 743
Organic Drivenness Brain Stem Syndrome and an Experience Case Reports E Kahn and L H Cohen New Haven Conn —p 748

Thyroidectomy in Chronic Lymphatic Leukemia — Dameshek and his associates present the case of a woman aged 42, with the signs of aleukemic lymphatic leukemia, who had a basal metabolic rate of plus 65 per cent. It was thought that the continued loss in weight, profuse drenching sweats increasing nervous symptoms and beginning circulatory failure might be due to the markedly elevated metabolic rate. When the patient became extremely ill and failed to respond to rest in bed, compound solution of iodine and roentgen therapy, complete ablation of the thyroid was performed. Following this procedure the metabolic rate dropped strikingly and the clinical signs and symptoms of hypermetabolism disappeared, as did the signs of circulatory failure. The patient gained weight, and the lymph nodes and spleen regressed about 90 per cent from their original size. There was complete disappearance of all symptoms and the blood picture became almost normal. Improvement has continued for five months after thyroidectomy. The authors state that remissions have been frequently reported in this disease and it is possible that the improvement is due to a remission. The rapid onset of improvement after the treatment leads them to believe, however that the operation was at least partly responsible for the improvement. They do not recommend this form of treatment for other types of malignant disease.

New York State Journal of Medicine, New York

34 269 330 (April 1) 1934

- Some Practical Problems in Handling of Peripheral Arterial Disease W J M Scott Rochester —p 269
Management of Uterine Bleeding T P Farmer Syracuse —p 274
Observations on Some Diseases of the Skin in Infancy and Childhood H Fox New York —p 278
Diagnosis and Treatment of Two Hundred and Twenty Four Cases of Gastro-Intestinal Allergy W Lintz Brooklyn —p 282
Syphilis Prevention of Congenital Syphilis J A Goldberg New York —p 290
Id. Diagnosis Importance and Treatment of Early Syphilis G V Mackee New York —p 293
Id. The Middle Aged and Elderly Syphilitic Special Problems in Diagnosis and Treatment A B Cannon New York —p 296

Oklahoma State Medical Assn Journal, Muskogee

27 113 152 (April) 1934

- Vertigo Ophthalmologic Vertigo J R Reed Oklahoma City —p 113
Id. Vertigo from the Otolgic Standpoint T G Wails Oklahoma City —p 114
Id. Vertigo from the Point of View of the Internist M F Jacobs Oklahoma City —p 116
Diseases of Childhood Carcinoma of the Upper Colon in Childhood R Walker and J F Daly Pawhuska —p 119
Id. Presentation of a Case of Hemorrhagic Disease of the New Born with Unusual Symptomatology C J Alexander Clinton —p 124
Id. Some Common Causes of Pyrexia in Children A Jenkins Sherman Texas —p 122
Id. Anemia of Infancy and Early Childhood C V Rice Muskogee —p 125
Practical Considerations of Maxillary Sinusitis J C Braswell and D L Edwards Tulsa —p 129

Pennsylvania Medical Journal, Harrisburg

37 555 634 (April) 1934

- Injuries of Nerves and Tendons of the Hand S L Koch Chicago —p 555
Anemias of Infancy and Childhood E R McCluskey Pittsburgh —p 557
Acute Appendicitis J O Bower Philadelphia —p 560
Cardiac Asthma Clinical Considerations Based on a Study of Twenty One Cases L H Crippe Pittsburgh —p 566
Cardiac Patients as Surgical Risks A H Colwell Pittsburgh —p 568
Laboratory Findings in Anemia in Children Maud L Neaten Pittsburgh —p 572
Treatment of Acute Cholecystitis H F Smith Harrisburg —p 574
Pernicious Leukopenia (Agranulocytic Angina) T Fitz Hugh Jr Philadelphia —p 579
Polycystic Kidney Disease C Haines Sayre —p 582

Psychoanalytic Quarterly, Albany, N Y

3 1152 (Jan) 1934 Part I

- Thalassa Theory of Genitality S Terence translated by H A Bunker Jr —p 1
Psychology of the Inventor Note S Lorand New York —p 30
Outline of Clinical Psychoanalysis O Fenichel Oslo Norway —p 42
Clinical Communications Reactivation of the Oedipus Situation S Z Orgel New York —p 128
Projection Heterosexual and Homosexual M R Kaufman Cambridge Mass —p 134
Ibsen the Druggist V Tausk translated by Dorian Feigenbaum —p 137

3 1134 (Jan) 1934 Part II

- Primitive High Gods G Roheim Budapest Hungary —p 3

Public Health Reports, Washington, D C

49 451 474 (April 6) 1934

- Psittacosis in the United States Incidence Scientific Aspects and Administrative Control Measures V M Hoge —p 451
*Effect of Alum Precipitated Ragweed Pollen Extract on Guinea Pigs W T Harrison —p 462

49 475-496 (April 13) 1934

- Health Services of Tomorrow T Parran Jr —p 477

Effect of Alum-Precipitated Ragweed Pollen Extract — Harrison found alum-precipitated ragweed pollen extract to be an effective sensitizing agent in guinea-pigs. This solid form is much more effective than the same amount of extract in aqueous solution. Guinea-pigs with the precipitated extract in the abdominal wall for ten days were sensitive to a large dose given intravenously. It is probable that the slow absorption of precipitated pollen extract more closely approaches the natural method by which human beings become sensitive to plant pollens. The addition of alum, in a concentration as high as 0.3 per cent, to ragweed pollen extract does not interfere with its desensitizing properties. It is possible that this small amount might slow the rate of absorption sufficiently to permit injection of larger doses in hypersensitive persons.

Radiology, St Paul

22 391 520 (April) 1934

- Osteolytic Bone Tumors L Jaches and M L Sussman New York —p 391
Pericolicitis Involving the Cecum Ascending Colon and Hepatic Flexure from the Standpoint of the Surgeon A G Frey Chicago —p 399
Recording of Cardiac Movements and Sounds by the Roentgen Ray (Kymphonoroentgenography) I S Hirsch New York —p 403
Analysis of a Group of Primary Newgrowths of the Lungs Treated with Deep X Ray Therapy W F Manges Philadelphia —p 423
Water Phantom Intensity Measurements of High Voltage Roentgen Rays (200 Kilovolt Peak) at 70 and 80 Cm Skin Target Distance J I Weatherwax and C Rohlf, Philadelphia —p 426
Relationship of Sinus Disease to Chest Disease in Children W W Wasson and H D Waltz Denver —p 432
Standard Absorption Curves for Specifying the Quality of X Radiation L S Taylor and G Singer Washington D C —p 443
Recent Advances in Encephalography C G Dyke and L M Davidoff New York —p 461
Enlargement of Atelectatic Lung a Roentgenographic Sign of Inflammation T T Wang and C M Van Allen Peiping China —p 475
Advisability of Immediate Colonic Irrigation Following a Barium Enema Estimation of Some of the Dangers Accompanying the Use of Barium M Golob New York —p 486
Method to Render Radioresistant Tumors Radiosensitive M J Sittenfeld New York —p 490
Early Diagnosis of Carcinoma of the Colon Roentgenographically Considered M Feldman Baltimore —p 493
*Roentgen Therapy in Metastatic Bone Cancer Report of Four Cases J Roemer, Paterson N J —p 499

Roentgen Therapy in Metastatic Bone Cancer —Roemer reports four cases of metastatic bone cancer and states that metastatic foci may be present in bones without presenting clinical evidence; therefore routine roentgen examinations should be made of the skeleton, especially of the pelvis and spine in all cases of cancer of the breast. The author's cases responded favorably to high voltage roentgen therapy. The patients were made comfortable and were able to perform their household duties. Life can be prolonged by this method for several years. Much better results might be accomplished if such cases were subjected to roentgen radiation as soon as clinical symptoms presented themselves, in spite of negative roentgen observations. The author uses 215 kilovolts 4 milliamperes, filtered with 0.75 mm of copper and 1 mm of aluminum, at 50 cm focal skin distance. With these factors the erythema dose is eighty-six minutes when a portal of entry 20 by 20 cm is used. Daily treatments are given if possible. In most instances one half erythema dose is given to one portal of entry at each session.

Southern Medical Journal, Birmingham, Ala

27 283 376 (April) 1934

- Treatment of Hemangiomas by Excision J S Davis and H E Wilgis Baltimore—p 283
- *Radiation Therapy of Renal Cortical Neoplasms, with Especial Reference to Preoperative Irradiation C A Waters L G Lewis and W A Frontz Baltimore—p 290
- Primary Lymphosarcoma of the Small Intestine with Metastases to the Gallbladder and Both Suprarenals F C Hodges and W E Vest Huntington W Va—p 299
- Continuous Irrigation of the Bladder in Certain Cases of Cystitis J H Neff University Va—p 304
- Regeneration of the Long Bones Following Complete Subperiosteal Removal in Cases of Extensive Osteomyelitis G V Brindley, Temple Texas—p 307
- A Study of Child's Sleep G Giddings Atlanta Ga—p 312
- Treatment of Leukemia D Y Keith, Louisville Ky—p 318
- Rational Treatment of Hyperthyroidism J deJ Penherton Rochester, Minn—p 323
- Symptoms and Signs Referred to the Abdomen the Result of Disorders Elsewhere J E Paullin Atlanta Ga—p 331
- Preoperative and Postoperative Treatment of Abdominal and Plastic Operations L E Burch Nashville Tenn—p 335
- Our Experience with Dacryorhinostomy E C Ellett and R O Rychener Memphis Tenn—p 339
- Chronic Nasopharyngeal Bursitis (Thornwaldt's Disease) D Roy Atlanta Ga—p 344
- Treatment of Chronic Alcoholism O Dietelm Baltimore—p 347
- Uterine Relaxation J R Garber Birmingham Ala—p 351
- Ptychitis in Pregnancy J F Geisinger Richmond Va—p 354
- Vincent's Angina Complications and Treatment M T Van Studdtford New Orleans—p 358
- Development of Cutaneous Melanoma C Phillips Temple Texas—p 363
- New Emphasis in the Teaching of Physiology E C Allbritton Washington D C—p 366

Radiation Therapy of Renal Cortical Neoplasms—

Waters and his associates point out that tumors of the hypernephroma type and embryonal carcinomas are sensitive to roentgen rays. Papillary carcinomas of the renal pelvis and the malignant papillary cyst adenomas are resistant to roentgen rays. Irradiation has caused a striking reduction in the size of roentgensensitive renal tumors and produced extensive morphologic changes in sensitive tumors with extensive fibrosis, hyalinization and necrosis. In certain cases the tumor has been almost completely destroyed and replaced by fibrous tissue. Normal renal tissue has not been injured by irradiation in the dosage employed in the authors' cases. Palpitation of the tumor should be avoided as much as possible to prevent expressing tumor cells into the blood stream. Tumors that were inoperable because of their great size have been rendered operable by shrinkage following irradiation. Reduction in the size of sensitive tumors begins almost immediately after the institution of irradiation. The authors recommend operative removal of the tumor after completion of the first series of irradiation (approximately three weeks), allowing a few days for rest and transfusion if the degree of anemia justifies it. A regrowth of the tumor may occur if operation is delayed long after completion of irradiation. Preoperative irradiation has not made operation more difficult and in certain cases has simplified nephrectomy. The renal pedicle should be ligated before the tumor is freed, thus diminishing the risk of metastasis.

Surgery, Gynecology and Obstetrics, Chicago

58 679 806 (April) 1934

- Fractures of the Neck of the Femur W R MacAusland A R MacAusland and H G Lee Boston—p 679
- Effects of Increased Intra-gastric Pressure on Thoracic and Abdominal Arterial and Venous Pressures C W McLaughlin Jr and J W Levering Philadelphia—p 699
- Disappearance of Blood from Cerebrospinal Fluid in Traumatic Subarachnoid Hemorrhage Ineffectiveness of Repeated Lumbar Punctures W Sprong Montreal—p 705
- *Carbon Dioxide, the Gaseous Anesthetics and the Advantages of Rebreathing Methods of Their Administration J G Poe Dallas Texas—p 711
- *Precancer of the Cervix Uteri. Some Pertinent Observations on Its Status N Freedman Montreal—p 717
- I The X-Ray Measurement of the Fetal Diameter in Utero Accurate Technique by Means of Stereoroentgenometry S H Clifford Boston—p 727
- *Safe and Satisfactory Method of Anesthesia for Toxic Goiter Patients W Bartlett and W Bartlett Jr St Louis—p 737
- Surgical Treatment of Sterility Caused by Occlusion of the Fallopian Tubes C C Norris Philadelphia—p 741
- Some Points in the Treatment of Genito-Urinary Tuberculosis T E Hammond Cardiff Wales—p 745
- Direct Hernia Record of Surgical Failures E. Andrews and A D Bissell Chicago—p 753

- Analysis of One Hundred Complicated Cases of Acute Appendicitis Primary Cecostomy or Enterostomy as a Life Saving Procedure L R Easton, New York, and W J Watson, New Britain Conn—p 762
- Total Removal of Left Lung for Bronchiectasis C Haight Ann Arbor Mich—p 768
- Diagnosis and Treatment of Pharyngo-Esophageal Diverticulum H J Moersch and E S Judd Rochester Minn—p 781
- Conservative Treatment of Acute Duodenal Fistula A E McEvers Rock Island Ill—p 786

Anesthesia—Poe believes that open ether inductions of anesthesia should be dispensed with (except in infants), because of the dangers of acapnia, apnea, excitement and struggling. It perpetuates the dread of anesthesia and thus materially hinders the progress of surgery. The induction of anesthesia with nitrous oxide gas-oxygen, changing to ethylene after consciousness is lost, with or without the addition of ether as may be required and with proper narcotic premedication, is the safest and most useful of all general anesthetics known. With the maintenance of sufficient humidity in the bag which is not difficult, ethylene is safe from static ignition, regardless of its proportion with oxygen in the moisture filled bag. To discard the use of ethylene in surgery would be analogous to discarding gasoline in present-day transportation. Ethylene, however, should be administered only by those well instructed in its use. Surgeons and dentists should have a working knowledge of anesthetics, and modern anesthesia should be administered only by those who are specially trained.

Precancer of the Cervix Uteri—Freedman made a histologic study on sections of precancer of the cervix so as to demonstrate the points of relative similarity between it and the earliest cancers—this similarity causing a confusion in diagnosis and a lack of finality about the existence, orientation or description of precancer. The following conclusions seem warranted: 1 Evidence goes to prove that in the cervix there does exist a precursory stage of cancer, the 'precancerous' or preferably the 'carcinoid stage.' 2 Cancer is definitely present and can be diagnosed in the cervix from the altered cytology alone, even when there is not the slightest down growth and the basement membrane is intact. 3 Many of the carcinoid conditions that are found in the neck of the uterus as a result of chronic irritations show an altered cytology which is comparable to that found in the genuine cancers, consequently there is much confusion as to the proper diagnosis. 4 Although there are not to be had unassailable scientific histologic criteria for carcinoid conditions, there still is a satisfactory means of diagnosis of the condition in the cervix, viz (1) the general appearance is not suggestive of established cancer, (2) few actual cancer-like cells are present and these are single and detached, (3) these altered cells are surrounded and separated by too many normal cells usually similar in type and (4) there is little or no loss of polarity. 5 An attitude in general that cancer may be mimicked perfectly histologically and still cancer not be present is a mistake and dangerous one. There is no doubt that many such cases are really cancerous. 6 Vital stains (Schiller, Ludford) offer a suitable method of diagnosing the earliest actual cancers and of differentiating them from carcinoid conditions. 7 For the final histologic diagnosis of suspicious tissue, in addition to vital staining, there is required biopsy examination with the microscope. The biopsy should be cut transversely and sectioned serially for microscopic study, and there must be repeated removal of tissue for examination if necessary.

Anesthesia for Toxic Goiter Patients—The Bartletts have the toxic goiter patient, under the partial influence of a basal anesthesia, placed on the table and the four sites of injection marked with pen and ink. Points for injection are determined as follows. The posterior border of the sternomastoid muscle is marked the ends of which are placed on the appropriate anatomic landmarks on the skull and clavicle, the distance between these two points is determined, the anterior border of the sternomastoid is determined and marked along a 'straight edge,' and a cross mark is made at a point slightly lower than that on the posterior border of the muscle about on a level with the laryngeal tubercle and just above the lower border of the thyroid cartilage. The skin of the neck is cleansed with benzine and sterilized by spraying with sodium ethylmercurithiosalicylate (merthiolate). A light gas anesthesia is started and carried to the depth at which needle

pricks will not be noted. Then through the posterior of these two injection points the portion of the superficial cervical plexus is blocked which curves around the posterior margin of the sternomastoid at its middle, about 3 cc of a 2 per cent solution of procaine hydrochloride without epinephrine being used, thus securing approximately a one hour anesthesia of the skin and fat. It is necessary to anesthetize the three ribbon muscles as well as the fasciae covering them and connecting the two across the midline. This can be accomplished through the anterior injection point by blocking the branches of the descendens hypoglossi where the three separate. A needle can be inserted into this space through the opening in front of the sternomastoid at a little lower level than that on the posterior border, a like amount of the same drug being used. The incision is made, the mask is removed and no more gas is employed unless the patient demands it. Each upper pole is infiltrated after its exposure with a 2 per cent solution of procaine hydrochloride just before it is divided. Thus is a painless bilateral resection operation ensured after needle thrusts, four of them made prior to skin incision, and the fifth and sixth after the upper thyroid poles are exposed.

Virginia Medical Monthly, Richmond

61 1 64 (April) 1934

- Diagnosis and Treatment of Rheumatic Heart Disease in Children J A Lyon Washington D C—p 1
Caesarean Section A M Showalter Christiansburg—p 9
Celiac Disease with Osteomalacic Like Bone Change F J Wampler and J C Forbes Richmond—p 11
Paroxysmal Hemoglobinuria of Syphilitic Origin E R Moorman Kilmarnock—p 14
Undulant Fever D Davis Richmond and H Bailey Sandston—p 18
Modern Methods of Birth Control W M Bowman Petersburg—p 21
Analysis of Two Hundred and Ninety Eight Cases of Operations on the Gallbladder with Conclusions as to Operative Procedure W H St Clair, Bluefield W Va—p 25
Treatment of Eclampsia J Bear Richmond—p 29
Follicular and Dental Root Cysts Their Clinical, Pathologic and Histologic Features J L Walker Jr, Norfolk—p 33
*Operation for the Fusion of the Tibio-Astragaloid Joint H H Wescott Roanoke—p 38
Overlooked Factor in Susceptibility to the Common Cold A E Ewens Atlantic City N J—p 40
Intestinal Obstruction Caused by the Mesentery of a Meckel's Diverticulum F J Kirby and N E Needle, Baltimore—p 43
Preventable Cancer and Curable Cancer and Value of Accurate Microscopic Diagnosis in the Operating Room J C Bloodgood Baltimore—p 45
Studies on the Utilization of Dicalcium Phosphate and Calcium Inositol Hexaphosphate by Rats J C Forbes Richmond—p 49

Fusion of the Tibio-Astragaloid Joint—Wescott attempted to fuse the tibio-astragaloid joint by the removal of a sufficient amount of bone in both the tibia and the astragalus to result in a better blood supply without shortening the extremity and thus producing a complete mortise from inside the joint. During the operation, the foot is held by an assistant in plantar flexion of 5 degrees for men and 15 degrees for women. Through an incision over the internal malleolus, a block of bone is removed extending through the joint, one-fourth inch in width and from one-half to three-fourths inch in height. This opening with the three-fourths inch axis in line with the shaft of the tibia, is extended through the ankle joint, its upper half in the tibia and the lower half in the astragalus. It is carried into the fibula until its inner half has been entered and the small block of bone removed. A graft is taken from the tibia of sufficient width to fill the greater diameter of the tunnel and twice the length of the depth of the tunnel through the joint. The graft is divided at the center of the length and placed cortex to cortex to double its thickness. The two pieces of graft are driven in as one, through the opening in the malleolus and through the joint into the fibula. External fixation is unnecessary, as the graft acts as a key.

Wisconsin Medical Journal, Madison

33 253 324 (April) 1934

- Dawn of a Specialty in Medicine Allergy and Physical Allergy W W Duke Kansas City Mo—p 265
Tachycardia L M Warfield Milwaukee—p 276
Intussusception L W Peterson Shawano—p 282
Effects of Barbiturates W F Wegge Milwaukee—p 285
Removal of Broken Needles from Spinal Canal A Popp Milwaukee—p 287
Some Unusual Duodenal Pathology J A Evans La Crosse—p 291
Treatment of Tuberculosis in General Practice III A I Banjai, Wauwatosa—p 294

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

31 1 84 (Jan March) 1934

- Empyema in Children from Physician's Point of View H T Ashby—p 1
Papular Urticaria and Dynamics of Skin Sensation D W Winnicott—p 5
Early Diagnosis of Congenital Dislocation of Hip M Forrester Brown—p 17
Cystic Dilatation of Common Bile Duct F P Weber—p 27
The Postmature Infant W J Rutherford—p 36

British Journal of Radiology, London

7 65 128 (Feb) 1934

- New Continuously Evacuated X-Ray Tube for Deep Therapy T E Allibone and F E Bancroft—p 65
A Three Hundred Kilovolt Direct Current Generator Using Continuously Evacuated Rectifiers T E Allibone A Beeston and G S Jones—p 83
Radiation Treatment of Actinomycosis R Stewart Harrison—p 98
Apparatus for Reading with Closed Eyes A H Pirie—p 111

7 129 192 (March) 1934

- Radiation Treatment of Neoplasm with Especial Reference to Relative Values of Hard and Soft Rays I W M Levitt—p 129
Radiation Treatment of Neoplasm II R J Reynolds—p 134
Id III G F Stebbing—p 137
Id IV F Herniman Johnson—p 141
Radiation of Neoplasm with Regard to Possible Differential Action of Short and Long Waves V J H D Webster—p 149
Radiation Treatment of Neoplasm VI F Roberts—p 151
Id VII L A Rowden—p 155
Id VIII N S Finzi—p 156
Ionization Produced in Air by X Rays and Gamma Rays W V Majneord and J E Roberts—p 158
Absorption of Gamma Rays by Barium Sulphate Plaster, Water and Beef J S Rogers—p 176

British Medical Journal, London

1 469 516 (March 17) 1934

- Causes and Treatment of Arthritis C W Buckley—p 469
Treatment of Malaria in Europeans by Atabrine with Especial Reference to the Relapse Rate P D Johnson—p 473
Treatment of Malaria with Atabrine E J R MacMahon—p 477
The Recovery Principle in Gas Oxygen Anesthesia A Closed System W B Primrose—p 478
Management of Breast Feeding in General Practice H R Youngman—p 480

1 517 566 (March 24) 1934

- Pathogenic Agent in Normal Human Bone Marrow Its Nature and Relationship to Lymphadenoma Agent of Gordon U Friedemann—p 517
Some Properties of Encephalitogenic Agent in Lymphadenomatous Tissue with Further Observations on Gordon's Biologic Test in Diagnosis of Hodgkin's Disease C E Van Rooyen—p 519
Use of 2,4-Dinitrophenol as Metabolic Stimulant D M Dunlop—p 524
Heredity and Varicose Veins Constance Otley—p 528
Medical Aspects of Methyl Chloride A P Gorham—p 529

1 567 606 (March 31) 1934

- Value of Eye Symptoms in Diagnosis of General Diseases H G A Giesing—p 567
Autonomic Nerve Supply of Distal Colon Anatomic and Clinical Study E D Telford and J S B Stopford—p 572
Study of Hysterectomy Based on After Histories of One Hundred and Twelve Cases P McEwan—p 574
Pernicious Anemia in an Asiatic E C Spaar—p 578
Heredity a Minor Factor in Mental Deficiency C McNeil—p 584

Indian Medical Gazette, Calcutta

69 61 120 (Feb) 1934

- Abdominal Pregnancy Secondary to Tubal Gestation at Term. M M Cruickshank and S T Achar—p 61
*New Operation for Cure of Ascites F C Fraser—p 64
Infantilism and Cirrhosis of Liver M V R Rao—p 64
New Intravenous Anesthetic Evipan Sodium G H Fitzgerald—p 66
Mental Suggestion in Everyday Life W Nunan—p 68
Notes on Treatment of Oriental Sore with Berberine Acid Sulphate. R Chatterjee—p 72
*Unusual Form of Tuberculosis Case A N Goyle A Vasudevan and K G Krishnaswamy—p 72
Incidence of Portal Cirrhosis of Liver in Vizagapatam, Based on Critical Study of Autopsy Records and Observations T S Tirumurti and M V R Rao—p 74
Constants of Cow's Milk B B Brabmachari—p 76

Operation for Cure of Ascites—Fraser discusses an operation that was performed in an intractable case of ascites in which other treatments had failed. It was attended with

instantaneous relief. The omentum was split into halves from its free border to its root, and each half was carried between the muscles of the anterior abdominal wall and anchored there by sutures. The wound healed by first intention, but paracentesis had to be performed eleven days later in order to save the scar from bursting open from distention. This first operation was a complete failure. Throughout the following month, paracentesis had to be performed repeatedly. The author wondered whether the procedure adopted in the radical treatment of hydrocele would have the same beneficial results in ascites. So for the second operation an incision running from just above the pubes to well above the umbilicus was made and the peritoneum on each side of the wound was stripped up by gauze dissection nearly to its reflection on to the ascending and descending colons, the general oozing of blood was arrested easily by hot saline gauze swabs. The abdomen was then closed with a continuous silk suture and no drain was put in. A small dose of morphine was given prior to the operation to abolish any chance of shock. The wound healed by first intention.

Unusual Form of Tuberculosis—Goyle and his associates cite a case of tuberculosis of the liver, spleen and lymph nodes. The gross appearance of the liver at first sight suggested secondary carcinomatous growths though there was no characteristic central umbilication, but on histologic examination it was clear that the lesions were of the nature of an infective granuloma. Even though the firm, elastic, cheesy consistency of the lesions and the infrequent concentric formation of endothelial cells were suggestive of multiple gummas the absence of definite fibrous capsule and cicatrices the negative Wassermann reaction, and the presence of Langhans type of giant cells, especially in sections of glands and spleen were all in favor of tuberculosis. Definite proof of the lesions being tuberculous in nature was afforded by the demonstration of acid-fast bacilli in sections of the liver spleen and lymph nodes. The bacilli being few, they were demonstrated only after careful examination of a number of sections. Histologically, the lesions were unusual in that giant cell systems, such as are found in tuberculosis, were rare except in the lymph nodes and the spleen.

Journal of Neurology and Psychopathology, London

14 193 288 (Jan) 1934

- Megalencephaly S A K Wilson—p 193
Brain of Mental Defective. Study of Morphology in Its Relation to Intelligence. Part II Corpus Callosum in Its Relation to Intelligence W R Ashby and R M Stewart—p 217
Disseminated Demyelination of the Central Nervous System in Monkeys and Allied Disorders in Man C Davison—p 227
Comparison of Some New Flocculation Tests for Cerebrospinal Fluid with the Wassermann Reaction (M B R II Modified Citochole and Modified Kiss Reactions) A S Paterson and F L McLaughlin—p 239

Journal of Pathology and Bacteriology, Edinburgh

38 117 252 (March) 1934

- *Healing of Intraduct Carcinoma of the Mamma R Muir and Anne C Aitkenhead—p 117
Hemolytic Streptococci from the Vagina of Febrile and Afebrile Parturient Women R Hare—p 129
Ability of Hemolytic Streptococci Found in Infected Throats to Resist the Bactericidal Power of Normal Human Blood R Hare—p 143
Regeneration of Skeletal Muscle in Young Rabbits W G Millar—p 145
Influence of Testicular Extracts on Fragility of Red Blood Cells and on Dispersion of India Ink Particles in the Dermis G Favilli and D McClean—p 153
*Atheroma and Coronary Thrombosis in a Young Diabetic E R Cullinan and G Graham—p 167
Preparation of Pneumococcus Species Antigen H B Day—p 171
*Relation of Giant Cell Formation to Caseation in Miliary Tubercles in the Human Liver T D Day—p 175
Early Stage of Nephritis Repens Dorothy S Russell—p 179
Rough Variation of Vibrio Cholerae and Its Relation to Resistance to Cholerae (Type A) Y N Yang and P B White—p 187
Experimental Pneumococcosis Infective Silicosis E H Kettle—p 201
Epithelial Nature of the Oat Cell Tumor of the Mediastinum Georgiana M Bonser—p 209
Hemolytic and Toxic Activities of Filtrates of Clostridium Chauvoei J C Kerrin—p 219
Manifest Effects of Castration in Male Rats V Korenchevsky and M Dennison—p 231

Healing of Intraduct Carcinoma of the Mamma—Muir and Aitkenhead report two cases of Paget's disease of the nipple in which the associated intraduct carcinoma has at places

undergone retrogression and disappeared. This occurs by reactive change in the connective tissue within the elastica, which undergoes hyperplasia and, as the cancer cells atrophy, produces obliteration of the lumen. The obliterated ducts ultimately are represented by hyaline material, often avascular and relatively acellular, surrounded by a ring of abundant elastic tissue. These changes have been observed mainly in the ducts in the deeper part of the nipple and in the subjacent tissue, and also in the substance of the breast.

Atheroma and Coronary Thrombosis in Diabetes—Cullinan and Graham present a case of relatively mild diabetes and widespread arterial atheroma with coronary thrombosis, with death at the age of 27. The cause of the arterial damage could not be determined. The incidence of arterial degeneration and the knowledge that the blood cholesterol was raised were two of the factors that led to the recent introduction of a diet richer in carbohydrate and poorer in fat for the treatment of diabetes. In the authors' case the cholesterol content of the blood was not estimated. Also the relationship between exogenous cholesterol and atheroma is far from clear. It is possible by cholesterol feeding to produce atheroma-like lesions in rabbits and sometimes in rats and mice but not in cats or dogs, and it is almost certain that carnivora have means of dealing with cholesterol which herbivora lack. It may even be that atherosclerosis in the human being is associated with an upset not of the exogenous but of the endogenous metabolism of cholesterol.

Giant Cell Formation and Caseation in Tubercles in Liver—Day observed the reticulum associated with miliary tubercles in the human liver to be either a new formation associated with healing or the remains of that which supported pre-existent liver cells. The presence of reticulum similar in arrangement to that of the normal liver in situations from which all trace of liver cells had disappeared is considered to indicate a previous necrosis. Such reticulum was present in 90 per cent of the lesions examined. It was best seen in caseous material, and it intimately surrounded the majority of giant cells. The author concludes that necrosis must in many cases have preceded giant cell formation and he presents evidence to show that the substance of giant cells differs from caseous material.

Journal of State Medicine, London

42 125 186 (March) 1934

- Citizenship and Charity J C Pringle—p 125
Citizenship and Eugenics C P Blacker—p 133
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Need for Care and After Care of Tuberculous J A G Keddie—p 149
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Lancet, London

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- Eruptive Mediterranean Fever A Lemierre—p 441
Sympathectomy. Review of One Hundred Operations E D Telford—p 444
*Fluid Factor in Treatment of Neglected Diabetic Coma F B Byrom—p 446
Agranulocytic Angina and Pentose Nucleotide Case Report H L Marriott—p 448
Postural Deformities and Bone Growth Experimental Study A B Appleton—p 451
Hernia Through the Foramen of Winslow R A Kerr—p 454
Fluid Factor in Treatment of Neglected Diabetic Coma—In treating dehydration of neglected diabetic coma, Byrom treats the case as one of profound shock. The patient must be kept warm. Immediately after admission he is given from 50 to 100 units of insulin intravenously, followed by 500 cc of warm physiologic solution of sodium chloride. Meanwhile, dextrose to last the patient for twenty-four hours (usually about 500 Gm) is dissolved in about 2 liters of half strength physiologic solution of sodium chloride, which is given to the patient by mouth in twenty-four equal doses, accompanied by subcutaneous injections of suitable doses of insulin. As a rule from 10 to 20 units is injected every hour until the blood sugar, which is estimated hourly, has fallen to normal. The patient is encouraged to drink freely half strength physiologic solution of sodium chloride. When this solution is used, both salt and water are almost quantitatively retained and little is excreted. The dextrose and saline mixture is well

tolerated by the patient and seems less prone to cause vomiting than dextrose dissolved in water. It should be given in small mouthfuls. If the patient cannot be roused after the first intravenous injection care should be taken if further infusions are necessary to see that the fluid is injected slowly enough to permit diffusion into the tissue spaces without burdening the heart. This routine should be suspended as soon as clinical evidence of dehydration disappears.

1 499 556 (March 10) 1934

- Treatment of Postencephalitic Parkinsonism A F Hurst—p 499
Cisternal Drainage in Coma from Barbitone Poisoning Together with Observations on Toxic Effects of Continuous Barbitone Medication J Purves Stewart and W Wilcox—p 500
*Value of Human Blood Serum in Septicemia P Lazarus Barlow and L P B Chamberlain—p 503
Streptococcal Septicemia Two Cases Successfully Treated with Streptococci (Scarlatina) Antitoxin D D Pinnock and H H Sanguinetti—p 507
Systemic Poisoning by Phenylenediamine Report of Fatal Case M C G Israels pathologic report by W Susman—p 508
Evipan as an Intravenous Anesthetic Results in One Thousand Cases R Jarman and A L Abel—p 510
*Comparative Study of Red Cell Diameter and Red Cell Volume Measurements Janet M Vaughan and Helen M Goddard—p 513

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Divinyl Oxide Anesthesia in Obstetrics W Bourne—p 566
Aneurysm of Pulmonary Artery Report of Case R B Scott—p 567
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Peripheral Neuritis Occurring During Antisyphilitic Treatment E H Rink—p 570
Simultaneous Bilateral Tubal Gestation G F Langley—p 571

1 667 718 (March 31) 1934

- Carcinoma of the Prostate E G Muir—p 667
Lower Segment Cesarean Section as a Routine Review of One Hundred and Nineteen Cases K V Bailey—p 672
Proteinuria in Chronic Nephritis Phyllis M Tookey Kerridge—p 675
Potent Formol Toxoid as a Diphtheria Prophylactic and Interpretation of the Moloney Test E A Underwood—p 678
Severe Relapsing Anemia in a Case Apparently of Hodgkin's Disease F P Weber and E Schwarz—p 680

Value of Blood Serum in Septicemia—Lazarus-Barlow and Chamberlain gave twelve patients whose diagnosis was septicemia or sapremia an intramuscular injection of antiserum and, if no improvement took place within twenty-four hours as judged by a fall in the temperature and pulse rate, an injection of fresh human serum was given. If further antiserum was considered necessary, it was almost always given alone, and the human serum twenty-four hours later. In all cases in which streptococcus antiserum was administered, the polyvalent and antiscarlatinal antisera were used in equal proportions. In certain cases some of the serum was given intravenously—after it had been found compatible with the patient's red cells—and the remainder intramuscularly, so as to carry on the effect. In other cases the whole amount was given intramuscularly. To obtain the serum, approximately 50 cc of blood was withdrawn from the vein of a donor and centrifuged as soon as it had clotted, the separated serum was then injected into the patient at once, usually about half an hour after its withdrawal. In the series of the twelve cases there were only three deaths. In one, death was due to thrombosis of the inferior vena cava, but immediately after the administration of the human serum and up to the onset of the thrombosis there was distinct improvement. In the second case the patient was an elderly woman with, presumably, an acute staphylococcal septicemia—a condition for which there was no satisfactory antiserum at the time. The third patient died of meningitis but there was a definite improvement in the temperature after the administration of the human serum, and the complete absence of further rigors was a conspicuous feature. In some cases the second dose of antiserum produced a fall in temperature without the subsequent injection of human serum, whereas no effect had been produced by the first dose until after the addition of the human serum. In several cases one effect of the human serum appeared to be that the patients obtained longer periods of sleep. Another noticeable effect was an improvement in their general condition within twenty-four hours whether the temperature had fallen or not. The authors conclude that from the clinical point of view whole blood would be at least as effective as serum, making the method available to the general

practitioner who has not the apparatus at hand for the separation of the serum.

Systemic Poisoning by Phenylenediamine—Israels reports a fatal case of systemic poisoning by phenylenediamine in which the history, the appearances in the liver, the absence of other causes (the ascending infection in the kidney was almost certainly terminal), and the known toxicity of the dye make it a reasonable supposition that subacute atrophy of the liver was due to the use of the dye. The author believes that the use of hydrogen dioxide for removing the dye from the hands was a contributory cause in this case. It seems likely that the production of aniline is responsible, at least in part, for the toxic symptoms. The dye as used commercially is a mixture of the meta and para forms of phenylenediamine. Deamination of either of these gives aniline. Support for this hypothesis was found in the occurrence of pale blue staining material in the liver. The symptoms of Nott's case are strongly suggestive of aniline poisoning.

Red Cell Diameter and Volume—Vaughan and Goddard made forty comparative determinations of cell volume and cell diameter. In clinical practice the size of the red cell is judged by whether the estimated mean falls within, below or above the normal limits. The volume and diameter were considered to be correlated when the means of both fell within, below or above the range of means observed to be normal for volume by Wintrobe and calculated to be normal for diameter by Price-Jones. They were considered not to be correlated and one to be greater than the other when one fell outside the normal limits. In a miscellaneous group of twenty-one cases there was a correlation between the values for mean corpuscular volume and mean diameter. In a group of five cases, all of acholuric jaundice, the mean diameter was less than the mean corpuscular volume—i.e., the cells appeared to be thicker than normal. A group of six miscellaneous cases gave a greater mean diameter than the mean corpuscular volume—i.e., the cells appeared to be flatter than normal. Their results agree with the more numerous observations of others, that for clinical diagnosis volume can be taken as a measure of cell size in Addisonian pernicious anemia and in idiopathic hypochromic anemia. The series shows, however, that it cannot be so taken in all anemias. Estimation of cell volume is necessary for calculation of mean corpuscular hemoglobin and mean corpuscular hemoglobin concentration per cubic centimeter. The latter will possibly prove of diagnostic value. It is also necessary for comparison with measurements of cell diameter in order to recognize changes in the thickness of red cells. The results agree with the observations of others that in patients with acholuric jaundice the red cells are characteristically abnormally thick, the mean corpuscular volume being greater than the mean diameter. The average mean corpuscular hemoglobin concentration in acholuric jaundice patients was found to be greater than in the eight normal controls. It is suggested that this finding is associated with the discrepancy between cell volume and cell diameter.

Practitioner, London

132 129 304 (Feb.) 1934

- Methods of Physical Treatment Introduction H Rolleston—p 129
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Reflections on Sun Treatment Theory of Varying Stimuli and Varying Response H Gauvain—p 156
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Physical Methods in Treatment of Rheumatism Arthritis and Fibrositis C W Buckley—p 226
Physical Treatment and Tests in Pulmonary Tuberculosis F Heaf—p 236
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Zinc Ionization and Zinc Electrolysis in the Treatment of Certain Conditions Met with in Diseases of Throat Nose and Ear A R Friel—p 271
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Medicolegal Problems in General Practice If Medicolegal Aspects of Physical Medicine J Collic—p 290

Tubercle, London

15 193 240 (Feb) 1934

Contribution to the Study of Tuberculous Infection in Infancy and Childhood J C Hendrie—p 193
 Universal Stretcher Splint for Treatment of Surgical Tuberculosis R Porteous—p 204

15 241 288 (March) 1934

*Observations on the Platelet Count in Tuberculosis R C Brock—p 241
 Some Principles in the Surgery of Tuberculosis T E Hammond—p 251
 Contribution to Study of Tuberculous Infection in Infancy and Childhood J C Hendrie—p 264

The Platelet Count in Tuberculosis—Brock describes the behavior of the platelet count in the course of tuberculosis. In general there is a rise in the number of platelets when the disease is active, and a return to normal figures follows a subsidence in the activity of the process. The raised count is more an index of activity than of prognosis, but as a corollary it may be of value in prognosis. When the infection is particularly severe the platelet count may fall to low figures, an event of as grave significance as is a fall of the leukocyte count during an acute septic process. The rise is so constant as to be of some value in the diagnosis of doubtful cases. The author discusses the relationship of this rise to the occurrence of spontaneous venous thrombosis during the course of the disease and shows that the behavior of the platelet count after the major operation of thoracoplasty follows a different course, which is the course usually observed after any such major operation. This suggests that one must be careful before assigning undue importance to the thrombocytosis, especially in connecting it with the process of immunity. It is possible that the reaction may only be a secondary minor result of circulating toxins of any sort and be in no way connected with the more important defensive mechanisms.

Chinese Medical Journal, Peiping

48 1 100 (Jan) 1934

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Chinese Eye Drugs C Pak and A Pillat—p 101
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 Some Notes on Malaria in Nanking Review of Two Hundred and Fifty Cases C S Yang and W L Chuang—p 124
 Occurrence and Significance of Deficiency of Septum Pellucidum L Alexander and T H Suh—p 138
 Acute Anterior Polymyelitis in China Brief Note on Epidemiology W S New—p 142
 *Chronic Epyemas of Gallbladder and Appendix J B G Muir—p 144
 Lymphoblastomas in Small Intestine of Child J L Little—p 148
 Controlling Smallpox Under Chinese Rural Conditions C C Chen and F J Li—p 153
 The Psychopathic and the Psychopathic Incidence of Disease C I McLaren—p 158

Chronic Epyemas of Gallbladder and Appendix—Muir describes two cases, one of chronic epyema of the gallbladder and one of chronic epyema of the appendix. The infective process in the two cases was similar in that catarrhal inflammation of a mild degree of virulence was present, associated with obstruction to the drainage of the products of inflammation in the case of the gallbladder by an impacted calculus, and in the case of the appendix by torsion of the proximal end, which obstructed the lumen. The inflammatory material after a certain time became sterile, owing to the low virulence of the causal bacteria and their subsequent death through the accumulation of metabolic products in the inflammatory fluid. No acute symptoms arose in the first case, although almost complete destruction by ulceration of the mucous membrane of the gallbladder and atrophy of the appendicular mucous membrane with little ulceration must constitute rare pathologic phenomena in infective processes of the organ.

Annales de Medecine, Paris

35 245 324 (April) 1934

Cardiopathies and Pulmonary Tuberculosis G Caussade and A Tardieu—p 245
 Application of Rehberg's Theory to Clinical Study of Renal Disturbances and Diabetes P Cambier—p 273
 *Role of Hepatobiliary Factor in Origin of Hypertension J Daniel—p 300

Use of Bile in Treatment of Hypertension—Vasomotor substances in the body can be divided into two antagonistic groups: the hypertensive group represented by epinephrine and the hypotensive group represented by histamine, acetylcholine and adenylic acid. Daniel believes that a route of elimination of the vasomotor substances is by the hepatobiliary tract. He and his co-workers have verified the hypotensive action of bile, which they believe is simply a physiologic attribute and not an argument in favor of the toxic nature of bile. Experiments were performed on twenty dogs anesthetized with a barbitol derivative. Human bile from three sources, ox bile, bile of swine and of dogs, and sterile ox bile were used. Whether injected intravenously or intra-arterially all these substances produced a marked, immediate and lasting drop in arterial pressure. The experiments could be repeated many times on the same dog. After a drop of certain duration the arterial pressure always returned to its initial level. Slight acceleration of the pulse and slight modification of the respiratory movements occurred. The intensity and duration of the hypotensive effect were proportional to the amount of bile injected. The author feels that the factors in the bile responsible for this action are uncertain. Sodium glycocholate and sodium taurocholate have a hypotensive action, but less accentuated and lasting than that of bile. It was found further that in a gravid and hypertensive dog injection of autogenous vesicular bile caused a drop in arterial pressure. This action was less pronounced by a similar injection in a normal animal. In seventeen patients with arterial hypertension without demonstrable renal lesions, clear ox bile was administered by mouth for ten days in a dose of from 15 to 3 Gm a day. In ten of these a marked and lasting drop in tension varying from 40 to 60 mm occurred. In five others the drop was less, but the subjective effect was good. In two cases there were no results.

Archives des Maladies des Reins, Paris

S 1 128 (Jan) 1934

*Functional Disturbances Resulting from Dechloridation L. Ambard, J Stahl and D Kuhlmann—p 3
 Venous Lesions Associated with Upper Urinary Tract E Papin—p 17
 Increase of Tensiometry P Bergouignan—p 43
 Spontaneous Fragmentation of Urinary Calculi E Chavuin—p 53
 Operative Prognosis Renal Insufficiency and Chloride Medication H Chabanier and C Lobo Onell—p 65
 Some Cases of Solid Perinephric Tumors C Lepoutre—p 71
 Circulatory Difficulties in Prostatitis Kisthimos and J Vafiadis—p 83
 Overthrow of Operation Described by Steinach E. Papin—p 113

Disturbances from Dechloridation—Ambard and his collaborators attempted to produce dechloridation in two dogs without dehydration, other than that due directly to the change in salt concentration. The dogs were fed a soup consisting of saltless bread, potatoes and meat, and drinking water as desired. By this regimen the plasma chlorides fell to 39 per thousand. To produce a further drop in chlorides they injected from 1 to 2 mg of histamine to cause gastric secretion and a half hour later injected a few centigrams of apomorphine to produce vomiting. In this way dechloridation was produced by way of the stomach. This procedure was repeated two or three times a day for two weeks and the plasma chlorides were reduced to 25 and even 225 per thousand. The effects of dechloridation were studied in this manner over a period of eight consecutive months. The principal observations were a rise in alkali reserve, so that it was doubled as the plasma chlorides dropped from 4 to 225 per thousand; dehydration of the blood, demonstrated by an increase in plasma albumin up to 30 per cent of its normal value, no appreciable effect on the aqueous secretion of the kidney, marked disturbance of urea secretion, which in the course of a drop of blood chlorides to 225 per thousand tended to drop in maximal concentration to a third of its normal and elevate the level of blood urea to triple its normal, little modification of appetite diminished but not abolished gastric secretion (produced by histamine). There were no appreciable

modifications of the general condition even when the blood chlorides were kept between 22 and 3 per thousand for nearly two consecutive months

Journal de Chirurgie, Paris

43 481 640 (April) 1934

- Osteoplastic Abutments for Congenital Dislocations of Shoulder L. Ombredanne—p. 481
- *Bloody Discharge from Nipple in Generalized Ectasis of Galactophores P. Moulouguet and J. Rousset—p. 488
- Treatment of Subcondylar Fractures of Humerus in Children M. Boppe and J. Chomet—p. 505
- Extra Articular Arthrodesis of Knee by Anterior Route in Children A. Delahaye—p. 515
- *Late Results of Nephropexy by Shortening Renal Fascia N. Kleiber—p. 521

Blood from Nipple in Ectasis of Galactophores—Generalized dilatation of the milk ducts causing bloody secretion from the nipple is rare. Moulouguet and Rousset cite seven cases, two of which were observed by them. The condition is to be recognized by hemorrhage coming from numerous duct pores and the absence of a solid or cystic mammary tumor. The discharges are usually intermittent. The authors stress the elimination of other causes before this diagnosis is made. These cases may be divided into two types. The first is associated with quiescence or even atrophy of the glandular apparatus. In this type enormous canals are seen, sometimes distended and sometimes long and tortuous, with blood or bloody coagulum in their lumens. In the second group the dilatation of the ducts is less marked and coexists with an active glandular apparatus. In neither group however, is the least sign of malignant growth apparent. Treatment, therefore, should not involve the mutilation of a radical breast removal. The authors' operation of choice is removal of the mammary gland by subcutaneous operation with the radial incision suggested by Lecene.

Results of Nephropexy—According to Kleiber, two groups of factors are responsible for retaining the kidney in its normal position. The most important are the anatomic means of fixation. Less important are the influences of abdominal pressure, full loops of intestine, the aspirating effect of the diaphragm, and intraperitoneal pressure. The renal fascia is the principal means of holding the kidney in position in the manner of a sack. In cases of floating kidney the planes of the fascia separate, allowing the kidney to sink between them. Forty nephropexies have been performed by the author. The technic involved typical lumbar incision and exposure of the renal fascia through section of the musculature and the fascia transversalis. After section of the renal fascia longitudinally the kidney is freed from adhesions and replaced in normal position. The fascial sac is closed with reefing sutures. To obtain the best possible adhesion of the kidney to the surrounding tissues, the author has practiced decapsulation before closure of the sac. In follow up studies of eighteen patients from two to seven years after the operation, subjective results were good. In none was the replaced kidney palpable. Roentgenologic control by pyelography in most of these patients showed the kidney to be well fixed and in good position.

Presse Médicale, Paris

42 529 552 (April 4) 1934

- Classification of Nephritis F. Rathery and P. Froment—p. 529
- Roentgenotherapeutic Treatment of Algeias J. Haguenuau, L. Gally and D. Lichtenberg—p. 531
- Treatment of Juxta Articular Fractures (Position of Immobilization) M. Boppe—p. 534
- Extramucous Pylorotomy for Hypertrophic Stenosis of Nursing R. Leibovici—p. 535
- Syphilis and Paralysis of Dilators of Larynx M. Jacod—p. 538

Roentgen Therapy of Algeias—Haguenuau and his associates report the results of treatment of so-called essential algeias with roentgen therapy. Only ultrapenetrating roentgen rays were used since the authors had never seen a case refractory to the ultrapenetrating rays respond in later treatment to rays of less penetration. After many attempts they standardized their technic as follows: constant tension of 200,000 volts, filters of 1 mm of copper and 0.02 mm of aluminum, anticathode skin distance of 40 cm, total doses of 3,000 roentgens for each field of irradiation divided into biweekly treatments of 500 roentgens. If the results are not satisfactory,

the same treatment under the same conditions may be repeated after a rest of three or four weeks. They irradiate as wide a field as possible (while protecting the important organs) and filter the rays with a heavy metal (copper or zinc). Their results are based on patients treated more than two years ago in order to insure the durability. In sciatica (divided into high, middle and low types), which had been refractory to all other forms of treatment, roentgen therapy was quite effective. Of thirty-one cases treated by the authors, fifteen showed frank and lasting cure, seven definite amelioration and nine no results. In ten cases of cervicobrachial neuralgia there were six cures, two ameliorations and two failures. In essential neuralgia of the trigeminal, roentgen therapy gives poor results, but in facial causalgia the therapeutic effects of roentgen rays are especially favorable. In posttraumatic and postoperative algeias there are many failures, but results are better than with other forms of treatment. Roentgen therapy in talalgias, with or without calcaneal spur formation, usually gives good results. In two cases of coxalgia the authors obtained one cure and one slight amelioration. Of nine patients treated during the course of herpes zoster, there were seven cures, one amelioration and one failure. In certain other miscellaneous algeias, roentgen treatment gave inconclusive results. The authors conclude that in many refractory cases roentgen therapy is of definite benefit, though its employment is still mostly empirical.

Scalpel, Brussels

87 497 524 (April 14) 1934

- *Treatment of Roentgen Dermatitis with Silver Nitrate and Ultraviolet Rays Craps and A. Alechinsky—p. 497
- Luxation of Head of Radius Forward in Child R. Sœur—p. 504
- Gastrocolic Fistula Following Carcinoma of Stomach P. Govaerts and P. Basteme—p. 506
- Stuttering Its Development and Treatment According to the School of Fröschels in Vienna Mlle. Mussafia—p. 510

Treatment of Roentgen Dermatitis—Craps and Alechinsky advocate a simple technic consisting in protecting the healthy tissues with a screen of linen, pomade or tissue paper and painting the lesion lightly with a 5 per cent aqueous solution of silver nitrate. In some cases to insure adherence of the solution and to facilitate its absorption it is advantageous first to wash the affected area with ether and it is often necessary to clear the skin of squamas or less adherent crusts before application of the solution. The area is then exposed to a quartz lamp at an optimal distance of 20 cm. The period of irradiation varies from five to ten minutes. In all cases it must be sufficient to produce complete drying of the solution and blackening of the area. If the color is not dark enough the area is repainted until it becomes a glistening black. Since drying of the lesion begins from the time of the first application, the area treated should be covered only with a sterilized gauze compress. No fatty substances should be applied in the course of treatment. The patient is treated every other day. The authors studied five patients, all of whom responded well to treatment. Pains disappeared after one or two applications. Scar formation was rapid. The period of treatment in general was shorter than that required by any other method (maximum ten months).

Schweizerische medizinische Wochenschrift, Basel

64 325 344 (April 14) 1934

- Various Forms of Hysteria B. Slotopolsky Dukor—p. 325
- Diagnosis and Therapy of Chronic Intermittent Subtotal Ileus R. Allemann—p. 331
- *Practical Significance of Colloid Reactions with Consideration of All Other Aspects of Cerebrospinal Fluid O. Fischer and H. Busch—p. 333
- New Body Extracts with Antispasmodic and Tonic Effects J. S. Schwarzwann—p. 336
- New Methods of Microscopic Examination of Biologic Fluids A. W. Hochloff—p. 338

Significance of Colloid Reactions of Cerebrospinal Fluid—Fischer and Busch give attention primarily to the colloidal gold and mastic tests. In discussing the foundations of the colloid reactions, they show that the coarsely dispersed globulins usually exert precipitating action on the colloids while the action of the finely dispersed albumins is protective. The curves that develop as the result of the reciprocity between the precipitating and the protective actions can be differentiated into the left and the right curves. In the first of these

the precipitation begins in the left half of the series of test tubes (larger quantities of cerebrospinal fluid), while in the right curves it begins in the right half of the series of test tubes (highly diluted fluid). It is incorrect to talk of paralytic or syphilitic curves, for these occur not only in syphilitic conditions but also in a large number of organic disturbances of the central nervous system. Thus the significance of the colloid reactions lies not so much in their diagnostic precision as in the sensitivity with which they indicate the presence of organic disturbances of the central nervous system. Right curves, which indicate an increase in the protein with involvement of the albumins, occur almost exclusively in meningitides, in cases of blocked cerebrospinal fluid and in tumors. The left curves occur primarily in parenchymatous or in vascular disorders of the central nervous system, such as syphilis, multiple sclerosis, poliomyelitis and encephalitis. The authors list four groups of concurring signs and show what each indicates. 1 Colloid reactions of the parenchymatous type with positive syphilitic reactions and with a more or less pronounced increase in cells and protein, indicate syphilitic disease of the central nervous system. 2 Colloid reactions of the parenchymatous type, with negative syphilitic reactions, exist in various organic diseases of the central nervous system, particularly in encephalitis, multiple sclerosis and poliomyelitis. The existence of seronegative forms of syphilis, such as tabes and congenital syphilis, is, of course, possible. 3 Colloid reactions of the meningeal type: great increase in the number of cells and in the proteins, exanthochromia and fibrin curds are found in meningitides. In the cases that are of syphilitic origin the syphilitic reactions are positive. In other types of meningitis the syphilitic reactions are negative. 4 Colloid reactions of the meningeal type: absence of increase in the number of cells, great increase in the protein content, xanthochromia, fibrin curds and negative syphilitic reactions are the signs of blocked cerebrospinal fluid and indicate an obstruction in the cerebrospinal fluid spaces.

Clinica Medica Italiana, Milan

65 113 196 (Feb.) 1934

- Mesencephalic Gliosis. Case. P. Massaroli and G. B. Zanetti—p. 115
 *Biliary Elimination of Tetra-Iodophenolphthalein in Diabetic Patients. L. Pinelli—p. 142
 Stenosis of Arch of Aorta. L. Bargi—p. 152
 *Influence of Contraction of Spleen on External Function of Pancreas. O. Da Rin—p. 184

Elimination of Tetra-Iodophenolphthalein in Diabetic Patients.—Pinelli made cholecystographic studies of ten patients with diabetes mellitus and diabetes insipidus. The patient on a fasting stomach received intravenous injections of 45 mg of tetra-iodophenolphthalein, dissolved in 40 cc of distilled water, for every kilogram of body weight. The author obtained in almost all cases an early opacity of the gallbladder, which may be attributed to hyperactivity of Kupffer's cells, which fix and in a short time usually spread the iodized substance, it also may be attributed to the hepatic cells which rapidly eliminate a great amount of bile containing iodine into the gallbladder, producing the normal visibility in a short time. In eight patients presenting diabetes mellitus, the gallbladder became visible rather early. Filling began from a half to one and a half hours after injection. The maximal opacity and distention of the gallbladder were observed from two to two and a half hours after injection. The gallbladder became smaller and began to lose its opacity after from three to seven hours, after seven hours a fair concentration still could be observed, even though the organ was reduced in size. From twelve to sixteen hours after injection the roentgenograms showed no filling of the gallbladder. In seven out of eight cases the gallbladder appeared normal in form and size but of an extremely intense opacity. The rate of dextrose in the blood did not increase after injection of tetra-iodophenolphthalein. In two patients presenting diabetes insipidus, the opacity of the gallbladder appeared early and no modification of the glycemic rate was observed.

Influence of Contraction of Spleen on External Function of Pancreas.—Da Rin studied the behavior of the lipolytic and amylolytic powers of pancreatic juice in normal persons before and after excitation of the splenic region with spraying of ethyl chloride and with ether packs. The author's experiments showed an increase of these properties after

excitation of the spleen. He maintains that this increase of lipolytic and diastasic powers depends on the introduction into the circulation of large amounts of acetylcholine from the spleen which in turn stimulate the external function of the pancreas through the vagal route. Before splenic stimulation the lipolytic properties show values varying from a minimum of 145 to a maximum of 305. These lipolytic values after splenic excitation present increasingly marked and constant modifications. In fact, in some subjects the lipolytic power increases to more than double the initial value. In other cases the increase is less marked but still worthy of consideration. Favorable results were obtained in the study of the amylolytic properties. In all patients there was a minimum increase of 1 and a maximum of 13.3 amylolytic units, corresponding to a production of 1 Gm dextrose per thousand. The author does not accept as proved the opinion expressed by others that the spleen takes part in the digestive process by introducing special hormones into the circulation.

Policlinico, Rome

41 157 212 (April 15) 1934 Surgical Section

- *Postoperative Hyperazotemia and Hypochloremia. T. Calzolari—p. 157
 Intestinal Infarct Complicating Perforated Gastric Ulcer. G. Castellano—p. 175
 Primary Osteosarcoma of Terminal Phalanx of Thumb. G. Guerneri. D. Antona—p. 183
 *Accidental Spontaneous Rupture of Pregnant Uterus. M. Margottini—p. 191
 Mucocoele of Appendix. Case. C. Tarantino—p. 206

Postoperative Hyperazotemia and Hypochloremia.—Calzolari observed the variations of the urea and the chlorides of the blood in twenty patients following surgical intervention. Toward the fifth day these substances reached their maximal concentration. After this in cases with a favorable course there was a tendency to return to normal values. Hyperazotemia always evident, fluctuated between a maximum of 0.11 Gm and a maximum of 0.5 Gm. Such an increase is well tolerated by the patient. Hypochloremia always present, becomes more evident if the entire cellular amount is estimated instead of the single chlorides of the plasma. The relation between the cellular chlorides and those of the plasma gives a more exact idea of the effective lowering of the chlorides. There does not seem to be any direct correlation between hyperazotemia and hypochloremia so far as it is possible to verify the presence of the two conditions separately and at different times, yet, as a rule, they disappear simultaneously. The return to normal values of blood chlorides in cases of marked hypochloremia greatly favors the return to normal of the blood urea. The administration of sodium chloride to all patients for a few days after operation is a good prophylactic measure.

Accidental Spontaneous Rupture of Pregnant Uterus.—Margottini states that accidental spontaneous rupture must be distinguished from inevitable ruptures in etiology, localization and time of occurrence. The accidental ruptures are the result of lesions residing exclusively in the uterine wall, which may be congenital or acquired. Multiparity, scars and infections are the usual causes of the lesions. The site of these ruptures may be in any layer of the uterine musculature. The ruptures may occur during parturition (in the period of dilatation) or during the last months of pregnancy. In the author's patient rupture occurred at the beginning of labor in the scar of a previous cesarean section and the fetus passed into the peritoneal cavity. The author states that the rupture was caused by the attachment of the placenta to the area of the uterus weakened by the scar.

Anales de Medicina Interna, Madrid

3 195 287 (March) 1934

- Parkinson's Disease Combined with Torsion Spasm Following Trauma. Case. López Aydllo—p. 195
 Alteration of Sexual Cycle Following Ovarian Interventions. E. Vinals. M—p. 207
 Measurements of Normal Corporal Habitus. Jimena de la Vega. R. Novoa and A. Galmes—p. 249
 *Benign Acute Lymphocytic Meningitis. W. Lopez Albo. A. Feijóo and Goitia—p. 259
 Lactic Acid as Food. Amelia Azarola and J. A. Collaza—p. 283

Benign Acute Lymphocytic Meningitis.—Lopez Albo and his collaborators state that lymphocytic meningitis is not an epiphenomenon but is a disease in itself. Provisionally, the existence of an idiopathic lymphocytic meningitis caused by an

invisible virus may be admitted. The existence of a lymphocytic meningitis of reticulo-endothelial origin is possible. In the presence of an amicrobic lymphocytic meningitis with normal or slightly diminished dextrose and chloride content of the cerebrospinal fluid, the possibility of a tuberculous origin by direct action of the tubercle bacillus should be eliminated. A meningitis ending in recovery may be considered tuberculous in cases in which the diminution of dextrose and chloride in the cerebrospinal fluid was great, in patients presenting tuberculous lesions or a positive skin reaction. In all cases that clinically suggest a meningeal reaction and show a total or preponderant lymphocytic formula, it is advisable to perform a chemical, cytologic, bacteriologic and serologic analysis of the cerebrospinal fluid. The examination should be repeated during the course of the disease. Eventually blood examinations and inoculations of the cerebrospinal fluid in animals should also be made in order to reach a more precise diagnosis. The forms of serous meningitis, meningeal states, meningeal reactions, meningism, acute aseptic meningitis, and lymphocytic and sympathetic meningitis should be differentiated. Perhaps, hysterical meningitis corresponds to benign lymphocytic meningitis. The failure to detect micro-organisms in the cerebrospinal fluid in the presence of meningitis does not mean that the case is amicrobic, because it is possible for the pathogenic organisms to be killed during the first phase of their invasion of the subarachnoid space.

Archiv für Gynäkologie, Berlin

155 525 618 (March 20) 1934

- *Follicle Persistence with Glandular Hyperplasia of Endometrium in Its Clinical and Anatomic Significance K. Tietze—p. 525
- Action of Placental Extract on Pregnant Guinea Pigs Elicitation of Delivery J. Fontes—p. 565
- Modification of Antidiuretic and Chloride Eliminating Action of Posterior Lobe of Hypophysis by Blood Serum of Pregnant and Non-pregnant Women W. Bickenbach and H. Rupp—p. 572
- Leukocyte Infiltrate of Umbilical Cord Hydrogen Ion Concentration of Amniotic Fluid and Premature Birth R. Goltz—p. 585
- Dermoid in Omentum in Bilateral Dermoids of Ovaries J. Treutinger—p. 595
- Pregnancy Changes of Rectum H. Schwaalm—p. 600
- *Localization and Character of Inflammatory Processes of Gonorrheal Vulvovaginitis in Small Girls N. S. Iwanow—p. 605

Follicle Persistence with Glandular Hyperplasia of Endometrium—Tietze discusses follicle persistence with glandular hyperplasia, a condition that is sometimes designated as metropathia haemorrhagica. His discussion is based on observations in 466 cases, which were treated at the clinic in Kiel in the last ten years. The author stresses the higher incidence of the disturbance at the beginning and at the end of the period of sexual function and the fact that in most cases of glandular hyperplasia disturbances in the menstruation exist before the onset of the disease. In the differential diagnosis all acyclic hemorrhages have to be considered, namely, incomplete abortion, endometritis after abortion, true endometritis, polyps, submucous myomas and carcinoma of the neck and the body of the uterus. In connection with the clinical peculiarities of glandular hyperplasia in follicle persistence the author discusses cases that developed after pregnancy and cases with short or with prolonged hemorrhages and relapses. He describes anatomic observations on the ovaries, the endometrium, the myometrium and the tubes and states that, in all but one of the cases in which a histologic control was possible large cystic, granulosa-bearing follicles were found. The result of this is a hyperplasia of the endometrium, the myometrium and the mucous membrane of the tubes. As the source of the hemorrhage, the hyperplastic endometrium was of greatest interest.

Gonorrheal Vulvovaginitis in Small Girls—Iwanow shows that in children the gonorrheal inflammation does not have the tendency to spread superficially over the mucous membranes of the vulva and vagina but rather tends to go deeper in the connective tissue layers. Above the foci of severest inflammation, the structure of the epithelium covering is generally changed. It becomes thinner and readily permeable, and thus the fluid products of inflammation and the cellular elements of the subepithelial infiltrate (together with the gonococci) come to the surface of the mucous membrane. The vaginal mucous membrane of small girls may appear entirely normal at the sites of gonorrheal inflammation. The primary

location of the gonorrheal vulvovaginitis in small girls is the vulva. As a rule, however, the inflammation exists only in spots, particularly in the recesses and folds immediately underneath the epithelium. The inflammation is severest where the secretion stagnates, that is, in the vaults, in which the gonococci can invade the tissues. In treating gonorrheal vaginitis of small children it is therefore necessary to remove the secretion by irrigation. The mucous membrane of the cervical canal always remains free from inflammation. The occurrence of gonococci in the rectal secretion does not indicate the presence of a gonorrheal inflammation.

Beiträge zur Klinik der Tuberkulose, Berlin

84 363 446 (March 20) 1934 Partial Index

- *Experiments with New Substance for Extrapleural Filling of Lung P. G. Schmidt—p. 363
- Reaction Capacity of Various Forms of Tuberculosis to Tuberculin Irritation K. A. Bock—p. 374
- Rapidly Healed Early Cavity T. Salum—p. 388
- Syphilis and Lung A. V. von Frisch—p. 390
- Gold Therapy of Pulmonary Tuberculosis W. Boerner and M. U. C. R. Malle—p. 411
- Bronchiectases in Situs Viscerum Inversus Totalis K. Nüssel and H. Helbach—p. 424
- Behavior of Respiratory Equivalent in Strenuous Work M. Gavazzeni and L. Cotti—p. 429
- Influence of Respiration Inhibited by Artificial Stenoses on Pulmonary Ventilation During Strenuous Work M. Gavazzeni and L. Cotti—p. 433

Extrapleural Filling of Lung—Schmidt experimented with several substances consisting of a gelatin base with various fillers, such as wax, stearin, starch or cellulose. An addition of wool fat was necessary to obtain a soft consistency. He tested the various substances in animal experiments. In parallel animal experiments, the histologic changes caused by paraffin fillings were studied. The latter, in addition to good encapsulation, frequently showed complete organization, particularly in case of the smaller fillings. In a patient in whom a filling of 1,000 Gm had been introduced to effect pleural adhesions in bronchiectasis, an invasion of connective tissue into the filling could be observed. The new substances were tried in the hope that they would prove superior to paraffin because of their greater ease of preparation and use and because of their better organization. It was found that the wax-gelatin filling fulfilled these requirements, for it healed into the organism without disturbances and became firmly fixed by encapsulation and organization. Reduction of the size of the filling by resorption was never observed. Consequently the wax-gelatin filling is suitable for operations in which the filling is to remain. The wax-gelatin is not so suitable, however, if a filling is made only for the purpose of producing pleural adhesions, because the organization makes the later removal of the filling difficult. The animal experiments indicate that the wax-gelatin filling may be employed also in the plastic repair of tissue defects. The substances containing stearin, starch or cellulose proved unsuitable for fillings, because they caused irritation and disintegration.

Chirurg, Berlin

G 233 296 (April 1) 1934

- Simultaneous Abdominosacral Operation for Rectal Carcinoma M. Kirschner—p. 233
- Danger of Peritonitis in Clean Operations R. Stuch—p. 244
- Perforation of Palate Due to Dental Plate F. de Quervain—p. 249
- Emptying of Stomach and Bowel During and After Operation R. Klapp—p. 253
- Rapidly Protecting Premedication Anesthesia and Tachyphylactic Intravenous Injections C. Henschen—p. 255
- *Treatment of Extensive Burns of First Second and Third Degree with Cod Liver Oil W. Löhr—p. 263

Treatment of Burns with Cod Liver Oil—Löhr states that the cod liver oil treatment of burns does not influence the primary shock but is remarkably effective in controlling the secondary infection of large areas. A rapid cleansing of the wound follows its application, and epithelization is stimulated to a degree not seen in any other form of treatment. It is superior to the tannic acid method in that it can be used on the face and in such difficult regions as the buttocks, scrotum and anus. The cod liver oil was used as a salve or in combination with the cod liver oil plaster-of-paris cast. Attention is called to the fact that commercial cod liver oil is sterile. Under the influence of the oil and the rest secured by the cast, extensive and deep ulcerations in most difficult

locations heal in the surprisingly short period of from eight to fourteen days. The closed method of treatment with the cod liver oil plaster-of-paris cast is particularly applicable in second degree burns of the extremities. Secretions may be copious in the first few days and make it advisable to replace the original cast. As a rule, the cast is kept on for two weeks. Third degree burns of the extremities are treated by enfolding the extremity in sterile towels thickly covered with the cod liver oil salve. After a few days a cast may be applied, especially when contractures about the joints are feared. The author was particularly impressed with the remarkable regeneration of epithelium over large surfaces, such as the entire back.

Klinische Wochenschrift, Berlin

13 545 576 (April 14) 1934 Partial Index

- *Cultivation of *Spirochaeta Pallida* in Artificial Mediums F Jahnelt — p 550
- *Inhibition of Dopa Reaction by Vitamin C H Schroeder — p 553
- Changes in Electrocardiogram in Renal Insufficiency Uremia in Cardiac Insufficiency E Becher — p 554
- Circulatory Action of Extract of Posterior Hypophysis in Different Species of Animals F G Dietel — p 554
- Quantitative Determination of Indican in Blood Serum P Schlierbach — p 556
- Temporary Improvement of Tolerance in Course of Diabetes Mellitus Produced by Icterus Simplex B W Ercklentz — p 557
- Subdural Hematoma of Left Temporal Lobe in Hemorrhage of Superior Longitudinal Sinus F W Kroll — p 561
- Micromethods for Determination of Protein and Its Fractions in Serum and Plasma Without Distillation F Rappaport and G Geiger — p 563

Cultivation of *Spirochaeta Pallida*—On the basis of extensive studies, Jahnelt states that there exists no method which permits the cultivation of *Spirochaeta pallida*. He studied so-called pallida cultures prepared by other investigators and found that they were not identical with *Spirochaeta pallida* in their staining characteristics or in their biologic properties. In all respects they were identical with the saprophytic spirochetes of the human genital region.

Inhibition of "Dopa Reaction" by Vitamin C—Schroeder, after reviewing the so called dopa reaction (also called Bloch's reaction), directs attention to the presence of depots of vitamin C in organs, which either participate in the pigment metabolism or are located near pigment depots. He studied the action of ascorbic acid on epinephrine, which is chemically related to dioxyphenylalanine (so called dopa). He observed that vitamin C inhibits the oxidation of epinephrine. This inhibition of the oxidation showed itself through lack of discoloration but was demonstrated also in the blood pressure test and in the modification of the blood sugar curve of rabbits. The author thinks it probable that the stabilization of the epinephrine action observable in metabolic experiments is the result of the vitamin C content of the suprarenal cortex. In other experiments he studied the influence of pure crystallized ascorbic acid on Bloch's reaction. He found that ascorbic acid really prevents pigment formation in the tissue sections. He calls attention to a report in the English literature according to which vitamin C reduced the pigmentation of the skin in a case of Addison's disease.

Medizinische Klinik, Berlin

30 417 456 (March 29) 1934 Partial Index

- Clinical Observations on Prognosis of So Called Localized Fibrous Osteodystrophia (Bone Cysts and Bone Granulomas) W Anschütz — p 417
- Relieving Pressure on Intracranial Portion of Optic Nerve by Surgery H Schloffer — p 421
- *Has Iodoform Become Superfluous in Surgery? F P Leusden — p 425
- Treatment of Carcinoma of Rectum Finsterer — p 426
- Progress in Knowledge of Sympathetic Nervous System and Its Clinical Particularly Neurosurgical Significance P Sunder Plassmann — p 432
- *Clinical Aspects of Corpus Luteum Hemorrhages H Markus — p 435

Is Iodoform Superfluous?—According to Leusden this question is answered in the affirmative by many physicians, who either have an aversion against the strong odor of the substance or have an idiosyncrasy against it. He however, has a different point of view and states that he would not do without iodoform in the treatment of surgical tuberculosis (amputations in cases of tuberculosis of bones and joints) of sanious processes and of conditions in which sanious conditions are likely to develop. He recommends iodoform also as an antiseptic following excision of contaminated wounds. He

wants iodoform kept in the therapeutic armamentarium, because the various substitutes, particularly for iodoform gauze, do not give such satisfactory results.

Corpus Luteum Hemorrhages—Markus points out that corpus luteum hemorrhages formerly were considered primarily the result of ovarian pregnancy. However, later observations revealed that the number of cases without pregnancy far exceeded those with pregnancy. In the majority of cases of ovarian hematoma, the other parts of the genitalia show pathologic changes such as myomas, retroflexion, carcinoma or adnexitis. Moreover, intra-uterine pregnancy may play a part and the so called small cystic degeneration has been considered an etiologic factor. The hemorrhage may develop without unusual cause, but in many cases a trauma (bimanual examination, overexertion in gymnastics, excessive abdominal pressure) precedes. As a rule the hemorrhages occur shortly before menstruation or at the time of the rupture of the follicle, but it may set in at any time. The hemorrhage may be slight and take the form of a retro uterine hematocoele, but a slight initial hemorrhage eventually may be repeated in a more severe form. The symptoms differ. Many cases are diagnosed as appendicitis and their true nature is recognized only in the course of laparotomy. The more profuse corpus luteum hemorrhages often present the symptomatology of those occurring in extra-uterine pregnancy. If the intra-abdominal hemorrhage is recognized the following considerations may permit the diagnosis of corpus luteum hemorrhage: (1) The amenorrhea characteristic for extra-uterine pregnancy is absent, (2) frequently there is no vaginal discharge of blood, (3) the intra-abdominal hemorrhage begins near the time of menstruation or of follicle rupture, (4) the presence of an intact hymen gives almost complete certainty. Since corpus luteum hemorrhages occur often at an early age, a virginal hymen is found in a considerable percentage of cases. Once the condition has been recognized, laparotomy should be performed immediately, but the intervention should be as conservative as possible. The ovary should not be removed unless it is absolutely necessary. The author thinks that in most cases the suturing of the bleeding cyst is sufficient. He gives the histories of two cases.

30 457 496 (April 6) 1934 Partial Index

- Method and Theory of Human Electrocardiogram W Trendelenburg — p 457
- Sedimentation Reaction of Blood F Kùlbs — p 461
- *Laboratory Infection with Weil's Disease and Serotherapy of this Disorder P Uhlenhuth and E Zimmermann — p 464
- Gastritis in Genesis of Ulcer F Kauffmann — p 467
- Progress in Knowledge of Sympathetic Nervous System and Its Clinical Particularly Neurosurgical Significance P Sunder Plassmann — p 476

Serotherapy of Weil's Disease—Uhlenhuth and Zimmermann describe a laboratory infection with Weil's disease. In the process of inoculating guinea-pigs with the ictrogenous spirochete, some of the highly virulent material was squirted into the face of a laboratory assistant but not, as she maintained into her eyes. The face was immediately disinfected with alcohol, but Weil's disease developed in spite of this. The symptomatology was atypical, and only the demonstration of the spirochetes made the correct diagnosis possible. As soon as the spirochetes had been detected, the patient was given an intramuscular injection of convalescent serum. Because the effect of this measure was favorable, the authors recommend early serotherapy of Weil's disease by means of convalescent serum or of rabbit serum. For the laboratory personnel working with the ictrogenous spirochete they recommend immunization.

Munchener medizinische Wochenschrift, Munich

81 425 464 (March 23) 1934 Partial Index

- *Treatment of Arterial Embolism W Denk — p 437
- Habituation and Tolerance in Smoking of Tobacco R Hofstatter — p 439
- Gonorrheal Arthritis and Its Differential Diagnosis J Kowarschik — p 443
- *Seroreaction Valuable for Diagnosis of Glandular Fever H Lehndorff — p 447
- Is Suppression of Hemorrhoidal and Menstrual Hemorrhages Significant? B Aschner — p 450

Treatment of Arterial Embolism—Denk advises that, as soon as the diagnosis of arterial embolism has been established the patient should be given an intravenous injection

of one or two ampules (0.03 or 0.06) of synthetic papaverine. If after half an hour the circulation improves and the pains are lessened, the injection may be repeated two or three hours later. After that the injections are repeated after suitable intervals until the circulation has been restored, which may require from one to four days. On the second and third day the intervals between the injections may be lengthened. However, if after the first or second injection no effect is noticeable, embolectomy should be resorted to as quickly as possible. The injections of synthetic papaverine were ineffective in old cases, that is, when the first injection was made after the embolism had existed for twenty-four hours or longer, and also in patients with severe sclerotic changes in the vascular system. But even in such cases the injection treatment may be tried first, since if all preparations for an embolectomy are made there is no loss of valuable time. The author employed the injections in ten cases, in eight of them a lower extremity and in two an upper extremity was involved. In six cases the embolism could be counteracted by the injections alone. The failures were due in two cases to belated treatment and in one to severe sclerosis. The fourth failure could not be accounted for. In a supplement to his paper, the author states that the injection of synthetic papaverine may be tried even in pulmonary embolism, for not only did he find it effective in one case but he also cites another author who has recommended it.

Seroreaction for Diagnosis of Glandular Fever—Lehndorff calls attention to a peculiar reaction in the serum of patients with glandular fever. It is the 'heterophile antibody reaction,' also designated as the Hanganatzu-Deicher test, which is demonstrable by nonspecific agglutination of the corpuscles of sheep's blood. The technic of the test is simple. The serum of the patient is inactivated by exposing it for thirty minutes to a temperature of 58°C. Then a series of dilutions of serum with physiologic solution of sodium chloride is set up in the usual manner (1:4, 1:8, 1:16 and so on up to 1:4,096). To each 0.5 cc of serum dilution, 0.5 cc of a 2 per cent suspension of washed corpuscles of sheep's blood and then 1 cc of sodium chloride solution is added. The tubes are put in the incubator for two hours and then in the icebox over night. The number of cases of glandular fever tested in this manner is not large, but the outcome of the antibody reaction is so clear in all cases that its clinical value cannot be questioned. In glandular fever, infectious mononucleosis and lymphoid cell angina there is a thick clotted conglobation of the corpuscles of the sheep's blood up into the high dilutions, while in healthy persons agglutination is either entirely absent or extremely weak in the 1:4, 1:8 and in exceptional cases, the 1:16 tubes. Thus a strongly positive reaction is seen only in the various forms of glandular fever, and the test becomes a reliable diagnostic aid. In case of septic toxic symptoms and of lymphatic reaction in the blood, a strongly positive heterophile antibody reaction indicates glandular fever, infectious mononucleosis or monocytic angina and militates against leukemia.

Wiener klinische Wochenschrift, Vienna

47 417-448 (April 6) 1934

- *Late Injuries Following Abortion H. Zacherl and W. E. Richter —p. 417
Tuberculin Sensitization of Tuberculin Negative Organism K. Rupilius —p. 420
Papillary Cystadenoma of Mamilla H. Weber —p. 422
Percussion of Pulmonary Apex by Practitioner A. Winkler —p. 424
Pathologic Anatomy of Pancreas S. Peller —p. 426
Incidence of Primary Cancer of Pancreas in Jews H. Hamperl —p. 426
Connections Between Vasomotor Neurosis of Mamilla (Mamillary Spasm) and Mammary Carcinoma Familial Occurrence of Cancer H. Beck —p. 427
Subfebrile Temperatures as Mass Appearance K. Csepai —p. 431
Hereditary Prognosis Genital Malformation in Four Generations of One Family A. L. Scherbak —p. 432
Outis of Nurslings L. Hofmann —p. 434

Late Injuries Following Abortion—Zacherl and Richter show that the late sequelae of abortion are more severe than the immediate results. The menstruation was disturbed in approximately half the cases, amenorrhea occurring in many. A number of the women became sterile and anatomic changes

of the genitalia existed in many. Later pregnancies and deliveries showed a greater incidence of complications in women who had had an abortion than in those who had not. Frequent complications in these women were placenta praevia, weak labor pains, prolongation and disturbances of the placental delivery, fever during delivery, death of the fetus and habitual abortion. These late sequelae were especially frequent in primiparas. The fact that some of the late bad results of abortion are caused by the technic shows that it is necessary to adopt a method which is less injurious and takes the physiologic conditions into consideration. The author asks for a vigorous campaign against unnecessary abortions on the ground that they are dangerous even if done in the proper manner.

Vasomotor Neurosis of Mamilla and Mammary Carcinoma—Beck found that of 234 women with cancer of the breast more than half gave a typical description of the vasomotor neurosis of the mamilla, one third described similar symptoms, and only 15 per cent stated that they had not had symptoms of this nature. The author observed that the greatest number of women who admitted a vasomotor neurosis of the mamilla were of the light type (blond or brown hair), while those who denied this symptom were nearly all dark. He summarizes these observations as follows: 1. Vasomotor neurosis of the mamilla is most frequent in blond women and predisposes to medullary cancer. 2. Symptoms resembling the vasomotor neurosis of the mamilla are most often found in brown haired women, and in this type scirrhous of the breast is most frequent. 3. Women without vasomotor neurosis of the mamilla are mostly of the dark type and develop the comparatively rare colloid cancer in the highest percentage of cases. A comparatively high percentage of women with the vasomotor neurosis of the mamilla show neuropathic symptoms. The author shows on genealogical tables that a predisposition to cancer is hereditary and that the vasomotor neurosis of the mamilla is a hereditary factor, on the basis of which there develops in the majority of cases a carcinoma of the breast, usually of a definite anatomic type.

Zentralblatt für Chirurgie, Leipzig

61 881-928 (April 14) 1934

- Completely Open Urachus of Unusual Dimensions and Its Treatment W. Rieder —p. 882
Early Diagnosis of Cox's Varicella of Adolescence K. Lindemann —p. 887
Diagnosis and Treatment of Tuberculous Bony Cysts A. Stalman —p. 896
High Grade Icterus in Cecal Occlusion I. Filipowicz —p. 898
A Movable Syringe E. Cornils —p. 899
Accidents in Moving Stairways H. Stasny —p. 901
*Surgical Treatment of Gastroduodenal Ulcer H. von Haberer —p. 903

Surgical Treatment of Gastroduodenal Ulcer—Von Haberer has returned to the first operation of Billroth which he modified by diminishing the size of the gastric stump through ligation of the individual blood vessels in the submucosal layer. A new duodenal bulb develops some time after this operation, which, together with the anastomotic ring, insures a rhythmic emptying of the stomach. No stenosis of the anastomotic ring was ever noted. Fine catgut sutures are employed for all the layers. Comparison of large statistics, such as his own, with those of Enderlen show certain agreement in their point of view. Both practice extensive resection and regard the gastro-enterostomy as only a palliative procedure. In both clinics, excision of the ulcer was abandoned some time ago. Their incidence of recurrence amounted to about 1 per cent. In the treatment of acute perforation, Enderlen prefers a simple suture without the gastro-enterostomy, while the author's preference is for partial gastric resection. That a perforation favors the healing of an ulcer is not in accordance with his experience. The possibility of a malignant degeneration of the gastric ulcer has assumed importance in recent years. In his own experience it amounted to about 9 per cent. In the author's clinic, malignant degeneration was noted with greatest frequency on the lesser curvature. He performed a gastric resection for a large duodenal ulcer penetrating into the pancreas in a boy aged 8 years and in a girl aged 14. The symptoms in both had existed for six years. He prefers the combination of local with splanchnic anesthesia to inhalation anesthesia. While the inci-

dence of postoperative pulmonary complications is not less with the former than with the latter, the damage to the heart, the circulation and the parenchymatous organs is obviated. Among the postoperative measures the author stresses the use of the duodenal tube in cases of atonic or bleeding stomach. The tube may be left in for twenty-four hours and will serve as a means of emptying the stomach and supplying the fluids. He believes that the picture of gastroduodenal ulcer in the United States presents a milder aspect and that the cases come earlier to operation. This accounts for good results with less radical procedures than those practiced in Germany.

Zentralblatt für Gynäkologie, Leipzig

58 913 960 (April 21) 1934

- Obstetric Competence of General Practitioners G Winter—p 914
Clinical Aspects and Pathogenesis of Retarded Menstrual Shedding of Endometrium H U Hirsch Hoffmann—p 917
Ileus with Intestinal Gangrene After Doleris Operation Successful Surgical Treatment P Caffier—p 922
Activation of Thyroid by Serum from Pregnant Women and by Extracts from Urine of Pregnant Women F Schenk—p 929
*Diagnosis of Trichomonads W Bender and O Hettehe—p 930

Diagnosis of Trichomonads—After trying various methods of staining, Bender and Hettehe found a method that makes it possible to detect within a short time even old cases of trichomoniasis. The basic principle of the method is the readiness with which the leukocytes and other elements of the leukorrheal discharge are stained by an aqueous suspension of brilliant cresyl blue. The trichomonads remain unstained and can be recognized by their property of reflecting strong light. There are two types of trichomonads, the flagellate form and the cystic form. The flagellate forms are about twice the size of lymphocytes, have an oval body and are highly motile. Through the influence of medicaments they gradually lose their motility and their flagella and assume a roundish, cystic and smaller form. The authors assume that the cystic form undergoes division and that this in turn explains the rapid relapse after treatment is interrupted. In order to be able to determine the therapeutic effects of various remedies, they devised a method that permits the counting of the trichomonads. Pus is thinned out with formaldehyde treated physiologic solution of sodium chloride and stained by the method described. Then the trichomonads are counted in the Thoma-Zeiss chamber. The values fluctuate between 120 and 800 in 1 cc. In cases that had undergone treatment there were rarely more than from 100 to 150 nonmotile and small trichomonads. The authors are convinced that their easy and rapid method will reveal trichomonads in many cases of leukorrhea in which otherwise they would not be detected.

Acta Orthopaedica Scandinavica, Copenhagen

5 193 (No 1) 1934

- *First Stages of Coxa Plana H Waldenström—p 1
Injuries to Crucial Ligament or Knee Joint and Their Treatment N Silfverskiöld—p 35
Spondylitis Deformans of Cervical Spine as Cause of So Called Brachial Neuralgia and Other Neuralgiform Pains Contribution Especially to Question of Treatment A Rydén—p 49
Operative Treatment of Radial Nerve Paralysis H Camitz—p 81
Treatment of Diaphyseal Fractures of Lower Leg by Combination of Gelatinized Zinc Gauze Case and Plaster Apparatus During Last Phase of Union Hellgren—p 87
Posterior Flap Approach to Talocrural Articulation in Cadaver Experiment A Lurje—p 90

First Stages of Coxa Plana—Waldenström proves by his bilateral cases that coxa plana develops in a hip joint previously normal. A case may show incipient coxa plana in the right hip joint, while the left hip joint is normal, the left hip joint may still be normal sixteen months later, and after another eighteen months typical coxa plana may be demonstrated in a previously normal joint. The clinical symptoms, a slight limp and a trifling reduction of the mobility, probably make their appearance before any evidence of the change becomes visible in the roentgenogram. The most important diagnostic indication of coxa plana in its earliest stages is the flattening of the epiphysis, which may be observed when the clinical symptoms have been present only a month. This flattening of the epiphysis is seen most clearly in the roentgenograms in lateral projection (flexion-abduction position) because

the aplation chiefly concerns the anterosuperior part. In all cases of coxa plana, the distance between the epiphysis and the bottom of the acetabulum is greater than normal from the beginning of the disease. This distance is measured best from the medial part of the epiphysis to the bottom of the socket, that is, to the lateral leg of the U-shaped figure. It increases steadily with the progression of the disease. Its cause is the flattening of the femoral head and the resulting displacement of the latter to the side and upward in the acetabulum. At first there is no change in the shape of the acetabulum. The change in the latter takes place secondarily, as an adaptation of the socket to the deformed head, and only after some time. When the head has assumed its final shape the adaptation of the socket is completed and, as a consequence, the distance from the epiphysis to the bottom of the acetabulum is again normal and the head fits into the socket.

Bibliotek for Læger, Copenhagen

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- *Climacteric Keratoderma H Havthausen—p 57
Investigations on Action of Metal Salts on Phagocytosis P Mørch—p 64
Studies on Alimentary Lipemia in Man N I Nissen—p 75
*Contribution to Knowledge of Postoperative Changes in Blood P Windfeld—p 82

Climacteric Keratoderma—Havthausen describes post climacteric hyperkeratoses limited mainly to the palm of the hand and the sole of the foot. They appear in the earliest stages as scattered, sharply defined elements of regular, round or oval form from the size of a lentil to a pea. Hyperemia and itching are absent. When the disturbance has continued for a time it is often complicated with eczema, especially in the palm of the hand, and itching may occur. The elements become more indistinct in contour and irregular, hyperkeratotic parts with milium vesicles and deep fissures form in the middle of the palm. The disorder is frequently accompanied by adiposity, hypertension, and arthritis of the knees (Gram's triad) and is assumed to be, like these, a result of endocrine disturbances following the menopause. The eczema on the hands usually yields to treatment with ointment, but the use of thyroidin and different ovarian preparations has not in any case effected complete disappearance of the keratoses.

Postoperative Changes in Blood—In Windfeld's material of eighty-one patients with afebrile disorders, nine had fractures and seventy-two were operated on. Examinations of the blood were made to determine the cell volume, thrombocyte count, sedimentation reaction, amount of fibrinogen, serum albumin, serum viscosity, amount of calcium in plasma and serum, and time of coagulation. He says that neither marked changes nor the absence of changes in the blood factors after operation afford evidence of a supervening complication and that examinations of this kind cannot be expected to aid in the early recognition of a beginning thrombosis.

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- Constitutional Thrombopathy, New Hereditary Bleeding Disease. E A von Willebrand R Jürgens and U Dablbjerg—p 193
Hour Glass Tumor R Falin—p 233
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Influenza and Our So-Called Cold Disorders Statistical Investigation Å A Hertzberg—p 252
*Casuistic Contribution to Knowledge of Schönlein-Henoch Disease. G Schetelig—p 264

Schönlein-Henoch Disease—In the first of Schetelig's patients, a girl aged 4½ years, the disorder set in with pronounced abdominal pain, diarrhea and vomiting and was followed by repeated eruptions of purpura, subcutaneous edema, pain in muscles and extremities, and finally by a hemorrhagic nephritis. There were violent reactions against proteins and animal albumin, both on parenteral and on oral administration. The second instance, in a boy of 16 years, presented a far milder form of the disease, with typical outbreaks of purpuric patches. The third case, in a man aged 24, was characterized by a long-continued hemorrhagic nephritis. Treatment with a diet deficient in albumin and with papavarine-atropine methyl nitrate preparations gave good results.

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THE FAMILY DOCTOR AND THE CHANGING ORDER

PRESIDENT'S ADDRESS

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DES MOINES, IOWA

In assuming the office of President I feel a deep sense of humility and keen appreciation of the responsibility entailed in following the distinguished teacher and surgeon who preceded me as well as the long roll of noted leaders in American medicine who have graced this high station.

I have been impressed with the wisdom of having a year of training as president-elect and the opportunity offered of gaining a closer familiarity with the administrative affairs of our great association. I wish it were possible to give a vivid portrayal of the extent and the comprehensive character of its activities.

The Board of Trustees has prepared this year a motion picture, which will serve to illustrate the magnitude of the physical plant and likewise permit a wider conception by the membership of the loyalty, integrity and scientific ideals of the administrative and editorial officers in maintaining their stewardship. Through the medium of *THE JOURNAL*, published weekly, and eight or more special monthly publications, there are brought to the members all new discoveries pertaining to the causes, diagnosis and treatment of disease throughout the world. The Association further exercises its particular educational function in making available for the general practitioner and the specialist every phase of medical progress so essential for the continuing development of the experienced physician.

By means of the Council on Medical Education and Hospitals and the various bureaus, the members are kept conversant with the advancement in methods of medical training and the different forms of licensing procedures, as well as those changes in the social order that affect the interests of the individual physician.

As members of an age-old guild, we are governed in our rules of conduct largely by tradition. Medical knowledge as we know it today is not of recent origin but rather the assembled facts of many treasured traditions, the impress of the master on disciple and student by the written or the spoken word through succeeding generations.

As history is simply the biography of the mind of man, so is the medical knowledge of our day but the sequence of epochal events each new discovery forming the basis of a new truth to follow. Again the development and growth of this knowledge has always

been intimately related to the type of medical education and practice of the art prevailing in each particular period of organized society.

While we treasure the rich heritage that runs back into the sources of the past, we have come to recognize that much of the old has passed away. A changing order is bringing new problems into the practice of medicine such as it has not encountered before. Therefore the time has come to look forward and try to read the days ahead in the light of what has happened in the past.

Since the turn of the century man's environment has changed, largely as the result of the expansion of his control over physical forces, as in the growth of speed, the elimination of time and space, and the enlargement of the dominion of man's skill and knowledge. This new environment has however not produced a new society, and in some respects the individual units of society have not kept pace with the changing world. Nevertheless the thoughts and interests of society are closely concerned with the striking changes that are taking place in the forms of medical and nursing service, particularly as to its availability and cost.

The increasing interest in matters medical on the part of modern society is the result of a long process of public education by various agencies, in which our association has taken a leading part.

Through the medium of radio broadcasting, special publications, public lectures, the efforts of various speakers' bureaus, operating through national, state and affiliated medical organizations in conjunction with various governmental agencies, interwoven with boards of education, public health services, children's bureaus, hospitals and scores of other units, there has become fixed in the public mind such things as the importance of well being, why and when to call a doctor, child health and the rearing of children, preventive medicine in its several forms, the control of tuberculosis, heart disease and cancer, as well as much sound advice as to diet, and general rules of hygiene.

As a consequence of this form of public instruction society is thinking about medicine, particularly in the field of constructive health, as it has never thought before, which has resulted in a fast enlarging body of well informed people of better discernment as to what is required in the way of medical service.

THE FAMILY DOCTOR OF THE FUTURE

A new sort of clientele is emerging for the doctor of the future that will call for all the social and intellectual adaptability at his command. In this new order of society there is a call for a different type of family doctor or general practitioner than was required a generation ago. Although of somewhat different mold, he will be the central figure in the field of medical prac-

President's address before the American Medical Association at the Eighty-Fifth Annual Session, Cleveland, June 12, 1934.

tice as in the ages past. He is the basic doctor of tomorrow and of the new order. It is for him that medical faculties will be enlarged, courses of study extended and physical equipment utilized to the highest degree. He will approach the threshold of medicine with a broad cultural training in the natural sciences and the humanities, so that he can read aright the faults of heredity and the laws of eugenics, to interpret more readily the problems underlying the biologic delinquencies which constitute the greatest burden of modern society.

For further training in the basic medical sciences and the clinical art of diagnosis and treatment of disease, this country affords ample facilities in medical schools and teaching hospitals. The future curriculum will however place special emphasis on clinical instruction in preparation for the broad field of general practice. For him diagnosis will constitute an intellectual accomplishment rather than the application of numerous instrumental aids or laboratory conclusions. The thorough preparation of the family doctor will therefore entail an added responsibility on the medical faculties of the future. Aside from his higher medical attainments, he will be a man of broad vision, calm judgment with the human touch, and a full appreciation of the needs of the individual patient.

In the general field of preventive medicine there will be ample opportunity for his art. Governmental health agencies are concerned largely with the community control of infectious diseases as they occur in smaller or larger epidemic form, but the family doctor will have his opportunity as individual health adviser, particularly in connection with the various preventive and immunizing procedures to protect the child and the adult from the different diseases of infectious nature.

A much wider field of service is encompassed in the early recognition and possible control of the organic disorders, such as the diseases of the blood, heart and blood vessels, the kidneys, the digestive tract and the nervous system.

The symptoms of fatigue, loss of weight, shortness of breath, pain with ordinary physical effort, impaired appetite, backache, moderate disturbances in kidney function, cough, dizziness and headache will have a special meaning to the family medical adviser with his knowledge of personal habits, familial tendencies and environmental conditions, and the further ability to investigate thoroughly the significance of such minor symptoms. It must be equally manifest that in any campaign for the control of cancer the family doctor will have a very important function. The intelligent advice that he will be able to give in acute or chronic conditions requiring surgical treatment, as well as faithful association with the operating surgeon in the further care of the patient, will be of inestimable service and comfort to all concerned.

The constant increase of mental disease is one of the major economic and social problems of this day. Some idea of the magnitude of the problem may be gained when it is stated that the number of new commitments to institutions for mental disease has almost paralleled the increase in matriculation in the colleges of the country. Most mental patients have a long history with symptoms appearing years before the real condition is manifest. The hope of dealing with the problem lies in early diagnosis in general practice and appropriate direction and treatment of each condition.

One of the important functions of the future family doctor will be concerned with the maintenance of health of his people, thus serving them as a faithful adviser during the state of well being as well as when they are ill. Periodic health examinations will be an important part of his practice, although the initial stage of enthusiasm for such examinations seems to have waned some in recent years. Quite recently the Massachusetts State Medical Society challenged the necessity for annual examinations, characterizing them as a luxury and maintaining that "universal investigation of recently acquired trivial signs and symptoms by the family doctor would be more profitable than the periodic health examination." We all appreciate that the individual with a backache or a headache will probably seek a medical examination more readily than when no such complaint is manifest.

The liberal qualifications prescribed for the family doctor of the new order would seem to correspond to the well trained internist or pediatrician and to a certain extent such a comparison is well applied. Emergency surgical treatment may also be a part of his function.

Although the family doctor or general practitioner will maintain a slightly different rôle from what he had in the past, he will continue to occupy the center of the medical stage and by reason of his broad medical training will be perfectly competent to take care of 85 per cent of general medical practice, besides being equally competent to know when, where and how to seek advice and aid in the other 15 per cent. He will likewise be the integrating force, the coordinator in establishing relations with the specialist in the best interest of the patient.

SPECIALISM IN THE FUTURE

The number of specialists may be somewhat more limited in the future, but they will be distinctly of a higher order. The specialist in any particular field from now on must furnish qualifications that have passed the scrutiny of his peers.

Special boards of examiners are established in the specialties of ophthalmology, otorhinolaryngology, obstetrics and gynecology, dermatology, pediatrics and radiology. A number of other specialties will probably organize similar boards in the near future. Last February a national advisory board of the medical specialties was formed, having for its purpose to coordinate and unify the qualifying methods of the constituent specialty boards. Hereafter the names of qualified specialists who have been properly certified by their respective examining board will be submitted to the Council on Medical Education and Hospitals for endorsement and publication as such in the Directory of the American Medical Association. The value of such certification for the public welfare and the profession will be generally recognized.

The family doctor as he has been portrayed, and the highly qualified specialist will be the medical pioneers of tomorrow and are destined to preserve the highest traditions of our guild. As we view with some satisfaction the outlook for the practice of medicine in the changing order, we are faced at the threshold with the same problem that is giving so much concern to the medical economists of this day. Thoughtful observers have recognized that doctors are being trained without any consideration of possible consumer requirements and beyond the limit that society can adequately support.

NEW PROBLEMS

Changing social and economic conditions will continue to influence the practice of medicine, and aside from those previously mentioned there are further factors that will have an important bearing on the medical practice of the future.

There are now no more frontiers. Country life is disappearing, and the existence of our people is changing from a rural life to essentially a city and suburban existence. The general population is not increasing as formerly, in fact there is every indication that by the year 1960 the birth rate and death rate will have reached a balance. As a result fewer children will be born and fewer will die in childhood. Furthermore a greater number of persons will live beyond former limits and succumb to those diseases incident to the aging process and the degenerative changes of later life. Certain diseases, as typhoid, malaria, smallpox and diphtheria, are much less frequent than formerly and are likely to become less so in the future. It may logically be assumed that during the next generation the family doctor or general practitioner is going to be mainly concerned with problems of nutrition and infectious diseases in the young, the metabolic disorders and hazards of industry in the adult, and the degenerative diseases peculiar to the old.

During the past year and a half the Bureau of Medical Economics of the Association has conducted a careful survey with regard to the distribution of physicians in the United States. When this is completed a more definite determination as to the actual ratio of physicians to population in different areas will be available. Nevertheless, when considered in the light of present acute problems of the practitioner and the facts concerned with the future practice of medicine one is forced to the conviction that more doctors are being turned out than society needs and can comfortably reward. In the recent State Board number of *THE JOURNAL* an editorial statement was made that, in 1933, 5,012 new members were added to the medical profession in the United States through licensure, while the losses by death for the same period were approximately 3,500. The net gain of 1,500 is about 1 per cent of the number of physicians actually practicing in the United States.

The census of 1930 shows an increase in population during the preceding decade of 6 per cent, or an annual rate of increase in population of something less than 0.6 per cent.

With the pendulum swinging toward a balanced population, it will be clearly evident that the time is coming, and not far distant when the principal function of medical service can be effectively furnished by half the number of medical graduates that we now have.

According to the report of the Commission on Medical Education, the United States has more physicians per unit of population than any other country in the world, and twice as many as the leading countries of Europe. With a total of 156,440 licensed physicians in the United States at the present time, there is one for every 780 persons. England has one doctor for 1,490 persons. France has one for 1,690, and Sweden has one for 2,890.

It is estimated that a reasonably complete medical care can be provided in this country on the basis of one physician to about 1,200 persons—that an adequate medical service for the United States could probably be provided by about 120,000 active physicians.

According to these figures there are at present a surplus of approximately 35,000 physicians.

"If the present rate of supply is continued, the number of physicians in excess of indicated needs will increase. By actuarial calculations it is estimated that by 1940 there will be in round numbers 171,700 physicians, and in 1980 about 211,800. The number of persons per physician in 1940 will be 760, in 1960 about 730, and in 1980 about 690."

It requires no special actuarial philosophy to forecast what such a state will mean to the economic welfare of the future practitioner.

It is only natural to place the responsibility with the medical schools, in that they hold in their hands the power to control the supply of physicians for the future, but the time has arrived for the American Medical Association to take the initiative and point the way. During the coming year the Association, through the Council on Medical Education and Hospitals, will institute a resurvey of the medical schools of this country. Whether the problems of this new day in medicine will be met by a limitation in the number of existing institutions or the number of students admitted cannot be foretold, but it will require real courage and tenacity to bend the educational processes to the urgent social and economic needs of the changing order. A fine piece of educational work could well be done if we were to use only one half of the seventy-odd medical schools in the United States.

It will be claimed that to close educational doors of any kind to ambitious youth is undemocratic and un-American, that, if a young man or woman wants to study medicine and can pass the necessary examinations, he or she should be free to do so. Yet, if I read the signs aright, the truly democratic process will be to take thought about the good of the whole, and less about the special satisfaction of the few. In one of the enlightened democracies of the old world, Sweden, this is being successfully accomplished. It will also be argued that in a democracy of forty-eight states the control of the number of physicians to be licensed is the prerogative of the individual state. A precedent has however been established by our neighbor to the north in the province of Alberta, where legislation was recently adopted that no more physicians will be registered in the province until the proportion has risen to 1 for 1,200 of population.

The present system opens the responsibilities of medical service not only to a larger number than can support themselves properly but to many who have not the basic qualifications for the study and practice of medicine.

The wise selection of fewer students can well be left to the educational faculties. It is now well recognized that the yardstick of basic qualifications is not confined to academic grades, for it is more important and fundamental that the prospective medical student have those attributes of personality characterized by an alert imaginative mind, physical and moral vitality, honesty, loyalty, resourcefulness and adaptability. He must be the kind of person who can deal effectively with sick lives as well as damaged organs or impaired physiology.

Much of the present unrest and anxious emotion about state and socialized medicine is the result of economic fear and uncertainty and in large part due to the social dangers that have developed as the result of an overcrowded and ill distributed body of doctors.

At a recent Medical College Centenary occasion in the state of Ohio, a leading educator and medical school administrator made this problem of an oversupply of medical graduates the theme of his address and sounded an urgent academic appeal for concerted action to meet the challenge of the changing order.

If the educational forces will respond to this clarion call in sympathetic and active cooperation with the American Medical Association, its constituent membership and the licensing bodies of each state, we shall once more have put our own house in order and a new day will dawn in American medicine. In the spirit of this enlightened sentiment we may then approach the coming day in fullest confidence that the cultured family adviser will come again to his high estate and the idealism of medical service exemplify the labors of the doctor as in the ages past.

We may likewise entertain the hope that those who follow can justly say in the words of the old Scot, 'they caught the 'gleam' an' followed it'.

Again, if we follow the lamp that appears to light the way, it will but confirm the prophetic words of the French philosopher Rene Descartes, spoken more than three hundred years ago: "If ever the human race is lifted to its highest practicable level, intellectually, morally and physically, the medical profession will perform that service."

DURATION OF IMMUNITY FOLLOWING VACCINATION AGAINST SMALLPOX

W PALMER DEARING, M D

AND

M J ROSENAU, M D

BOSTON

It is still the traditional belief that the protective effects of vaccination last about seven years. The basis of this dictum lies in the observation that immunity to smallpox wears off in some individuals, and the magic number seven has been taken as the time to revaccinate. In the earlier studies on revaccination, results were recorded as successful, "a take," or unsuccessful, "no take." In the latter case the inference was drawn that the person was immune. This does not necessarily follow.

In the light of present knowledge, the reaction on revaccination is classed as immediate, accelerated or primary, depending on the period of incubation, the height of the reaction and the course of events. The immediate reaction indicates immunity, the accelerated reaction partial immunity, and the primary reaction that immunity has worn off. Jenner knew of the reaction now called immediate and described it as occurring when variolous matter is inserted into the skin of persons who have had a prior attack of smallpox or have been vaccinated. The immediate reaction is usually so slight, however, that it was overlooked during the greater part of the nineteenth century.

In the earlier literature on this subject many revaccinations were reported as unsuccessful which, it is now known, must have been immediate reactions. The data collected before the immediate reaction was recorded therefore need revaluation.

In our experience, all individuals properly vaccinated exhibit a take. We have seen no exception. Failure

to take indicates an inactive virus, no insertion, or some other fault in technic. In other words, the individual was not really vaccinated.

The initial vaccination results in the classic primary take with the three-day incubation period, the three-day papular, the three-day vesicular and the three-day pustular stages succeeding with great regularity. The height is reached about the twelfth day, followed by crusting and leaving a typical scar. If the individual has been vaccinated before, the reaction is usually modified. The modified reactions are classified as either immediate or accelerated and indicate that the subject has retained some immunity from his previous experience. The immediate reaction indicates a high degree of immunity whereas the accelerated reaction indicates that the immunity has in part worn off. Finally, as second attacks of smallpox occur in the rare individual, so also may a subject lose his immunity to cowpox and exhibit all the manifestations of a primary take on revaccination.

We have been struck, however, by the rarity of a primary take on revaccination. If immunity lasts only from seven to ten years, there should be many primary takes after this interval. Such is not the case. In vaccinating medical students it is rare to find a primary take for teaching purposes, even though previous vaccination was done as much as twenty years before. In short, observations suggest that in the great majority of cases immunity to vaccinia lasts a great deal longer than has been commonly thought.

In examining this point, we have studied the records of the students in the classes in preventive medicine in the Harvard Medical School and in epidemiology in the Harvard School of Public Health. As a class exercise, the students vaccinate each other under supervision with the regular stock vaccine in capillary tubes, prepared by the Antitoxin and Vaccine Laboratory of the State Department of Public Health of Massachusetts. Each student makes a written report of the course of his reaction and of his previous vaccination history.

During the last three years, in observation of more than 400 vaccinations, we have seen only five primary takes, two of these were in students who had had smallpox in childhood but had never been vaccinated. Of the remaining three, one reported four prior unsuccessful vaccinations, one had been vaccinated over twenty years previously, and the third had been vaccinated only two years before. The last is an example of the very occasional individual who seems to maintain little or no immunity to cowpox, indicating that he might have had two attacks of smallpox if exposed.

In addition to the data collected during the past three years, we have records submitted at the time by the classes of 1916, 1919, 1920 and 1924. From the individual reports of these seven classes, we have tabulated the data on the types of reaction which occurred, with relation to the time that elapsed since the last previous vaccination.

The character of the eruption and the time of reaching its height were used as criteria, because they were more definite than the period of incubation. Reactions were classed as immediate if they remained papular throughout the course, or if they reached their height within seventy-two hours. The takes were classed as accelerated if a vesicle developed and if they reached their height between the fourth and ninth days. Reactions were classed as primary if they reached their height the tenth day or later. There was little tendency

for overlapping of accelerated and primary reactions, in all but one or two cases, the height was reached on the eighth day or earlier, or else on the eleventh or twelfth day. There was slightly more tendency for merging between accelerated and immediate reactions, but again the great majority fell definitely into one or the other category.

TABLE 1—Results of Vaccination After One Prior Vaccination

Years Since Last Previous Vaccination	Type of Reaction							Comment		
	Year Totals	Immediate		Accelerated		Primary				
		Num ber	Per Cent	Num ber	Per Cent	Num ber	Per Cent			
Under 5	1916	0								
	1919	4	4	100						
	1920	6	5	83	1	17				
	1924	0								
	1931	4	4	100						
	1932	6	5	83		1	17			
	1933	2	2	100						
Total under 5		22	20	91	1	4	1	45		
5 to 9	1916	1	1	100				1916 to 1924 11 with 9 or 82 per cent immediate		
	1919	3	2	67	1	33				
	1920	5	5	100						
	1924	2	1	50	1	50			1931 to 1933, 14—all immediate	
	1931	7	7	100						
	1932	7	7	100						
	1933	4	4	100						
Total 5 to 9		25	23	92	2	8				
10 to 19	1916	23	12	52	10	43	1	5	1916 to 1924 72 with 38 or 53 per cent, immediate	
	1919	10	14	74	5	26				
	1920	21	0	43	7	33	5	24		
	1924	9	3	33	6	67				1931 to 1933 32 with 42 or 83 per cent immediate
	1931	22	19	86	3	14				
	1932	12	9	75	3	25				
	1933	18	14	78	4	22				
Total 10 to 19		124	80	64	33	31	6	5		
20 and over	1916	4	2	50	2	50			1916 to 1924 26 with 13 or 50 per cent immediate	
	1919	4	1	25	3	75				
	1920	13	8	62	3	21	2	15		
	1924	5	2	40	2	40	1	20		1931 to 1933 21 with 19 or 90 per cent immediate
	1931	3	2	67	1	33				
	1932	10	9	90	1	10				
	1933	8	8	100						
Total 20 or more		47	32	68	12	25	3	7		

It is of considerable interest that, even in medical students on the lookout for reactions, the small papule of the immediate reaction was often unnoticed until attention was called to it by itching. Many reactions were so slight that they were overlooked completely, and the student reported "no take" until the instructor pointed out the characteristic papule. Small wonder that the reaction was overlooked for almost a hundred years!

In tabulating the data, we have grouped the cases according to whether the last previous vaccination was less than five, from five to nine, from ten to nineteen, or twenty or more years ago. The reactions in individuals who had had only one prior vaccination are recorded in table 1. The persons who had had two or more vaccinations prior to the class exercise are tabulated in table 2. The two groups were separated thus to discover whether the number of previous vaccinations had any effect on the duration and degree of immunity following the last vaccination. In the two tables the data from each of the seven student classes are recorded separately to show both the variations that occur and the essential consistency of the observations from year to year. Table 3 summarizes the facts.

Of the 557 revaccinations, only eleven, or 2 per cent, gave primary takes. Of these primary reactions, ten appeared on the second vaccination (table 1) and only one after two or more previous vaccinations (table 2).

This distribution suggests that there is less chance of a primary take if the subject had been previously vaccinated twice or more. Seven of the ten primaries on second vaccination, however, occurred in 1920. There were five among twenty-one vaccinations in the ten to nineteen years group and two among thirteen cases twenty or more years after first vaccination. This indicates an abnormal distribution in 1920, since no other such figure appears in our series (table 1). Only one primary take appeared less than five years after initial vaccination (table 1) and the rest after ten or more years had elapsed.

With regard to the distribution of immediate and accelerated reactions, the two groups (tables 1 and 2) are entirely consistent within the limits of chance variation. Also, the percentage of immediate reactions decreases from above 90 within five years to under 70 after twenty years. Conversely, the percentage of accelerated reactions increases from below 5 to about 25 in the same time interval between vaccinations. We again call attention to the essential consistency of the figures, where the discrepancies appear large, as in table 1, class of 1924, ten to nineteen years group, the figures are small—nine cases in this instance.

Examination of the data on immediate and accelerated reactions ten years or more after prior vaccination

TABLE 2—Results of Vaccination After Two or More Prior Vaccinations

Years Since Last Previous Vaccination	Type of Reaction								Comment
	Year Totals	Immediate		Accelerated		Primary			
		Num ber	Per Cent	Num ber	Per Cent	Num ber	Per Cent		
Under 5	1916	8	8	100					
	1919	23	22	96	1	4			
	1920	25	24	96	1	4			
	1924	8	7	83	1	12			
	1931	54	54	100					
	1932	57	57	100					
	1933	34	34	100					
Total under 5		209	206	99	3	1			
5 to 9	1916	6	5	83	1	17			1916 to 1924 33 with 34 or 87 per cent Immediate
	1919	5	4	80	1	20			
	1920	5	5	100					
	1924	23	20	87	3	13			
	1931	18	17	94	1	6			1931 to 1933 42 with 33 or 90 per cent Immediate
	1932	6	6	100					
	1933	18	15	83	3	17			
Total 5 to 9		81	72	88	9	12			
10 to 19	1916	13	7	54	6	46			1916 to 1924 32 with 21 or 66 per cent Immediate
	1919	6	4	66	2	33			
	1920	6	5	83	1	17			
	1924	7	5	71	2	29			
	1931	6	5	83	1	17			1931 to 1933 12 with 11 or 92 per cent Immediate
	1932	3	3	100					
	1933	3	3	100					
Total 10 to 19		44	32	73	12	27			
20 and over	1916	0							
	1919	0							
	1920	2	2	100					
	1924	0							
	1931	0							
	1932	1	1	100					
	1933	2			1	50	1	50	
Total over 20		5	3	60	1	20	1	20	

shows an interesting change during the period of time covered by our data (comment in tables 1 and 2). In the earlier years 1916, 1919, 1920 and 1924 the percentage of immediate reactions ten years or more after prior vaccination is definitely lower than in the later period from 1931 to 1933. Conversely, there are more accelerated reactions. For example, the earlier period in table 1, ten to nineteen years group, shows seventy-two vaccinations with only 53 per cent immediate

whereas the later years show fifty-two vaccinations with 88 per cent immediate. This confirms an impression that accelerated reactions were more frequently seen then than now. This may very well have resulted from the change in technic during this time. Extensive insertions, $1\frac{1}{2}$ inches (3.8 cm) or more in length, were formerly insisted on in the belief that large takes gave better immunity. It is now known, however, that small insertions, not over one-eighth inch

TABLE 3—Results of Revaccination—Summary of Tables 1 and 2

Years Since Last Previous Vaccination	Totals	Type of Reaction					
		Immediate		Accelerated		Primary	
		Num ber	Per Cent	Num ber	Per Cent	Num ber	Per Cent
Under 5	231	226	98	4	1.6	1	0.4
5 to 10	106	95	90	11	10		
Total under 10	337	321	95	15	4.7	1	0.3
10 to 20	165	112	67	50	30	6	4
20 and more	52	35	67	13	25	4	8
Total 10 or more	220	147	67	63	29	10	4
Total	557	468	84	78	14	11	2

(0.32 cm) long, give satisfactory immunity with the minimum of inconvenience to the subject.

In the course of these studies we encountered nine students with a history of smallpox, attested in each case by the telltale pockmarks. These are recorded separately because the students had never been vaccinated (table 4). Only one gave an immediate reaction, and four of them gave primary takes. This confirms a similar observation made by one of us¹ at Eagle Pass in 1895, that individuals vaccinated shortly after recovery from smallpox often gave primary takes.

It is of interest for control purposes to add that in each year the potency of the virus was indicated by the occurrence of at least one primary take in the class. These do not all appear in the tables, because some individuals had never been successfully vaccinated before. This control is desirable because of the fact that "immediate" reactions can be elicited with heated or otherwise inactivated virus.²

TABLE 4—Vaccination Following Smallpox

Years Since Attack of Smallpox	Totals	Type of Reaction					
		Immediate		Accelerated		Primary	
		Num ber	Per Cent	Num ber	Per Cent	Num ber	Per Cent
5 to 9	2			1	50	1	50
10 to 19	4	1	25	2	50	1	25
20 and over	3			1	33	2	67
Total	9	1	11	4	44.5	4	44.5

SUMMARY AND CONCLUSIONS

The duration of immunity to smallpox as indicated by the results of vaccination was studied in 557 medical students who had previously been vaccinated and in nine who had never been vaccinated but who had had smallpox. Of 337 students vaccinated ten years or less after previous vaccination, only one gave a primary take, fifteen, or 4.7 per cent, gave accelerated takes, and 321, or 95 per cent, an immediate reaction. Of

the 168 students vaccinated from ten to nineteen years before, only six, or 4 per cent, gave primary takes, fifty, or 29 per cent, gave accelerated takes, and 112, or 67 per cent, immediate reactions. After twenty years, of fifty-two reactions, thirty-five, or 67 per cent, were immediate, thirteen, or 25 per cent, were accelerated, and 8 per cent gave primary takes.

It is welcome news that immunity conferred by a single vaccination usually lasts longer than the traditional seven to ten years, and that the benefits conferred extend for twenty years or more in most individuals. Revaccination reinforces protection and, as our records here presented show, is usually a mild experience. Certainly nothing in these facts should alter the procedure of always vaccinating when exposed or in danger of exposure to smallpox.

The situation with reference to smallpox is interesting. Vaccination of nine individuals with a history of smallpox who had never been vaccinated gave four primary takes, four accelerated takes and only one immediate reaction. Experience teaches that smallpox usually protects against itself, second attacks are rare. It does not, however, protect so well against cowpox, as our data show. On the other hand, experience in every epidemic of smallpox in which vaccinated individuals were exposed has demonstrated the powerful specific protection afforded by vaccination.

BERIBERI FOLLOWING DRASTIC VOLUNTARY DIETARY RESTRICTION

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Beriberi is looked on as a tropical or exotic disease but the conditions that are alleged to give rise to it may conceivably occur elsewhere. A few instances have been encountered in badly run prisons and insane asylums, but sporadic cases are on the whole sufficiently rare, in this locality at least, to justify us in placing two on record.

Beriberi is a vitamin B deficiency disease characterized by cardiovascular changes, edema and polyneuritis. Historically it is a very ancient malady. It appears in Chinese writings of the Sun and Tang dynasties at the beginning of the seventh century. A description dating back to 610 A. D. is clear enough to indicate that a moist and a dry form of the disease were then recognized just as is the case today. Under the name of kakke the malady makes its appearance in Japanese literature in the ninth century. The first indubitable descriptions are, however, not found before the seventeenth century. An early account by a European was written by Malcolmson in 1835. About the middle of the nineteenth century the publications multiplied rapidly, largely by reason of work by Europeans studying the problem in Asia both on the mainland and in Japan and on the islands of the Straits and in the Philippines. The disease was a great scourge in the armies during the Sino-Japanese War (1894-1895), occurring in 17.56 per cent of the troops, and in the Russo-Japanese War (1904-1905), in 16 per cent. One fourth of all hospitalized soldiers had the disease.

Read before the Section in General Medicine of the College of Physicians Feb. 26, 1934.

¹ Rosenau, M. J. Report of the Surgeon General U. S. Pub. Health Service 1895.
² Andervont, H. B. and Rosenau, M. J. J. Immunol. 18: 51 (Jan.) 1930.

Early writers believed that beriberi was caused by an infective agent, but in 1895 Eijkman¹ made experiments that not only resulted in clearing up the cause of beriberi but threw a flood of light on the whole subject of deficiency diseases. He fed hens nothing but polished rice and produced polyneuritis, exhaustion and death, while a diet of rice and barley or of only half polished rice prevented the disease. Between 1900 and 1910 proof was definitely brought forth that beriberi was a nutritional disease. Fraser and Stanton in 1910-1911 showed that beriberi could be prevented among the natives of the Malay peninsula by a diet of parboiled rice and that it could be prevented under the same condition even when the men also received polished rice. Similar experiments were made by Chamberlain, Vedder and their associates in the Philippine Islands. A little later Takaki² succeeded in conquering beriberi in the Japanese navy by a change of ration.

The accessory food factor that is responsible for beriberi is the soluble antineuritic or B vitamin, which in nature is usually associated with a closely related substance called the antipellagra vitamin (B_2 or G). These water-soluble vitamins are contained in vegetables, fruits, milk, yeast, kidney, liver, brain and whole grain. Recent studies seem to indicate the possible existence of seven components in the B complex.³

Clinically, beriberi presents itself in two fairly distinct forms: one in which polyneuritis predominates, the other in which edema is the outstanding feature. In the former a differential diagnosis between beriberi and polyneuritis from other causes is sometimes required. The senior author many years ago called attention to the similarity between alcoholic multiple neuritis and the deficiency diseases. It is well known that steady drinkers in whom alcoholic multiple neuritis later develops rarely partake of an adequate amount or of a proper kind of food.

Edematous cases of beriberi can be distinguished by the fact that pressure on the calf muscles produces severe pain; it has also been noticed that beriberi patients have difficulty in rising from a squatting position. If the diagnosis proves doubtful, the therapeutic test may decide. Under the specific therapy, the administration of foods that contain vitamin B, beriberi patients promptly recover.

Nutritional or war edema is allied to beriberi in that it is also a deficiency disease. It results from living on a diet containing too little protein and an excess of fluid and salt. Polyneuritis is not common in war edema. Some cases of war edema are probably due to an acute glomerulonephritis.

Patients with beriberi, as in our own first case, usually complain of dyspepsia. They seldom have spontaneous pain but they lose all appetite, acquire a loathing for food and have a sense of fullness in the stomach which in the more severe cases may pass into nausea and vomiting. The first characteristic symptom as a rule seems to be weakness in the legs, later a moderate edema, paralysis of the legs and general nervous disturbances such as irritability, headache and dizziness are added. Changes in the skin in the form of hemorrhagic exudates often appear. Fever is usually absent unless complications ensue. Palpitation on exertion and shortness of breath are present and become more

marked as the disease progresses. The heart is usually enlarged, especially toward the right, but the edema is out of all proportion to the clinical evidence of cardiac changes during life. With respect to the changes in the heart, the recent studies of Wenckebach⁴ are interesting. He found the right heart extraordinarily overfilled, the muscle being stretched and flattened out. These pathologic changes throw light on the sudden deaths that are so common in beriberi. The vascular symptoms often closely resemble those of aortic insufficiency.

E. W. Our first patient, a white man, aged 76, married, retired from business, complained of greatly swollen, painful legs, and digestive disturbances. His father, mother, two brothers and three sisters had all died of old age. The patient had typhoid in infancy. When he was 23 he had a "heat stroke", at that time he was given so many different kinds of medicine that ever since he has had stomach trouble for which he has seen many specialists in this and foreign countries. Gradually he eliminated one article of food after another, since nearly everything gave him a feeling of distress in the stomach, with belching of large amounts of gas.

About a year and a half before admission he became so ill that he discontinued all foods, except milk, of which he took about 3 quarts a day. As this caused diarrhea, he was forced to cut down the amount by one half. He grew progressively weaker and in August 1933 his legs began to swell. The swelling became more and more pronounced and eventually involved the face and hands. He was dizzy and extremely irritable and so weak that he had to be lifted from his bed to a chair. The greatly swollen legs were intensely painful and he screamed when they were touched. Eventually he became utterly helpless and could no longer leave the bed but lay with his swollen legs drawn up and supported by pillows under the knees. With difficulty he was induced to take a little milk but would take nothing else in the way of food. Somewhat later pruritus and became very annoying, and he at last consented to see a physician. A skin specialist treated him without any relief. It was at this time that he was first seen by one of us (D.) and a week later by the other (R.). There were large ecchymotic spots on the legs and buttocks. The heart was enlarged to the right, the hands, face and legs were edematous, the calf muscles were extremely tender to touch. The man was visibly emaciated, extremely pale, mentally confused and very uncooperative. A diagnosis of beriberi was made. Only the persuasion of both of us finally broke the man's resistance against going to the hospital.

The blood count on admission showed less than 7.5 Gm of hemoglobin, 2,150,000 red blood cells, 8,800 white blood cells with 82 per cent polymorphonuclears and 18 per cent small lymphocytes with a marked shift to the left. The urine was concentrated, the color of dark straw, with a specific gravity of 1.017 acid, with no albumin or casts and from 25 to 30 leukocytes per low power field.

Two blood transfusions of 250 cc each on succeeding days were given. Because of the patient's unwillingness to cooperate and to take food, a Jutte tube was introduced through the nostril into the stomach and through it large quantities of vitamin B extract, orange juice, beef juice, egg, tomato juice and cod liver oil were administered for four days. The first day his intake was 134 ounces and the output 39 ounces. Large doses of iron and ammonium citrate were also given through the tube. On the fourth day he removed the tube himself and said he would eat whatever we gave him if he was permitted to go home. He ate pureed vegetables, raw liver pulp, cooked fruit and fruit juices and took the iron without any distress. He was allowed to go home. The blood count on discharge, October 18, showed hemoglobin, 8.9 Gm, red blood cells, 2,840,000, white blood cells, 3,630, polymorphonuclears, 61 per cent, and small lymphocytes, 39 per cent with a marked shift to the left.

At home he continued to eat ravenously. A general diet was ordered: the vitamin B extract and iron and ammonium

¹ Eijkman C. *Netherlands Arch. f. path. Anat.* 148: 523, 1897.
² Takaki cited by Sherman H. C. and Smith S. L. *The Vitamins*, ed. 2. New York: Chemical Catalog Company, Inc. 1933.
³ Kruse H. D. and McCollum E. V. *Review of the Recent Studies on the Antineuritic Vitamin B*. J. A. M. A. 98: 2001 (June 18) 1932.

⁴ Wenckebach K. F. *Riddle of Beriberi*. Heart Libman Anniv. Vols. 2: 1199, 1932.

citrate being continued. The swelling subsided within two weeks and he was then allowed to get out of bed. Though he was still very weak, the pain in the calves of the legs had almost entirely disappeared and the cecymotic spots were fading. He had no more indigestion. One month later, November 7, his blood count showed hemoglobin, 95 Gm, or 61 per cent, red blood cells, 3,500,000, white blood cells, 4,300, polymorphonuclears, 56 per cent, small lymphocytes, 43 per cent and eosinophils 10 per cent, with a marked shift to the left. He now walks outdoors unaided, is in a cheerful frame of mind and is interested in everything, for the first time in two years. He eats with relish all varieties of food without the slightest discomfort, he sleeps well and feels better than he has in years.

About a year ago Brauchle⁵ reported an interesting case which is almost a replica of the foregoing. The patient, Dr. Brauchle's own mother, aged 60, began to have pain in the left hip. After about a year other symptoms were added, such as fatigue and tension in the muscles of the legs. These complaints were at first attributed to the menopause but treatment of every sort not only was of no avail but seemed to intensify the trouble. The woman had been largely a vegetarian all her life. After a year, fever and edema appeared, the patient's weight increased from 144 to 160 pounds (65.3 to 72.6 Kg). Eventually the muscles became so weak that motion was virtually impossible and the only parts that could be moved were the mouth and eyes. One consultant attributed the symptoms to myositis, another attributed them to periarteritis nodosa but remarked casually that there was some resemblance to beriberi. It is interesting that the patient's mother had died at the age of 65 with practically identical symptoms. When she was almost moribund Dr. Birch-Benner was called in and declared at once that the disease was the wet form of beriberi. He placed the patient on a diet of raw fruit, "mush," nuts and raw vegetables, bread, milk and cooked vegetables were totally forbidden. Under this treatment the edema rapidly disappeared. Her weight dropped from 160 to 120 pounds (72.6 to 54.4 Kg), motion returned in the muscles and at the end of three years, the raw fruit being continued, the patient was able to walk any distance and to make long journeys. Dr. Brauchle and all who had seen the patient declared that her recovery was a miracle. In our case the recovery was no less striking.

An unusually interesting case is reported from the Philadelphia General Hospital by Kepler.⁶

A Negro woman, aged 28, had always been in good health. In August 1918 she had a miscarriage followed by severe vaginal bleeding. A friend recommended raw starch as a cure. Acting on this advice and later influenced by a superstition among Negroes that raw starch has cosmetic value and tends to make the skin white, she gradually ate more and more. At the end of two years this habit had increased to such an extent that she was consuming from 1 to 2 pounds daily of one of the box brands of gloss starch. Her husband had only one of his daily meals at home, and rather than cook for herself she obtained most of her nourishment from the starch. The cooked meal at night consisted of the usual staple articles of diet found on a workman's table. Under this regimen she lost her appetite and as a result she practically subsisted on laundry starch, which, so far as its vitamin content is concerned, is certainly the equivalent of decorticated rice. The hold that this habit had obtained on her can be realized from the fact that on several occasions after admission to the hospital she asked the nurses to smuggle starch to her. At the end of a little less than three years she began to have symp-

toms of polyneuritis, with a trifling edema of the buttocks. The heart was enlarged to the right and to the left and, despite the fact that there was no aortic diastolic murmur, the vascular signs were those of pronounced aortic insufficiency. As the patient also had nephritis, the primary treatment was directed toward that disease. After about ten days a diagnosis of beriberi was made and autolyzed yeast was given. A marked improvement followed. The urine became normal, various heart murmurs that had been present gradually vanished, and the pulsation of the peripheral arteries disappeared and the heart became normal in size.

A case of beriberi is reported by Swineford.⁷

A woman, aged 47, single, a native of Virginia, had a severe attack of typhoid and since then had never been entirely free from indigestion. To combat the abdominal pains she gradually reduced her diet to toast, soup, an occasional egg, corn meal, oatmeal and a rare helping of fish or chicken. She practically eliminated fruits, fresh milk, meat, peas, beets, potatoes and other vegetables from her diet. Gradually signs of polyneuritis developed, the legs became drawn up and the muscles of the calves and thigh exceedingly tender, even the bones were painful on light tapping. Alcohol could be ruled out as a cause of the symptoms. Under a high vitamin B diet the patient improved but did not fully recover.

Farnell and Yacovlev⁸ call attention to the difficulty of distinguishing at times between pellagra and beriberi.

Wohl⁹ reports a beriberi-like state in a diabetic woman, aged 32, whose diet had been improperly balanced. In considering cases of this type the thought comes to mind that perhaps the neuritis of diabetes has in it a deficiency factor.

A case of self-imposed avitaminosis partaking of the character both of scurvy and of beriberi has been reported by Bullowa.¹⁰ A man, aged 55, Irish, a hotel porter in New York, had "taken a dislike" for meat and had lived for four and a half months on tea and bread. The result was a symptom complex suggesting both the lack of the antiscorbutic and the antiberiberi vitamins.

One of us (R.) has for several years been of the belief that some of the cardiac "breaks" seen in the poor patients entering the Philadelphia General Hospital since the depression are in part due to food privation and can be corrected only by proper nutrition. It is important to inquire in much greater detail than is the usual custom into the dietetic habits of patients. One may then perhaps learn that many common diseases, infectious and others, arise largely on the basis of faulty practices in eating.

Our second case was diagnosed as beriberi by one of us (R.) through consultation with the patient's physician, who described the results of his examinations.

A young woman, much overweight, in an effort to reduce her avoirdupois had adopted a meager and monotonous diet. After a few weeks she became short of breath and had palpitation and edema of the legs. These symptoms induced the belief among her medical attendants that she was suffering from heart disease. She had no rheumatic history, never had been ill with anything that could have given her heart disease and, prior to her voluntary dietary restriction, had been athletic and in the best of health. To my mind there was in this patient no primary cardiac trouble. The symptoms were those of a deficiency disease, in other words, it was the picture of the wet form of beriberi. Under a sensible dietetic regimen and that alone, the young woman made a prompt recovery.

7 Swineford Oscar Virginia M J 56 814 (March) 1930

8 Farnell F J and Yacovlev P J Ann Clin Med 4 541 (Jan) 1926

9 Wohl M G Avitaminosis in the Course of Diabetes J A M A 87 901 (Sept 18) 1926

10 Bullowa J G M M Clin North America 10 959 (Jan) 1927

5 Brauchle Alfred Med Welt 7 34 (March 11) 1933

6 Kepler E J Beriberi from a Diet of Raw Starch J A M A 85 409 (Aug 8) 1925

As long as fashion decrees the sylphlike figure, sporadic cases of beriberi are likely to occur. They may show only an incomplete picture of the disease but if the true cause of the symptoms is not recognized, the trouble may be ascribed to primary myocardial disease with inevitable failure of treatment.

The period of vitamin shortage that an individual may safely endure is variable, being influenced by several factors.¹¹ It is quite possible, although by no means proved, that the edema of wet beriberi is due to a shortage of protein. This would suggest a multiple deficiency in this type of the disease.

Of the sources of vitamin B for clinical use, yeast and wheat germ are the best. Liver, kidney and brain are richer than muscle in vitamin B. The whole grains, because of their content of germ, contain appreciable amounts in contrast to the highly milled products such as white flour and degerminated corn meal. Among the fruits and vegetables, tomatoes, raw cabbage, fresh spinach and legumes have been found to contain more than orange or lemon juice, onions, cauliflower or lettuce. The vitamin in the egg is located in the yolk. Milk, although a good source of the pellagra preventive substance, does not contain a large amount of vitamin B.

A MILK AND BANANA DIET FOR THE TREATMENT OF OBESITY

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During the course of certain studies on the comparative value of various carbohydrate foods, particularly cooked and uncooked fruits and vegetables, in the diet of patients with diabetes, it was observed that a diet of bananas and milk furnished a simple and effective method for weight reduction. The regimen has since been used by a considerable number of individuals suffering from simple obesity, and it is thought desirable to detail the method and the results obtained.

For the patient who is willing to make reasonable sacrifices to reduce excessive weight, the advantages of a simple, easily measured diet are quite obvious, provided it is well balanced from a nutritional standpoint and sufficiently palatable. Weight reduction usually involves the breaking of a habit that is firmly entrenched. Such a habit some persons find may be easily broken by a gradual process of "tapering off," as is involved in the usual curtailment of starches, sweets and fats, but many others find this very difficult. Among these, particularly, are those who are obliged to work with food, such as housewives, who prepare the family meals. For such persons, and it is believed that they constitute a large proportion of the total who seek relief, a strict regimen, resolutely adhered to over a definite period, furnishes the most practical method of attaining the desired end.

A most important requirement in a reducing diet is that it give a sense of satisfaction or "fulness." This is not always met merely by the use of bulk. What is called the satiety value of a diet is said to be furnished largely by foods high in fat content. The explanation given is that either alone or in combination with other foods they stimulate gastric secretion and prolong gastric digestion. The consequent slow emptying of the

stomach produces the satisfactory prolonged sense of fullness.¹ Be that as it may, the fact that the banana is a "filling" food is a matter of common observation. Notwithstanding this property, however, the banana has a nearly negligible fat content. Indeed, very few foods possess a satiety value for the average person comparable to that of the banana unless they contain considerable proportions of fats with the resulting high caloric value. On the other hand, the high carbohydrate content of the banana effectively counteracts any tendency to ketosis during periods of marked caloric restriction.

The use of milk for the reducing diet seems to date from Moritz,² who adapted it from the regimen of Karell.³ Used as the sole article of food, it is simple and cheap, but to many it is monotonous and flat. The use of skimmed milk in reducing diets has also been common for many years. Its caloric value is about one-half that of whole milk, while the essential nutritive constituents, with the exception of the butter fat and its vitamins, are retained.

A combination of milk and bananas is simple and palatable. The portions to be taken are readily measured, no preparation is necessary and they are universally available. Such a diet for reducing weight is very inexpensive when compared to the foods commonly used in reducing regimens, particularly the meats and salads. As a useful and practical foundation for a reducing diet, (1) the combination may be utilized for one or two meals, with moderate restriction of the third, or (2) it may be taken as the entire diet for from ten to fourteen days, then exchanged for a more varied regimen for a similar period in which the weight loss is maintained but not increased. The use of alternate periods of starvation and restricted diet was used by Folin and Denis⁴ and was considered "perfectly safe, harmless and effective."

1. When used as a continuous diet, one or two large ripe bananas may be used with one glass (250 cc.) of whole milk for both breakfast and lunch. This is followed by a restricted evening meal, consisting of clear soup, a slice of lean meat (or fish or fowl), two or three portions of 5 per cent vegetables, a slice of bread and butter, and a portion of uncooked fruit. Such a diet will contain from 1,000 to 1,200 calories and may be continued for an indefinite period with satisfactory results.

2. The second method involves the use of bananas and skimmed milk alone for periods of from ten days to two weeks, then alternating with a more liberal regimen.

BANANA DIET REGIMEN WITH ALTERNATE PERIODS OF RESTRICTED AND LESS RESTRICTED DIET

Period of Strict Diet—The strict diet consists of six large bananas and 1,000 cc. of skimmed milk, to be eaten in three or more meals, spaced according to the personal food habits of the individual. The food value of this diet is given in the accompanying table.

Only fully ripened bananas, i. e., fruit with yellow skin flecked with brown, should be used. It is easy to have such bananas available each day by purchasing in advance, when necessary, green tipped or firm yellow

1 Harrop, G. A. Diet in Disease. Philadelphia: P. Blakiston's Son & Co. 1930, p. 120.

2 Moritz, F. Ueber Entfettung durch reine Milchkuern. Munchen med. Wechn. chr. 55: 1569 (July 28) 1908.

3 Karell. De la cure de l'ait, Arch. gen. de med. 118: 513 (Nov.) 1866.

4 Folin, Otto and Denis, W. On Starvation and Obesity with Special Reference to Acidosis. J. Biol. Chem. 21: 183 (May) 1915.

11 Cowdall, G. B. Vitamin B in Relation to the Clinic. J. A. M. A. 98: 2282 (June 25) 1932.
From the Chemical Division, Medical Department of the Johns Hopkins Hospital and University.

fruit and allowing it to ripen fully at room temperature. The skimmed milk is obtained by pouring off the top fourth of a quart bottle, which contains the cream, and using the remainder. Buttermilk made from skimmed milk may be used in place of the plain skimmed milk if desired. A salad of one fourth of a medium sized head of lettuce, or of an equal quantity of cabbage, with a small amount of mayonnaise dressing made with liquid petrolatum,¹ is a useful and valuable addition at one meal during the period of strict diet.

Food Value of Skimmed Milk and Banana Diet

	Carbohydrate	Protein	Fat	Calories
6 large bananas	132	8	1	569
1 000 cc of skimmed milk or four ordinary glasses	50	36	3	371
Total food value	182	44	4	940

This diet is followed for from ten days to two weeks and usually produces a weight loss of from 4 to 9 pounds (1,814 to 4,082 Gm) in persons who are moderately active and carry on their usual living routine. Reduction of the diet to four bananas daily is well tolerated by many and the results are more striking. Weakness and severe physical discomfort, however, must be avoided. Fluids without food value, including tea or coffee, but without cream or sugar, are permitted freely. Salt is avoided to discourage retention of body fluid. An adequate fluid intake must be insisted on, preferably never less than 1.5 liters, or six large glasses daily, in addition to the milk. Such fluids without food value or salt do not increase the weight and are an important aid in guarding against constipation. On the banana diet the stools are much less bulky than on the usual mixed diet. If constipation occurs, it may be counteracted by the use of liquid petrolatum, but the use of saline purgatives is to be deprecated.

Period of Less Restricted Diet—At the end of from ten to fourteen days on the strict diet, alterations may be made as follows:

1 Substitution of one or two eggs, boiled, steamed or poached, salted, with one-fourth square of butter for one or two bananas, as the case may be. If the first period of strict diet is too rigorous, one egg, with one-fourth square of butter, may replace one banana from the outset. This entails larger salt intake but makes the regimen better tolerated for some persons.

2 Use of from one to four average servings of green vegetables, containing 5 per cent carbohydrate or less. One square of butter melted may be poured over these vegetables at the table, but no butter or fat of any sort should be used in the cooking.

For most persons these vegetables are most satisfying in both flavor and bulk when placed in boiling water to which a pinch of salt is added. They should be removed just as soon as tender but before the fresh flavor is lost by prolonged heating.¹ The melted butter should be added at the table directly to the food portion, where it can be seen and enjoyed. Any condiments without food value, including vinegar, may be added as desired. Provided the butter is sharply restricted to the amount mentioned, the quantity of the vegetable taken may usually be unrestricted. It is advisable to use one or more helpings of these vegetables occasionally uncooked.

3 Addition of one small portion of any lean meat, fish or poultry, except pork. No thickened gravy is to be used.

No fat-containing foods, except the portions of butter expressly mentioned, and no foods containing sugar or starch in any form are to be used.

The regimen as outlined is to be followed alternately from ten to fourteen days of the strict banana and skimmed milk diet is followed by two weeks of the less restricted diet, as just given. During the less restricted period, care is taken to avoid regaining weight, but no further loss is desirable. At the end of the less restricted period of two weeks the strict diet is again resumed for two weeks, and so on until the desired loss is made.

A small group of persons have either a distaste or an idiosyncrasy for bananas. Their use is not practicable in such cases.

The limit to which reduction may be safely undertaken is frequently placed at 1 or 2 pounds (453.6 or 907 Gm) per week, or from 5 to 10 pounds (2,268 to 4,536 Gm) per month. Each patient, however, presents an individual problem. Rapid reduction is well tolerated by some, others must reduce more slowly. The state of well being, mental and physical, is a most important guide. Some hunger and weakness during the first three or four days of the milk and banana regimen are common and must not be regarded too seriously. Such symptoms usually disappear at the end of a week and are replaced by a feeling of well being. Certain persons complain of drowsiness early in the evening on a reducing diet, adjustment of the menu to allow a light lunch late in the evening may be helpful to such persons.

Weight loss in excess of 2 or 3 pounds (907 or 1,306 Gm) a week, except when the diet is very markedly curtailed, represents an excessive loss of water. The patient should be warned that the larger losses of weight which may take place during the early days of dieting are due to loss of water and will not continue. Three fourths of the weight of the soft tissues is composed of water, and it is often stored temporarily in place of fat. The effect of this temporary storage must be explained to patients in order to dispel the common impression that it is possible to hold or even gain weight on greatly reduced diets. Low salt intake is useful in facilitating more rapid equilibrium. If the storage and excretion of body water is chiefly regulated by the storage and excretion of sodium, as it appears to be, a low salt intake should discourage retention of both sodium and water. Such appears to be the case on a diet of bananas and milk. The comparatively low sodium intake on this diet produces in most persons a more even loss of weight than is often found in diets with such a high carbohydrate moiety.

Although the nitrogen intake is much lower in this diet than in the diets described in current publications,⁶ it is noteworthy that the nitrogen balance has been attained in six cases studied when on the strict diet at the end of one week, and of two weeks. In four it was not, but the nitrogen loss in no case exceeded 2 Gm a day after the end of the tenth day. The weight losses in this entire group ranged between 4 and 11 pounds (1,814 and 4,990 Gm) for the two weeks. Rubner.⁷

5 Wilder R M The Management of Obesity J Am Dietet A 6 91 (Sept) 1930
6 91 (Sept) 1930 Fishbein Morris Your Weight and How to Control It New York George H Doran Company 1927
7 Palmer W W Article on Obesity in Nelson's Loose Leaf Living Medicine 3 p 116
8 Hayward E and Waller D S Quality Studies of Therapeutic Diets III The Reduction Diet J Am Dietet A 8 256 (Sept) 1933
9 Howard C P Article on Obesity in Oxford Medicine 4 195
6 Authors listed in footnote 5 Also Evans F A and Strang J M Am J M Sc 177 339 (March) 1929
7 Rubner M Arch Anatomie u Physiol 1919 p 135 (Physiologische Abteilung) Hindhede's Untersuchungen über Eiweissminimum

observed that uncooked fruits and vegetables can reduce the protein metabolism to low levels, almost to the wear and tear quota

"It is a valuable piece of information to know that one may diet an obese patient on a food (milk) containing little protein and two-thirds the body's energy requirement, without danger of protein loss"⁸

SUMMARY

A diet having as its basis bananas and milk is proposed for the treatment of overweight, on the grounds of simplicity, low cost, ready availability, palatability, high satiety value, low salt content and demonstrated effectiveness in securing the desired aim

CONVALESCENT SCARLET FEVER SERUM AND COMMERCIAL ANTITOXIN

A COMPARISON OF THEIR PROTECTIVE VALUES

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Since its introduction by Weissbecker¹ in 1897, scarlet fever convalescent serum has proved useful in the treatment of scarlet fever. The results obtained have been variable, probably because there has been much variation in the size of the doses used. Among sixteen authors² reporting results since 1912, the therapeutic dose varied from 10 to 240 cc. At present the trend is toward smaller doses.

Reports of protection of contacts by means of convalescent serum are meager. Degkwitz³ treated 509 scarlet fever contacts, using 5 or 6 cc for children up to 8 years of age and 10 cc for those from 9 to 14 years of age. All but three escaped the disease.

Neff⁴ used convalescent serum in doses of from 15 to 30 cc for prophylaxis in twenty-five contacts, with no failures. Meader⁵ of the Detroit health department reports that, of 450 contacts who were given 7.5 cc each of pooled convalescent serum from donors who had had scarlet fever within a year or a little earlier, 29 per cent contracted the disease. In similar groups that did not receive convalescent serum, 12.8 per cent of the subjects came down with scarlet fever. He concludes that about 85 per cent of those passively immunized were protected against scarlet fever.

The figures cited may be misleading because no data regarding susceptibility of those receiving convalescent serum are given. Also it is not stated whether they harbored hemolytic streptococci at the time the serum was given. Since in an average group only from 40 to 50 per cent are susceptible and only a small percentage may be carriers of hemolytic streptococci, to conclude that all who did not develop scarlet fever were protected by convalescent serum is erroneous.

⁸ Lusk, Graham. *The Elements of the Science of Nutrition* ed 4, Philadelphia W B Saunders Company 1928 pp 364-365.

¹ From the Wallace R Lane Fund of the Scarlet Fever Committee and the John McCormick Institute for Infectious Diseases and the Pediatric Department of Illinois University Medical School and Cook County Hospital Contagious Disease Hospital.

² Weissbecker Leopold. *Ztschr f klin Med* 32 188 1897.
³ Thomson David and Thomson Robert. *The Role of the Streptococci in Scarlet Fever*. Ann Pickett Thomson Research Lab G 163 (Dec) 1930.

⁴ Degkwitz R. *Causative Agent in Scarlet Fever*. *Munchen med Wchnschr* 69 955 (June 30) 1922.

⁵ Neff F C. *Scarlet Fever Immunization*. *Arch Pediat* 29 250 (April) 1922.

⁶ Meader F M. *Scarlet Fever Prophylaxis*. *J A M A* 94 622 (March 1) 1930.

Some in each group were undoubtedly immune before the convalescent serum was administered, and others were not infected with scarlet fever streptococci.

In their first publication on the skin test for susceptibility to scarlet fever, the Dicks⁶ showed that a considerable quantity of convalescent serum was required to render Dick positive persons Dick negative. In one case it was necessary to give 10 cc of convalescent serum on three different occasions, at intervals of three, seven and nine days, respectively, to render a person Dick negative. This quantitative element in the use of convalescent serum has been neglected. One example from our own experience is, perhaps, sufficient, although similar cases have been observed.

A woman, aged 33, a laboratory technician, was secured to work in the Cook County Contagious Hospital. Before going on duty she was given a Dick test, which was strongly positive. In order to give her some protection until such time as she could be actively immunized, she was given 7.5 cc of pooled scarlet fever convalescent serum, the dose being used for prophylaxis at that time by the Michael Reese Hospital Serum Center. On the same day another Dick test was performed, and the following day the test was again strongly positive. Two days later she came down with a typical attack of scarlet fever. After the rash was well developed, there was blanching at the site of the convalescent serum injection.

That prophylactic doses of regular commercial antitoxin have been uniformly successful in affording complete passive immunity under similar circumstances has also been repeatedly demonstrated.

A nurse was sent to the Contagious Disease Hospital with scarlet fever, Jan 10, 1933. Two days later her roommate, who had not been Dick tested or immunized at the Cook County Hospital, was found to have a slight sore throat, slight nausea and malaise. Her temperature was 99.2 F, the pharynx was slightly inflamed, but there was no rash. She was isolated, nose and throat cultures were made on blood agar, and a Dick test was performed. The next day the throat culture was positive for hemolytic streptococci and the Dick test was positive. A prophylactic dose (100,000 neutralizing units) of scarlet fever antitoxin, prepared by a state health department, was given intramuscularly, and at the same time another Dick test was made. Scarlet fever did not develop. When the patient was observed the next day, the Dick test was negative.

In an experience of eight years in controlling scarlet fever outbreaks in schools, orphanages and homes, one of us (P S R) has used scarlet fever antitoxin repeatedly in this way, but only when the Dick test and throat cultures were positive and there were clinical signs, such as fever, nausea or an inflamed throat, indicating that scarlet fever was imminent. Antitoxin has always prevented the development of scarlet fever.

We felt that it would be of value to determine the titer of several lots of convalescent serum in order that a more accurate comparison with commercial antitoxin might be made. At the time that this study was undertaken, pooled human convalescent scarlet fever serum was being used freely in the Contagious Disease Hospital and was being distributed throughout Chicago by the Michael Reese Serum Center. Its average titer was not known, but it was distributed in doses of from 7.5 to 10 cc for prophylaxis and from 20 to 60 cc for therapy.

Through the courtesy of Dr S A Levinson of the Michael Reese Serum Center, we obtained twelve different lots of pooled scarlet fever convalescent serum for study. Precisely the same method was used for titration as has been in use by one of us for several

⁶ Dick G F and Dick Gladys H. *A Skin Test for Susceptibility to Scarlet Fever*. *J A M A* 82 265 (Jan 26) 1924.

years in testing commercial antitoxins for the Scarlet Fever Committee.

Dilutions were made as follows:

1 A toxin control prepared by adding 5 cc of physiologic solution of sodium chloride to 5 cc of a solution of toxin ten times as strong as standard skin test solution, so that 0.1 cc (the amount injected) contained five skin doses.

2 A toxin-antitoxin mixture. Five cubic centimeters of the toxin dilution containing ten times the standard skin test strength was added to 5 cc of a known dilution of the conva-

After the discovery, by preliminary Dick tests, of a number of Dick positive individuals, all three dilutions were injected into the skin in amounts of 0.1 cc each after one and a half to two hours' incubation of the mixtures at 37°C. The tests were observed and recorded in millimeters, with some indication of the degree of pinkness and swelling, at twenty-four and forty-eight hours.

A typical titration record follows. If the toxin was neutralized for forty-eight hours in at least four of six

TABLE 1—Results of Titration of Convalescent Serums S-46 and S-47*

Test Subject	Toxin Control (5 Ce Diluted Toxin Containing 100 Skin Test Doses per Ce Plus 5 Ce Physiologic Solution of Sodium Chloride)	Toxin-Antitoxin Mixture (5 Ce Diluted Toxin Containing 100 Skin Test Doses per Ce Plus 5 Ce Convalescent Serum S-46 Diluted 1:10)	Toxin-Antitoxin Mixture (5 Ce Diluted Toxin Containing 100 Skin Test Doses per Ce Plus 5 Ce Convalescent Serum S-47 Diluted 1:10)	Serum Control S-46 (5 Ce Convalescent Serum S-46 Diluted 1:10 Plus 5 Ce Physiologic Solution of Sodium Chloride)	Serum Control S-47 (5 Ce Convalescent Serum S-47 Diluted 1:10 Plus 5 Ce Physiologic Solution of Sodium Chloride)
1 24 hours	25 by 18 mm moderate red	0	0	0	0
48 hours	22 by 20 mm faint	0	0	0	0
2 24 hours	28 by 22 mm moderate red	0	0	0	0
48 hours	28 by 22 mm faint	0	0	0	0
3 24 hours	23 by 18 mm moderate red	0	0	0	0
48 hours	20 by 15 mm faint	0	0	0	0
4 24 hours	25 by 20 mm moderate red	5 by 6 mm moderate red	0	0	0
48 hours	22 by 18 mm very faint	14 by 16 mm moderate red	16 by 15 mm moderate red	0	0
5 24 hours	22 by 18 mm faint	0	0	0	0
48 hours	0	0	0	0	0
6 24 hours	25 by 21 mm moderate red	16 by 14 mm moderate red	14 by 14 mm moderate red	9 by 10 mm moderate red	0
48 hours	0	20 by 16 mm moderate red	18 by 15 mm moderate red	0	0

* Convalescent serums 46 and 47 held the scarlet fever toxin forty-eight hours when used in a dilution of 1 to 10 in four of six satisfactory test subjects. Thus the serums contain 1,000 neutralizing units per cubic centimeter.

lescent serum to be tested. The preliminary dilution of serum was usually 1:5. One-tenth cubic centimeter of the mixture contained five skin test doses of toxin and an unknown amount of antitoxin. In a mixture thus prepared, if the serum was found to have neutralized the toxin a titer of at least 500 neutralizing units per cubic centimeter was assumed. (Each

satisfactory tests, the serum was considered acceptable in the dilution used. No persons whose toxin controls did not average 20 mm or over in both diameters were considered suitable subjects for the tests. If a positive reaction was obtained with the serum control, the test was, of course, disregarded.

Table 2 gives the results of twelve convalescent and three normal pooled adult serums tested. The average titer for the convalescent serum was about 500 neutralizing units per cubic centimeter, and, for the normal adult serum, less than 250 neutralizing units per cubic centimeter. All commercial scarlet fever antitoxins are tested in exactly the manner outlined here by one of us (P. S. R.) before they are distributed. No commercial antitoxin is allowed on the market unless it contains 15,000 or more neutralizing units per cubic centimeter. Thus, to introduce the accepted prophylactic dose of scarlet fever antitoxin (100,000 neutralizing units), one would have to give 200 cc of convalescent serum, or 7 cc of the weakest commercial antitoxin.

To obtain further evidence, Dick positive persons were given convalescent scarlet fever serum and Dick tests were performed the same day and subsequent days to observe at what speed passive immunization was accomplished. Another group was given commercial antitoxin in prophylactic doses and tested in the same way.

Table 3 shows that convalescent serum had no uniform effect on Dick tests performed the same day and subsequent days. In the majority of cases the Dick test was still positive the next day and for several days

TABLE 2—Results of Titration of Twelve Lots of Pooled Convalescent Serum and Three Lots of Normal Adult Serum*

Less Than 250 Neutralizing Units per Ce	250 Neutralizing Units per Ce	500 Neutralizing Units per Ce	1,000 Neutralizing Units per Ce
S 23	S 26	S 28	S 32
S 37	S 39	S 36	S 46
N AI	N 11	S 38	S 47
	N 12	S 41	
		S 43	

* S convalescent serum, N normal adult serum. The average titer for twelve convalescent serums was 500 neutralizing units per cubic centimeter. The pooled normal adult serums averaged less than 250 neutralizing units per cubic centimeter. All commercial scarlet fever antitoxin is required by the United States Public Health Service to contain 15,000 neutralizing units per cubic centimeter before it can be marketed a potency thirty times that of average convalescent serum and more than sixty times that of the normal adult serums tested.

0.1 cc of the mixture injected contained five skin test doses and 0.01 cc of serum. Thus 1 cc of serum contained 100×5 neutralizing units.)

3 A serum control. Five cubic centimeters of the serum dilution was added to 5 cc of physiologic solution of sodium chloride.

7 Dick, G. F. and Dick, Gladys H. Therapeutic Results with Concentrated Scarlet Fever Antitoxin. Preparation, Standardization and Dosage of the Antitoxin. J. A. M. A. 84: 803 (March 14) 1925.

thereafter In some cases, no effect whatever was noted

On the other hand, the Dick test was always completely negative the day after the injection of a prophylactic dose of antitoxin (table 4)

In our experience, the ordinary commercial preparation of scarlet fever antitoxin (100,000 neutralizing units for prophylaxis) has always afforded complete passive protection against scarlet fever in susceptible persons, if given before the onset of the disease

TABLE 3—Results of Dick Tests Before and After the Administration of Convalescent Scarlet Fever Serum*

Age Years	Date of First Dick Test	Reading of First Dick Test	Date of Serum Adminis- tration	Amount of Serum Given		No. of Neutral- izing Units	Date of Dick Test	Reading Next Day	Date of Dick Test	Reading Next Day	Date of Dick Test	Reading Next Day
8	Dec 10	28 by 20 mm moderate red	Dec 12	20			Dec 18	24 by 22 mm moderate red				
10	April 22	10 by 12 mm faint pink	April 23	36	10	5 000	April 23	Negative				
6	April 22	10 by 10 mm faint pink	April 23	36	10	5 000	April 23	Negative				
10	April 22	24 by 15 mm moderate red	April 23	36	10	5 000	April 23	34 by 23 mm bright red	May 11	34 by 20 mm bright red		
11	April 24	32 by 14 mm moderate red	April 24	37	10	2 500	April 24	18 by 16 mm moderate red	April 26	18 by 16 mm moderate red	April 27	6 by 6 mm moderate red
3	April 24	14 by 14 mm moderate red	April 24	37	10	2 500	April 25	14 by 14 mm moderate red	April 27	10 by 10 mm moderate red	April 28	Negative
9	April 24	24 by 10 mm moderate red	April 24	39	20	5 000	April 25	17 by 16 mm moderate red	April 26	Negative		
7	April 24	28 by 10 mm moderate red	April 24	36	10	5 000	April 26	30 by 15 mm moderate red	April 26	Negative		
3	April 24	16 by 14 mm moderate red	April 24	37	10	2 500	April 26	15 by 15 mm moderate red	April 26	Negative		
14	April 24	18 by 16 mm moderate red	April 24	39	20	5 000	April 26	24 by 26 mm moderate red	April 27	14 by 10 mm moderate red		
9	April 24	30 by 16 mm moderate red	April 24	39	20	5 000	April 26	14 by 15 mm moderate red	April 26	14 by 12 mm moderate red	April 27	Negative
9	April 24	26 by 15 mm moderate red	April 24	34	10	2 500	April 26	Negative				
9	April 24	24 by 15 mm moderate red	April 24	34	10	2 500	April 26	26 by 15 mm moderate red	April 26	Negative		
6	April 24	30 by 18 mm moderate red	April 24	37	10	2 500	April 26	24 by 16 mm moderate red	April 26	16 by 16 mm moderate red		
10	May 5	40 by 30 mm bright red, swollen	May 6	40	20		May 6	40 by 30 mm bright red swollen	May 7	40 by 30 mm bright red swollen	May 8	40 by 30 mm bright red swollen
Adult	May 17	20 by 20 mm moderate red	May 18	38	10	5 000	May 19	20 by 20 mm moderate red	May 20	20 by 15 mm moderate red		
Adult	May 17	20 by 15 mm moderate red	May 18	38	10	5 000	May 19	20 by 15 mm moderate red	May 20	20 by 15 mm moderate red	May 21	20 by 12 mm moderate red
Adult	May 17	24 by 15 mm moderate red	May 18	38	10	5 000	May 19	24 by 15 mm moderate red	May 20	10 by 10 mm moderate red	May 21	5 by 5 mm moderate red
Adult	May 17	20 by 10 mm moderate red	May 18	38	10	5 000	May 19	20 by 10 mm moderate red	May 20	20 by 10 mm moderate red	May 21	20 by 10 mm moderate red
Adult	May 17	14 by 10 mm moderate red	May 18	38	10	5 000	May 19	14 by 10 mm moderate red	May 20	10 by 5 mm	May 21	8 by 5 mm moderate red

* The results shown in this table indicate that a 10 cc dose of convalescent serum administered prophylactically which does not usually contain more than 5 000 neutralizing units of antitoxin is not sufficient to render a positive Dick test negative in the majority of cases
† May 11 prophylactic scarlet fever antitoxin and Dick test given May 12, Dick test negative

TABLE 4—Results of Dick Tests Before and After Administration of Commercial Scarlet Fever Antitoxin (Prophylactic Dose, 100 000 Neutralizing Units)*

Age Years	Date of First Dick Test	Reading of First Dick Test	Date of Antitoxin Administration	Date of Dick Test	Reading Next Day
10	Jan 13	17 by 15 mm moderate red	Jan 14 E R Squibb & Sons	Jan 14	Negative
8	Jan 7	24 by 22 mm moderate red	Jan 13 E R Squibb & Sons	Jan 14	Negative
Adult	May 16	14 by 10 mm moderate red	May 17 Parke Davis & Co	May 17	Negative
Adult	May 16	10 by 10 mm moderate red	May 17 Parke Davis & Co	May 17	Negative
Adult	May 16	24 by 20 mm moderate red	May 17 Parke Davis & Co	May 17	Negative
Adult	May 16	14 by 10 mm moderate red	May 17 Parke Davis & Co	May 17	Negative
Adult	May 16	24 by 20 mm moderate red	May 17 Parke Davis & Co	May 17	Negative
Adult	May 16	14 by 15 mm moderate red	May 17 Parke Davis & Co	May 17	Negative
5	May 26	30 by 20 mm bright red	May 27 Mich Health Dept	May 27	Negative
1	May 26	20 by 20 mm moderate red	May 27 Mich Health Dept	May 27	Negative
10	May 11	40 by 30 mm bright red swollen	May 12 Mich Health Dept	May 12	Negative

The results shown in this table demonstrate that 100 000 neutralizing units of antitoxin which is the required prophylactic dose for commercial products in the United States rendered the susceptible individuals immune within twenty four hours

SUMMARY

1 Cases have been observed in which the usual dose of scarlet fever convalescent serum administered to susceptible individuals failed to afford passive protection against scarlet fever

2 Using the same method as is used in titrating commercial antitoxins, we found that twelve lots of pooled convalescent serum had a potency of from less than 250 neutralizing units (a unit is the amount of serum required to neutralize one skin test dose of toxin) to 1,000 neutralizing units per cubic centimeter. The average potency was 500 neutralizing units per cubic centimeter

Commercial antitoxins are required to have a potency of not less than 15,000 neutralizing units per cubic centimeter. Thus, to obtain as many neutralizing units as are present in commercial antitoxins, at least thirty times as much convalescent serum is required

3 Twenty persons known to be susceptible to scarlet fever were given 10 or 20 cc of pooled scarlet fever convalescent serum and Dick tested, usually the same day and for a few days thereafter. Only three became immediately Dick negative. Two of these had very faint original tests. A large proportion had not become Dick negative several days later. One whose test remained unchanged three days after administration of convalescent serum at once became immune after a prophylactic dose of commercial scarlet fever antitoxin

COMMENT

At a time when convalescent scarlet fever serum is being so widely used it is pertinent again to call attention to the fact that there is a quantitative element in scarlet fever therapy that should not be neglected

Scarlet fever antitoxin has proved to be distinctly useful in preventing complications, in shortening the

febrile period, and in reducing the mortality rate, also in passively protecting scarlet fever contacts

Convalescent scarlet fever serum is useful if given in adequate amount and, in addition, has the advantage of not containing horse serum. That convalescent serum is very rarely given in adequate dosage is apparent from this study.

Unless an unusually potent convalescent serum is available, patients will receive more immune bodies from the therapeutic dose of scarlet fever antitoxin (300,000 neutralizing units) than from convalescent scarlet fever serum given in the dosage at present usually used. The benefit obtained varies directly with the speed with which the antitoxin is given.

While this communication does not concern itself with relative costs, it is worth mention that if convalescent serum is distributed through a serum center which must maintain personnel and equipment it inevitably costs much more per antitoxic unit than commercial antitoxin.

Gordon⁸ has advocated immunotransfusion for severe septic scarlet fever, claiming for it a distinct superiority to scarlet fever antitoxin. He says "With immunotransfusion the amount of protective substance is from five to ten times greater than is ordinarily accomplished by the injection of serum and, furthermore, is introduced into the blood stream directly rather than indirectly, as by the intramuscular route." Immunotransfusion is undoubtedly a useful procedure. However, in the light of the data given here Gordon's statement seems open to question.

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THE CONGENITALLY SHORT ESOPHAGUS

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Atresia of the esophagus with an esophagotracheal fistula has long been considered the most common congenital anomaly of this structure. The fatal termination of all these cases and the opportunities afforded for the study of the malformations at autopsy has resulted in a more general knowledge and comprehensive literature of atresia than is available on congenital stenosis. Being compatible with life, congenital stenosis may not produce symptoms until solid food is eaten, in some cases symptoms of obstruction may not occur until adult life has been reached. Esophagoscopists are generally agreed that congenital stenosis is more common than their personal records or the reports in the literature would indicate. It is probable that a number of these are not differentiated from acquired stenosis, that others are treated by bouginage without a preliminary diagnostic esophagoscopy, and that an equally large number go through life with the knowledge that they cannot swallow normally but get on satisfactorily with careful selection and proper mastication of foods. A careful study of these groups would undoubtedly reveal many cases of congenital deformity. This was confirmed in certain of our cases.

In 1931, Findlay and Kelly¹ described an anomaly that was characterized by congenital shortening of the esophagus and by the presence of a portion of stomach in the thoracic cavity with stenosis at the junction of the esophagus and thoracic stomach. A detailed report of nine cases was presented. Similar cases had been previously recognized but these were confused with an associated diaphragmatic hernia of the stomach. By esophagoscopy it was found that the dilated food passageway between the point of stenosis and the diaphragm was lined by gastric mucosa. This was corroborated by histologic examination of tissue removed at esophagoscopy.

Coincident with the receipt of Findlay and Kelly's¹ report we observed identical changes in a patient admitted for removal of a bolus of meat from the esophagus. Similar studies carried out in several cases of esophageal ulceration with stenosis, previously diagnosed as peptic ulcer of the esophagus, indicated that these, too, presented a congenitally short esophagus and a thoracic stomach. Continued interest in this anomaly has led to the discovery of fourteen cases since 1931.

The scarcity of reports of these cases in the literature should not indicate that the condition is rare. With the exception of a report by us,³ all data pertaining to this anomaly have appeared in British medical literature. On the basis of our discovery of fourteen cases within four years, this condition would appear to be relatively common. Cases are probably overlooked because of the lack of a proper technic in the roentgen study and failure, on the part of the esophagoscopist, to investigate carefully the food passageways distal to the stenosis or to note the distance between the upper teeth and the point of transition of esophageal into stomach mucosa. Two of our cases had previously been diagnosed as acquired stricture, four were considered peptic ulcer of the esophagus. Ulceration was present, and, occurring at a point proximal to the level of the diaphragm, it was assumed to originate in the esophagus. The stenosis, considered as cicatricial in origin, was explained as resulting from the healing ulcer. The food passageway distal to the ulceration was not examined esophagoscopically. Consequently no opinion regarding its character was expressed.

AGE AND SEX

The series of cases reported by Findlay and Kelly¹ consisted of nine children—seven boys and two girls. Their ages varied from 4 weeks to 9 years and 10 months. Monkhouse and Montgomery⁴ reported a group of seven cases. All these were adults. Our group, consisting of nine females and five males, included one girl and three boys varying from 6½ to 9½ years, eight women from 28 to 64 years of age, and two men, aged 21 and 32 respectively. Two children were brother and sister.

SYMPTOMS

No classic symptom group has been suggested. One can divide the cases into two groups. In one, the out-

1 Findlay, Leonard and Kelly, A. B. Congenital Shortening of the Esophagus and the Thoracic Stomach Resulting Therefrom. *J. Laryng. & Otol.* 46: 797 (Dec.) 1931.

2 Kelly, A. B. Congenital Stenosis of the Esophagus in Children Associated with Diaphragmatic Hernia of the Stomach. *J. Laryng. & Otol.* 45: 679 (Oct.) 1930.

3 Clerf, I. H. and Manges, W. F. Congenital Anomalies of the Esophagus with Special Reference to the Congenitally Short Esophagus with a Portion of Stomach above the Diaphragm. *Ann. Otol. Rhin. & Laryng.* 42: 1058 (Dec.) 1933.

4 Monkhouse, J. P. and Montgomery, S. K. A Report of Seven Cases of Partial Thoracic Stomach with Short Esophagus. *J. Laryng. & Otol.* 48: 743 (Nov.) 1933.

8 Gordon, J. E. Immunotransfusion in Scarlet Fever. *J. A. M. A.* 100: 102 (Jan. 14) 1933.
From the Bronchoscopic Clinic and the Department of Roentgenology, Jefferson Medical College Hospital.

standing symptoms are dysphagia and regurgitation with disturbances in nutrition and growth. These were present in three children and two adults. In seven of Findlay and Kelly's¹ cases, regurgitation was present from birth, disturbances in nutrition and growth were observed in all. In the other group, distress, particularly after eating, was noted in addition to dysphagia with lodgment of food and regurgitation. These were



Fig 1—Short esophagus in a woman who while eating meat twenty four hours previously to examination had a portion lodge in the esophagus. In A the arrows point to a small quantity of barium that was retained in the esophagus proximal to the bolus of food. Examination was difficult because of constant retching and inability to retain the barium mixture in the esophagus. The obstruction caused by the food was practically complete. In B after the bolus of food was removed esophagoscopically roentgen examination showed a portion of stomach in the thoracic cavity with an esophagus too short to reach to the level of the diaphragm. Note the width of the opening through the diaphragm.

observed in one child and six women. Certain cases are symptom free until dietetic indiscretions result in the lodgment of food or the development of pathologic lesions direct attention to the esophagus. This was observed in the case of a man whose first symptom referable to the esophagus consisted of temporary lodgment of a portion of apple in the lower part of the esophagus six months before coming under our observation. No further disturbances were noted until three months later, when dysphagia for solid foods developed. The roentgenograms indicated that there was present an organic stenosis. At esophagoscopy there was found a congenitally short esophagus with a thoracic stomach, and an indurated area with ulceration. Tissue removed was reported by Dr B L Crawford as adenocarcinoma. This was subsequently corroborated.

Dysphagia—Careful investigation will often reveal that dysphagia was present since birth or more commonly, since solid food was added to the dietary. This was observed in eight cases. In five, difficulty in swallowing was present for "many years" to twenty years. Several found it necessary to take large quantities of fluid when eating to aid in swallowing. Regurgitation was commonly observed and usually occurred during mealtime. Lodgment of food was of frequent occurrence. Seven of the patients were referred to the Jefferson Hospital Bronchoscopic Clinic because of aphagia resulting from lodgment of food (fig 1).

Weight Loss—This was particularly noticeable in the children all of whom were underweight and poorly developed. In the case of a child aged 8 years, gastrostomy was performed because of extreme emaciation and marked dysphagia. A diagnosis of cicatricial

stenosis was made and the true nature of the condition was not discovered until esophagoscopy was done. The adults were generally well nourished, one weighing 250 pounds (113.4 Kg).

Distress—Symptoms varying from "indigestion" and flatulence to severe epigastric pain were present in seven adults and one child. These occurred very shortly after taking food. Severe pain was a prominent symptom in four. It was commonly referred to the epigastrium and behind the lower half of the sternum, in two it was also referred to the back. In three cases acid foods produced severe distress. Alkalis, notably sodium bicarbonate, gave prompt relief and were frequently employed by seven of the patients.

It was interesting to note that two patients experienced severe pain on assuming a dorsally recumbent posture, in fact, they slept only in a semi-sitting position. On further questioning it was found that relief was also secured by lying on the right side. Esophagoscopy in these cases revealed a large area of superficial ulceration at the gastro-esophageal junction. The pain was unquestionably due to contact of gastric juice with the area of ulceration. In the absence of a normal hiatus the gastric contents would gravitate upward to the ulcerated area when the patient assumed a recumbent posture. Alkalis gave immediate relief, but this was usually brief. The characteristic pain could be induced by touching the ulceration with a swab of silver nitrate solution, a topical application used in the esophagoscopic treatment. Preliminary cocaineization of the ulcerated area gave complete relief.

ROENTGEN EXAMINATION

The essential points in the roentgen diagnosis of congenital shortening of the esophagus are: First, a portion of the cardiac end of the stomach must be



Fig 2—This shows the rugae of the stomach at the level of the wide diaphragmatic opening also where the esophagus joins the stomach. There is marked dilatation of the esophagus above the esophagogastric junction. There was remarkably little esophagoscopic evidence of narrowing at the junction of esophagus and stomach.

shown to stay above the level of the diaphragm. Second, the esophagus must be shown to be too short to reach as low as the level of the diaphragm.

As to the first point, the only characteristic sign is the presence of multiple longitudinal rugae markings in that portion of the tube through and just above the diaphragm (fig 2). When this point is established,

the change of posture will not cause that portion of the stomach above the diaphragm to go either lower or higher, and there will be no variation in relations on repeated studies

As to the second point, when it is seen that a portion of the stomach is above the diaphragm it is necessary to visualize the entire length of the esophagus above the narrowing at the junction of the esophagus and stomach and show by



Fig 3—A woman aged 53 had dysphagia for twenty years. Food frequently lodged in the esophagus for brief periods. There was no history of swallowing a caustic or other injury. This case was however considered one of cicatricial stenosis until the substenotic food passageway was explored. The rugae of the stomach through a large opening in the diaphragm and the expanded portion of the stomach above the diaphragm shadow are clearly demonstrated. The upper esophagus is greatly dilated. The constricted portion is 7 cm in length.

views at different angles and positions that the esophagus is not tortuous or angulated but that it is a nearly straight tube and that the narrowed portion could not possibly reach the diaphragm (fig 1 B). If it is to be viewed at all in the light of a diaphragmatic hernia or hernia of the stomach through the diaphragm, the term "congenital fixed" or "congenital irreducible" should qualify the term "hernia". There are other contributory signs the most important of which is that the portion of the stomach above the diaphragm is larger than the esophagus and will show its true diameter or capacity only when that portion below the diaphragm is well filled (fig 2). This can be best accomplished when the patient is in the right oblique prone posture,⁵ previously described, in which position the hiatus is on a higher level than the upper end of the esophagus, and gravity tends to keep the barium mixture in the cardiac end of the stomach. In one of the cases we did not succeed in getting diagnostic evidence until the patient was placed in this posture. The right oblique prone posture is not practical for children too young or too uncooperative to carry out the act of drinking through a tube. In such cases the recumbent posture is essential and at times there is some advantage in tilting the table so that the upper end of the esophagus is at a lower level than the lower end. The only objection to this posture in adults is that the roentgenoscopic view and the roentgenograms are less clear because of the total thickness and density of the median line structures, particularly the thoracic vertebrae and the heart. When a lumen wider than the normal esophagus above the level of the hiatus has been demonstrated and there is no evidence of obstruction, either organic or spasmodic, at the diaphragm, the evidence is strongly contributory.

Roentgenographically, all our cases have shown some degree of narrowing where the esophagus joins the stomach. This appearance of narrowing does not differ greatly from that seen in strictures following injury, except that in the vast majority of instances the narrowing due to cicatricial tissue formation following injury is much more marked when it is first seen, the portion of the esophagus below the stricture is not dilated, the history is that the difficulty in swallowing has been progressive following an accident, and there is apt to be more or less emaciation (fig 3), while in the congenitally short cases the difficulty in swallowing a large bolus of solid food has always been present. The narrowing at times causes so little inconvenience that the diagnosis is overlooked entirely or is only by chance brought to light in adult life. On the other hand, the lumen has been rather small in a few cases. In two, the condition was brought to light only after complete obstruction by a bolus of food. The narrowing has been rather uniform as to location, at about the level of the seventh to the ninth dorsal vertebra.

As reported by Findlay and Kelly,¹ we found no collection of air or gas in the stomach either above or below the diaphragm. In none did we find any appreciable evidence of delay of the barium mixture at the diaphragm level, and in all of them the opening in the diaphragm was appreciably larger than normal.

As mentioned previously two of our group were of one family, brother and sister, but two other sisters and three brothers showed no abnormality.

In all our cases it was evident that the esophagus proximal to its junction with the thoracic portion of stomach was not long enough to reach the diaphragm in any posture or any state of filling with any consistency of barium mixture. A few of them showed evidence of dilatation proximal to the narrowing. Roentgenoscopic views in anteroposterior and lateral projections with the patient both standing and lying down have shown an entire absence of tortuosity of the esophagus.

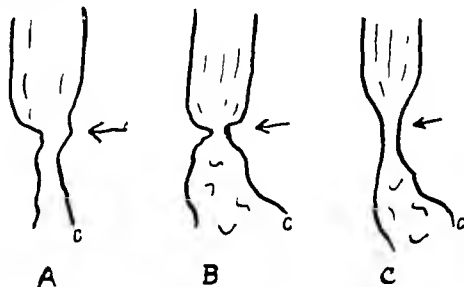


Fig 4—A schematic illustration indicating the impressions gained from esophagoscopy in cicatricial stenosis and in two of the more common forms of narrowing observed in the congenitally short esophagus. In cicatricial stricture (A) the lumen is commonly eccentric with some distortion. In the congenital form of stenosis the lumen is concentrically placed and may consist of a weblike narrowing (B) or it may present a funnel like appearance of variable length (C).

CHANGES SEEN AT ESOPHAGOSCOPY

There were commonly found moderate evidences of chronic esophagitis and some dilatation of the thoracic esophagus. In three cases the suprastenotic dilatation was marked. In all the cases but one there was found a maximum point of narrowing of the esophageal lumen, which was approximately opposite the fourth rib or fourth interspace along the left border of the sternum. The stenotic lumen varied in size from one admitting a 9 mm standard esophagoscope to one that was not more than 4 mm in diameter. Resistance offered to the tip of the esophagoscope suggested an

acquired stricture. The lumen was practically always concentrically placed and lacked the distorted appearances commonly noted in cicatricial stenosis (fig 4A). The general appearances, however, were not unlike those noted in acquired strictures, although there was lacking the customary evidence of scarring of the esophageal wall. The absence of visible scarring could be readily explained by the masking effects of chronic inflammatory changes.



Fig 5—Glandular mucosa gastric type that was removed from the food passageway above the level of the diaphragm as shown in figure 6. The surface of the tissue is covered by columnar epithelial cells which are continuous with the underlying gland structure. (Histologic study by Dr B L Crawford slightly reduced from a photomicrograph with a magnification of 100 diameters.)

In two cases the stenosis was weblike, in a third the narrowing was abrupt, the lumen being about 4 mm in diameter (fig 4B). In nine cases the narrowing was funnel-like in appearance, varying from 2 to 7 cm in length (fig 4C). In one there appeared several points of narrowing within several centimeters, suggesting multiple strictures. In the remaining case there was no demonstrable point of narrowing at the esophago-gastric junction.

The appearances of the stenosed lumen, which do not resemble the normal hiatus esophageus and the resistance offered to the tip of the esophagoscope should clearly indicate that the narrowing is not of spincteric or of pinchcock origin. No opinion can be given concerning the histologic components. The resistance to dilation should indicate that it contains considerable connective tissue elements. The only available data on the histologic study of a congenitally short esophagus is reported by Jacob, Tweedie and Negus⁶ who recorded the changes observed in the case of a child aged 1 year and 7 months which came to autopsy. They found the narrowing of the esophagus beginning a short distance below the bifurcation of the trachea. It extended for a distance of 2 cm. Below this the food passage opened again and presented appearances of stomach mucosa. The lumen of the narrowed portion showed a superficially ulcerated surface. Histologic examination of the esophagus above

the stenosis exhibited a fairly normal esophageal wall with thickening of the epithelial layer and muscularis mucosae. A study of the walls below the stenosis exhibited stomach mucosa. It was difficult to identify the wall of the stricture, as the epithelium was ulcerated and no surviving fragments could be found for identification. Marked inflammatory changes were present in the submucosa and muscularis coat.

Ulceration varying from a small area at the point of stenosis to extensive changes involving the funnel-like narrowing and entire zone of stenosis was observed in eight cases. The ulceration appeared superficial, the areas were covered by a thin grayish exudate and sharply demarcated by a narrow inflammatory zone. Granulations, when present, were commonly flat. In the four cases in which severe epigastric pain associated with taking of food was complained of, the ulceration was extensive.

Immediately on traversing the stenosis, the esophagoscope entered into what appeared to be stomach, although anatomically the tip of the tube remained proximal to the level of the diaphragm. This fact might be readily overlooked unless accurate routine comparative measurements were made. Failure to traverse the normal hiatus before the stomach is entered should be suggestive of a congenital anomaly unless the stenosis involves the hiatal level of the esophagus. In no case was it possible esophagoscopically to observe a narrowing in the stomach which would correspond to the level of the diaphragm, normally the hiatal level. From an esophagoscopic standpoint one gained the impression that as soon as the stenosis was passed one entered the stomach. The patient with a gastrostomy fistula was examined by retrograde gastroscopy several times to determine this point. Through the retrograde gastroscope one could not differentiate between the appearance in this case and that in the normal except that the esophagogastric junction offered resistance to the gastroscope and could not be traversed, in addition, this point was found at a higher level than is normal.



Fig 6—Roentgenogram made in the lateral plane with the esophagoscope in situ. The tip of the tube is below the esophago-gastric junction and is in contact with the stomach wall. Tissue removed from this level proved to be normal gastric mucosa. Note that the tip of the esophagoscope and the point of tissue removal are well above the level of the diaphragm the dome of which is barely visible. The case examined in this study is shown in figure 3.

In nine of the cases, tests were made with litmus paper after the stenosis was passed to ascertain the reaction of the fluids.

It was invariably acid. This in itself is of little importance for it is a known fact that regurgitation of gastric content is not uncommon when an esophagos-

⁶ Jacob F H, Tweedie A and Negus V E. Congenital Shortening of the Esophagus. *J Laryngol & Otol* 48: 486 (July) 1933.

copy is performed on a conscious patient. To corroborate the esophagoscopic opinion that gastric mucosa was observed at a point above the level of the diaphragm, specimens of tissue were removed in eight cases. In all these histologic examination indicated the presence of normal or ulcerated gastric mucosa (fig 5). For accurate localization of the anatomic site from which mucosa was removed for biopsy, esophagoscopy was performed on a double plane roentgenoscopic table. The position of the tip of the esophagoscope at the point where the tissue was removed was recorded roentgenographically in the lateral view (fig 6).

The esophagoscopist, unaided by an accurate report from the roentgenologist regarding the condition of the food passage immediately beyond the stenosis, is often confronted with the question whether these are cases of acquired stenosis. If the point of stenosis cannot be traversed esophagoscopically, no opinion can be given regarding the presence or absence of a congenital anomaly. A negative history of injury to the esophagus cannot be accepted as conclusive evidence that a stenotic lesion is congenital, since caustics may be swallowed during the first few years of life and the accident not remembered. If the stenosis can be passed esophagoscopically, inspection of the substenotic food passageway, anatomic localization of the level of the stenosis and the presence or absence of the normal hiatal pinchcock will afford adequate evidence. The roentgenographic evidences and the esophagoscopic observations should be conclusive.

TREATMENT

The chief problems to be considered are those of providing an adequate food supply and the relief of pain. Practically all the adults observed were well nourished. Dietetic indiscretions and hasty eating were usually responsible for disturbances in swallowing. The children, however, were undernourished and poorly developed.

In the cases of web stenosis, prompt improvement in swallowing was observed following esophagoscopic dilation, since the web offered little resistance to the bougie and the tip of the esophagoscope. Satisfactory results were secured in the nonulcerated cases by proper selection of food, thorough mastication and occasional esophagoscopic dilation.

Patients with ulceration at the junction of the esophagus and thoracic stomach presented a difficult problem in treatment. Pain was the outstanding symptom. Various combinations of alkalis and bismuth subnitrate afforded temporary relief. Topical applications of silver nitrate, 10 per cent, to the ulcer seemed to be helpful. Dietetic treatment along the lines indicated in gastric ulcer is recommended. In certain of these, esophagoscopic dilation afforded relief. In one case dilation of the stenosis was followed by complete relief of pain, although ulceration persisted.

SUMMARY

Among fourteen cases of congenital shortening of the esophagus with stenosis and the presence of a portion of stomach in the thoracic cavity there were four children and ten adults. Two children, brother and sister, are of one family. Two groups of symptoms were noted, one consisting of those resulting from esophageal obstruction and malnutrition, in the other, symptoms due to ulceration were prominent, although there was some mechanical obstruction. The roentgenographic and esophagoscopic changes were those of narrowing of the lumen at the esophagogastric junc-

tion, a point above the normal hiatal level with a portion of stomach above the diaphragm. In several, superficial ulceration of the mucosa was observed at the level of the stenosis. In eight cases mucosa was removed from the food passage above the diaphragm level for histologic examination. This proved to be gastric mucosa.

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MENINGOCOCCEMIA

REPORT OF TWO CASES WITH RECOVERY

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Meningococcemia, unaccompanied by meningitis or with meningitis occurring as a late complication, has been reported infrequently in the American literature. Cases reported in the foreign journals outnumber those in America in the proportion of six to one. Four cases have been diagnosed at the Peter Bent Brigham Hospital. The first one was reported in 1924 by Dock,¹ and the second by Marlow² in 1929. My purpose in this paper is to report two additional cases. A repetition of the description of the disease, which has been so comprehensively presented in numerous papers, especially those of Chaler, Giraud and Morel,³ Bloedorn,⁴ Dock,¹ Jacono⁵ and Binns and Fothergill,⁶ seems no longer desirable in a communication of this kind.

REPORT OF CASES

CASE 1—E. H., a white woman, aged 31, single, referred to the hospital, March 9, 1930, complained of intermittent chills, fever and skin eruptions of nine weeks' duration. A diagnosis of meningococcic septicemia had been made during the fifth week, but the administration of polyvalent antimeningococcus serum over a period of four weeks had been without beneficial effects.

The family and past histories were irrelevant. While at work and in apparently good health, the patient had had a shaking chill followed by a profuse sweat. For the following ten days she complained of weakness and migratory joint pains but continued at work. From the eleventh day until admission there was a daily rise in temperature to 104 or 105 F., usually following a chill. The rise in temperature was never sustained more than eight hours. Between the bouts of fever the patient felt fairly well. There were no abnormal physical manifestations until the intermittent appearance of a rash, first observed during the sixth week and occurring thereafter during the febrile periods. The eruption consisted of crops of deep red maculopapules and purpuric spots varying from 2 mm to 1 cm in diameter. These lesions appeared in greatest numbers on the lower extremities, but occasionally on the arms, trunk and face. The white blood cells averaged 14,000 per cubic millimeter during the afebrile periods. Three blood cultures taken during the fourth week were positive and produced a gram-negative diplococcus with the cultural characteristics of the meningococcus. The organism was agglutinated by Massachusetts and New York State polyvalent antimeningococcus serum in a dilution of 1 to 100. A brief outline of

From the Medical Clinic of the Peter Bent Brigham Hospital.
1 Dock, William. Intermittent Fever of Seven Months Duration Due to Meningococcemia. *J. A. M. A.* 83: 31 (July 5) 1924.
2 Marlow, F. W. Jr. Meningococcemia. *J. A. M. A.* 92: 619 (Feb 23) 1929.
3 Chaler, J., Giraud, P. and Morel, M. Meningococcus B Septicemia. *J. de med. de Lyon* 7: 565 (Dec 5) 1926.
4 Bloedorn, W. A. Meningococcus Septicemia. *Am. J. M. Sc.* 162: 881 (Dec.) 1921.
5 Jacono. Meningococcemia. *Riforma med.* 40: 755 (Aug 11) 1924.
6 Binns, J. T. and Fothergill, L. D. Meningococcus Septicemia. *New England J. Med.* 205: 536 (Sept 10) 1931.
7 I am indebted to Dr. J. M. Salles of New Bedford, Mass., for his permission to report this case. Dr. Salles was responsible for the care of the patient during the greater part of her illness.

serum therapy before admission was as follows 40 cc of Massachusetts State polyvalent antimeningococcus serum intravenously on the thirty-sixth day, with a severe reaction during the injection, from the thirty-sixth to the fifty-sixth day, 190 cc of Lilly's concentrated polyvalent antimeningococcus serum and 848 cc of Massachusetts serum subcutaneously in from 10 to 45 cc doses, on the fifty-seventh day 51 cc of New York State serum intravenously in seven doses, on the fifty-eighth day 16 cc of a special lot of serum made at the Massachusetts State laboratory, subcutaneously in divided doses, followed by 90 cc of the same kind of serum intravenously in doses of from 5 to 10 cc during the next eight days.

Though there had been no appreciable effect on the temperature, an afebrile period of twenty-four hours the longest observed, had occurred three days prior to admission. A few hours before entry the patient suddenly developed headache and pain in the back and neck. It was feared that meningitis had developed, and the patient was sent to the hospital.

On admission the patient was well developed but slightly undernourished and fairly alert and cooperative. Except for a definite tachycardia, a soft precordial systolic murmur, and small fading, red-brown macular areas on the trunk, thighs and legs the physical examination was not remarkable. The temperature was 102 F. Examination of the blood showed hemoglobin (Tallqvist), 75 per cent, red blood cells, 4,800,000, and white blood cells, 11,300 per cubic millimeter, differential polymorphonuclear leukocytes, 55 per cent, lymphocytes, 26 per cent, mononuclears, 13 per cent, eosinophils, 5 per cent, and basophils, 1 per cent. The platelets appeared normal but the red blood cells were slightly hypochromic. A blood culture on enriched mediums was sterile. Lumbar puncture was not performed. Massachusetts State polyvalent antimeningococcus serum was given intravenously as follows 10 cc shortly after admission followed by slight pain in the lumbosacral region and flushing of the face, two doses of 15 and 20 cc during the next twenty-four hours, 5 cc on the second hospital day, 15 cc on the third day, 5 cc on the fifth day, and 8 cc on the seventh day. The patient did not develop signs of meningitis or serum sickness. The temperature gradually receded to normal by the second day, and, except for an occasional rise to 99.5 F during the next five days, remained at a normal level. The patient was allowed up on the thirteenth day and she has remained well since her discharge from the hospital on the twenty-second day.

CASE 2—H. F., a girl, aged 17 years, admitted to the hospital, Aug. 29, 1933, complained of sore throat, painful joints and skin lesions.

The family history was unimportant and previous hygiene was good. At the age of 16 months the patient had acute poliomyelitis with residual paralysis of the left lower extremity. At the age of 9 years a tendon transplant operation was done. For several years she had worn a brace. In early childhood she had uncomplicated whooping cough, measles, mumps, chickenpox, and frequent spontaneous epistaxis. Menstruation began at 14 years and continued regularly with slight dysmenorrhea for three years. For one year prior to admission there had been metrorrhagia and recurring attacks of pain in the right side of the lower part of the abdomen. There was no history of venereal infection. The first attacks of tonsillitis occurred at 14 years with frequently recurring attacks usually associated with a cold. Five weeks before entry there developed a blister on the left heel with slight infection, but it was completely well before the onset of her presenting illness.

One week before admission a cold and sore throat with cervical adenitis developed. This condition had partially subsided when, in the evening, twenty-four hours before entry, there was a slight chill followed by fever and a profuse sweat. All the joints seemed to be stiff. The following morning in addition to malaise, headache, sore throat and stiffness of the joints numerous small, discrete maculopapular lesions were noted in the skin of the upper extremities. Some of these areas were painful.

The patient was well developed and nourished and appeared acutely ill. There were numerous red maculopapular lesions varying from 5 to 20 mm in diameter on the arms and dorsum

of both forearms. Some of these lesions were slightly nodular and did not fade on pressure. There were four petechiae, each approximately 2 mm in diameter in which, over the course of the next twenty-four hours, gray centers rapidly developed, as shown in the accompanying illustrations. The petechiae were located over the right olecranon process, on the dorsum of the interphalangeal joint of the right thumb, on the ulnar side of the base of the right little finger, and on the dorsum of the left ring finger. These four lesions were considered to be definitely embolic in origin and were painful. Skin lesions were found only on the upper extremities, and the maculopapular lesions disappeared within twenty-four hours of admission without residual discoloration. No petechiae were seen in the conjunctivae, mucous membrane of the mouth, or under the nails. Smears of the petechia on the right thumb showed numerous pus cells but no organisms, and cultures on enriched mediums remained sterile. No new skin lesions developed. The four petechiae healed in five days with slight bluish discoloration.



Fig. 1—On the dorsolateral surface of the left ring finger, a dark red petechia developed a gray center forming a pustule similar to that on the right thumb.

Examination also showed swelling and tenderness of the left index finger, and pain on flexion of the fingers of the right hand and on movement of the right wrist and left shoulder. The tonsils were large and acutely injected, but there was no exudate on the tonsils or posterior pharyngeal wall. The anterior cervical lymph nodes were enlarged and tender. The lungs were clear. The heart was normal except for an increased rate and a faint systolic murmur heard best at the left sternal margin in the fourth interspace. The spleen was not felt, nor was the area of splenic dullness increased. Pressure deep in the right lower abdominal quadrant caused slight pain. On bimanual pelvic examination there was tenderness in the right adnexal region, and a small mass regarded as the tube and ovary was palpated. The cervix was poorly visualized but there was a large amount of mucopurulent discharge from the vagina. Smears were negative for typical intracellular gram-negative diplococci, and culture of the pus grew only staphylococci. The gonococcus complement fixation test of the patient's blood was twice positive. These manifestations, in addition to the history of metrorrhagia and pain,

suggested pelvic inflammatory disease of gonococcic origin. There was atrophy, partial paralysis and shortening of the left lower extremity, with resultant scoliosis and deformity of the pelvis.

The temperature on admission was 101.4 F (rectal). Hemoglobin (Sahli) was 85 per cent, red blood cells numbered 4,460,000 and white blood cells, 21,000 per cubic millimeter. The differential count showed polymorphonuclear leukocytes, 81 per cent, lymphocytes, 13 per cent and mononuclears, 6 per cent. The platelets and red blood cells were normal in appearance. On four examinations of uncatheterized urine specimens a slightest possible trace of albumin, by the nitric acid ring test, and a small number of white blood cells were found. When the patient was admitted, a tentative diagnosis of septicemia was made. A blood culture taken at that time on beef infusion, dextrose broth and blood agar produced a growth of a gram-negative diplococcus in all four flasks of the liquid medium at the end of ninety-six hours. The solid medium remained sterile at the end of fourteen days. The organism from the first subculture was agglutinated by both the New York and the Massachusetts State polyvalent antimeningococcus serum in a dilution of 1 to 80. In a dilution of 1 to 160 there was slight agglutination with New York State



Fig. 2—A dark red petechia on the dorsum of the interphalangeal joint of the right thumb became raised, rounded and developed a gray center forming a pustule.

serum. Controls with normal horse serum and Parke Davis polyvalent antigenococcus serum showed no agglutination. Incubation was maintained for one hour at a temperature of 50 C. A control with the patient's serum against a known culture of meningococcus was not carried out. The isolated organism showed other characteristics of the meningococcus. It did not grow at room temperature, it grew poorly in subcultures and only on enriched mediums; it fermented both dextrose and maltose but did not ferment saccharose and lactose.

About twenty-four hours after admission the patient complained of pain in the right thigh. There developed a diffuse swelling with induration, redness, and tenderness on the lateral aspect of the right thigh. There was no fluctuation, and roentgen examination showed no soft tissue destruction or abnormalities of the femur. This condition subsided in four days. The temperature rose to 102 F on the fourth day, having reached normal on the morning of the third day. On the fifth day the temperature was 101 F but for the following eleven days ranged between 98 and 100 F. From the third to the eighth day 8 Gm of sodium salicylate was given daily. There were migratory joint pains in the fingers and knees and migratory swelling, redness and tenderness of the fingers persisted for several days. On numerous occasions pain and tenderness over the long bones was noted. On the twelfth

day the patient developed nonprojectile vomiting, unaccompanied by nausea or headache. Fluids were given subcutaneously, and gastric lavage was done with slight improvement. Repeated examinations showed no positive neurologic signs, excepting the old paralysis of the left lower extremity. Anti-meningococcus serum therapy was deliberately withheld because the temperature was practically normal, the white blood cell count was only slightly elevated, and there were no longer definite signs of blood stream infection. A blood culture taken on the twelfth day was sterile. The cause of the vomiting could not be determined. On the morning of the seventeenth day the patient noticed diplopia. A thorough neurologic examination showed no changes. The temperature was only 100 F, but the white blood cell count had increased from 13,000 to 21,000 per cubic millimeter. With the possibility that the diplopia and vomiting were signs of early meningitis, a lumbar puncture was performed, with completely negative spinal fluid examination. However, 20 cc of New York State antimeningococcus serum was given intrathecally, 40 cc intravenously, and 20 cc intramuscularly. Two days later 65 cc was given intravenously and 15 cc intramuscularly. On the three following days 20, 60 and 60 cc, respectively, was given intravenously. The day following the last injection of serum moderately severe serum sickness developed, lasting about twelve days. The diplopia and vomiting disappeared in two days after serum therapy was instituted. After recovery from serum sickness the patient was considered to be well. However there was vomiting on two occasions following dietary indiscretion shortly before her discharge from the hospital forty-three days after admission.

The patient was readmitted to the hospital three weeks later with another attack of acute tonsillitis. She had been fairly well during the interim but had occasionally vomited after meals. Except for the absence of skin lesions, joint involvement and evidence of pelvic inflammatory disease, the physical examination was the same as on the first admission. The temperature was 102 F (oral) but returned to normal in eighteen hours. The white blood cell count was 15,000 per cubic millimeter and the hemoglobin and red blood cell count were unchanged. Lumbar puncture gave normal results. Blood culture and the gonococcus complement fixation test were negative. Throat and nose cultures showed no significant organisms. A smear from the cervix uteri was negative for intracellular gram-negative diplococci. The sore throat quickly subsided, and the patient was discharged from the hospital in one week.

There were at least three subsequent mild attacks of tonsillitis until tonsillectomy was performed, Dec. 28, 1933, under local anesthesia. The patient is being followed in the outdoor department and has remained well, except for occasional vomiting after meals, unaccompanied by nausea or pain. Gastric analysis and roentgen examination of the gastro-intestinal tract by barium meal and enema were normal. The cause of the vomiting is believed to be psychic.

COMMENT

The first case is a classic example of chronic meningococcemia with the triad of intermittent chills and fever, arthralgia and skin eruptions. A total of 1,275 cc of specific polyvalent antimeningococcus serum was administered intravenously and subcutaneously, with ultimate recovery of the patient. In view of the tendency of many patients with meningococcemia to recover spontaneously, failure to obtain immediate improvement with serum therapy in this case prevents one from concluding that there was any beneficial effect.

In the second case the onset of a chill fever, joint pains and petechiae accompanying an acute infection of the upper respiratory tract suggested a septicemia. This opinion was confirmed by growing the meningococcus in the blood culture taken twenty-four hours after the onset of symptoms. Subsidence of the acute symptoms suggested beginning spontaneous recovery before serum therapy was instituted. However, in the early stages of chronic meningococcemia there may be

afebrile asymptomatic periods of several days' duration. It is therefore possible that fever and chills of chronic meningococcemia would have developed had serum been withheld longer. Serum therapy that appears successful may fail to eradicate the infection completely. Specific serum was administered in one reported case¹ but fulminating meningitis developed nine months after apparent recovery from a meningococcemia with intermittent fever of two months' duration.

The one death in our four cases was due to terminal meningitis, which developed after seven months of intermittent fever. Antimeningococcus serum was not given, because the isolated organism was thought to be a gonococcus.

Although beneficial effects of specific serum therapy in meningococcemia are not always demonstrable, it is believed that intensive intravenous treatment with polyvalent antimeningococcus serum should be given, regardless of the course of the symptoms or the inability to isolate or agglutinate the organism.

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TOXIC CIRRHOSIS OF THE LIVER

REPORT OF A CASE DUE TO LONG CONTINUED
EXPOSURE TO CARBON TETRACHLORIDE

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Many chlorinated hydrocarbons have a toxic action on the liver. Of these, chloroform (CHCl_3) is the best known. Carbon tetrachloride (CCl_4) is closely related chemically to chloroform and likewise is a hepatic poison. Because of its noninflammable character and because it is an excellent solvent for fats and greases, it is extensively used in industry.¹ It has been introduced into the home as a fire extinguisher and a dry cleaner under the trade names of "Pyrene" and "Carbona." It is sometimes used by hairdressers as a dry shampoo. It has supplanted such inflammable liquids as naphtha and gasoline in many commercial dry-cleaning plants. It is widely used in medicine as a vermifuge in the treatment of hookworm disease.

Many cases of acute poisoning have now been recorded following the inhalation of the fumes of carbon tetrachloride.² This may produce only a slight dizziness or nausea, but in severe cases death ensues. Occasionally after oral administration as a vermifuge a lethal quantity has been absorbed from the bowel.³ In many of these fatal cases death is due to an acute toxic necrosis of the liver with the clinical picture of acute yellow atrophy. Several investigators, among them Gardner, Lamson and their co-workers,⁴ have reported the experimental production in animals of acute hepatic injury by the administration of carbon tetrachloride, either orally, intravenously or by inhalation, so that

the substantial identity of the clinical and the experimental lesions is accepted.

In addition to this acute injury, Bollman and Mann⁵ have shown that hepatic cirrhosis can be produced in dogs by the repeated administration of small doses of carbon tetrachloride over a prolonged period of time. This observation of Bollman and Mann has since been confirmed by Lacquet,⁶ Higgins⁷ and Hartman.⁸ The clinical counterpart of the latter condition, that is, chronic carbon tetrachloride poisoning with hepatic cirrhosis, has not previously been reported so far as we have been able to determine. Butsch⁹ has described a case in which ascites developed in a man after he was exposed, over a period of six months, to the fumes of carbon tetrachloride while cleaning telephone parts. In addition to the ascites there was a definite lipemia and a great increase in the cholesterol content of the serum, such as Rosenthal and Lillie¹⁰ and McMahon and Weiss¹¹ found associated with acute carbon tetrachloride poisoning in experimental animals and in human beings. There were no other clinical manifestations, and various tests for hepatic function gave normal responses. The observations in the case of

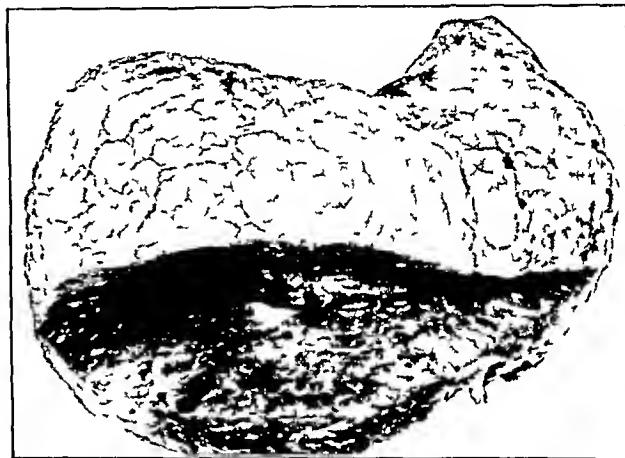


Fig 1—Gross specimen showing nodular surface and lobulations of cut surface.

Butsch are suggestive of cirrhosis but not conclusive, for the possibility of a subacute toxic injury of the liver cannot be entirely excluded.

In the present case the history, the physical signs and the laboratory observations were sufficient to permit the diagnosis of cirrhosis of the liver, this diagnosis being confirmed at necropsy. The history in reference to carbon tetrachloride is highly significant.

REPORT OF CASE

History—A man aged 46, an Italian, presented himself at the hospital, May 10, 1933, because of "swelling of the stomach" of three months' duration.

For the past eleven years the patient's occupation had been that of a cleaner of clothes. His work consisted of washing

Added by a grant from the Harriet Weil Fund
From the Department of Medicine, New York Post Graduate Medical School and Hospital.
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2 McGuire L. W. Carbon Tetrachloride Poisoning. *J. A. M. A.* 99: 988-989 (Sept. 17) 1932.
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clothes in an open receptacle in a small, poorly ventilated room. The cleaning fluid used since 1928 was a mixture of 55 per cent of carbon tetrachloride and 45 per cent of naphtha and benzine. During this period many other men had attempted to work with him, but none could continue because they soon became ill, with loss of appetite, diarrhea and vomiting. One worker, according to the patient, had "turned yellow." Many times during this period the patient had had spells of nausea and vomiting and had had severe vertigo when he worked with the cleaning fluid for any period of time. He insisted that although he occasionally had wine to drink with his meals, he



Fig 2—Cross section under low power showing lobulations and infiltration of connective tissue

never drank spirituous liquors. The rest of the past history was unimportant.

He had had difficulty for three years with what he termed "gas on the stomach." Flatulence and a sensation of epigastric fulness and distention followed the ingestion of food and was temporarily relieved by catharsis and occasionally by sodium bicarbonate. He had had dull aching pains, localized in the right upper quadrant of the abdomen for a year. This usually appeared after a heavy meal or after eating greasy food. Three months before admission this pain had been more severe and he noticed that there was considerable tenderness over the area of pain. Coincident with the onset of tenderness and increase in pain, the abdomen began gradually to increase in size. He had occasional epistaxis. Constipation and gas formation were marked. He also noted that while his weight had remained stationary, his arms, face and chest had become thinner. He felt tired all the time and did not have enough strength to work.

Physical Examination—The patient was dark complexioned and had a quite sallow appearance, he was 5 feet 5 inches (165 cm) tall and weighed 151 pounds (68.5 Kg) (standard weight for height and age is 139 pounds, or 63 Kg). The sclerae were slightly but definitely icteric in tint. The lips and mucous membranes were slightly cyanotic. The face and arms were thin and contrasted markedly with the distended abdomen. The latter was flat on percussion throughout and had a marked fluid wave. The liver was palpable four fingerbreadths below the costal margin and was very firm. The spleen was palpable by ballottement three fingerbreadths below the costal margin. There was some venous enlargement in the superficial veins of the abdominal wall both anteriorly and posteriorly. The abdominal circumference was 39 inches (99.5 cm). The blood pressure was 110 systolic, 70 diastolic. The rest of the examination was normal.

Laboratory Examination—The fluid intake was limited to about 1,000 cc, the actual intake varying from 880 to 1,240 cc. Under these conditions the daily output of urine varied from 500 to 900 cc, with a specific gravity varying between 1.020 and 1.027. Individual urine specimens contained traces of protein and urobilin but were otherwise normal. Bile was not present.

There was a moderate degree of anemia, the hemoglobin being 73 per cent (Sahli), the erythrocytes numbered 3,810,000, and the leukocytes 7,300 with a normal differential count.

The chemical analysis of the blood revealed a blood urea nitrogen of 121 mg, sugar 82 mg, cholesterol 167 mg and cholesterol esters 77 mg per hundred cubic centimeters. The icterus index was 15 but the serum bilirubin was less than 20 mg. The van den Bergh reaction was indirect.

The galactose tolerance test, May 16, with 40 Gm. of galactose, gave a urinary excretion of 17 Gm. June 3, the excretion was 23 Gm. The bromsulphalein test, May 11, showed a retention of 30 per cent at the end of half an hour.

Gastric analysis showed the presence of free hydrochloric acid. Biliary drainage was done on several occasions. Concentrated specimens of bile were obtained each time, no crystals were in the sediment, and cultures of the bile were sterile.

Progress—The patient was placed on a high carbohydrate, salt-free diet with limitation of the intake of fat and protein. Because of the work of Minot and Cutler¹² showing the beneficial effects of calcium administration in dogs with carbon tetrachloride poisoning, 60 grains (4 Gm) of calcium lactate was given twice a day. Before mersalyl was given, ammonium chloride was administered in daily doses of 9 Gm. May 31, a dose of 1 cc of mersalyl (salyrgan) was given intravenously. The urinary output was 1,500 cc that day and 1,200 cc on each of the two succeeding days. June 3 a second injection of mersalyl was given with a diuresis of 2,000 cc during the following twenty-four hours.

There was marked improvement while the patient was in the hospital. He felt much stronger. The girth of the abdomen decreased to 33 inches (84 cm). The weight decreased from 151 pounds to 134 pounds (61 Kg). With the disappearance of the ascites, the liver and spleen could be palpated with ease, the apparent size being the same as on admission. The patient was discharged from the hospital in good condition after twenty-five days.

The patient continued to improve in strength for several months and was free from edema and was able to do light work. Examination in September indicated that the liver was palpable at the costal margin, while the spleen could no longer be felt. September 20 a bromsulphalein test showed a retention of 50 per cent of the dye at the end of thirty minutes, suggesting that the hepatic lesion was progressive. About this time and contrary to medical advice, he returned to work at cleaning



Fig 1—Cross section under high power showing swollen liver cells, leukocytic infiltration and cutting off of cell groups by invading fibrous tissues

clothes and was again exposed to fumes of carbon tetrachloride. A few weeks later he began to have "gas" and abdominal distress after eating, and the abdomen became progressively larger. November 7 his weight was 144 pounds (65 Kg) and examination showed the presence of a moderate degree of ascites. He was again given ammonium chloride and a series of injections of mersalyl. The diuretic response was unsatisfactory, and the ascites became progressively more marked. November 23 he was readmitted to the hospital. His

12 Cutler J T The Influence of Diet on Carbon Tetrachloride Intoxication in Dogs J Pharmacol & Exper Therap 45 209 226 (June) 1932 Minot A S and Cutler J T Guanidine Retention and Calcium Reserve as Antagonistic Factors in Carbon Tetrachloride and Chloroform Poisoning J Clin Investigation 6 369 (Dec) 1928

weight was 145 pounds (65.8 Kg). Abdominal paracentesis of 9,000 cc of clear, straw-colored fluid was done. When discharged the following day his weight was 136 pounds (61.7 kg). The paracentesis gave temporary relief but the ascites recurred within a few days and could no longer be controlled by medical means. He was readmitted to the hospital and a second paracentesis was done, December 12, 3,500 cc of fluid being removed. Following paracentesis, 2 cc of mersalyl was given intravenously. The fluid intake the succeeding twenty-four hours was 1,000 cc and the urine output 2,000 cc. In spite of frequent injections of mersalyl following his discharge from the hospital, the ascites recurred. The patient was readmitted to the hospital and a paracentesis of 6,000 cc was done, December 28.

Because of the inability to control the ascites further by medical therapy, an exploratory laparotomy was decided on. It was performed by Dr. Erdmann, December 29. A large amount of ascitic fluid was present in the peritoneal cavity; the liver was markedly cirrhotic, and the spleen was hypertrophic. A splenectomy was done and the omentum implanted into the abdominal wall.

Following the operation the patient did not rally. The pulse and temperature became progressively elevated and he died three days after operation.

At necropsy, advanced hepatic cirrhosis, postoperative hemorrhage and old infarcts of the right kidney, with compensatory hypertrophy of the left kidney, were found.

Pathologic Examination.—The spleen weighed 600 Gm and measured 205 by 100 by 51 mm. It appeared to be slightly firmer than normal. On section the pulp was bright red with a few gray streaks. The follicles were not conspicuous.

Microscopic examination showed the splenic follicles to be 1 to 2 mm in diameter and rather inconspicuous in the hypertrophied spleen. The enlargement of the spleen was due chiefly to dilatation of the venous sinuses and an increase of reticulum in the walls of these sinuses. They were rather stiff so that they remained distended in the fixed specimen. There was also an increase of fibrous tissue and apparently of smooth muscle in the capsule of the spleen and in the trabeculae that extended into its substance. The cellular structure appeared not to be disturbed qualitatively. Our pathologic diagnosis was splenomegaly of chronic passive congestion.

The liver measured 15 by 21 by 7 cm and weighed 1,135 Gm (fig. 1). Its surface was irregularly nodular; the individual nodules varying from 5 to 10 mm in diameter raised from 2 to 4 mm above the liver surface. They were grayish brown to reddish brown and were separated by irregular branching strands of grayish white tissue. The capsule was smooth and glistening. On section the organ cut with a well marked increase in resistance. The cut surface consisted of irregular islands of grayish brown parenchyma surrounded by diffusely branching strands of connective tissue.

Microscopic examination showed the external capsule of the liver to be about 0.5 mm in thickness with very coarse bands of connective tissue extending from it into the substance of the organ. These bands entirely surrounded small lobules of hepatic tissue in some places (fig. 2). The strands of fibrous tissue in some places were richly infiltrated by abundant lymphocytes. The bile ducts were slightly increased in number. Occasionally they contained small clumps of exfoliated epithelial cells, but on the whole the bile ducts appeared normal and there was no evidence of excessive inflammatory infiltration about them. The change in the liver appeared to be due to destruction of the hepatic cells, with a compensatory hyperplasia of the remaining hepatic elements. In this way numerous small lobules which were highly irregular in shape and which were partly or entirely surrounded by bands of connective tissue more or less richly infiltrated by lymphocytes had been formed (fig. 3). The hepatic cells themselves appeared to be larger than normal and occasionally contained giant nuclei. Our pathologic diagnosis was chronic hepatitis and cirrhosis.

COMMENT

The patient presented sufficient evidence for the clinical diagnosis of hepatic cirrhosis and this diagnosis was confirmed at necropsy. The various agents that have been suggested as possible causes of cirrhosis are

legion. The experimental production of hepatic cirrhosis in animals by chronic intoxication with carbon tetrachloride has been amply proved. The patient was exposed to the fumes of carbon tetrachloride over a prolonged period and it seems reasonable to conclude that, while the amounts inhaled were insufficient to produce a violent toxic reaction at any one time, they nevertheless caused a diffuse destruction of hepatic tissue with resultant fibrosis and cirrhosis. In view of the history and in the absence of evidence implicating other etiologic factors, we believe that this case represents the clinical counterpart of the experimental lesions previously referred to and therefore is a valid example of hepatic cirrhosis due to chronic poisoning by carbon tetrachloride.

Exposure to the fumes of carbon tetrachloride in the dry cleaning of clothes, as pointed out recently,¹³ is quite common. When this practice is carried out at home under usual conditions, only small amounts of cleaning solution are used, ventilation is adequate and the exposure is occasional and of short duration. In commercial practice, on the other hand, large quantities of carbon tetrachloride are used and, unless ventilation is adequate and care is taken to prevent inhalation of fumes by the workman, may involve frequent or continuous exposure to the fumes over prolonged periods.

The industrial hazards associated with the use of carbon tetrachloride have recently been reviewed by McCord,¹⁴ who stresses the danger of acute poisoning. The present case demonstrates that, with exposure to the fumes over a prolonged period, chronic poisoning may develop as an additional industrial hazard.

A TYPICAL HEREDITARY SYNDROME

DYSTROPHY OF THE NAILS, CONGENITAL DEFECT OF THE PATELLA AND CONGENITAL DEFECT OF THE HEAD OF THE RADIUS

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Turner¹ has reported the very interesting history of two families in both of which "arthrodysplasia" associated with dystrophy of the nails has occurred as a dominant mendelian character through four generations. The author attempted to clarify the facts from a genetic point of view. Probably he was not familiar with the literature on the association of dystrophy of the nails with skeletal anomalies, since he suggested one pathologic hereditary factor for his first family in which all the affected members showed both anomalies. For the other family, in which several members presented only dystrophy of the nails, he postulated two different pathologic factors, one of which (the factor for arthrodysplasia) manifested itself only when the other factor was also present. Besides, the author thought there was a possibility that there existed a third factor, which, whenever it was present, inhibited the factor for arthrodysplasia, so that only the nail dystrophy would be manifested in cases of this kind.

13 Volatile Poisons in the American Home editorial J A M A 101 1238 1239 (Oct 14) 1933

14 McCord C P Carbon Tetrachloride A Nontechnical Discussion of Its Toxicity Indust Med 1 151 157 (Dec) 1933 From the First Medical Department (Prof. Julius Bauer) of the Policlinic of Vienna

1 Turner J W An Hereditary Arthrodysplasia Associated with Hereditary Dystrophy of the Nails J A M A 100 882 (March 25) 1933

There are two very important reasons against this hypothesis of Turner's. First, one cannot assume essentially different laws for the representation of hereditary characters in the genotype (that is, the sum of all the potential hereditary factors present in the fertilized ovum) in different families. A factor may be more prevalent in one family and less in another, this is perfectly true and may often be observed. However, to believe that a phenotypic hereditary attribute that is represented once by only one genotypic unit might be represented in another case by several different factors in the same species would be contrary to all hitherto known laws of experimental and human genetics. Therefore, whenever a hypothesis is constructed on the genotypic representation of phenotypic characters in human pathology, one explanation must be sought that will be satisfactory for all the observed facts.

The second reason why I cannot agree with Turner's concept is that if two factors are assumed for all the cases, the fact must be explained that usually the two anomalies are inherited together as if they were one. The author tried to explain this by the hypothesis that the factor for the skeletal condition would be manifested only when the factor for the nail anomaly was also present. This assumption is not consistent with a large number of observations in analogous cases in the literature.

When Turner stated that the deformity he described had "never been reported previously," he was right as far as the specific joint anomalies with their different details were concerned. He overlooked, however, several cases in the literature, which I shall refer to later. As a matter of fact, a number of very similar observations have been known. The striking characteristics of Turner's cases are (1) disorders of the nails varying from the total absence of the nail to one that is only a little thinner than normal, always affecting more severely the thumb nail and becoming less marked toward the little finger, (2) defect or at least severe hypoplasia of the patella and large internal condyle of the femur, (3) deformities of the elbow, large prominent internal condyle and other more trivial anomalies of the humerus. In regard to the head of the radius, the author admitted only that it was unusually small, but it is evident from the roentgenograms (fig. 4 in Turner's paper) that there was also a luxation of the head of the radius, (4) hypoplasia of the scapula and of the features of the head of the humerus, (5) slight congenital deformities of the hip joints and anomalies of the ankles, the malleoli being enlarged and the internal one being larger than the external one.

Three of these anomalies and the three most striking ones form in themselves an already well known syndrome, that is, anonychia with congenital defect of the patella and congenital luxation of the head of the radius. The latter need not be present, as there exists also a large number of cases in which only the defect or hypoplasia of the patella is associated with the defect of the thumb nail. This association—obviously the slightest form of this syndrome—is a typical one and is usually found in several members of the same family. The two anomalies are inherited together, so that usually the affected members are afflicted by the two at the same time. Still, there are rare exceptions individuals who may show only the one or the other defect.

In 1928 in the course of a study on genetics of the human skeletal system I² was able to gather from the literature the history of eight families in which congenital defect or hypoplasia of the patella was inherited through several generations. Incidentally, I wish to mention that when I refer to the defect of the patella I mean the isolated one in which the neighboring bones are intact—a rather rare anomaly. In cases of a defect of one or more of the long bones of the leg, the patella is very often lacking too, but these cases are not of interest here. Among the eight families with hereditary isolated congenital absence of the patella there were three³ in which the bone defect was associated with a hereditary defect of the thumb nails in all the affected members of the family. As far as I could ascertain (Little's³ paper in the original was not accessible), the two anomalies always occurred together in the same individual, with one single exception. In the case described by Rubin,³ a boy whose patella was absent had perfectly well developed nails. His sister and mother were afflicted by both deformities and his maternal grandmother had had no thumb nails but there was nothing known about the patellas. At that time I was concerned only with hereditary anomalies of the bones and so I did not mention a case of Most⁴ with defect of the thumb nails and only rudimentary development of the other nails in a child, in four of his sisters and brothers, in his father, in the five paternal uncles and in the paternal grandmother. The child showed, among other deformities that do not belong to the syndrome here discussed (clubfoot on one side, talipes calcaneovalgus on the other, contracture of the hip and knee joints and so on, which probably are at least partly due to exogenous causes, being present only occasionally in the same individual), a congenital defect of the patella, which of course was not due to exogenous factors. The other members of the family with anonychia were not examined. It seems rather probable that at least in some of them the patella was also lacking. This is the more plausible as it is known that a defect of the patella may not produce any disturbances for the individual and very often he does not even know about this defect.

Since my publication I have come to recognize, in addition to this typical duality—defect of the patella and thumb nail—a somewhat broader syndrome. There exist a few more families in which is inherited not only the defect of the thumb nail but also the dystrophy or partial defect of the other nails, as shown in the case of Most. There is not only defect of the patella but also other anomalies of the joints, particularly luxation of the head of the radius and other less striking, less constant and less characteristic deformities. The first of these cases had been reported before my first paper on this subject was published. As this was the only case known at the time, the association of anomalies as a typical syndrome did not occur to me. It was Trauner and Rieger⁵ who published this pedigree with congenital luxation of the head of the radius and dystrophy of the nails in six members of four generations. One of the patients also had a hypoplasia

2 Aschner Berta Ztschr. f. Konstitutionslehre 14 129 (June 8) 1928. Aschner Berta and Engelmann Guido Konstitutionspathologie in der Orthopädie Berlin Julius Springer 1928.
3 Little cited by Rubin George Congenital Absence of Patellae J. A. M. A. 64 2062 (June 19) 1915. Wolf München med. Wchnschr. 1900 p. 766.
4 Most A. Allg. med. Centr. Ztg. 1903 p. 153.
5 Trauner R. and Rieger H. Family with Six Cases of Congenital Dislocation of Radius and Identical Anomalies of Finger and Knee Joints and Nails Arch. f. klin. Chir. 137 659 1925.

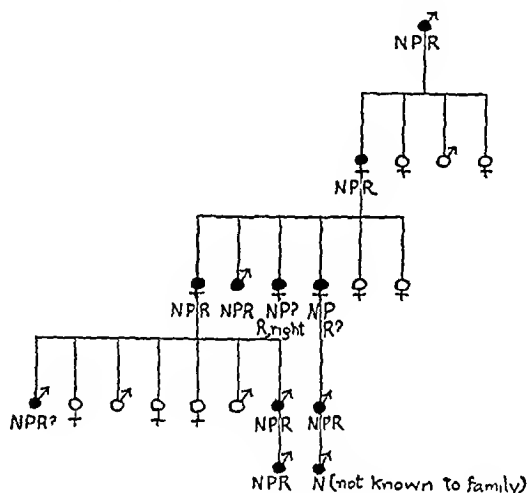
of the patella. In addition, there were signs of slight arthrosis deformans⁶ of the knee joints and a camptodactylia (congenital contraction of the fifth and fourth finger) which were inherited in this family. Later on, Oesterreicher⁷ observed a case in which eleven members in five generations of the same family were affected with congenital defect of the thumb nail and the patella. The latter was not quite certain in two of them. In seven members there were also to be found a deformity and congenital luxation of the head of the radius on both sides, in one individual this was present only in the right arm and in three others it was not known whether there was also a deformity of the elbow joint or not. The anomaly of the joints alone did not occur in that family, as shown in the accompanying diagram. It was only a short time ago that I learned of the two more analogous pedigrees of Turner's

Having related all the facts that it has been possible to obtain to date regarding this syndrome, I shall try to explain the genetic connections and reasons for the phenotypic facts, searching of course for a supposition that will explain satisfactorily all the observations that have been made. As I was aware of only the typical association of the defect of the patella and thumb nail in 1928, I assumed two different pathologic genotypic factors that were responsible for these two anomalies, since each of them might occur alone without the other. In my own table, previously mentioned, I quoted five families in which only a defect of the patella was inherited, the nails being perfectly normal. On the other hand I know from the literature quite a number of cases of hereditary dystrophy and defect of the nails (Tobias,⁸ Ebstein,⁹ Pires da Lima,¹⁰ Hofmann¹¹ and others), in some families associated with congenital alopecia (Nicolle and Halpre,¹² Barrett,¹³ Jeanselme and Rime,¹⁴ White,¹⁵ Jacobsen¹⁶ and others) but without any skeletal anomalies in the whole family. It is therefore obvious that there must exist at least two separate pathologic factors in the genotype, so-called genes, which produce the two anomalies.

The next problem is Why do these deformities occur so frequently together and why are they, once they are both present in a family, always inherited together with very rare exceptions, almost as if they were one factor? For the explanation of the latter fact I previously assumed a linkage between the two genes, which means that they would be situated in the same chromosome. It is known from experimental biology that genes localized in the same chromosome are inherited together like one unit, with a few exceptions, which are caused by certain irregularities in the mitotic division of cells the so-called crossing over. T. Morgan and his school have studied these relations for a great many characters of *Drosophila* with excellent success, and they were

able to plot a geographic map of the situation of many genes in the chromosomes of *Drosophila*. Of course, knowledge is still far distant from that exactitude in human pathology. Since the fundamental laws of heredity are naturally the same for all kinds of individuals whose cells undergo mitotic division, it is obvious that linkage must also play a big role in the heredity of man. This results from the very fact that the number of different genes or hereditary units in man is an enormously large one, while the number of chromosomes probably is twenty-four, or may even be only twelve, and therefore every chromosome must necessarily contain a great many different genes, which are consequently linked together. One example of linkage in man is known for sure that is, the so-called sex-linked characters. In view of this, one certainly has a right to assume a linkage between the two pathologic genes in question.

There is still another problem to be solved. It is understood why the two anomalies, once being present in an individual are inherited together. But why are they to be found so comparatively often in the same



Oesterreicher's pedigree. P defect of the patella N defect of the thumb nails R luxation of the head of the radius

family? With such rare deformities as these two, it cannot be merely chance if out of eight families with defect of the patella three are also affected by the defect of the thumb nails or, if Most's case and the others with the whole syndrome are counted, there are seven families among twelve showing both anomalies. In order to understand this better, one might ask the question. If, for example, an individual with a congenital defect of the patella contains in his genotype a gene producing this anomaly, what is to be found instead in the genotype of a normal individual? This must include somewhere the normal "allelomorph" of that pathologic unit which is a gene for the right development of the patella. In an analogous manner one must conclude of course, that a physiologic gene exists for the normal development of the nails in the genotype. If one of these factors is altered in a certain way, the pathologic gene in question occurs. Now the problem may be considered like this. Why are these two normal genes so often and easily altered at the same time? Julius Bauer had assumed that different genes have the more probability to show pathologic mutations at the same time, the closer they are localized together within the chromosome, as any damage occur-

6 This expression is now generally used in the German literature to characterize the degenerative, consumptive processes of the joints in opposition to the inflammatory ones.

7 Oesterreicher W. *Ztschr f Konstitutionslehre* 15 465 (Sept 22) 1930

8 Tobias Norman. Hereditary Familial Dystrophy of the Nails. *J A M A* 84 1568 (May 23) 1925

9 Ebstein E. *Dermat Wchnschr* 68 113 1919

10 Pires de Lima J. *A Ann de dermat et syph* 5 266 (May) 1924

11 Hofmann F. *Arch f Dermat u Syph* 89 381 1908

12 Nicolle G and Halpre A. *Ann de dermat et syph* 6 675 1895

13 Barrett A M. Hereditary Occurrence of Hypothyroidism with Dystrophies of the Nails and Hair, *Arch Neurol & Psychiat* 2 628 (Dec) 1919

14 Jean elme and Rime. *Bull Soc. franç de dermat et syph* 31 79 1924

15 White C J. *J Cutan & Gen Urin Dis* 14 220 (June) 1896

16 Jacobsen A W. Hereditary Dystrophy of the Hair and Nails. *J A M A* 90 686 (March 3) 1928

ring to one of them and changing it into its pathologic allelomorph may most easily involve its nearest neighbors. So I postulated in 1928 that the genes for defect of the patella and the thumb nail were not only linked together in the same chromosome but are even very near neighbors to one another within the chromosome. This seems to me the more plausible, as it is known indeed from Morgan's studies that every gene has its own particular place within the chromosome and that linked genes, the closer they are placed together, show a less frequent tendency to be separated by crossing over. Since crossing over is very rare in my case, a very near relationship must be assumed. This hypothesis of the very close neighborhood between the two linked factors in question entered into the American literature through my chief, Julius Bauer,¹⁷ who has discussed this concept in several lectures.

There is no difficulty whatever in explaining the new facts that have been learned from the observations of Trauner and Rieger, Oesterreicher and Turner. Here is an additional third constant, hereditary symptom, the luxation of the head of the radius. This deformity has been observed occurring as a hereditary anomaly alone without the other two deformities (Hoeftmann-Weszkalnys,¹⁸ Weszkalnys,¹⁸ Servier,¹⁹ Princtau,²⁰ von Sury,²¹ Dencks,²² Sieber,²³ and others). It is obvious, therefore, that there exists a third pathologic factor causing the congenital luxation of the head of the radius. This factor is likewise closely linked to the other two, as the three symptoms are inherited together with few exceptions. Probably the neighborhood of this third gene to the others is not quite as close as the one previously mentioned, as the whole syndrome does not occur quite so often as the association of the defect of the thumb nail and the patella. The other anomalies of the joints described in these families are far too variable for one to analyze certain genes, and not much more can be said at present than that a constitutional inferiority of the joints seems to belong to this syndrome.

As the hereditary camptodactylia in the family of Trauner and Rieger is also seen only in the members affected with the syndrome, it may be assumed that this pathologic gene, which is inherited together with the others, is localized in the same chromosome but is not in an unusually close contact with them. I should not be surprised to find, occasionally, in families with such obvious anomalies in the germ plasma other signs of constitutional deviation as well. Accordingly, it has been seen that in Oesterreicher's family there are quite a number of neuropathic and psychopathic individuals.

I hope I have shown that my assumption—linkage with close neighborhood of the linked characters of several different hereditary pathologic factors—can satisfactorily explain all the clinical data and facts that are known up to the present about the pathologic condition here discussed. Turner's hypothesis could never explain either the cases with hereditary defect of the patella alone or the families with congenital luxation of the head of the radius without dystrophy of the nails. Trauner and Rieger, in discussing only their own pedigree, assume for this case a polyphenia that

means one single hereditary unit in the genotype which produces several different and disconnected signs in the phenotype. Such a polyphenic pathologic factor would certainly clarify the case of Trauner and Rieger, but it would not account for all the other observations as, in the case of polyphenia, the singular phenotypic symptoms could never occur separately. On the contrary, whenever one of them is present, the others have to be there too. I hope that I have succeeded in showing clearly that each of the symptoms may occur alone and independent as a hereditary character, as well as two or three joined together.

It is rather curious, therefore, that even Oesterreicher, who is well acquainted with the related literature, accepts the hypothesis of polyphenia. In my opinion this may be understood by the fact that this author, a neurologist, did not feel sufficiently secure in genetics to form an opinion of his own in regard to the genotypic connections of the observed symptoms. He therefore sought the advice of Paula Hertwig, the biologist. Hertwig, on the other hand, was naturally not familiar enough with the clinical facts, which would make a polyphenia impossible. She derived her theory chiefly from the striking cases presenting the whole syndrome and she argued that a linkage was not probable because that would not explain why the two linked genes should show a pathologic mutation so frequently at the same time. This difficulty is resolved by the assumption of the very close neighborhood in the chromosome. When Oesterreicher declines the linkage on account "of the impossibility of an exact proof in man," it seems rather strange, as the proof cannot be any more exact for the polyphenia than for any other genotypic connection in man. It is rather more likely that a proof can be found for the linkage, as I have already shown that the existence of linkage even in man is very plausible and quite sure for the sex-linked characters. It must not be forgotten that the scientific methods of genetics in man are quite different from those of experimental biology, and only a clinician well acquainted with clinical facts and familiar as well with the biologic laws and progresses of genetics will be able to solve the problems of human genetics.

Vienna IX, Hebragasse 5

Calmness Amid Storm—In the first place, in the physician or surgeon no quality takes rank with imperturbability, and I propose for a few minutes to direct your attention to this essential bodily virtue. Perhaps I may be able to give those of you, in whom it has not developed during the critical scenes of the past month a hint or two of its importance, possibly a suggestion for its attainment. Imperturbability means coolness and presence of mind under all circumstances, calmness amid storm, clearness of judgment in moments of grave peril, immobility, impassiveness, or, to use an old and expressive word, phlegm. It is the quality which is most appreciated by the laity though often misunderstood by them and the physician who has the misfortune to be without it, who betrays indecision and worry, and who shows that he is flustered and hurried in ordinary emergencies, loses rapidly the confidence of his patients. In full development, as we see it in some of our older colleagues, it has the nature of a divine gift, a blessing to the possessor, a comfort to all who come in contact with him. You should know it well, for there have been before you for years several striking illustrations, whose example has, I trust, made a deep impression. As imperturbability is largely a bodily endowment, I regret to say that there are those amongst you, who, owing to congenital defects may never be able to acquire it. Education, however will do much and with practice and experience the majority of you may expect to attain it to a fair measure.—Sir William Osler

17 Bauer Julius *Beihft z Med Khn* 21.1.1925 *Bull Johns Hopkins Hosp* 44.52 (Jan) 1929 *Constitutional Principles in Clinical Medicine* Harvey Lectures 28.37, 1932-1933

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23 Sieber H *Ztschr f orthop Chir* 46.555 1925

Clinical Notes, Suggestions and New Instruments

PREVENTION OF SCARLET FEVER

MATTHEW MOLITCH M D JAMESBURG N J

There is still present, in the minds of many general practitioners, a doubt of the value of immunization against scarlet fever. In the New Jersey State Home for Boys, routine Dick tests are done on every boy admitted and all boys with a positive reaction are treated with *Streptococcus scarlet fever* toxin prepared according to the Dick method. Five doses, consisting of 500, 2,000, 8,000, 25,000 and 80,000 skin test doses, are given hypodermically at weekly intervals. The accompanying table gives the incidence of positive reactions in 3,025 Dick tests. All the tests during the last nine years were done by Dr G F Leonard of the Biological Laboratories of E R Squibb & Sons, which eliminates a possible source of error. An intradermal injection of 0.1 cc of standard scarlet fever toxin, containing one skin test dose, was given in each case and a reaction of 1 cm or more was considered positive.

Our percentage of positive cases (15.5) is rather low but understandable when one considers the strata of society from which our boys come. They have probably been immunized to most infections during earlier childhood. Our boys range in age from 8 to 17 years and are committed only from the state of New Jersey. Melnick,¹ in a study of the children in the St John's Orphanage in Philadelphia, found an incidence of 17 per cent positive, while Bull,² in an analysis of his private patients, found an incidence of 83 per cent positive. The latter group was described as privileged children who have been sheltered from infection.

An analysis was made of a group of patients, all of whom were treated by me and who remained in the institution long enough to be retested after treatment. One hundred and seven boys comprise this group. Eighty-five were tested once from three to seventeen months after treatment was completed, while twenty-two were tested twice from sixteen to thirty months after treatment was completed. Two boys were found to have positive reactions ten and seventeen months respectively after treatment. This gives an incidence of success in 98.2 per cent. Both were given an additional course, and one became negative while the other left the institution before he was retested.

Incidence of Positive Dick Tests

Year	Total	Negative	Positive	Positive per Cent
1925	669	444	125	21.0
1926	77	62	15	19.4
1927	312	275	37	11.8
1928	317	266	51	16.0
1929	306	260	46	15.0
1930	404	335	69	17.0
1931	302	259	43	14.2
1932	319	283	36	11.2
1933	419	371	48	11.4
Grand totals	3,025	2,500	525	15.5

There have been some slight reactions to immunization chiefly headache, fever, occasionally nausea and vomiting and rarely rheumatic pains. Scarlatinal eruptions were not noted in any of our cases but peculiarly were noted in two boys following tetanus antitoxin given for prophylactic purposes. Of the 107 boys 12 were admitted to the institution hospital an incidence of 11.2 per cent. Seven boys were admitted once during the five weekly treatments, while four were admitted twice and one boy was admitted three times. It should be stated that boys are admitted to the hospital particularly because of elevation of temperature or for any reason that temporarily handicaps their academic or vocational training.

No precautionary measures were given to decrease the incidence of reactions because of their minor character. Melnick¹

¹ Melnick Theodore. Prevention of Scarlet Fever. Arch. Pediat. 50: 158 (March) 1933.

² Bull H G. Report on a Group of Fifty Children Dick Tested Eight Years After Immunization Against Scarlet Fever. J. A. M. A. 101: 363 (July 29) 1933.

outlined a precautionary procedure which the average practitioner might not care to use, because of its resemblance to a preoperative routine. During the past three years two cases of scarlet fever occurred in the institution. One was in a boy who had a positive Dick test and was awaiting treatment, while the other was in a nurse who had not been Dick tested.

CONCLUSIONS

- 1 Three thousand and twenty-five boys were Dick tested, with an incidence of 15.5 per cent positive reactions.
- 2 An analysis was made of 107 treated cases, with an incidence of success in 98.2 per cent.
- 3 Twelve boys (11.2 per cent) were admitted to the institution hospital because of reactions, chiefly elevation of temperature.
- 4 No case of scarlet fever developed in negative Dick cases or in treated positive cases. One case developed in an untreated positive.

Therapeutics

THE THERAPY OF THE COOK COUNTY HOSPITAL

EDITED BY BERNARD FANTUS, M D
CHICAGO

NOTE.—In their preparation these articles are submitted to the members of the attending staff of the Cook County Hospital by the director of therapeutics, Dr Bernard Fantus. The views expressed by various members are incorporated in the final draft prepared for publication. The series of articles will be continued from time to time in these columns.—Ed

THERAPY OF TETANUS

PROPHYLAXIS

1 *Medical, Surgical and Obstetric Asepsis*—Tetanus has followed infection from hypodermic injection, especially of tissue-destroying drugs (such as quinine) and if made into the lower extremity. It has occurred also after vaccination. Infection may occur from blisters on the feet, from the umbilicus in the new-born infant, from bed sores contaminated by feces, and from burns. Wound discharges of patients with tetanus are infectious, hence care must be taken to prevent inoculation of others. Even though in actual practice such transmission is rare, patients with tetanus are best treated by a special nursing and medical group, trained to give constant and adequate care.

2 *Treatment of Contaminated Wounds*—Under local or general anesthesia, as needed, the wound should be incised, if this is required, to remove all foreign bodies (dirt, clothing, bone denuded of periosteum). Cleansing with soap and water, should be followed by liberal use of solution of hydrogen dioxide. For wounds that cannot be rendered aseptic by cleansing and debridement, the Carrel-Dakin technic of wound disinfection is probably best. Cauterization should never be done, as necrotic tissue favors the growth of tetanus germs. The skin surrounding the wound should be painted with tincture of iodine to produce and maintain hyperemia.

3 *Antiserum*—In all cases in which earth or street dirt has entered the tissues, one should inject 10 cc (1,500 units) of antiserum subcutaneously near the wound as soon as possible (from 0.5 to 1 cc first and wait three or four minutes for possible reactions before injecting the remainder of the dose). If there is a large, dirty, macerated wound, the minimum initial dose should be 5,000 units. A second dose should be given within ten days, as immunity lasts for only seven

to ten days. Children are given half of the adult's dose. Should a secondary operation become necessary, the prophylactic dose should be repeated, but care should be taken first to desensitize the patient to horse serum.

TREATMENT

1 *Antispasmodic* — For patients admitted with spasms, securing of immediate and prompt relaxation is imperative. Tetanic spasms should be controlled and continuous sleep or at least complete muscular relaxation secured to avoid respiratory muscle spasms and exhausting convulsions.

(a) Chloral hydrate, from 1 to 2 Gm every four hours (up to 10 Gm daily), may be given, preferably in starch water by rectum, and the patient kept asleep until the symptoms have abated. Instead of this, amytal sodium may be used in doses of 0.2, 0.4 or 0.8 Gm by mouth, by rectum or intravenously as required to keep the patient under moderate narcosis all the time.

(b) Morphine sulphate, 8 mg, may be given hypodermically every four hours as required to allay pain. While cyanosis is no contraindication to its use, it should be given with caution so as not to depress the respiratory center.

(c) In severe cases with recurring convulsions, magnesium sulphate should be injected intrathecally under light chloroform anesthesia. The dose is 1 cc of 25 per cent solution to each 10 Kg of body weight, for children, 0.5 cc for each 10 Kg. The patient should be kept in the horizontal position with the head slightly elevated to protect the respiratory center. The dose should not be pushed to complete relaxation but merely to the point of rest and comfort. The effect sets in within half an hour and lasts up to twenty-four hours, when the dose should be repeated (0.8 cc of solution to each 10 Kg). If respirations become slow or shallow, from 2 to 5 cc of 5 per cent solution of calcium chloride should at once be injected intravenously and the spinal canal washed with physiologic solution of sodium chloride. If necessary, artificial respiration should be kept up for hours. If spinal puncture cannot be used 25 per cent solution may be given subcutaneously (from 1 to 2 cc to each 10 Kg of weight), four times in twenty-four hours.

(d) The masseter muscles should be infiltrated with procaine hydrochloride (0.5 per cent solution) against trismus resisting other treatment.

2 *Antiserum* — This must not be given until the spasms are under control. A preliminary skin test should be given. (a) Local infiltration of the tissue (muscles) should be done some distance away from the wound with 20,000 units of antiserum.

(b) Intravenous injection with 60,000 units of antiserum should be done at the same time as the local infiltration. It is best given diluted with Ringer's solution, and by the drop method.

One must be prepared to treat anaphylaxis (q.v.) with epinephrine.

(c) Intramuscular injection is the most important mode of administration. In milder cases (those with a long incubation period or with local symptoms only) it should be given instead of intravenous injection, and, in more severe cases, following the intravenous injection, 60,000 units daily for the first two days.

(d) Intrathecal injection is given only in severe cases with trismus, under very light chloroform anes-

thesia, and after permitting from 10 to 20 cc of spinal fluid to escape, 15,000 units slowly (preferably by gravity), and repeated daily until the symptoms subside. It is well to dilute the serum in the syringe with some of the spinal fluid. Cistern injection is considered best in head injuries. The advantage of intrathecal injection is questioned.

(e) Endoneural injection may be considered in desperate cases. Its advantage has not been established.

3 *General Regimen* — Continuous and special medical and nursing care is essential.

There is constant danger of tonic spasm of the respiratory muscles, even as late as the fourteenth to the twenty-first day, which may produce fatal asphyxia. These spasms are best detected by frequent gentle palpation of the abdomen and watching the respirations as soon as the abdomen becomes rigid. The occurrence of this rigidity indicates immediate administration of more sedative even if the patient is asleep.

(a) Absolute rest and quiet in a dark room are necessary—no talking, no switching on of lights, no slamming of doors. The patient should be given an adequate sedative before being disturbed for any treatment, such as an enema or catheterization.

(b) The diet should consist entirely of liquids, as solids may cause spasm of the muscles of deglutition. If swallowing is impossible, retention enemas of 5 per cent dextrose solution should be given. Milk may be fed by gavage, later, from a bulb or a nursing bottle with large holed nipple. Intravenous or intramuscular injections of 5 per cent dextrose solution must be used, in addition, to a sufficient extent to maintain an adequate fluid income.

(c) Frequent aspiration of the nasopharynx is required in patients unconscious from large doses of sedative.

(d) A laxative, such as liquid petrolatum or castor oil, is required, as constipation is the rule.

(e) Catheterization may be demanded. The bladder must be watched for distention in all cases.

(f) The patient should be kept as comfortable as possible, as discomfort causes restlessness and even convulsions and increases the amount of sedative medication required, and with this the danger from the sedative. Sponge baths may be demanded if the patient is hot and perspiring, mentholated calamine lotion and epinephrine injections, for serum reactions.

4 *Surgical Treatment* — Here opinion is divided. Some believe that operation is not indicated after the onset of the disease excepting in rare cases. Others consider acute tetanus a surgical emergency indicating, if possible, complete excision of the focus without entering infected tissue and, if this is not feasible, wide exploration under general anesthesia for debris and foreign bodies in all cases in which the severity of the disease increases while the patient is in the hospital. At any rate, no surgery should be undertaken until after sedative and antitoxin treatment has been established.

5 *Artificial Respiration* — If enfeeblement of respirations and cyanosis manifest themselves, artificial respiration, preferably by means of a respirator, should be instituted. Asphyxia from spasm of the respiratory muscles should be prevented by adequate antispasmodic therapy, it is not amenable to the respirator. Patients kept alive for nine days have at least a 90 per cent chance of recovery.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS
H A CARTER Secretary

EVEREADY PROFESSIONAL MODEL CARBON ARC LAMP REACCEPTED

In a report published in *THE JOURNAL*, Aug 15, 1931 page 462, the Council accepted for a period of one year the Eveready Professional Model Carbon Arc Lamp manufactured by the National Carbon Company, Inc., Cleveland. This lamp is designed for general radiation therapy in physicians' offices, hospitals or clinics.

The unit operates on 110-115 volts, 60 cycles, alternating circuit, and the current drawn from the line does not exceed 15 amperes. The carbons are brought into contact, separated and held at proper arc length when burning by means of a motor operated constant current arc control. The feeding of the arc is entirely automatic and the feeding mechanism is started merely by turning on the switch. The carbons are drawn together and, when the arc strikes, they separate to the correct arc length. When the carbons have burned to the minimum permissible length, the arc is automatically extinguished. The transformer mounted on the rugged stand, permits a current of 25 amperes to flow through the arc while but 15 amperes is drawn from the line.

The company claims that the unit will provide sufficient ultraviolet, visible and infra-red radiations to supply the demands of physicians practicing artificial radiation therapy. The claims in the advertising matter and descriptive literature examined by the Council conform with the Council's adopted statement "Regulations to Govern Advertising of Ultraviolet Generators to the Medical Profession." The Eveready Professional Model Carbon Arc Lamp therefore, is reaccepted and included in the list of accepted devices for the regular period of three years.

VICTOR MODEL "B" THERMO-SPECTRAL LAMP ACCEPTABLE

The General Electric X-Ray Corporation manufactures a therapeutic radiant heat lamp called the Model "B" Thermo-Spectral Lamp. It is furnished with two types of radiant energy generators—a nitrogen-filled tungsten filament bulb and a resistance (infra-red) unit. The socket in the chromium plated reflector is standard and the resistance unit can be exchanged for the bulb or vice versa in accordance with technic employed by the physician.



Victor Model "B" Thermo-Spectral Lamp

The stand is equipped with a flexible extension arm, which may be bent at any angle and retain the position given it. The arm is mounted on a sliding vertical rod, which may be adjusted for height, the over-all extension (approximately 7 feet) giving a wide range of adjustments. The shipping weight is 55 pounds.

The unit was investigated in a clinic acceptable to the Council. With the infra-red unit, the distance for comfort on the average skin was found to be 24 inches. At 18 inches the heat was intolerable. The Council believes that the lamp will render satisfactory service to a physician who desires to practice infra-red radiation therapy.

The firm gives the following values:

	Spectral Range Angstrom Units	Dominant in Region of (Angstrom Units)	Wattage
Incandescent bulb	4 000-25 000	9 000-11 000	500 watts
Infra red unit	7 600-150 000	20 000-30 000	600 watts

The Victor Model "B" Thermo-Spectral Lamp, therefore, is placed on the Council's list of accepted devices.

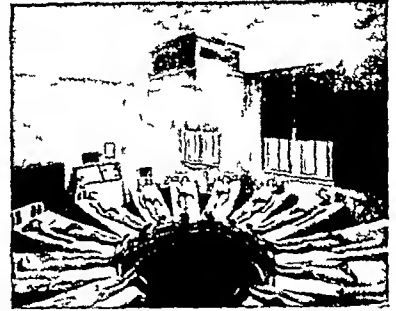
HANOVIA GROUP IRRADIATION LAMP ACCEPTABLE

The Hanovia Chemical and Manufacturing Company offers for sale to the profession the following four models of group irradiation lamps:

- No 2135 A four burner unit for alternating current (60 or 25 cycles)
- No 2133 A two burner unit for alternating current (60 or 25 cycles)
- No 2134 A four burner unit for direct current 220 volts
- No 2132 A two-burner unit for direct current 220 volts

Aside from the number of burners, the construction of these lamps is practically the same. The burners themselves are similar in type to those used in the Super Alpine Sun Lamp which has been accepted by the Council on Physical Therapy and reported on in *THE JOURNAL*, July 30 1932 page 389.

The burner consists of an evacuated tubular vessel constructed of transparent fused quartz containing mercury pools, which function as electrodes and supply mercury vapor for arc operation. The group irradiation unit itself is ordinarily mounted in the ceiling, hence a remote-controlled lighting arrangement is required. The burners are lighted by establishing a momentary contact between the enclosed mercury pools. This is accomplished, first, by tilting the burner in such a manner that the mercury flows from one end to the other, second, by restoring the burner to its normal level so that the mercury flows back to its original position. Lighting is accomplished in the alternating current lamp by a motor-operated tilting device and is controlled by the operator stationed at the control cabinet. Establishment of the arc automatically returns the burner to its proper position and stops the motor.



Hanovia Group Irradiation Lamp Acceptable

The physical and clinical claims in the descriptive literature and advertising matter for this unit conform with the Council's statement "Regulations to Govern Advertising of Ultraviolet Radiation Generators to the Medical Profession."

The Hanovia Group Irradiation Lamp, therefore, is included on the list of accepted devices for physical therapy.

EVEREADY SOLARIUM TYPE CARBON ARC LAMP REACCEPTED

In a report published in *THE JOURNAL*, Aug 22, 1931, page 541, the Council accepted for one year the Eveready Solarium Type Carbon Arc Lamp, manufactured by the National Carbon Company Inc., Cleveland. It is designed to administer therapeutic light treatment simultaneously to groups of patients.

The length of the lamp is approximately 3 feet and the width depends on the number of units included in each lamp. One, two or four units can be housed in a complete solarium lamp. Canopy, reflectors, exhaust fan and remote control cabinet are supplied with each unit. Suitable ammeters for measuring the current at each arc are supplied and placed in a convenient position on each control cabinet. Each unit is designed to accommodate two pairs of carbons. The arc burns between only one pair of carbons at a time. As these burn the arc shifts to the other pair without interruption. The carbons are brought into contact, separated and held at proper arc distance by means of a motor operated, constant current, arc control. The feeding of the arc is entirely automatic and the feeding mechanism is started merely by pushing a switch on the remote control cabinet. The carbons are drawn together and when the arc strikes they separate to the correct arc length. When the carbons have burned to the minimum permissible length, the arc is automatically extinguished. The firm claims that Eveready Carbons will operate the generator for ten hours without attention.

The standard therapeutic solarium unit is built for operation on 220 volt, 60 cycle alternating current, at 60 amperes arc current. The arc potential is approximately 50 volts and each arc requires an input of 3,100 watts at 205 amperes line current.

The claims made for this lamp in the advertising matter examined by the Council comply with the published statement "Regulations to Govern Advertising of Ultraviolet Generators to the Medical Profession." The Eveready Solarium Type Carbon Arc Lamp, therefore, is accepted and included in the accepted list of devices for physical therapy for the regular period of three years.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary

NEO-SYNEPHRIN HYDROCHLORIDE—laevo α -hydroxy- β -methyl-amino-3-hydroxy ethylbenzene hydrochloride.—The hydrochloride of the laevo isomer of a synthetically prepared derivative of phenylethylamine having the formula $C_6H_5OH \cdot CHOHCH \cdot NHCH_2 \cdot HCl$. Neo-synephrin hydrochloride differs from synephrin tartrate in that (1) neo-synephrin hydrochloride is a salt of hydrochloric acid—synephrin tartrate is a salt of tartaric acid, (2) neo-synephrin hydrochloride is a laevo compound—synephrin tartrate is a dextro compound, and (3) the hydroxyl of the nucleus in neo-synephrin hydrochloride is in the *meta* position—in synephrin tartrate it is in the *para* position.

Actions and Uses—Neo-synephrin hydrochloride is a vasoconstrictor which is active when administered orally. It is more powerful in vasoconstrictive ability than synephrin tartrate, and possesses a relatively low toxicity. Applied to mucous membranes it causes contraction of the small blood vessels, thus reducing swelling and congestion of such membranes. Neo-synephrin hydrochloride may be useful in the symptomatic treatment of the nasal congestion accompanying disorders of the upper respiratory tract such as sinusitis, vasomotor rhinitis and hay fever. It may also be employed in combination with a local anesthetic, for surgical or dental use.

Dosage—For topical application to the nasal mucous membrane the 0.25 per cent solution is ordinarily used. The 1 per cent solution, diluted with an equal volume of physiologic solution of sodium chloride or Ringer's solution, may be used when a stronger preparation is desired. For surgical and dental anesthesia, it may be diluted in the proportion of three to four drops of the 1 per cent solution to 10 cc of a 2 per cent procaine hydrochloride solution. Neo-synephrin hydrochloride is relatively stable in alkaline solutions, it may be sterilized by boiling.

Manufactured by Frederick Stearns & Company, Detroit. U. S. patent 1,680,055 (Aug. 7, 1928; expires 1945). U. S. trademark 90,142.

Solution Neo-Synephrin Hydrochloride 0.25 Per Cent—Neo-synephrin hydrochloride 0.25 per cent, sodium benzoate 0.1 per cent, and sodium chloride 0.8 per cent, in distilled water.

Solution Neo-Synephrin Hydrochloride 1 Per Cent—Neo-synephrin hydrochloride 1 per cent, sodium benzoate 0.1 per cent, and sodium chloride 0.8 per cent, in distilled water.

Neo-synephrin hydrochloride occurs as white odorless nonhygroscopic crystals possessing a bitter taste. It is readily soluble in water and alcohol. The aqueous solution is neutral to litmus paper. It melts between 139-141°C. The specific rotation $[\alpha]_D^{25}$ ranges between -46.2 and -47.2.

Transfer 0.3 Gm of neo-synephrin hydrochloride to a glass container, dissolve in 3 cc of water, add 15 drops of ammonia water and rub the glass container with a glass rod the base that separates when washed with cold water and dried melts at 170-171°C without decomposition. Determine the nitrogen content of the base by the micro Dumas method; the nitrogen found is not less than 8.2 per cent nor more than 8.5 per cent. Dissolve 0.010 Gm of neo-synephrin hydrochloride in 1 cc of water and add 1 cc of copper sulphate solution (10 per cent) followed by 1 cc of sodium hydroxide solution (20 per cent); a reddish purple color forms that is not extracted by ether. Dissolve 0.01 Gm of neo-synephrin hydrochloride in 1 cc of water and add 1 drop of ferric chloride (10 per cent); a permanent amethyst purple color develops. Dissolve 0.02 Gm of neo-synephrin hydrochloride in 3 cc of alcoholic potassium hydroxide solution, add 3 drops of chloroform and boil; there is no odor of carbamine (absence of primary amines). Dissolve 0.05 Gm of neo-synephrin hydrochloride in 30-40 cc of distilled water, add 1 cc of diluted hydrochloric acid in

1 cc of barium chloride solution; no turbidity should result (absence of sulphate). Dissolve 0.2 Gm of neo-synephrin hydrochloride in 10 cc of distilled water; the solution yields a negative test for heavy metals when tested according to the U. S. P. X method (see U. S. P. X, page 439). To 1 cc of a solution containing 0.02 Gm of neo-synephrin hydrochloride add 2 drops of a freshly prepared solution of sodium nitroprusside 1 per cent, then 1 cc of sodium hydroxide solution followed by 0.6 cc (10 drops) of glacial acetic acid; the final solution should not be a deeper yellow than the same reagents without the neo-synephrin hydrochloride (absence of corresponding ketone).

Dissolve about 0.2 Gm of neo-synephrin hydrochloride accurately weighed in 200 cc of water, heat to boiling, add 4 cc of diluted nitric acid, followed by silver nitrate solution in slight excess, allow the container and mixture to stand for six hours; transfer to a Gooch crucible, wash well with diluted nitric acid (10 cc of diluted nitric acid diluted to 100 cc), dry at 100°C, cool in a desiccator and weigh the chloride (Cl^-) calculated from the silver chloride weighed is not less than 17.20 per cent nor more than 17.60 per cent. Heat about 0.2 Gm of neo-synephrin hydrochloride accurately weighed for twenty-four hours in an oven at 100°C; the loss is not more than 0.1 per cent. Determine the nitrogen content by the micro Dumas method; the nitrogen found is not less than 6.7 per cent nor more than 7.0 per cent. Transfer about 0.5 Gm of neo-synephrin hydrochloride accurately weighed to a platinum dish, ignite until constant weight is attained; the ash is less than 0.1 per cent.

Neo-Synephrin Hydrochloride 1 Per Cent Solution

Transfer 10 cc of the solution to a beaker, evaporate the solution to dryness on a boiling water bath, extract the residue with three 15 cc portions of boiling absolute isopropyl alcohol, evaporate the isopropyl alcohol to dryness on a boiling water bath, dry the extract in an oven at 100°C to constant weight; the residue is equal to not less than 0.95 per cent nor more than 1.05 per cent. The melting point ranges between 138 and 140°C.

Dissolve the residue in 3 cc of water, add 10 drops of ammonia water, rub the glass container with a glass rod, filter the precipitate, wash with cold water on a porous plate; the melting point is 169-171°C.

Neo-Synephrin Hydrochloride 1/4 Per Cent Solution

Follow the standards as described for the 1 per cent solution except use a 25 cc sample.

DILAUDID—Dihydro-morphine hydrochloride— $C_{17}H_{19}O_3 \cdot N \cdot HCl$. Dilaudid differs essentially from morphine hydrochloride in that one of the hydroxyl groups of the latter has been replaced by a ketone group.

Actions and Uses—Dilaudid is closely allied both chemically and pharmacologically to morphine, having the analgesic property of morphine as well as its action on the respiratory system. Its action on the intestine is probably less marked than is that of morphine. It is more toxic than morphine and is clinically effective in doses which are considerably smaller than are necessary with that alkaloid. It has been shown experimentally and clinically that dilaudid is powerfully analgesic and that, like morphine, it can depress the respiratory mechanism profoundly. At the same time, the experimentally established ratio between effective doses of morphine and dilaudid for the production of desirable effects is not materially different from the ratio between their toxic doses. Clinical trial has not shown that dilaudid is free from tolerance and addiction evoking properties, and, while side actions such as nausea, vomiting and constipation seem to occur less frequently than with morphine, the prolonged administration of dilaudid should be undertaken with as much caution as would be exercised with morphine itself. Dilaudid comes within the scope of the federal narcotic regulations.

Dosage—As a sedative and for the relief of pain, the usual oral dose is 2.5 mg ($\frac{1}{80}$ grain) in mild pain or cough, 13 mg ($\frac{1}{8}$ grain) may be given orally. The customary hypodermic dose is 2 mg ($\frac{1}{32}$ grain). Clinically the dose of dilaudid necessary to produce analgesia is about one-fifth that of morphine.

Manufactured by E. Bilbuer, Inc., Jersey City, N. J. (Bilbuer Knoll Corporation, Jersey City, N. J., distributor). No U. S. patent. German patent 380,919 (1923). U. S. trademark 298,197.

Ampules Solution Dilaudid 2 mg ($\frac{1}{32}$ grain) 11 cc. Each cubic centimeter contains dilaudid 2 mg, in physiologic solution of sodium chloride.

Hypodermic Tablets Dilaudid 2 mg ($\frac{1}{32}$ grain)

Hypodermic Tablets Dilaudid 3.2 mg ($\frac{1}{10}$ grain)

Hypodermic Tablets Dilaudid 4 mg ($\frac{1}{8}$ grain)

Tablets Dilaudid 2.5 mg ($\frac{1}{16}$ grain)

Dilaudid occurs as a fine white crystalline, odorless powder freely soluble in water, about 1 in 3, soluble in alcohol, insoluble in ether. Its aqueous solution is neutral to litmus. From aqueous solution ammonia water and sodium hydroxide precipitate the free base dihydromorphine as fine white crystals soluble in an excess of sodium hydroxide.

Dissolve about 0.5 Gm of dilaudid in 25 cc of water, add sufficient ammonia water to make distinctly alkaline and let stand overnight; collect the precipitate of dihydromorphine on a filter paper, wash with cold water, dry at 100°C; it melts with decomposition at 257 to 262°C. To 10 cc of the foregoing filtrate add an excess of diluted nitric acid and 2 cc of silver nitrate solution; a curdy white precipitate results soluble in an excess of ammonia water. Add 0.5 Gm of dilaudid previously dissolved in 2 cc of water to an aqueous solution containing 1 Gm of hydroxylamine hydrochloride, warm followed by the addition of an excess of ammonia water and set aside overnight; collect the precipitate of oxime on a filter paper, wash with a diluted ammonia water (1 part ammonia water with 99 parts of water) and water, dry at 100°C; it melts with decomposition at 230 to 235°C.

Dissolve 0.02 Gm of dilaudid in 5 cc of sulphuric acid and add 1 drop of ferric chloride solution and heat gently no blue coloration results. Dissolve 0.01 Gm of dilaudid in 1 cc of water and mix 10 cc of a freshly prepared potassium ferricyanide solution to which previously has been added 0.1 cc of ferric chloride solution a blue color results (*difference from codeine*). Boil about 0.2 Gm of dilaudid with 5 cc of sodium hydroxide solution the odor of ammonia is not noticeable (*ammonium salts*). Dissolve about 0.5 Gm of dilaudid in 15 cc of water separate portions of 5 cc each yield no red coloration on dilution with an equal volume of diluted hydrochloric acid and 0.2 cc of ferric chloride solution (*meconate*) no turbidity with 1 cc of diluted hydrochloric acid and 1 cc of barium chloride solution (*sulphate*) no coloration or precipitation on saturation with hydrogen sulphide (*salts of heavy metals*).

Dry about 0.5 Gm of dilaudid at 100 C for six hours the loss in weight does not exceed 15 per cent. Incinerate about 0.5 Gm of dilaudid accurately weighed the residue is not more than 0.1 per cent. Transfer about 0.3 Gm of dilaudid accurately weighed to a suitable Kjeldahl flask and determine the nitrogen content according to the official method described in Official and Tentative Methods of Analysis of the Association of Official Agricultural Chemists third edition page 20 chapter 2 paragraph 22 the percentage of nitrogen corresponds to not less than 4.25 per cent nor more than 4.5 per cent when calculated to the dried substance. Transfer about 0.3 Gm of dilaudid accurately weighed to a suitable beaker add 100 cc of water followed by the addition of 25 cc of silver nitrate solution and 10 cc of nitric acid boil with continuous stirring and allow to cool in a dark place. Collect the precipitate of silver chloride on a Gooch crucible wash with a diluted nitric acid and water followed by alcohol and ether finally dry to constant weight at 100 C the amount of hydrogen chloride calculated from the silver chloride found corresponds to not less than 11.25 per cent nor more than 11.5 per cent when calculated to the dried substance.

Committee on Foods

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING ADDITION TO THE RULES AND REGULATIONS

RAYMOND HERTWIG Secretary

SPECIAL PURPOSE FOODS

"Special Purpose Foods" with usefulness restricted to specific purposes such as inclusion in diets for obesity or morbid conditions, shall display on the labels and in the advertising in easily legible type and in close proximity to the trade name the designation 'Special Purpose Food' and a statement listing all ingredients in the order of their decreasing proportions by weight in the food.

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG Secretary

IRRADIATED VITAMIN D PASTEURIZED MILK

- (1) CLOVER LEAF DAIRY COMPANY S
- (2) DETROIT CREAMERY COMPANY S
- (3) EBLING CREAMERY COMPANY S
- (4) H P HOOD & SONS, INC
- (5) THE MITCHELL DAIRY COMPANY INC
- (6) OHIO CLOVER LEAF DAIRY COMPANY S
- (7) PRODUCERS MILK COMPANY S
- (8) QUALITY MILK PRODUCTS COMPANY S SELECT
- (9) QUALITY MILK PRODUCTS COMPANY S JERSEY
- (10) ROSZELL'S
- (11) SIDNEY WANZER & SONS, INC
- (12) ST LOUIS DAIRY COMPANY S

Distributors—(1) Clover Leaf Dairy Company Gary Ind, (2) Detroit Creamery Company, Detroit, (3) Ebling Creamery Company Detroit (4) H P Hood & Sons Inc, Boston, (5) The Mitchell Dairy Company, Inc., Bridgeport Conn (6) Ohio Clover Leaf Dairy Company, Toledo, Ohio, (7) The Producers Milk Company, Cleveland (8) and (9) Quality Milk Products Company Tulsa Okla (10) J D Roszell Company Peoria, Ill, (11) Sidney Wanzer & Sons, Inc, Chicago (12) St Louis Dairy Company St Louis

Description—Bottled pasteurized vitamin D milk irradiated with ultraviolet rays (patent No 1 680 818)

Preparation—The milk complies with legal requirements and is pasteurized by the standard holding method. For description of irradiation, see THE JOURNAL, Oct 7, 1933, page 1155

Vitamins—Clinical investigation shows this milk to be a reliable antirachitic agent if proper amount is used. Contains 135 U S P X (Revised, 1934) vitamin D units per quart.

Claims of Distributors—Irradiated antirachitic pasteurized milk having otherwise the flavor and food values of usual pasteurized milk.

SAVOY STRAINED VEGETABLES FOR INFANTS BEETS, CARROTS, GREEN BEANS, PEAS, PRUNES FLAVORED WITH LEMON JUICE, SPINACH, AND STRAINED VEGETABLES WITH CEREAL AND BEEF BROTH

UNSEASONED

Distributor—Steele-Weddes Company, Chicago

Packer—The Larsen Company, Green Bay, Wis

Description—Respectively sieved beets, carrots, green beans, peas, prunes flavored with lemon juice, spinach and vegetables (carrots, potatoes, tomatoes, celery, peas, beans, spinach) with pearl barley and beef extract prepared by efficient methods for retention in high degree of the natural mineral and vitamin values. No added sugar or salt. These products are the same as the respective accepted Larsen's vegetables and fruits (THE JOURNAL, July 8, 1933, p 125, July 22, 1933, p 282, July 29, 1933, p 366, Aug 12, 1933, p 525, Aug 19, 1933, p 605, Aug 26, 1933, p 675)

SUNKIST CAKE FLOUR

BLEACHED

Distributor—Maney Milling Co, Omaha

Manufacturer—Philip H Postel Milling Co, Mascoutah, Ill

Description—Soft winter wheat short patent flour, bleached

Manufacture—Soft winter wheat is washed, tempered and milled by essentially the same procedures as described in THE JOURNAL June 18, 1932, page 2210. Chosen flour streams are blended and bleached with nitrogen trichloride (4 Gm per barrel)

WINTERS PURINA 100% WHOLE WHEAT BREAD

Manufacturer—Southern California Baking Company, San Diego, Calif

Description—A whole wheat bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932 p 817) prepared from whole wheat flour, water, sweetened condensed skim milk, invert sugar, lard, sucrose, yeast, salt, malt syrup, and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

Analysis (submitted by manufacturer) —

	per cent
Moisture (entire loaf)	37.7
Ash	0.8
Fat (ether extraction method)	2.0
Protein (N X 6.25)	10.1
Crude fiber	1.2
Carbohydrates other than crude fiber (by difference)	48.2

Calories—25 per gram 71 per ounce

Claims of Manufacturer—Conforms to the United States Department of Agriculture definition and standard for whole wheat bread

ARMOUR'S STERILIZED UNSWEETENED EVAPORATED MILK

Manufacturer—Armour and Company, Chicago

Description—Unsweetered sterilized evaporated milk

Manufacture—The procedure of evaporation and canning, and the analysis are essentially the same as for the usual evaporated milk (THE JOURNAL, April 16 1932 p 1367)

Claims of Manufacturer—See announcement on the advertising of the Evaporated Milk Association (THE JOURNAL, Dec 19, 1931, p 1890)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 16, 1934

PLASMA MAGNESIUM

Until recently, consideration of the physiologic role of the mineral nutrients tended to be overshadowed by an enthusiastic interest in certain organic factors potent in nutrition, namely, the vitamins. There is a rapidly growing tendency at present, however, to consider the possible relations of inorganic elements to the bodily functions. Surprisingly enough, this trend has been directed into the field of the nutritional significance of some mineral elements that occur as traces in the organism.¹ Thus, fluorine, aluminum, zinc, copper and manganese have been added to a list that has long included iron and iodine. One might assume from all this that the part played by the more familiar constituents, notably calcium, magnesium, sodium, potassium, chlorine and phosphorus, was now adequately understood.

This is certainly not the case for some of these elements. The significance of magnesium, for example, has remained vague indeed, despite the fact that its occurrence in notable amounts in both the blood and the body tissues has long been recognized. Most textbooks of biochemistry present at best a vague story of magnesium in the body. One writer,² who may be selected as representative, records that magnesium occurs in small amounts in all animal and plant cells. In vertebrates the body's chief store is in bone. Bone contains but one-eighth as much magnesium as calcium, muscle and nerve tissues, on the other hand, contain twice as much. The blood content is 3 mg per hundred cubic centimeters. Magnesium deficiencies do not occur on the average diet. Human milk contains little, indicating, he concludes, that but little is required, even by the growing organism.

Salts of magnesium have perhaps been better understood as pharmacologic agents. The use of magnesium sulphate (epsom salt) and of magnesium citrate as laxatives has a long and respectable tradition. Con-

siderable investigation has been devoted in the past to the explanation of the laxative effects. Soluble magnesium compounds have also become known, particularly through the studies of the late S. J. Meltzer, as substances that can induce narcosis when they are introduced in adequate doses parenterally into the body. How important magnesium may be in the routine of the physiologic processes has been made clear by McCollum and his co-workers³ at Johns Hopkins University. When experimental animals are restricted to a diet containing less than two parts per million of magnesium, they fail to grow and quickly become abnormal. Within three days all exposed skin areas show vasodilatation, which becomes intensified until about the tenth day. During this time the animals are nervous and easily startled, and by the end of the period (eleventh day) they may be so unstable as to go into convulsions in response to any disturbance, with fatal results in 80 per cent of the cases. There is loss of hair on the ears, jaws and neck, and the salivary and tear glands are hyperactive. After two or three weeks of magnesium deprivation, the teeth are affected and later the tissues around the teeth. Finally there is decalcification of the entire skeleton.

This is of course an extreme illustration, but it presents the possibility that cases showing convulsions or other conditions of increased neuromuscular activity would be encountered clinically in which the plasma magnesium is low. According to studies of Hirschfelder⁴ of the University of Minnesota, both hypomagnesemia and hypermagnesemia are clinical entities. The normal or average concentration of magnesium in the blood in health is about 2 mg per hundred cubic centimeters of the plasma, ranging from 1.8 to 2.5 mg. When healthy persons take epsom salt by mouth they excrete about 40 per cent of the ingested magnesium in the urine in twenty-four hours, but the concentration of magnesium in the blood plasma does not rise appreciably. However, when the kidneys are injured, administration of one or more purgative doses of epsom salt may lead to hypermagnesemia with its expected consequences. At a level of 11 mg of magnesium per hundred cubic centimeters, plasma drowsiness is likely to occur, a content of 17 mg was attended by coma.

Hirschfelder believes, from his clinical observations and blood chemistry studies, that many cases of coma in nephritic patients, diagnosed uremic coma, may be simply magnesium coma induced by epsom salt purgation. He remarks that since a single ordinary dose of epsom salt by mouth can raise the concentration of magnesium in the blood of nephritic patients to two thirds of the concentration at which coma sets in, and since with larger doses it is easy to induce coma in

¹ An interesting review of this subject is given by Rose Mary S. The Nutritional Significance of Some Mineral Elements Occurring as Traces in the Animal Body. Yale J. Biol. & Med. Mendel Anniversary Number 4: 499 (March) 1932.
² Cameron A. T. A Textbook of Biochemistry. New York: Macmillan Company 1933.

³ Kruse H. D., Orent E. R. and McCollum E. V. J. Biol. Chem. 96: 519 (May) 1932; 100: 603 (May) 1933; Orent E. R., Kruse H. D. and McCollum E. V. Am. J. Physiol. 101: 454 (Aug) 1932; Kruse H. D., Schmidt Marguerite M. and McCollum E. V. ibid. 105: 635 (Sept) 1933.
⁴ Hirschfelder A. D. Clinical Manifestations of High and Low Plasma Magnesium. J. A. M. A. 102: 1138 (April 7) 1934.

nephritic animals, it seems probable that a few repeated doses of epsom salt would induce coma in the patients. It is therefore most probable that there are every year in the United States many cases of coma occurring in nephritic patients which are diagnosed uremic coma but which in reality are magnesium coma caused by the use of epsom salt as a purgative. Since experimental animals could be brought out of this coma instantly and their lives prolonged by the intravenous injection of calcium chloride, the intravenous injection of calcium chloride would probably restore such patients to consciousness. The story of epsom salt probably applies comparably to magnesium citrate. Hirschfelder has also described a clinical syndrome associated with low plasma magnesium accompanied by a condition of hyperirritability of the neuromuscular system, often associated with muscular twitchings or convulsions. These cases are probably more common than has been realized. At least in the patient whose kidneys are pathologic the twitchings or convulsions can be relieved by the administration of a purgative dose of epsom salt by mouth. Apparently new chapters in the history of magnesium in the body are being written.

THE FUEL FOR STRENUOUS EXERCISE

The problem of the source of energy in vigorous muscular work has become increasingly complicated as new methods of investigation have been applied. The fuel of exercise may be investigated by analyses of the inspired and expired air during and after work. Information may also be obtained by studies of the change in composition of the blood and urine produced by the exercise. These studies have shown that sugars are the principal but not the only fuel used. There is no depletion of sugar as a result of short periods of strenuous exercise,¹ and no good effects can be expected from its administration. The fact that sugar is used in large amounts during muscular exercise does not indicate that the carbohydrate should be increased in the diet of athletes. The body is able to form sufficient sugar from any adequate diet except during prolonged violent exertion. In the latter case the carbohydrate reserve may be reduced to low levels.

The available observations on the blood sugar levels in exercise seem to be extremely contradictory. A partial explanation, at least, has been found in the degree to which excitement or emotional factors enter into the situation. During severe exercise in the laboratory, little variation is ordinarily observed. This steadiness is not equally true on the football field. Edwards, Richards and Dill² of the Fatigue Laboratory at Harvard University have observed that hyperglycemia is uncommon in exercise with little or no emotional stress but common in exercise with emotional stress

on the football field. In football players it is not much influenced by age within the range of 16 to 22 years, by diet, or by the mass of spectators. Before the game begins blood sugar is normal, and it appears to reach a peak when the game is half over. At the end of the game blood sugar may be normal while urine sugar is high, indicating that blood sugar has passed through a maximum. Inferentially, if exercise should continue (as in marathon races) hypoglycemia might result.

In the latest observations by Edwards, Margaria and Dill³ there is no evidence that carbohydrate is essential for strenuous exercise or that it is more essential in work than in rest. A study was made of exercise of sufficient duration and intensity to reduce the carbohydrate reserve to low levels. Altering the rate of work each half hour alters the proportion of energy derived from carbohydrate but not the blood sugar. With a plethora of carbohydrate some fat is used in exercise and, as carbohydrate reserve diminishes, the proportion of energy derived from fat may increase from 8 per cent to 77 per cent in actual cases. The Harvard physiologists believe that, while the choice of fuel is determined with precision, blood sugar concentration is not the governor. Thus, when dextrose is ingested during work and after depletion of carbohydrate reserves, the blood sugar may reach a maximum before there is a response of the respiratory quotient. It has often been assumed that the principal cause of fatigue is carbohydrate depletion. According to the Harvard investigations in man the accumulation of acetone bodies in exercise of long duration without food may be a primary source of breakdown.

MATERNAL MORTALITY

The United States Children's Bureau of the Department of Labor, with the assistance of an obstetric advisory committee, has presented an analytic report¹ of maternal deaths that occurred in thirteen states in 1927 and in the same states and two others in 1928. The states contributing the material for the study are fairly well distributed geographically and are typical of the sections in which they are located. In these fifteen states during the years of the study the deaths of 7,537 women were assigned to puerperal causes by the United States Bureau of Census. This number constituted 26 per cent of the deaths from puerperal sepsis in the entire birth registration area for these two years. In this study, 18 per cent of the deaths were of Negro women, with a rate nearly twice that for white women. The maternal mortality rate was 64 per 10,000 live births, as compared with a rate of 67 per 10,000 in the birth registration area for these two years. Of the total number studied it was found as

¹ Best, C. H. and Taylor, N. B. *The Human Body and Its Functions*. New York: Henry Holt & Co. 1932.
² Edwards, H. T., Richards, T. K. and Dill, D. B. Blood Sugar, Urine Sugar and Urine Protein in Exercise. *Am J Physiol* 98:302 (Sept.) 1931.

³ Edwards, H. T., Margaria, R. and Dill, D. B. Metabolic Rate, Blood Sugar and the Utilization of Carbohydrate. *Am J Physiol* 108:203 (April) 1934.

¹ Maternal Mortality in Fifteen States. Children's Bureau, Department of Labor, Bureau Publication 223. Maternal Deaths. Children's Bureau, Department of Labor, Bureau Publication 221 (abstract of complete report).

a result of interviews that 7,380 deaths had been actually puerperal in the meaning of the international classification, the detailed analyses are therefore based on these figures

Nine per cent of all the deaths were of women who had had no medical care or care only when dying. Of the women included in the study, more than half were hospitalized some time during their final illness. The deaths of 4,066 occurred in hospitals, but the deliveries or abortions of only 2,629 occurred in hospitals. Relatively few of these patients who died in hospitals had planned hospitalization. About one third of the women died before they reached the last trimester of pregnancy. For more than half the women who died in hospitals after reaching the last trimester, hospitalization was an emergency measure. Of these women, 83 per cent were attended by physicians, interns or medical students, 11 per cent by midwives and 4 per cent by nonmedical attendants, 2 per cent of the women had no attendant at the delivery or at death if the patient died undelivered. Puerperal septicemia was the most important cause of death prior to the seventh month and accounted for 59 per cent of the deaths in this period. The deaths of 509 unmarried women were included in the study. Approximately one half of the deaths in this group as compared with 39 per cent of the deaths of married women were from puerperal septicemia. The maternal mortality rate in the states included in the study (except one) was 143 per 10,000 illegitimate live births and 60 per 10,000 legitimate live births.

An attempt was made to estimate the quality of prenatal care by grading this care in three groups. Of the 1,478 women who first consulted the physician before or during the fifth month of pregnancy, 49 per cent received grade I care, 16 per cent grade II care and 34 per cent grade III care.

More than half of the women had had some operative procedure before death. In 26 per cent of the deaths following forceps deliveries and 19 per cent of the deaths following versions the fatal outcome was assigned to sepsis. Seven per cent of the deaths included in the study followed cesarean section. The advisory committee comments on this fact as follows: "The fact that cesarean section was done on one fourth of all the women who died following operation for delivery suggests that there had been unwise selection of cases for the operation—as cesarean sections constitute only a small percentage of all operative deliveries in general."

Abortion as used in this study may be defined as the termination of a previable uterine pregnancy. Puerperal septicemia was the cause of the deaths of 73 per cent of the 1,825 women who died following abortions. These deaths constituted 45 per cent of the total number of deaths from puerperal septicemia in this study. Puerperal septicemia accounted for 40 per cent of the 7,380 deaths included in the study. Thirty

per cent of all the deaths were preceded by some presumably toxic condition as the chief cause or chief contributory cause. The great majority of toxic deaths were of women who lacked some or all of the ordinary safeguards.

As a result of these studies, which should be read in full by all those dealing with any aspect of pregnancy, the advisory committee made certain recommendations to the medical profession and the public. Physicians should assume leadership in maternal care, should obtain more accurate information relative to the cause and prevention of maternal deaths, and should evolve methods for acquiring better and more up-to-date knowledge of the fundamentals of obstetric care. Widespread education of the public as to the importance of securing and dangers of not securing adequate obstetric care also is recommended.

Current Comment

FACTORS INFLUENCING THE DEXTROSE TOLERANCE TEST

The dextrose tolerance test is of importance in diagnosis and investigation, yet the results obtained are frequently of little significance because of inadequate control of various factors. Studies in this field have made increasingly evident the fact that carbohydrate tolerance tests on the same individual, conducted at different times, may yield widely divergent results. An interesting analysis of some of the causes of these variations has been reported by Malmros¹ from the clinic of internal medicine at the University of Lund, Sweden. This investigator has studied the effect of previous diet, of age, and of renal threshold on the results obtained from dextrose tolerance tests on non-diabetic patients in the university clinic. The observations with respect to previous diet are of particular interest, since they involve the relation of acidosis to carbohydrate tolerance, a relationship recently considered in these columns.² Malmros reports that a low carbohydrate diet preceding a dextrose tolerance test produced an acidosis in most cases studied, and these persons exhibited a decreased carbohydrate tolerance. However, the acidosis is apparently not the sole factor responsible for this result. Although ingestion of ammonium chloride did produce a considerable acidosis and a somewhat diminished tolerance to dextrose, in harmony with observations of other investigators,³ Malmros observed that a hypersensitiveness to carbohydrate could be shown also in instances in which no acidosis was present or in which the acidosis due to previous low carbohydrate ingestion was compensated by the administration of sodium bicarbonate. In fact, the carbohydrate tolerance after the ingestion of 20 Gm of ammonium chloride daily for four days appeared to be better than that observed following a period of restricted carbohydrate intake. This interesting hyper-

¹ Malmros, Hagvin. *Acta med. Scandinav.* supp. xxvii, 1928.

² Acid-Base Balance and Carbohydrate Tolerance, editorial, *J. A. M. A.* 102:620 (Feb. 24) 1934.

sensitiveness to carbohydrate after a regimen poor in carbohydrate and protein and rich in fat, appeared in patients as early as one day after the diet had been begun and was fully pronounced after three days, it remained for a short time after the subject was returned to an ordinary mixed diet. On the other hand, previous high carbohydrate feeding did not affect the dextrose tolerance test. These results are of considerable interest from a practical point of view. It appears that a dextrose tolerance determination following a low carbohydrate diet may yield a blood sugar curve resembling perfectly a diabetes curve in the absence of this disease. Not infrequently, persons in whom glycosuria has been demonstrated have been given limited amounts of carbohydrate, a subsequent tolerance test might readily result in a wrong diagnosis and unpleasant consequences for the patient.

Association News

MEDICAL BROADCASTS

Columbia Broadcasting System

The American Medical Association broadcasts on a Western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4:30 to 4:45 Central daylight saving time. The next three broadcasts will be as follows:

June 21 Mischiefous Misconceptions W. W. Bauer M.D.
June 28 Motor Touring and Camping, W. W. Bauer M.D.
July 5 Death Angel W. W. Bauer M.D.

National Broadcasting Company

The National Broadcasting Company talks have been discontinued for the summer.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Plague Infected Squirrels—Seven plague-infected ground squirrels were found in Tulare County, near Fountain Springs, May 9, according to *Public Health Reports*.

Society News—Dr. Frederick G. Novy, among others, addressed the Alameda County Medical Association, May 21 on "Lymphogranuloma Inguinale."—Dr. Noel F. Shambaugh, Long Beach, addressed the San Diego County Medical Society, June 12, on "Degenerative Liver Diseases."

Outbreak of Acute Anterior Poliomyelitis—The California State Department of Public Health recently reported a steadily mounting incidence of acute anterior poliomyelitis. Statistics on the incidence of this disease during January, February, March, April and the first four weeks of May of 1934 shows that 269 cases were reported. Analysis of the age groupings in the group of cases reported in May indicates that approximately 83 per cent of the patients are under the age of 15 years (from 1 to 4 years, 28 per cent; from 5 to 9 years, 38 per cent; from 10 to 14 years, 17 per cent) but the impression is had also that cases reported during the fifth week involve the older age groups. As is well known, this disease manifests itself ordinarily in the late summer and fall and increased incidence in the early summer is generally accepted as an epidemiologic indication that the disease will reach epidemic proportions. It is interesting to note that about 70 per cent of the cases were reported from the counties of southern California including Riverside, Orange, San Bernardino, San Diego and Los Angeles. If the same sequence of events should

occur in 1934 as did in 1930, the disease will undoubtedly spread throughout California. Under such conditions it is necessary that physicians scrutinize with "a high index of suspicion" any illness particularly of the respiratory or digestive tracts in individuals from the infected areas especially, for the probable incidental paralysis may not occur in many cases.

CONNECTICUT

State Laboratories Move—The bureau of laboratories of the Connecticut State Health Department, Hartford, moved from 247 Pearl Street, June 10, to new quarters in the Atlas Building.

State Medical Election—Dr. Walter R. Steiner, Hartford, was elected president of the Connecticut State Medical Society at its annual meeting, May 24, and Dr. Charles W. Comfort Jr., New Haven, was reelected secretary. The next annual session will be held in New Haven, May 22-23, 1935. In addition to various clinics, the scientific program consisted of the following:

Spondylolisthesis Dr. Robert G. Reynolds, Hartford
Concerning Certain Contacts Between Law and Medicine Dr. Daniel P. Griffin, Bridgeport
Treatment of Chronic Endocervicitis Dr. Edward J. Tracey, Norwalk
Lobar Pneumonia in Children: A Survey of Eighty-Six Cases Dr. Clifton C. Taylor, Bridgeport
Cancer of the Breast Dr. Douglas Quick, New York
Hyperparathyroidism Dr. Wilder Tileston, New Haven
Medical Aspects of the State Farm for Women Dr. Rose Howe, Jameson, Niantic
Use of Small Quantities of Radium in Malignancy of the Mouth, Uterus and Breast, Dr. George T. Pack, New York
Maternal Mortality in Connecticut Dr. Louis F. Middlebrook Jr., Hartford

Dr. Pack also conducted a symposium on cancer of the uterus. Dr. Eugene M. Blake, New Haven, opened a round table discussion on the diagnosis and treatment of paralytic squint. Dr. Dorland Smith, Bridgeport, one on treatment of chronic tear sac infections, and Dr. William T. Morrissey, New Britain, one on treatment of chronic ear infections. The Fairfield County Medical Association acted as host.

DISTRICT OF COLUMBIA

Medical Bills in Congress—H. R. 9836 introduced (by request) by Representative Lewis, Maryland, proposes to provide for the licensing of operators in beauty shops in the District of Columbia. The bill would apparently authorize cosmetologists to use electrical apparatus or appliances to remove superfluous hair, warts, or moles. S. 3479 has passed the Senate, proposing to amend the act regulating the practice of the healing art in the District of Columbia (1) by substituting the corporation counsel of the District of Columbia for the United States district attorney as a member of the Commission on Licensure to Practice the Healing Art, and (2) by transferring to the corporation counsel for the District of Columbia from the United States district attorney, the duty of instigating legal proceedings for the enforcement of the act.

FLORIDA

Society News—Dr. Nathaniel L. Spengler, Tampa, addressed the De Sota-Hardee-Highlands Counties Medical Society in Arcadia, April 10, on "Hyperthyroidism in Infants and Children."—Speakers before the quarterly meeting of the Leon-Gadsden-Liberty-Wakulla-Jefferson County Medical Society in Chattahoochee, April 19, included Drs. Robert B. McIver, Jacksonville, on "Surgical Notes on the Urinary Tract in Children," and William O. Martin Jr., Atlanta, "Management of Squint."—At a meeting of the Marion County Medical Society, April 12, Drs. Gerry R. Holden and Edward Jelks, Jacksonville, spoke on "The Physician's Responsibility in the Cancer Problem" and "Diagnosis of Malignant Conditions of the Intestinal Tract."

IDAHO

Society News—Dr. Edward L. Whitney, Walla Walla, Wash., discussed hypertension before the Nez Perce County Medical Society in Lewiston, March 21, and Dr. Carl J. Johannesson, Walla Walla, gave an illustrated address on "Cholecystography Correlated by Gastro-Intestinal X-Ray Examinations, Checked Against Surgical Findings."

Annual Registration Due July 1—All practitioners of medicine and surgery holding licenses to practice in Idaho are required by law to register annually on July 1 with the department of law enforcement and at that time to pay a fee of \$2. If a licensee has not paid the annual registration fee by October 1 his license can be cancelled and will be restored within five years thereafter on payment of the delinquent

fees and a \$10 penalty. If a license has been canceled for more than five years, it can be reinstated only on the payment of \$25 and on the licensee's passing an examination, the nature of which shall be determined by the department of law enforcement.

ILLINOIS

Society News—Dr William H. Olmsted, St. Louis, addressed a joint meeting of the Belleville and East St. Louis Medical Society and the St. Clair County Medical Society, June 7, on "Insulin Reaction in Treatment of Diabetes."

Chicago

Dr Slaymaker Honored—Dr Samuel R. Slaymaker, president of the Washington Boulevard Hospital and clinical professor of medicine, Rush Medical College, was guest of honor at a dinner given by 100 friends and colleagues at the University Club, June 7, in recognition of his twenty years' service with the hospital. An oil portrait of the guest of honor was presented to the hospital, and Dr Slaymaker was presented with a watch and chain. Dr Vincent J. O'Connor was toastmaster. Among the speakers were Dr Arthur R. Metz and Dr James B. Herrick. Photographs of the portrait were given to each one in attendance.

Ricketts Prize Awarded—The Division of Medical Sciences of the University of Chicago announces the award of the Howard Taylor Ricketts Prize for 1934 to Dr Paul E. Steiner and Thomas C. Grubb, Ph.D. Dr Steiner was given recognition for his work on "The Role of the Avian Tubercle Bacillus in the Etiology of Hodgkin's Disease" and Dr Grubb for his work on "Studies on the Coccus Forms of *Corynebacterium Diphtheriae*." The first award of this prize was made in 1913 to Dr Esmond R. Long and the late Dr George L. Kite. The announcement of the 1934 award was made on May 3, the anniversary of Dr Ricketts' death, which occurred while he was conducting research on typhus fever in Mexico.

Personal—Dr and Mrs Luther G. Bass observed their golden wedding anniversary April 22—Dr Grace Hiller, instructor in medicine in the Division of Medical Sciences, University of Chicago, has been appointed director of the student health service at Goucher College in Baltimore effective in the autumn—An illuminated parchment award of merit was presented to Matthew O. Foley, editorial director of *Hospital Management* by the trustees of the American Hospital Association. Dr Bert W. Caldwell, executive secretary of the association, made the presentation and speakers included Lewis Bernays, British consul; Dr Malcolm L. Harris, Dr Thomas Hugh Scott Hines, III, and Mr Asa S. Bacon, superintendent, Presbyterian Hospital. Mr Paul H. Fesler, superintendent, Wesley Memorial Hospital, was toastmaster.

INDIANA

Society News—Dr Robert B. Osgood, Boston, addressed the Terre Haute Academy of Medicine, the Fifth District Medical Society, the Vigo County Medical Society and the Aesculapian Society in Terre Haute, May 4, on "General Aspects of Arthritis and Its Treatment."—The Eleventh Indiana Councilor District Medical Association was addressed, May 16, in Kokomo, among others, by Dr Donald P. Abbott, Chicago, on "So-Called Indigestions—The Early Diagnosis of Gastro-Intestinal Disorders and Their Treatment," and Arthur L. Harter, D.D.S., Kokomo, "Dental and Medical Relationship."

Graduate Course—The Indiana University School of Medicine conducted a graduate course, May 21-June 2. Included on the program were Drs. Dean Lewis, professor of surgery, and Joseph C. Bloodgood, adjunct professor of surgery, Johns Hopkins University School of Medicine, Baltimore; Udo J. Wile, professor of dermatology and syphilology, University of Michigan Medical School, Ann Arbor; and Lester Dragstedt, Chicago. In addition to discussions of preventive medicine, early diagnosis and treatment of cancer and eradication and prevention of venereal diseases, a study of modern health problems as they relate to the professor of medicine as a whole was presented. A feature of the annual course was the alumni home-coming day and banquet with addresses among others, by Drs. Byrl R. Kirklin, class of 1914, head of the department of roentgenology of the Mayo Clinic; and Dr William T. Green, class of 1925, in orthopedic surgery, Harvard University Medical School, Boston. Their subjects were respectively, "Lesions of the Gastro-Intestinal Tract" and "Infections and Inflammations of the Bone."

IOWA

Summer Round Up—The summer round up of preschool children conducted each year by the Des Moines Council of Parent-Teacher Associations with the cooperation of local physicians has been assured. A special effort is being made to include in the free clinics only those children whose parents are unable to pay for the service.

Dr Thompson Honored—The Madison County Medical Society held a dinner for Dr William H. Thompson, Winter set, April 9, in recognition of his completion of fifty years in the practice of medicine. Dr Thompson was made an honorary member of the society. Dr Channing G. Smith, Granger, was toastmaster. Among those present were Drs. Walter L. Bierring, Des Moines, now President, American Medical Association, and Dr John H. Peck, former president of the National Tuberculosis Association.

MAINE

Medical Library—The Portland Medical Club recently established a medical reference library in the Portland Public Library, the nucleus of which was begun with voluntary contributions of members.

Typhoid Outbreak—Sixty-five cases and five deaths were reported in a recent outbreak of typhoid in Augusta. The disease was first diagnosed in a boy who had been ill for about ten days without medical attention, the father caring for him and also helping to milk the cows on the dairy farm. The milk was distributed to thirty-seven families and two grocery stores. Nurses and a physician were provided by the state department of health and more than 7,000 people were given antityphoid treatment at free clinics. An additional 1,500 persons were treated by private practitioners. All food handlers in the city, including milk dealers, were examined to locate possible carriers.

MARYLAND

Dohme Lectures—Donald D. Van Slyke, Ph.D., of the Rockefeller Institute for Medical Research, New York, delivered the Charles E. Dohme Memorial Lectures for 1934 at Johns Hopkins University School of Medicine, April 26-28. The lectures were entitled "Physiology of the Amino Acids" and "Factors Controlling Urea Excretion."

Dr Welch's Will Provides Endowment Fund—The needs of the Institute of History of Medicine and the Welch Medical Library will be given preference in the establishment of an endowment fund at Johns Hopkins University under the will of the late Dr. William H. Welch. After providing for the payment of several specific bequests, Dr. Welch left the residue of his estate in four parts, one of which is to establish the endowment fund for any purposes approved by the trustees, the institute and library to be given the preference. The university was also bequeathed all the physician's medical scientific and literary books, pamphlets, papers, medals and medical portraits, for the use of the medical school, including the Institute of the History of Medicine and the School of Hygiene and Public Health. Dr. Welch had been identified with Johns Hopkins University School of Medicine since 1884.

Society News—Dr George E. Bennett, Baltimore, gave an illustrated lecture before the Maryland Academy of Medicine and Surgery, April 17, on "Treatment of Fractures of the Neck of the Femur." Dr Arthur G. Barrett was installed as president of the society at this meeting, having been reelected to this position for the eighteenth time—Dr Hans Zinsser, Boston, addressed the Baltimore City Medical Society at its semiannual meeting, April 6, on "Variations of Typhus Fever."—Anna M. Baetjer, Sc.D., among others, addressed the seventh meeting of the Society of Hygiene of Johns Hopkins University, April 11, on "Relation of Potassium to the Contractions of the Mammalian Skeletal Muscle and Its Similarity to the Effect of Sympathetic Stimulation."—The Maryland Academy of Medicine and Surgery was addressed in Baltimore, May 15, by Dr Nathan B. Herman, among others, on "Diagnosis and Treatment of Hay Fever as Encountered in Maryland." Dr Lewis B. Hill, "Emotional Problems Expressed in Physical Symptoms" and Robert H. Brotman, D.D.S., "Dental Facts for the Physician."

MASSACHUSETTS

Departments Merged—The departments of botany, zoology and general physiology of the Biological Laboratories of Harvard University, Boston, have been consolidated to form a department of biology. Alfred C. Redfield, Ph.D., professor of physiology, has been appointed to the newly created position of director of the laboratories.

Society News—Dr Edward W Archibald, Montreal, addressed the semiannual meeting of the New England Medical Society in Boston May 31, on "Etiology and Treatment of Recurring Subacute Pancreatitis"—'Chronic Invalidism due to Joint Pathology' was discussed before the Massachusetts Society of Examining Physicians, May 23, by Drs Joel E Goldthwait, Howard K Thompson and Carl L Watson—The Hampden District Medical Society was addressed, April 24, by Dr Abraham Myerson, Boston, on "The Neuroses as the General Practitioner Meets Them" Dr Archibald J Douglas, Westfield, was elected president of the society

Expedition to Study Onchocerciasis—The continuation of investigations carried on by Dr Richard P Strong in Guatemala on the control and elimination of onchocerciasis and the development of scientific and medical knowledge of the Katanga region, are the objects of a six-months expedition which sailed, April 25, for Africa under the auspices of the department of tropical medicine The members include

Dr Richard P Strong director
Joseph C Bequaert Ph D entomologist
Jack H Sandground Sc D helminthologist
Mr Henry E Mallinckrodt laboratory assistant photographer
Mr R Stuyvesant Pierret Jr zoological assistant
Mr Byron L Bennett technician

MICHIGAN

Society News—Dr Walter G Maddock, Ann Arbor spoke before the Berrien and Cass County medical societies at Dowagiac, May 16, on "General Care of Peripheral Vascular Diseases"—The Houghton County Medical Society was addressed in Calumet, May 1, by Drs Alfred C LaBine, Houghton and George M Walde, Hancock, on "Thoracic Surgery in Tuberculosis"—Reuben L Kahn, D Sc, director of laboratories, University Hospitals, Ann Arbor, addressed the Oakland County Medical Society in Pontiac, May 16, on "Immunological Considerations in Connection with Vaccine Therapy" Dr Carl E Badgley, Ann Arbor, addressed the society, April 18, on lesions of the upper extremity—Dr Robert C Jamieson, Detroit was chosen president-elect of the Wayne County Medical Society at its annual session, May 21 Dr William J Cassidy was installed as president Alexander G Ruthven, president, University of Michigan, Ann Arbor, spoke among others, on "Modern Trends in Professional Education"

Physicians Honored—The regular alumni banquet of the Detroit College of Medicine and Surgery, now the Wayne University College of Medicine, June 7, served as a testimonial dinner to Drs Andrew P Biddle Don M Campbell and Angus McLean "three of the oldest and most useful graduates of the school" Dr James W Inches was toastmaster Dr Biddle, who has been professor emeritus of dermatology and syphilology at his alma mater since 1917, first became associated with the school in 1892 In addition to serving as secretary and counsellor to the state medical society Dr Biddle was president for two successive terms, from 1916 to 1918 Dr Campbell has been a member of the school's faculty for forty years, many of which have been as professor and head of the department of ophthalmology He was president of the Wayne County Medical Society from 1914 to 1915 Dr McLean was affiliated with his alma mater from 1905 to 1913 as professor of clinical surgery However, he has been more active in positions with the state and city governments, he served as city physician from 1888 to 1892 quarantine inspector for the Port of Detroit, 1893, became a member of the state board of health in 1905, and in 1911, a member of the Detroit Board of Health He is a past president of the Wayne County Medical Society and of the Michigan State Medical Society

MISSISSIPPI

State Medical Election—Dr James R Hill, Corinth, was chosen president-elect of the Mississippi State Medical Association at its annual meeting in Natchez May 10, and Dr Edward C Parker, Gulfport, was installed as president Vice presidents are Drs Altus B Harvey, Tylertown, Gilruth Darrington, Yazoo City, and Richard C Smith, Drew Blount was designated as the place for the next annual meeting, May 14-16, 1935

Medical School to Be Remodeled—An appropriation of \$75,000 by the state legislature makes possible the renovation of the old medical building of the University of Mississippi School of Medicine and also the remodeling of two floors of one of the wings of the University Hospital for the departments of physiology pathology and bacteriology It will also provide new equipment It is reported that the entrance

requirements will be raised from two to three years of college work and that the courses in physical diagnosis and clinical microscopy will be made adequate to meet the requirements of the four year schools

MISSOURI

Tuberculosis Day—Tuberculosis Day, the annual celebration of the Tuberculosis and Health Society, will be observed in St Louis June 26 A National League baseball game will be played at Sportsman's Park, following the entertainment

Society News—Speakers before the St Louis Medical Society, June 5, were Drs Bransford Lewis and Major G Seelig on 'Vocations and Avocations for the Doctor' and "History and Significance of Quackery in Medicine," respectively The society devoted its meeting, May 29, to the memory of members who had died since June, 1932

NEW JERSEY

Personal—Eugene Maier, Ph D, formerly of the staff of the Rockefeller Institute for Medical Research and of the department of pathology, Bellevue Hospital, New York, has been appointed chief bacteriologist of the Merck Institute for Therapeutic Research, Rahway—Dr Frank Overton, Patchogue, N Y, has been appointed editor of the *New Jersey Medical Journal*

State Medical Election—Dr Marcus W Newcomb, Browns Mills, was chosen president-elect of the Medical Society of New Jersey at its annual meeting in Atlantic City, June 6 Dr Lancelot Ely, Somerville, was installed as president Vice presidents are Drs Francis R Haussling, Newark, and Spencer T Snedecor, Hackensack Dr John Bennett Morrison, Newark, is secretary, and Dr Elias J Marsh, Paterson, treasurer

NEW YORK

Osteopaths Barred from Practicing Surgery—A bill designed to permit osteopaths to practice surgery with certain limitations was vetoed, May 23, by Governor Lehman According to the *New York Times*, the governor said

This bill eliminates the present requirement of the Education Law that an osteopath shall not perform surgery with the use of instruments and adds a number of provisions which seem to authorize osteopaths to engage in every form of medical practice except the giving of drugs by mouth to cure disease and the performance of certain specified surgical operations

It was further stated that, because of the ambiguous wording of the bill, it would be impossible to restrict and prevent any type of medical practice other than some types of major surgery

Health at Schenectady—Telegraphic reports to the U S Department of Commerce from eighty-six cities with a total population of 37 million, for the week ended June 2, indicate that the highest mortality rate (248) appears for Schenectady and for the group of cities as a whole, 112 The mortality rate for Schenectady for the corresponding week last year was 86 and for the group of cities, 10 The annual rate for eighty-six cities for the twenty-two weeks of 1934 was 123 as against a rate of 117 for the corresponding period of the previous year Caution should be used in the interpretation of these weekly figures, as they fluctuate widely The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate

New York City

Golden Anniversary Dinner—Eight physicians who have held membership in the Medical Society of the County of Kings for fifty years or more were guests of honor at a dinner given by the society at the Hotel St George, May 24 They were Drs William Browning, Frank E West John C MacEvitt, Lewis S Pilcher, Elias H Bartley, Charles P Gildersleeve, William Moitrier and John A Cochran Dr Dean Lewis, Baltimore, President, American Medical Association, was guest speaker The Medical Society of Kings County is 112 years old

Memorial Hospital Fifty Years Old—A dinner celebrating the fiftieth anniversary of Memorial Hospital for the Treatment of Cancer and Allied Diseases was held, May 25 at the Waldorf-Astoria Speakers were Dr James Ewing, chairman of the medical board Dr Edward C Dodds, director, the Courtauld Institute, Middlesex Hospital, London, England, Dr Livingston Farrand president of Cornell University, Mrs Robert G Mead, chairman of the finance committee, New York City Cancer Committee, and Dr George H Bigelow, superintendent of Massachusetts General Hospital and former

health commissioner of Massachusetts, Boston. At a special scientific meeting, May 24 at the New York Academy of Medicine, Dr John A. Hartwell spoke on "The Place of a Cancer Institute in Medical Organization", Dr Robert B. Greenough, Boston, on "Organization of Cancer Service in General Hospitals", Clarence C. Little, Sc D, Bar Harbor, Maine, "Heredity in Cancer," and Dr Dodds, "Cancerogenic Agents."

Society News—Dr Fred Wise addressed the American Stomatological Association, May 15, on "Buccal and Labial Lesions of Interest to Dentist and General Practitioner."—Dr Henry A. Rafsky addressed the Medical Society of the County of Queens, April 20, on diagnosis and treatment of gallbladder disease. Dr Abraham M. Rabiner spoke, May 4, on sciatica. Dr Augustus L. Harris addressed the society, May 29, on uroscopy, and Dr George L. Brodhead, maternal mortality.—Dr John H. Morris addressed the New York Surgical Society, May 9 on "Cholesterosis of the Gallbladder."—Dr Marie Pichel Levinson addressed the North Bronx Medical Society, April 5, on "Dangers of Gold Stem Pessaries."—Dr George W. Holmes, Boston, addressed the New York Roentgen Society, May 21, on "Roentgen Diagnosis of Obscure Lesions in the Upper Gastro-Intestinal Tract."—Dr Leila Charlton Knox, among others addressed the New York Pathological Society, May 24, on "Synoviomata: Report of Three Cases."

NORTH CAROLINA

State Medical Election—Dr Paul P. McCam, Sanatorium was installed as president of the Medical Society of North Carolina at its annual meeting, May 2. Dr Paul H. Runger, Asheville, was chosen president elect and Dr Lewis B. McBrayer, Southern Pines, reelected secretary. The next annual session will be held at Pinehurst, May 6-8, 1935.

New Health Department—The commissioners have approved the establishment of a full-time health department for Bertie County, effective July 1. Dr Frank H. Garriss, Lewiston, has been named county health officer. The county discontinued its health department four years ago. The new unit will be financed in part by the state board of health.

OHIO

Society News—Dr Henry B. Freiberg, Cincinnati spoke on "Prostatic Resection" before the Clinton County Medical Society in Wilmington, May 1.—At a meeting of the Warren County Medical Society at Lebanon May 1, Dr Leo S. Friedman, Cincinnati, discussed communicable diseases.—Speakers before the Greene County Medical Society May 3, were Drs Jerome Hartman and Herbert L. Brumbaugh, Dayton, on osteomyelitis and orthopedic causes of pain in the back, respectively.—Dr Arthur O. Peters, health commissioner of Dayton discussed the New Set Up in Medicine from a Public Health Standpoint" before the Montgomery County Medical Society, May 18.—At a meeting of the Logan County Medical Society, Dr Clarence A. Mills, Cincinnati, spoke on "Climate and Weather as Health Factors."—Speakers before the Wood County Medical Society, April 19, were Drs Bernhard Steinberg and J. Lester Kobacher, Toledo, on "Pathology of the Heart, Lungs and Kidneys as Concerns the General Practitioner" and "Modern Clinical and Laboratory Features of Cardiac Diagnosis," respectively.—Dr Hugh G. Beatty, Columbus considered "Sinus Infection in Children and Its Relation to Lower Respiratory Infections" before the Ashland County Medical Society, May 11.—A special meeting of the Portage County Medical Society in Ravenna, May 3, was addressed by Dr Louis J. Karnosh, Cleveland, on "Insanities of the World's Great Geniuses."—Dr Arthur S. Jones, Huntington, W. Va., discussed "Peripheral Nerve Injuries" before the Washington County Medical Society at Marietta May 9.—At a meeting of the Hempstead Academy of Medicine May 14, Dr George M. Curtis, Columbus, discussed "The Significance of Iodine in the Management of Toxic Goiter."

PENNSYLVANIA

Alumni Day Clinics—The University of Pittsburgh School of Medicine held its first annual day of clinics for the alumni and their guests June 2. At a luncheon following the clinics Dr Ralph H. Boots, New York, gave an address on arthritis.

Cancer Meeting—A public meeting on cancer constituted the meeting of the Cambria and Somerset County medical societies in Johnstown May 10. Speakers were Drs Joseph C. Bloodgood, Baltimore; Bernard P. Widmann, Philadelphia, and Samuel J. Waterworth, Clearfield.

Society News—The annual meeting of the Sixth Council District of the Medical Society of the State of Pennsylvania was held at State College, May 24. In addition to reports the program included addresses by Drs John O. Bower, Philadelphia, on "The Physician's Duty to the Public in the Appendicitis Campaign" and Harold A. Miller, Pittsburgh, "Present and Future Medical Relief in Pennsylvania." Dr Samuel P. Glover, Altoona, was the guest of honor at luncheon in recognition of his completion of fifty years of practice.—Dr Joseph A. Hepp, Pittsburgh, addressed the McKeesport Academy of Medicine, May 28, on gynecologic endocrinology.

Philadelphia

Fund to Study Convulsions—The Viola J. Lowe Memorial Research Fund has been established at the Temple University School of Medicine, it was announced May 20, by Samuel E. Lowe, president of the Whitman Publishing Company, Racine, Wis. The fund will finance the study of convulsions occurring in epilepsy and other diseases having convulsive manifestations. The work will be conducted under the direction of Drs Temple S. Fay, Frank W. Konzelmann and Omer William Wheeler.

University News—The Leffmann Biological Assay Research Laboratory at the Philadelphia College of Pharmacy and Science, named in honor of the late Dr Henry Leffmann, was dedicated, May 11. Dr Leffmann was at one time professor of general chemistry, toxicology and hygiene at the Woman's Medical College of Philadelphia, professor of clinical chemistry and hygiene, Graduate School of Medicine of the University of Pennsylvania and lecturer on research at the college of pharmacy. He died in 1930.—Surg. Gen. Hugh S. Cumming, U. S. Public Health Service, Washington, D. C., gave the commencement address of Woman's Medical College of Pennsylvania, June 6.

Portrait of Dr. Babcock—A portrait of Dr. William Wayne Babcock, for thirty-one years professor of surgery at Temple University Medical School, was presented to the school May 2 by the classes of 1933 and 1934. Dr. George W. Crile, Cleveland, delivered the principal address. Tributes were paid to Dr. Babcock by Drs. Herbert L. Northrop, Edward J. Klopp and Thomas A. Shallow. Dr. Donald W. Ingham, Lancaster, president of the class of 1933, and John William Crosson, president of the class of 1934, made the presentation and Charles E. Beury, LL.D., accepted the portrait on behalf of the university. Dr. Babcock is at present president of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons.

VIRGINIA

Society News—At a meeting of the University of Virginia Medical Society, May 7, Dr. Eugene M. K. Geising, Baltimore, talked on recent studies of the function of the posterior lobe hormone.

Graduate Clinic at University Hospital—The thirteenth graduate clinic at the University of Virginia Hospital, University, in cooperation with the department of clinical education of the Medical Society of Virginia, was held May 17. Subjects of clinics were emergency treatment of fractures, tumors and problem children. Addresses were made by Drs. Kenneth F. Marx, on public health phases of communicable diseases, William W. Waddell, Jr., treatment of communicable diseases, Oscar Swineford, Jr., management of hay fever and James C. Flippin, the physician and advances in medicine.

WASHINGTON

Society News—Physicians of Okanogan County recently organized a county medical society at a meeting in Omak with Dr. James Fred Mills, Omak, as president and Dr. Lorenzo S. Dewey, Omak, secretary.—Dr. John F. Leocog, Seattle, addressed the Kitsap County Medical Society, Bremerton, April 10, on fractures of the leg.—Dr. Howard L. Hull, Elma, addressed the Pierce County Medical Society, Lakeview, April 10, on "The Mantoux Test and Its Interpretation."—Dr. John F. Beatty, Everett, addressed the Snohomish County Medical Society, Everett, April 3, on heart failure.—Dr. Richard F. Berg, Portland, was the speaker before the Spokane County Medical Society, Spokane, April 12, on "Injuries to the Knee Joint."—Drs. Donald V. Trueblood and Brien T. King, Seattle, discussed neoplastic diseases and hyperparathyroidism respectively before the Whatcom County Medical Society, Bellingham, April 2.—At a meeting of the Yakima County Medical Society, Yakima, April 9, Drs. Lester J. Palmer and Maurice F. Dwyer, Seattle, delivered addresses on "Liver Functions in Glucose Metabolism" and "Roentgen-

ology of the Chest," respectively—Dr. Park Weed Willis, Seattle, addressed the King County Medical Society, May 7, on "The Doctor on the Witness Stand"—Drs. Homer J. Davidson and Charles Homer Wheeler, Seattle, addressed the Chelan County Medical Society, April 13, on "Treatment of Mucous Colitis" and "Low Blood Sugar," respectively

GENERAL

Study of Congenitally Malformed Children—The Gynecological Hospital Institute of Gynecologic Research of the University of Pennsylvania, Philadelphia, is conducting an intensive study of families into which congenitally malformed children have been born. Special interest centers in families in which malformations have appeared in two or more children. The objectives of the study are to determine the nature of recurrence in the same family, to study the nature of the defects and to possibly throw light on their etiology. Physicians who have knowledge of any such families are urged to communicate with Dr. Douglas P. Murphy at the institute.

Prize for Essay on Industrial Medicine—The sixth International Congress on Industrial Accidents and Diseases announces a prize of 1,000 Swiss francs to the author of the best (unpublished) original work on the subject "The Importance of Previous Physical Condition in Estimating the Sequelae of an Industrial Accident." Physicians in all countries are invited to take part. Manuscripts must be in hand by December 31. The award will be made during the next congress to be held in Brussels in July 1935. Those interested should communicate with Dr. Fred H. Albee, 57 West Fifty-Seventh Street, New York, or Dr. Emery R. Hayhurst, Ohio State Health Department, Columbus.

Regulations for Practice in Switzerland—Recent changes in regulations governing entrance to examination for the practice of medicine in Switzerland have restricted eligibility to Swiss citizens, the U. S. Treasury Department has been informed. However, a treaty may be made with any state that admits Swiss physicians to practice within its borders. The federal council also reserves the right to authorize taking of the examinations in "extraordinary cases" and "in consideration of particular circumstances." Foreign medical students who at the time the decree was promulgated were registered in a Swiss university, on the basis of a school graduation certificate conferring the right to admission to the examinations for the practice of medicine, are exempt from these changes.

Medical Study Trip to Hungary—American physicians of good standing are invited to join a study trip to Hungary, which is being arranged by a committee of New York physicians at the invitation of the Hungarian Medical Postgraduate Committee of Budapest. The party will sail from New York August 18, visiting Munich and Oberammergau en route. The return trip may be made optionally via Berlin, Paris or Italy, arriving in New York September 30. Dr. Harlow Brooks is chairman of the committee and Dr. Richard Kovacs, secretary. Other members are Drs. Charles G. Kerley, Jerome M. Lynch, Wendell C. Phillips and Ervin Torok, all of New York. Dr. Emile de Grosz is president of the Hungarian Medical Postgraduate Committee of Budapest.

Health Projects in CWA Program—A total of 75,763 men were employed in health projects during the existence of the Civil Works Administration. The estimated total cost was \$12,242,886. In the improvement of sanitary conditions in rural communities, 32,010 men were employed at a cost of about \$5,000,000. Malaria control, consisting of the elimination of mosquito breeding places, occupied 29,779 men at an estimated cost of \$4,500,000. Similarly typhus fever control was pursued with 7,033 men at a cost of \$1,143,636. The U. S. Public Health Service directed most of these services, the last in cooperation with the Bureau of Biological Survey and in addition directed the work of sealing abandoned coal mines to prevent chemical reactions which have been making treatment of drinking water difficult. The Bureau of Entomology also employed 369 men in spotted fever control work which consisted of clearing and burning undergrowth in areas where ticks are abundant. The cost of this project was \$79,500.

Medical Bills in Congress—*Changes in Status*. S. 1286 has passed the Senate, providing that for the purposes of promotion, longevity pay and retirement there shall be credited to officers of the Veterinary Corps and former officers of the Veterinary Corps now on the retired list all full-time service rendered by them as veterinarians in the Quartermaster Department, Cavalry or Field Artillery. S. 527 has passed the Senate, directing the Secretary of the Treasury to pay to Lillian Morden the sum of \$2462.20 in full settlement of all claims against the Government for medical expenses incurred

as a result of contracting influenza while employed as a student nurse in the Medical Department of the Army at Fort Dodge, Des Moines, Iowa, and providing that Lillian Morden shall be admitted to such army hospital as may be directed by the Surgeon General of the United States Army for necessary care and treatment. S. 2892 has passed the Senate, amending existing laws prohibiting the introduction of intoxicating liquors within the Indian country to permit their use as medicine by practicing physicians for patients of Indian blood. H. R. 3768 has passed the Senate, changing the name of the retail liquor dealers' stamp tax in the case of retail drug stores or pharmacies to "medicinal spirits stamp tax." S. 2800, the Copeland food and drug bill, has been reprinted to include various amendments submitted by Senator Copeland, on behalf of the Senate Committee on Commerce, June 8.

ALASKA

Personal—Dr. Walter W. Council, Juneau, has been appointed secretary-treasurer of the Alaska Board of Medical Examiners. He is also territorial commissioner of health.

Government Services

Health of the Army

The general death rate in the United States Army during 1933 was 41 per thousand of strength, as computed from weekly reports to the surgeon general. The rate for 1932 was 42 and for 1931 it was 45. The admission rate was 612 per thousand, as compared with 668 for 1932. The rate would have been still lower, the report points out, had it not been for an epidemic of respiratory diseases which carried over from the latter part of 1932 into January 1933. The total respiratory group accounted for an admission rate of 148 per thousand, as compared with 205 for 1932. Venereal diseases caused an admission rate of 30, a new low point. In the Civilian Conservation Corps, which was in existence for thirty-nine of the fifty-two weeks of 1933, the admission rate for diseases and injuries was 198 per thousand. There were 425 deaths during the period, a rate of 2.5. Respiratory diseases caused a rate of 248. During the year there were fifty-four cases of typhoid, twenty-eight in one company at Hamilton, Texas. Twenty-eight cases of meningitis occurred. Some of the rarer causes of admission to sick report were tetanus, 1, tick fever, 1, undulant fever, 1, encephalitis, 3, poliomyelitis, 11, and smallpox, 4.

Death of Former Chief of Biological Survey

Edward William Nelson, who was chief of the Bureau of Biological Survey of the U. S. Department of Agriculture from 1916 to 1927, died of heart disease in Washington, May 19, aged 79. Since his retirement as chief he had been engaged in research. He held the honorary degrees of M. A. from Yale University and Sc. D. from George Washington University, both conferred in 1920. His published work includes monographs on mammals and birds and descriptions of many new species.

Applications of Interns in U. S. Public Health Service

The U. S. Public Health Service will consider applications to fill a number of vacancies which exist at the present time and also vacancies which will occur about July 1, for second year medical interns. Any young physicians, not over 30 years of age, who have graduated from class "A" medical colleges and who have completed, or will shortly complete, one year's internship in approved hospitals are eligible to apply. The public health service desires to secure applications only from candidates who are interested in the service as a career and who desire to request permission to appear before a board of commissioned officers for examination for appointment as assistant surgeons in the regular commissioned corps, on or about the time they will complete a year's service as interns in the public health service. Applicants who are selected will be offered appointments with quarters, subsistence and laundry, and \$86.50 per month until June 30, when the cash pay will be increased to \$93.25, net, per month. Those interested in making application should address inquiries to the Surgeon General, U. S. Public Health Service, Washington, D. C., and more complete information and the necessary blanks on which to make application will be furnished.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 19, 1934

A Further Increase of Road Accidents

A serious increase of road accidents during the first three months of this year, compared with the corresponding period of last year, is reported. In Great Britain, excluding London, there was an increase of 1375 per cent in the number of persons killed and 125 in those injured. In Scotland there was an increase of 565 per cent in the number killed and 1075 in those injured. A rise in the number of deaths in Glasgow from 24 to 45 and in Edinburgh from 9 to 22 mainly accounted for the increased percentage in Scotland. In Wales the increase in the number killed was 33 per cent. Commenting on these figures, Lieut.-Col. Jocelyn Pickard, secretary of the National Safety First Association (formed to prevent road accidents), said that there were 105,000 more automobiles on the road than last year, which might partially account for the increase of accidents. In London there was an increase in the number of accidents but a slight decrease in the number of deaths. The injured in the first three months of this year numbered 12,263, against 11,078 in the same period of last year. The total number of accidents was 32,138 and 27,009, respectively.

The Minimum Food Requirements

The controversy aroused by the publication of two somewhat divergent reports on minimum dietetic requirements was reported in *THE JOURNAL*, February 10, page 469. The main difference was that the committee of the Ministry of Health estimated 3,000 calories and 37 Gm of first class protein as the daily requirements of a man doing moderate physical work, while the corresponding figures of the committee of the British Medical Association were 3,400 calories and 50 Gm of protein. The committee of the British Medical Association set out to determine the minimum weekly expenditure on foodstuffs which must be incurred by families of varying size if health and working capacity are to be maintained, and to construct specimen diets. The fact that the ministry accepted the advice of its own committee became the grounds for a political attack on the government, charging that the physicians of the British Medical Association had been flouted in a matter on which the lives of 2,000,000 unemployed persons depended. The difference has been investigated by a conference, which included Sir F. G. Hopkins, Professor Cathcart and Professor Mellanby representing the ministry's committee and Professor Cowell, Professor Mottram and Dr. G. P. Crowden representing the committee of the British Medical Association. The difference was found to be more a matter of misinterpretation than of actual fact. The ministry's committee was a permanent body appointed to advise on the practical application of modern advances in the knowledge of nutrition. It consisted of workers with a special knowledge of nutrition who did not possess authority to act or advise in economic matters. Their recommendation regarding requirements of calories and protein was intended to serve as a rough guide to health officers and to assist them in placing on a proper basis the nutrition of the communities and institutions under their charge. The values being statistical averages, were meant to apply to whole communities and not to individuals or single families. On the other hand, the committee of the British Medical Association was not a permanent body but a special one assembled for a specific purpose. Its task was partly financial, and it had to decide on the food allowances necessary to maintain health and working capacity. It had to bear in mind that the unemployed

spent much time in working on allotments, going to labor exchanges, or keeping themselves in good condition by exercising daily at training centers. They therefore recommended the 3,400 calories and 50 Gm of first class protein per "man equivalent."

The conference emphasizes the fact that there does not exist a standard of food requirements that can be rigidly applied in the same manner to all men and suggests that a sliding scale of caloric requirements is needed. It recommends the following

Requirements per Day

Individuals	Calories Gross
Man heavy work	3 400-4 000
Man moderate work	3 000 3 400
Man light work	2 600 3 000
Woman active work	2 800 3 000
Woman housewife	2 600 2 800
Boy 14-18	3 000 3 400
Girl 14-18	2 800 3 000
Child 12-14	2 800 3 000
Child 10-12	2 300 2 800
Child 8-10	2 000 2 300
Child 6-8	1 700 2 000
Child 3-6	1 400 1 700
Child 2-3	1 100 1 400
Child 1-2	900 1 100

The conference also agreed that the average requirements of the entire population or of large mixed groups of people is about 3,000 calories a day, but for individual requirements the sliding scale should be consulted.

PROTEINS AND VITAMINS

Accumulated evidence indicated that the total daily requirement of protein per man probably lay between 80 and 100 Gm. The amount depended on physique, occupation, habits, personal taste and age, while climate appeared to be a factor of some importance. There was general agreement that a certain proportion of the total protein should be in the form of first class protein, i. e., of animal origin, such as milk, eggs, cheese, meat and fish. However, the desirable proportion of animal to total protein has never been determined. Growing children and expectant and nursing mothers required relatively large amounts of first class protein, much more than would be arrived at by simple calculation based on man value equivalents. All recent studies had shown that for children milk was a most valuable food. It was, indeed, the only known naturally balanced food containing not only first class protein (187 Gm to the pint) in readily available form but also minerals, vitamins, carbohydrate and fat. The conference therefore stressed the importance of this highly nutritious food for children and nursing and expectant mothers.

Fatal Accidents to Children

Fatal accidents to children were discussed at the congress of the National Safety First Association, held in London. Colonel Oakes said that the total number of accidents in 1932 was 3,718, of which 2,938 were in boys and 1,320 in girls—roughly, three boys to every two girls. Nearly 1,500 children were killed on the roads. More than one fifth, approximately 800, of the total casualties involved children under the age of 1 year. One third of the casualties, 1,200, or approximately 45 per cent, occurred during the next four years from burns and scalds, and 34 per cent in road accidents. Thus, more than 2,000, more than half the children killed in accidents, were under 5 years of age. More than 1,000 fatalities occurred in the next five years, and more than two thirds of these were on the roads. Only one sixth—namely, 600—occurred in the later school ages, from 10 to 14 years, and more than 50 per cent were on the roads. Eight times as many boys as girls were drowned. Twice as many girls as boys were victims of burns, whereas the number of boys who died from scalds was approximately twice as great as the number of girls.

With reference to the road accidents to children occurring in England and Wales, more than 900 out of 1,150 were to

pedestrians, 200 to pedal cyclists, and approximately 50 to passengers in vehicles. The number of pedestrian victims reached a maximum at the ages of 4 to 5 years. During the later school years the child became a relatively safe walker and at 15 was perhaps an example to many seniors. But at the same age he (not she) was nearing his worst record as a safe pedal cyclist. The research of the association showed 16 as the most dangerous age for pedal cyclists, 15 coming next. The great majority of casualties were in boys.

The Undiminished Maternal Mortality

At a dinner held in support of the Safer Motherhood Campaign, Mrs. Stanley Baldwin, the wife of the statesman who led a campaign to provide anesthesia for poor women in labor, presided. Sir Hilton Young, minister of health, said that recent investigation had shown that a large proportion of the deaths in childbirth were due to preventable causes. He therefore welcomed the assistance of voluntary organizations. Two lines of advance were possible: one was the education of the expectant mother in antenatal care, the other the development of those services which rendered assistance to the expectant mother. At present the government provided maternity benefit (a payment of \$7 to the wives under the national insurance act). There was a clear case for the development of those services provided by the local authorities on behalf of the mother and child, particularly in the supply and organization of midwives and arrangements for the services of consultants. He proposes to issue a circular on the subject to local authorities, pointing out the direction in which the development of their services was still required, particularly in those areas where the maternal mortality is highest. The condition that causes concern is the unsatisfactory fact that while general mortality and infantile mortality have greatly declined in recent years, maternal mortality remains undiminished.

PARIS

(From Our Regular Correspondent)

April 25, 1934

Treatment of Undulant Fever

Professor Lemierre of the Faculté de médecine de Paris delivered a lecture on the treatment of undulant fever which appears to be getting more prevalent. He prefers injections of microbic endoproteins derived from cultures of *Alcaligenes abortus*, which Reilly was the first to employ. Extraction of the endoproteins is done by the Besredka method. Three-day cultures on gelose are scraped, dried in vacuo and ground with 40 per cent of sodium chloride. An emulsion in distilled water is prepared in such a manner that 1 cc of fluid corresponds to 0.02 Gm of the dried culture. After being centrifugated, or set aside for twenty-four hours in the icebox, the supernatant fluid is collected, put in ampules and then sterilized. This preparation has a high antigenic value. It contains the endoproteins of 500 billion germs per cubic centimeter. In 1926 Courtois Suffit, Garnier and Liege applied this treatment successfully, although at the price of a severe reaction that kept the temperature at 40 C for three days. Lemierre regards this treatment as the most effective available for combating undulant fever but he emphasizes that antigen therapy acts exclusively on persons in a state of allergy as previously determined by a positive Burnet cutaneous reaction. If the test is negative, it is useless to employ this method. If a state of allergy is lacking, it can sometimes be created by repeating patiently the Burnet cutaneous test. Not until then can one apply antigen therapy which is always remarkably effective but less so when there are secondary, articular, osseous or pulmonary localizations. In the cases of *Alcaligenes melitensis* the method has given precisely the same results. The treatment should be regulated in the following manner. First one

applies the Burnet test by injecting into the skin 0.2 cc of an extract of *Alcaligenes melitensis* or of *Alcaligenes abortus* and one reads the result at the end of from eighteen to twenty-four hours. When positive, the diameter of the reddened and infiltrated area will vary from the diameter of a lentil to that of the palm of the hand. The dose of endoprotein that is then injected by the intramuscular route, or preferably by the subcutaneous route, to avoid local pain will range between 0.33 cc and 1.5 cc, the smaller doses being reserved for cases in which the skin reaction is strongest. From one and one-half to two hours later, a severe chill commonly develops, together with a temperature of 39, 40 or even 41 C (from 102.2 to 105.8 F). After from twenty-four to forty-eight hours, the temperature falls suddenly to about 36.5 C (97.7 F), often if, during the next few days, a new Burnet skin test is applied, it will then be found negative. In the presence of the very strong Burnet skin reaction, great caution must be taken to save the patient a serious shock. The minimal dose of endoprotein injected in such cases may be without effect. A second dose may be given two days later, the quantity of inoculated endoprotein being increased. Sometimes even a third dose must be given. In the cases in which the sensitivity of the organism is very marked, successive injections of gradually increased doses appear to be preferable. It is too early to speak of cures in these cases. In undulant fever, new waves of fever may develop after prolonged periods of apyrexia. Nevertheless, great improvement immediately follows the violent shock reaction, the amelioration being manifest in the temperature and in the general condition of the patient.

Radiographers Required to Be Doctors

A new law pertaining to the practice of medicine will require the possession of a doctor's diploma in order to practice radiography and radiotherapy. Heretofore the radiographic laboratories in the hospitals have been under the direction of specialists who are not graduate physicians. Their number was small, dating for the most part from the beginning period of the use of roentgen rays. Many of these men had adapted themselves to this work in a remarkable manner. Occasionally, however, examples of fraud in the form of "trick films," in connection with claims following occupational accidents, have been discovered. Physicians have for some time shown displeasure at the role assumed by nondiplomaed radiographers, whom they have charged with a lack of knowledge of anatomy and with not always knowing what part of the body merited particular attention for the establishment of a diagnosis. With regard to treatment, this constituted it was pointed out, the illegal practice of medicine and entailed serious risks for the patients. As the result of demands made by the medical syndicates, parliament inserted this regulation in the new law. Nondiplomaed hospital radiologists appointed more than thirty years ago, and who have won the respect of physicians by the meritorious quality of their services, are to be admitted to registration.

A New Museum of History and Art

Mr. Mourier, director of the Assistance publique, has created a special museum designed to house historical relics and art objects derived from hospitals, hospital chapels and offices of charitable organizations in Paris. The museum is located on the banks of the Seine, quai de la Tournelle, in the vast apartments of the old Hotel de Miramon erected in the seventeenth century by Mansard, and which served in 1691 as a convent. After 1792 the building was occupied by manufacturers of weapons. In 1810, Napoleon I turned over the property to the Assistance publique de Paris, which installed therein its central pharmacy. The latter gradually accumulated a collection of relics and art objects derived from razed or

remodeled hospitals, the preservation of which appeared to present some degree of interest. There is a collection of 740 crucibles and various types of pharmacist's equipment, including earthenware from Delft, Nevers, Rouen, Sceaux, St Cloud and Sinceny. Much of the material has an inestimable value. The construction of new pharmaceutical laboratories, with modern equipment, will vacate the six large halls of the ground floor, adorned with beautiful wainscoting of the Renaissance period, where the collection of pottery was supplemented by numerous art objects for which there seemed to be no place in the modern hospitals: paintings, sculptures, engravings, artistic furniture, placards, sketches and voluminous correspondence. There is a fine bust of the financier Baujon, by Houdon, a portrait of Madame de Stael, founder of the Hôpital Necker, by Duplessis, a portrait of St Vincent de Paul and the "dames de la charité" (seventeenth century). The fine pieces of furniture of the period of Louis XV, the Regency and Louis XVI are numerous. There is a collection of ironwork derived from chapels: mortars, pewters, shovels, locks, and wrought mantel-piece plaques. Among the choice old books is the "Livre de vie active," a parchment manuscript, with miniatures dating from 1483.

BERLIN

(From Our Regular Correspondent)

April 23, 1934

The German Surgical Congress

The Deutsche Gesellschaft für Chirurgie held its session in Berlin, April 5-7. Professor Kirschner of Heidelberg, the chairman, took up his reply to the memorial of the Deutsche Orthopädische Gesellschaft. He brought out that it will not do to turn over entirely to the orthopedists the surgery of the motor and the supporting systems, leaving to the surgeon the remainder of the body. For the orthopedist, the bloodless measures and those requiring apparatus should be in the forefront. The special test for orthopedists in the state examination is not feasible (*THE JOURNAL*, Sept 16, 1933, p 942). Olivecrona of Stockholm spoke on technic and results of surgical operation in tumors of the auditory nerve. As a pupil of Cushing, he stated that in America the mortality resulting from the application of the intracapsular enucleation method had been reduced to from 4 to 10 per cent. None of the patients, however, regain their full working capacity. Patients operated on die in from three to four years at the latest, as the result of recurrences. Olivecrona removes, after the enucleation of the tumor, also the so called capsule. The working capacity of the patients has since been considerably improved, the mortality, however, has increased to about 20 per cent. The cerebellar tumors observed in the Kiel clinic were 50 per cent inoperable by reason of their malignity (medulloblastomas, ependymomas). Traumatic and nontraumatic thickening of the dura, as Jentzer of Geneva brought out, may resemble brain tumors. A technic for ventriculography, suggested by Peiper of Frankfurt-on-Main, consists in introducing a cannula within a ventricle and a second within the spinal canal. As spinal fluid flows from the lumbar cannula, the ventricular cannula automatically draws in air. Of course this method is applicable only in case all the cerebrospinal fluid passages are fully open. For the regulation of the blood flow through the brain, Schneider of Breslau has found, by means of experimentation, reflexive processes that are evidently controlled by way of the meningeal media. Following epinephrine, glyceryl trinitrate and hypertonic solution of dextrose, better blood distribution occurs. Carbon dioxide does not suppress the blood flow through the brain. According to the experiences of the surgical clinic in Tübingen, spinal anesthesia is to be recommended for these operations, to which, as Kirschner himself

suggested, scopolamine may be added intravenously by the drip method in order to induce partial anesthesia.

K H Bauer of Breslau discussed the sterilization law in its relation to surgery. A responsibility rests on the surgeon with reference to congenital hereditary malformations and their operative removal, but he cannot influence the *massa hereditaria*. Hence, in the event that an injury of the *massa hereditaria* occurs, sterility must result, even though the external injury in the person so affected has been effectively repaired. At least one million persons in Germany come within the scope of the sterilization law. In the interpretation of the law a decisive role is assigned to the physician. The commentary on the law published by the government needs to be further elaborated in order that mild and severe injuries may be more sharply differentiated.

The next topic was "Therapy of Pyogenous Infections and of Their Sequelae." Every infection—even the slightest—is to be regarded as a disorder of the whole organism. In combating an infection not only must the local manifestations be treated but also the general defense forces of the organism must be strengthened. There are four phases of the treatment: strengthening of the general resistance; increase of the local defense; elimination of the disease foci by opening the wound; and, finally, the protection and immobilization of the organ concerned. For drainage, a proper incision must be promptly made without causing disturbances of function. In furuncles and carbuncles, injections of the patient's own blood into the surrounding area are recommended. Remedies having a strong chemical action that injures the tissues should not be employed. Incised wounds should be left alone, after being covered with a moist bandage or an ointment plaster. An incision with an electric knife is to be regarded as the most conservative mode of dividing the tissues in inflammations. Induced ischemia should be avoided from principle, in these operations. Infiltration anesthesia is rejected by Lexer. Fistulas should not be treated with injections and tamponades but, if in any wise possible, with broad cleavage. Lexer called special attention to the results if osteomyelitis is not promptly and adequately opened up. What holds good for acute inflammation of the soft parts is justified here also.

In recent injuries, burns and phlegmonous inflammations, Lohr of Magdeburg employs cod liver oil ointment. *Bacillus coli*, *staphylococci* and *streptococci* are destroyed in cod liver oil. He reported therefore on his plaster of paris cod liver oil method in the treatment of acute and chronic osteomyelitis. After the periosteum has been split, a large plug of cod liver oil is inserted, a loose soft-part suture is applied, and then a plaster cast, which is left on for from two to three weeks. Opportunity is offered for the pus to flow off from under the bandage. In chronic cases, radical opening of the bone is indicated, then application of the plug of cod liver oil ointment and a plaster cast. Some of the advantages claimed for the method are that no painful changing of bandages is needed, and no abscesses or fistulas develop.

Sauerbruch of Berlin spoke on the operative treatment of bronchiectasia. He emphasized that the unilobar appearance of this disease in children is to be regarded as congenital, contrary to the conception of most pediatricians who assumed inflammatory causes. This view of Sauerbruch was confirmed by numerous preparations of the Berlin Pathologisches Universitäts-Institut. The surgical treatment consists in the radical removal of the affected lobe of the lung, which is all the more to be recommended now that the operative technic is sufficiently developed and since internal treatment never effects a cure. Fifty-eight cases have been treated thus far. Six patients died following the operation, the survivors are able to work, although two have a fistula. Treatment of noncongenital bronchiectasias does not give such good results.

The next main topic, "Surgery of Rectal Cancer," was presented by Goetze of Erlangen, who stressed the importance of a rectal examination for a prompt diagnosis. The sacral operative method is to be preferred. Liver metastases cannot be diagnosed by means of liver function tests. In contrast with this operative method, the abdominal route is a menace. For all these interventions, the high frequency current is highly recommended. Goetze performed in a third of his cases a one stage, radical operation, with from 10 to 15 per cent of mortality. If the carcinoma is already causing intoxication some time before the operation proper an artificial anus should be constructed in the sigmoid. In addition, a diet poor in salt should be given, and the circulation should be supported in anticipation. A further third of all cases can be treated with a two or three stage operation. The remaining third cannot be subjected to a radical operation, in these cases, rectotomy in combination with coagulation was chiefly employed. Also roentgenotherapy can be used—but not alone. Kirschner of Heidelberg recommended his combined sacral and abdominal method, which is applied by two operators working simultaneously, with the patient in a position especially adapted to the operation. The advantage is a gain in time, together with the possibility of a particularly radical procedure, the mortality, however, is higher.

Lauen of Königsberg organized in East Prussia a voluntary systematic examination of the healthy population. First 1200 women who considered themselves healthy were examined for cancer of the breast. One grave cancer two suspicious cases and 103 cases of old chronic inflammations were discovered. Of ten women who had previously undergone an operation for cancer, eight were in good health.

Felix of Berlin reported that his experiments had shown that both paralyzed and hypertrophic muscles can be favorably influenced by certain types of nerve transplantation. It is possible that such experimentation will develop methods for the surgical treatment of disorders of the heart muscle.

In hypertrophy of the prostate, Wildegans of Berlin and Kraas of Frankfurt-on Main recommended diathermy operations by the intra-urethral route, usually requiring several stages. Hemorrhage can thereby be readily controlled. Even in aged and weakly patients, good results are secured.

In other papers, numerous fields of surgery were considered. Professor Magnus, who was recently given a chair at the University of Berlin, was elected president of the society.

ITALY

(From Our Regular Correspondent)

April 15 1934

Surgery of Gastroduodenal Ulcer

Laccetti addressed the Accademia delle scienze mediche-chirurgiche of Naples on the surgical treatment of gastroduodenal ulcer. He pointed out that, in the midst of uncertainty of the etiologic factor, there is a tendency to attack the ulcer directly or to eliminate it together with neighboring tissues. The speaker in a case of postoperative jejunal ulcer operated by the transgastric route, treating the ulcer with the thermocautery. The result was favorable. Laccetti believes that, while gastroenterostomy remains the preferred operation in the pyloric cicatricial type of ulcer, it can be omitted in duodenal ulcer and the Judd operation substituted.

Professor Cavina in discussing this intervention before the Accademia medico-fisica fiorentina, said that he endeavored to remove the local lesion, to destroy the muscular activity of the pylorus and to eliminate two of the principal symptoms of duodenal ulcer, namely, stasis and gastric hyperacidity. The Judd operation is indicated in young persons in ulcers of recent origin particularly of the anterior wall of the bulb, in cases in which the duodenum is fairly mobile and not too much

deformed. In seven cases in which Cavina operated recently there was an excellent immediate result, and the remote result proved to be fairly favorable.

Physicians Made Senators

Professors Pende and Micheli were recently made senators. Prof. Nicola Pende, born in 1880, was one of the organizers of the University of Bari (1924), became instructor in clinical medicine, and was the first to fill the office of president. In 1925 he took over the management of the Clinica medica in Genoa, where he founded an institute of biotypology. Among the researches of Pende may be mentioned demonstration of the secretory and trophic influence of the splanchnic nerves and the solar plexus on the suprarenal capsules and the proposal (suggested by Professor Pieri, surgeon) to resect the splanchnic nerve in patients with angiospasm due to hyper-suprarenalism. His chief works are "Pathology of the Sympathicus" (in collaboration with P. Castellino), "Treatise on Endocrinology" and "Synthetic Treatise on Pathology and Clinical Medicine."

Prof. Ferdinando Micheli was born in 1872. He became professor of pathology at Siena and at Florence and from 1921 was director of the Clinica medica at the University of Turin. The principal subjects of his researches have been pernicious anemia, hemolytic icterus, paroxysmal hemoglobinuria, epidemic encephalitis, the serology of malignant neoplasms, and leukemia. He contributed an article on pulmonary tuberculosis for the recently published Italian treatise on internal medicine. He is codirector of the medical journal *Minerva medica*.

The Medicosurgical Congress of Calabria

The second Medicosurgical Congress of Calabria was held in Reggio Calabria under the chairmanship of Prof. Rocco Jemma. A paper was presented by Salvadori on laryngeal tuberculosis. In a group of 814 patients with pulmonary tuberculosis, the speaker studied 148 patients with laryngeal tuberculosis. While recognizing tuberculous sputum as a frequent cause of laryngeal tuberculosis, recent research attributes importance to transmission by the blood stream or by the lymph glands. Tropea emphasized that the treatment of both the lungs and the larynx should be equally vigorous, and he assigned special importance to sanatorium treatment and to collapse therapy. He refuted the old prejudice that mountain climate is contraindicated in tuberculosis of the larynx. It is advisable to examine laryngoscopically all patients affected with pulmonary lesions.

Puca presented a paper on epilepsy. He said it is the whole organism, mental and somatic, that participates in the morbid process and not cyclically but continuously. He stated that in the regions having the greatest wine consumption there is the highest incidence of epilepsy.

Professor Stanziale

The death of Prof. Rodolfo Stanziale, director of the Clinica dermosifilopatica in Naples, is announced. A pupil of Professor Cantani, Professor Stanziale studied bacteriology at first and for twelve years devoted himself to pathologic anatomy and histology. During that period he published his important work (still a classic) on the changes produced by syphilis in the arteries and particularly in the brain. He devoted himself later to studies on cutaneous tuberculosis, the experimental transmission of leprosy from man to the rabbit and pemphigus vegetans (Neumann). He was appointed professor of the pathology and clinical aspects of dermatology and syphilis, first at Messina and then at Naples, and later published a book on the prophylaxis of the venereal diseases. He founded at Naples the Istituto fotoradioterapico and was awarded a medal for his services in public health. His constant study of leprosy

made him one of the foremost leprologists in the world, and he was chosen as the Italian delegate to the third International Conference on Leprosy, held in Paris

The Incidence of Mental Diseases

The Istituto centrale di statistica has published a report from which it appears that there is a gradual and continuous increase in the number of inmates of the Italian psychiatric hospitals. The incidence is highest in northern Italy (and among the male sex) and is the lowest in southern Italy. The most frequent types are the affective psychoses, and particularly the subgroup of the depressive and melancholic states. The frequency of alcoholic psychoses shows a slight decrease. The manifestations dependent on syphilitic infection are increasing, particularly as to the types of dementia paralytica. The mortality in this disease appears, however, to be diminished in direct relation with the use of febrile treatment.

RIO DE JANEIRO

(From Our Regular Correspondent)

April 15, 1934

Diagnosis of Thoracic Aneurysms

Dr Manoel de Abreu, roentgenologist, addressed the Society of Medicine and Surgery of São Paulo on thoracic aneurysms. The diagnosis of aneurysms of the thoracic aorta, he said, was previously based on the relations between the tumor as revealed by roentgenology and the aortic tube as outlined by teleroentgenography in various positions. Now "blood hydrodynamics" is considered fundamental in any consideration of thoracic aneurysm. In a liquid mass in movement, hydrodynamics explains the development of centrifugal forces such as occur at the curves of rivers, the convex or external borders of which are deeply excavated while the concave or internal borders are flat. In closed tubes, as in the aorta, the blood stream pushed on by the left ventricle exerts on the vascular wall forces that obey the principles of hydraulics and give to the aneurysmal pouches their morphology and direction. Consequently aneurysms of the beginning of the ascending aorta which are close to the heart are directed upward, to the right and forward; those of the terminal portion orient themselves upward; those of the transverse portion are directed in the horizontal plane; those of the descending portion go down. The weight of the aneurysmal mass deviates slightly from the direction of the axis of development of the mass. In general, one may say that the axis of development of aneurysms approximates a line that bisects the angle formed by the axis of the aortic segment and by the vertical line (gravity). Consequently the aortic segment in which the aneurysm forms determines the development of the sac and constitutes the basis of the differential diagnosis. One must not forget the changes due to the resistance of the bony breast plate, the vertebral column and the thoracic contents, principally the heart and the vessels of the hilus. The author discussed the practical use of the theoretical data given and showed teleroentgenographic plates of aneurysms of all segments of the thoracic aorta, of tumors and of other disorders of the chest.

Hospitals of Rio de Janeiro

The following hospitals are under construction:

The Hospital Jesus for children will have a capacity of 150 beds. It will also admit mothers whose infants are in the hospital. It will have equipment to give instruction to children who remain in the hospital a long time.

The 150 bed Hospital of Gavea will be in a locality accessible to the population of Gavea Leblon, part of Botafogo and Copacabana. The Hospital of the Avenue 28th of September, in Villa Isabel is more complete and larger than the others. It will have more clinics than have the other hospitals already

started and also complete physical therapeutic services, roentgen therapy, hydrotherapy, mechanotherapy, and so on. It will attend also to other dependent services of the township, such as school clinics and health inspection of municipal employees, until central laboratories are installed. Its consultation rooms are arranged in such a way as to allow an attendance of thirty patients at the same time without overcrowding. The construction of the Central Hospital, on the Place of the Republic is also well advanced. This hospital will accommodate 600 patients and have a teaching institute including a school for nurses and postgraduate courses, a library, conference rooms and museums, the municipal morgue for persons who have died in hotels or other public locations, and central laboratories of pathologic anatomy, of clinical investigation and of fabrication of medical products.

An Association of Physicians

The Paulist Association of Medicine has approved by a great majority the necessity of creating the Order of Physicians, as the basis of a program of vindication of the Brazil medical profession. The project includes compulsory organization of all physicians of the country and its complete autonomy. The order will represent medical practitioners before the public campaigning for the adoption of laws protecting their moral and material interests and for measures of repression of the illegal practice of medicine; it will create a disciplinary council to enforce the observance of the code and demand that physicians who have studied abroad be naturalized and take a complete medical course in one of the official faculties of the country. It will elect its officers by direct vote.

JAPAN

(From Our Regular Correspondent)

April 30, 1934

Night-Blindness in Soldiers

Dr Y Fujihira, ex-surgeon of the garrison hospital at Chiba recently submitted his research on night-blindness in the army. He examined all soldiers in two regiments in which he served and found many cases of night blindness. Examination of the soldiers' food convinced him that the direct cause of this disease is not the lack of vitamin A, but the influence of the direct light of the sun during daytime drill, and overwork. He states that night-blindness frequently develops in aviators who fly from daytime to night and in infantrymen, who drill during the day and work in the evening. His opinion has alarmed the military authorities and they have undertaken a closer investigation of this problem.

Medical Bills in the Diet

A bill providing for the eugenic protection of the race, which was drawn up by the Japanese Eugenic Society, was presented for the first time in the diet. The bill proposes sterilization of criminals, persons with malignant hereditary diseases and similar cases. It is doubtful that the bill will be passed by the houses.

The lower house has agreed on new regulations to improve the status of midwives. This bill was presented last year but was not passed by the upper house. It is expected to be passed this year.

Regulation of School Lunches

The official regulation of school lunches in primary schools was first undertaken by the office of education in September 1932 to provide free lunches for school children who are undernourished or come to school without lunch. The office of education divided 513,330 yen among the fifty-three local governments for the following seven months in that fiscal year. During that period the system was put in force among 6,491 villages and towns and the lunches were given in 11,047 schools.

The lunches were sold for 4 sen, but they consisted of nutritious food. As this system was planned to be an educational facility and not mere relief work, the school lunch was given to any child also who wanted it at his own expense. The total number of lunches at public expense amounted to 29,232,438. With the experience that has been gained the lunches will be better and will be served in more schools this year.

Memorial to Noguchi

In memory of the late Dr. Hideyo Noguchi of the Rockefeller Institute, a hall will be built on the site of the cottage where he was born beside Lake Inawashiro in northeastern Japan. The committee aims to collect 100,000 yen to erect the hall and to repair the old house where his parents and brothers and sisters lived. In the hall will be kept various articles he had used, some sent back from America. Marquis Okuma and Dr. Shimjyo, president of the Kyoto Imperial University, are members of the committee.

Personal

Dr. M. Nagayo, chief of the Epidemic Research Institute in Tokyo, resigned last year to become dean of the medical department of the Tokyo Imperial University. Dr. Y. Miyagawa of the same institute will succeed him.

Dr. K. Sudo, who is noted for his study of medical chemistry, died, January 7, at the age of 63. He retired in 1932 from his position as president of the Kanazawa Medical College. He was a self-taught man in the real sense and had never been to college. He obtained the doctorate through the examination for practitioners. For a short time he practiced medicine in Tokyo but soon gave it up and began research in medical chemistry.

Mr. Gunn of the Rockefeller Foundation was guest of honor at the home ministers' dinner in recognition of his services in establishing an institute contributed by the foundation for training medical experts and workers.

Prof. S. Camboss of the medical college of São Paulo, Brazil, came to this country, January 22, with about fourteen medical students for an inspection tour. This was the first medical party to visit here from South America. All medical schools united in welcoming them. They visited medical centers all over the country for about one month. Dr. Camboss gave a lecture on blastomycosis at the meeting of welcome held by the medical and dental associations in Tokyo soon after they arrived.

Marriages

STANLEY EDWIN MCCLURE, Monon Ind., to Miss Marian McGowan of Mankato, Minn., in Columbia City, April 22.

PAUL EMANUEL LANDMANN, Johet Ill., to Miss Aileen Marie Burkhardt of Dwight, at Plainfield, May 12.

ROY LESLIE KENWARD, Melvin, Ill., to Miss Frances Nonnenmacher of Dewitt, Iowa, at Watseka, May 5.

PARKER C. HARDIN, Arkansas City, Kan., to Miss Catherine Shaffer of Charleston, Ill., May 19.

FRANK HART PRIOR to Miss Elizabeth Skummer Bagley, both of Colorado Springs, May 22.

HALDOY CHARLES KRAFT to Miss Mary Amanda Baker, both of Noblesville Ind., May 10.

WILSON GRAFTON CLAGETT to Mrs. Mary Campion Laurel, both of Dayton Ohio April 29.

REASON LOUIS COPE, Marksville La. to Miss Hazel Marquez of New Orleans, April 28.

JONAS BERK RAYMAN Toledo, Ohio, to Miss Lila Tobin of Miami Beach, Fla., May 22.

NORMAN E. FISHER, Toledo, Ohio, to Miss Jeanne Littwitz of Dayton, May 30.

JAY DONALD MILLIGAN to Miss Leone Daus both of Elgin, Ill., May 16.

Deaths

Carl Arthur Hedblom, since 1926 professor of surgery at the University of Illinois College of Medicine, Chicago, died suddenly, June 6, of coronary thrombosis, while attending a meeting of the American Surgical Association in Toronto, Canada. Dr. Hedblom was born in Dayton, Iowa, March 5, 1879. He was educated at the Colorado College where he received his B.A. in 1907, M.A., in 1908, and an honorary D.Sc., in 1921. In 1911 he received his M.D. from Harvard University Medical School and a Ph.D. from the Mayo Foundation of the University of Minnesota in 1920. He was an intern at the Massachusetts General Hospital from 1911 to 1913 and then went to Shanghai, where he was professor of surgery at the Harvard Medical School in China until 1916. In 1916 he entered the Mayo Foundation as a fellow in surgery and from 1919 to 1924 was head of the section on general and thoracic surgery at the Mayo Clinic. Dr. Hedblom was professor of surgery at the University of Wisconsin Medical School, Madison, from 1924 to 1926, when he came as professor of surgery to the University of Illinois College of Medicine. He was a member of the Society of Clinical Surgery, American Surgical Association and the Western Surgical Association, member and past president of the American Association for Thoracic Surgery and fellow of the American College of Surgeons. Dr. Hedblom was head of the surgical department at the Research and Educational Hospital of the University of Illinois and senior surgeon to St. Luke's Hospital, consulting surgeon at the Edward Hines Jr. Hospital, Hines, Ill., and the Municipal Tuberculosis Sanitarium.

Louis de Lotbiniere Harwood, Montreal, Que., Canada, School of Medicine and Surgery of Montreal, Faculty of Medicine of the University of Laval at Montreal, 1891, dean and professor of gynecology, University of Montreal Faculty of Medicine, fellow of the American College of Surgeons, corresponding member of the Surgical Society of Paris, officer of the Legion of Honor of France, first vice president of the Association of French-Speaking Physicians of North America, on the staff of L'Hôpital Notre-Dame superintendent of the Radium Institute of the Province of Quebec, aged 68, died suddenly, May 15.

Carroll W. Allen, New Orleans, Tulane University of Louisiana Medical Department, New Orleans, 1901, formerly professor of clinical surgery at his alma mater and professor of clinical anesthesia at the graduate school of medicine, fellow of the American College of Surgeons, aged 59, author of "Local and Regional Anesthesia", on the staffs of the Touro Infirmary and the Southern Baptist Hospital, where he died, April 14, of heart disease and diabetes mellitus.

Calvin Fremyre Barber, Brooklyn, College of Physicians and Surgeons in the City of New York, medical department of Columbia College, New York, 1882, fellow of the American College of Surgeons, for many years on the staffs of the Kings County Hospital, Coney Island Hospital and the Samaritan Hospital, chairman of the board of the Caledonian Hospital, aged 74, died, May 12.

Edwin A. Stevens, Mayfield, Ky., University of Louisville (Ky.) School of Medicine 1885, past president of the Graves County Medical Society and vice president of the Kentucky State Medical Association, formerly member of the board of education and mayor, aged 70, medical superintendent of the Mayfield Hospital, where he died, May 4, of cerebral hemorrhage.

Stephen Andrew Mahoney, Holyoke, Mass., Harvard University Medical School, Boston, 1889, member of the New England Obstetrical and Gynecological Society and the New England Surgical Society, fellow of the American College of Surgeons, on the staffs of the House of Providence and the Holyoke Hospital, aged 71, died, March 30, of coronary thrombosis.

Joseph L. Spruill, Jamestown, N. C., University of Maryland School of Medicine, Baltimore, 1895, past president of the Seaboard Medical Association and the Guilford County Medical Society, aged 63, medical superintendent of the Guilford County Tuberculosis Sanatorium where he died, May 5, of carcinoma of the urinary bladder with metastasis.

Sidney B. MacLeod, Chicago, Northwestern University Medical School, Chicago, 1897, past president of the American Association of Railway Surgeons, fellow of the American College of Surgeons, on the staff of the Jackson Park Hospital, aged 59, died, April 3, of coronary thrombosis and appendiceal abscess.

Albert Heman Ely, Cold Spring Harbor, N Y, College of Physicians and Surgeons in the City of New York, medical department of Columbia College 1888, member of the Medical Society of the State of New York, for many years on the staff of the Southampton (N Y) Hospital, aged 73, died, April 26, in the Huntington (N Y) Hospital

Wilfred Anthony Ash ♂ Seattle, Creighton University School of Medicine, Omaha, 1923, fellow of the American College of Physicians, aged 37, on the staffs of the Harbor View Hospital and the Providence Hospital, where he died, April 17, of pneumonia, following an injury received in a fall in his garage

Fulton R Stotler, Wilkesburg, Pa, Jefferson Medical College of Philadelphia, 1869, member of the Medical Society of the State of Pennsylvania for many years director of the city board of public education physician in charge of the Home for Aged Protestant Men and Couples, aged 86, died, April 28

Joseph Andrew Smith, Worcester, Mass, College of Physicians and Surgeons, Boston 1914, member of the Massachusetts Medical Society also a dentist, veteran of the Spanish-American War aged 59, formerly on the staff of St Vincent Hospital, where he died, April 16, of chronic myocarditis

Isaac Beckett Smith, Brooklyn College of Physicians and Surgeons in the City of New York, Columbia University, 1891, formerly chief of the bureau of preventable diseases, state department of health on the staff of St Mary's Hospital aged 68, died April 10 of coronary thrombosis

Harry Floyd Emert ♂ Sarles, N D, University of Minnesota College of Medicine and Surgery, Minneapolis, 1911, president of the North Dakota State Board of Medical Examiners formerly mayor of Sarles, aged 48, died, May 8, in a hospital at Devils Lake, of pneumonia

Harry Flower Shipley, Granite, Md, Baltimore University School of Medicine, 1898 for many years physician at the Woodstock (Md) College and deputy health officer of Baltimore County aged 60, died, May 10, in the University Hospital, Baltimore, of cerebral hemorrhage

Edwin Knickerbocker Losee, Upper Red Hook, N Y College of Physicians and Surgeons in the City of New York medical department of Columbia College New York, 1888 member of the Medical Society of the State of New York, aged 67, died April 13, of embolism

Hayward Warren Cushing ♂ Boston, Harvard University Medical School, Boston, 1882, member of the American Surgical Association, fellow of the American College of Surgeons consulting surgeon to the Boston City Hospital, aged 79, died, May 8, of cerebral hemorrhage

Winfield Bruce Anderson ♂ Brooklyn Long Island College Hospital, Brooklyn, 1917, served during the World War, on the staffs of the Bay Ridge Sanitarium, Midwood Sanitarium, Victory Memorial Hospital and the Samaritan Hospital, aged 39, died, May 20

Jere Dewey Eggleston ♂ Meriden, Conn College of Physicians and Surgeons in the City of New York, medical department of Columbia College, New York 1879 formerly on the staff of the Meriden Hospital, aged 80, died, May 26, of cerebral hemorrhage

O P Nuckols, Pineville Ky, University of Tennessee Medical Department, Nashville 1891 member of the Kentucky State Medical Association secretary and past president of the Bell County Medical Society, aged 72, died suddenly, in April, at Middlesborough

James Merle Scribner ♂ Lowell Mass, Tufts College Medical School, Boston, 1927, member of the New England Obstetrical and Gynecological Society on the staff of St Joseph's Hospital, aged 31, died, May 11, at his home in West Medford

Charles Fremont Bennett, Pomona, Calif, University of Michigan Medical School, Ann Arbor, 1879 aged 78 died January 18, in the Los Angeles General Hospital, of diverticulum of the esophagus, pulmonary tuberculosis and bronchopneumonia

William W Smith, Louisville Ky, Medical College of Ohio, Cincinnati, 1891 formerly member of the state legislature, aged 66 died, May 2, in St Anthony's Hospital, of a fracture of the hip sustained when he tripped on a rug in his home

Samuel Schneider, New York University and Bellevue Hospital Medical College, New York 1899 member of the Medical Society of the State of New York, aged 61, died, April 14, in the Park East Hospital, of carcinoma of the colon

George Ellis Towle, Wisconsin Rapids, Wis Marquette University School of Medicine, Milwaukee, 1913, served during the World War, formerly health officer of Marshfield, aged 46, died suddenly, February 27, of cerebral hemorrhage

Joseph Henry Litterer ♂ Nashville, Tenn, Vanderbilt University School of Medicine, Nashville, 1917, member of the American Society of Clinical Pathologists, served during the World War, aged 42, died, April 4, of heart disease

Pinkard Charles Downs Jr, Chicago, Meharry Medical College, Nashville, Tenn, 1916, member of the Illinois State Medical Society, aged 50, died, March 15, in the Cook County Hospital, of pericardial effusion and coronary occlusion

Gaius Fabius Brooks, Ysleta, Texas, University of Nashville (Tenn) Medical Department, 1883, Vanderbilt University School of Medicine, Nashville, 1889, member of the State Medical Association of Texas, aged 80, died, April 28

Aaron R Elder, Harrisonville, Mo, Missouri Medical College, St Louis, 1884, member and at one time president of the board of education, county health officer, on the staff of the Harrisonville Hospital, aged 80, died, April 5

Wilson Adolphus Allen, Rochester, Minn, Hahnemann Medical College and Hospital, Chicago, 1879, member of the Minnesota State Medical Association, aged 100 died, May 11, in a local hospital, of injuries received in a fall

Edgar Voorheis Beardslee ♂ Detroit, University of Michigan Medical School, Ann Arbor, 1916, aged 49 on the staff of the Highland Park (Mich) General Hospital, where he died, May 10 of carcinoma of the colon

Thomas Jobson Swantz, South Bend, Ind, Northwestern University Medical School, Chicago 1907, member of the Indiana State Medical Association, aged 56, died, May 10, of myocarditis and diabetes mellitus

Frank Emens, Trinity, Ala, Hospital College of Medicine Louisville, 1898, member of the Medical Association of the State of Alabama, member of the board of education, aged 64, died, April 26 of pneumonia

Charles Samuel Shultz ♂ Spirit Lake, Iowa, State University of Iowa College of Medicine, Iowa City, 1891 secretary of the Dickinson County Medical Society, aged 70, died, April 12, of pneumonia

Lucius E Ellis, Orrick Mo University Medical College of Kansas City, 1905, member of the Missouri State Medical Association, aged 56, died April 20, of malignant brain tumor and nephrectomy

Colin William MacDonald, Boston Bellevue Hospital Medical College New York 1887, member of the Massachusetts Medical Society, aged 76 died, April 19, of chronic myocarditis

Noah Albert Grant Tesson, Kansas City, Mo, Kansas City Medical College, 1895 member of the Missouri State Medical Association, aged 70, died, February 23, of coronary sclerosis

John Calvin Stever, Bambridge, Pa, Jefferson Medical College of Philadelphia, 1877, member of the Medical Society of the State of Pennsylvania, aged 81, died, April 8, of arteriosclerosis

Samuel Warren Miller, Denver, Jefferson Medical College of Philadelphia, 1884, member of the Colorado State Medical Society, aged 77, died, April 10, in Salt Lake City, Utah

Charles Samuel Layton, Eloise, Mich Detroit College of Medicine, 1897, formerly on the staff of the Eloise Hospital aged 62, died, April 20, in Detroit, of cerebral hemorrhage

Minard J Armstrong, Springfield, Mo (licensed in Missouri in 1905) member of the Missouri State Medical Association, aged 53, was found dead, April 13 of angina pectoris

Edward John Stephens, Utica, N Y, Albany (N Y) Medical College, 1881, aged 79 formerly on the staff of the Faxon Hospital, where he died, April 6, of chronic myocarditis

Charles Bartlett Dearborn ♂ Mount Sterling Ill, Rush Medical College, Chicago 1890, secretary of the Brown County Medical Society aged 66, died, May 16, of cerebral thrombosis

William Perry Stone, Palmer, Tenn, Chattanooga (Tenn) Medical College 1897, member of the Tennessee State Medical Association aged 66 died suddenly, April 15, of heart disease

Thomas Huston Smith ♂ Burnham, Pa Baltimore Medical College, 1897, past president of the Mifflin County Medical Society, aged 63, died March 20, of cerebral hemorrhage

Howard Henry Drake ♂ Norristown, Pa, Jefferson Medical College of Philadelphia, 1878 trustee at the Norristown State Hospital aged 77, died, May 19, of heart disease

Campbell A Stokes, Edinburg Ill, Eclectic Medical Institute, Cincinnati, 1882, member of the Illinois State Medical Society, aged 75, died, April 22, of heart disease

Carus Plumlee, Hot Springs, N M, Barnes Medical College, St Louis, 1911, member of the New Mexico Medical Society, aged 50 died, April 7, of acute nephritis

Edward Seguin, Eveleth Minn, School of Medicine and Surgery of Montreal, Que, Canada, 1899, aged 58, died, May 3, of acute fibrous pleurisy and bronchopneumonia

William Findley Weikal, Middletown, Ohio, Eclectic Medical Institute, Cincinnati, 1903, aged 66, died, April 27, in a sanatorium at Cincinnati, of cerebral hemorrhage

Ernest Owen Adams, Cleveland, Homeopathic Hospital College Cleveland 1893, aged 66, died, April 16, in the Huron Road Hospital, of cardiorenal disease

John Peter Faber, Schenectady, N Y, Albany Medical College, 1905, member of the Medical Society of the State of New York aged 56 died, April 9

Alexander Felix Toohey, Beresford, S D, John A Creighton Medical College, Omaha, 1899, aged 57, died April 19, in a hospital at Sioux City

Henry Russell Shotts, Linden, Ind, Indiana Medical College Indianapolis, 1877, aged 84, died, in April, at Lafayette, of injuries received in a fall

Richard C Taylor, Elburn Ill, Bennett College of Eclectic Medicine and Surgery, Chicago, 1893, aged 73, died, April 25, of acute nephritis

Moritz Loewenthal, Cleveland Baltimore University School of Medicine, 1894 aged 73, died, March 30 of heart disease and arteriosclerosis

Millard F Biggers, Glasgow Ky, University of Tennessee Medical Department, Nashville, 1900 aged 69, died, May 6, of cerebral hemorrhage

Ignatz Mayer @ Detroit Medico-Chirurgical College of Philadelphia, 1894, aged 73, died, in April, at the Grace Hospital of uremia

Preston M Edwards, Philadelphia University of Pennsylvania School of Medicine, Philadelphia, 1893, aged 66 died March 23

Howard Oliver Allen, Longmeadow Mass, University of the City of New York Medical Department, 1879, aged 80, died April 29

Edward G Lawton, Natchitoches, La Louisville (Ky) Medical College, 1890, aged 68 died, March 11, of mitral regurgitation

Ronald Levesque, Montreal Que, Canada School of Medicine and Surgery of Montreal, Que 1912 aged 47, died, January 14

Thomas Luther Lanier, Perris Calif University of Tennessee Medical Department Nashville, 1880, aged 85, died March 31

George Church Anderson, Montreal Que Canada McGill University Faculty of Medicine, Montreal, 1915 aged 41, died April 17

Aaron Godwin, Muscadine Ala, Atlanta College of Physicians and Surgeons, 1912, aged 47, died January 17, of heart disease

George J C Larsen, St Louis, Marion-Sims College of Medicine, St Louis, 1892 aged 67 died April 16, of pneumonia

Paul Frederick Eckstein @ Canonsburg Pa University of Pittsburgh School of Medicine, 1920 aged 38 died April 5

Schuyler Lott, Waterloo N Y Albany (N Y) Medical College, 1868, aged 91, died, May 2 of bronchopneumonia

Alexander Duncan Allen, Geneva, N Y Syracuse University College of Medicine, 1880 aged 77 died April 29

Joseph P Dyer, Jennings Okla University of Louisville (Ky) School of Medicine, 1909 aged 50 died April 24

Arthur E Snapp, Dayton Ohio Ohio Medical University Columbus 1900 aged 61 died May 5 of heart disease

Robert H Berg, Chicago Jenner Medical College Chicago 1916, aged 56, died May 22 of agranulocytosis

Jefferson Moore Luff, Felton Del Jefferson Medical College of Philadelphia, 1881 aged 75, died April 8

Eli Harman Porch, Philipsburg Pa Medico-Chirurgical College of Philadelphia, 1896 aged 69 died April 7

Ambler Caskie Richmond Va Medical College of Virginia Richmond 1883, aged 78 died, April 6

James M Hammer, Fountain City Tenn (licensed in Tennessee in 1889), aged 79 died, April 20

Bureau of Investigation

STARDOM'S HOLLYWOOD DIET

In Which the Obese Are Again "Kidded by Experts"

"Stardom's Hollywood Diet, a Reducing Food," seems to be essentially 2¼ cents' worth of soya bean flour faintly flavored with cocoa and salt and sold for from \$1.00 to \$2.00!

The product is put on the market by the Hollywood Diet Corporation of Chicago. The men behind it are reported to consist of two salesmen and an attorney. So far as is learned, no physician is an officer or director of the corporation. To include a lawyer in a company is a common set-up in the field of nostrum exploitation. The essentials to success in this field are salesmanship and enough legal talent to keep the salesmen from committing any technical violation of the law. It is quite unnecessary that any one in such a business should have even the faintest knowledge of medicine, pharmacy or chemistry. What sells a nostrum is the advertising, not merit.

In spite of the renaissance in curves, as typified by the popularity of Mae West, many American women still seek the



slim figure by short-cut methods, and obesity cures are still popular. Such cures vary widely in composition. Some of them are for external application—salts to be put in the bath water, creams or soaps to be rubbed on the surface of the body. Others are for internal use—purgative pills, salines sold as "salts" or "crystals," chopped-up laxative herbs sold as "teas," thyroid substance in pills or capsules, and, even more recently, the dangerously potent dinitrophenol. Within the past year or two still another method of capitalizing on the desire for the slim figure has appeared. It consists in selling under a fancy name some simple food product of low caloric value which the obese are urged to use in the place of two of the three daily meals. Stardom's Hollywood Diet belongs to the latter group.

Naturally in putting over a simple inexpensive food product as an obesity cure sold at an exorbitant price, skilful advertising is called for. Much of the advertising of Stardom's Hollywood Diet is buncombe to the nth degree. Thus:

Within thirty days you will thrill to your loveliest image you will radiate a vital more slender charm.

You'll be quite thrilled at the ease with which Stardom's molds your body into slender proportions almost before you realize it you will find your flabby tissues becoming firm slender and alluring.

After reducing with Stardom's Hollywood Diet you should look as young as you weigh and feel as young as you look. Yes you really should.

The possibility of your having an exciting type of Hollywood figure is now so real as to be actually breath taking.

This is some of the tosh that is dished up to the obese in order to get them to pay an extraordinary price for a most ordinary product

In a circular dealing with this nostrum there appears under the heading 'Certified—for Your Protection' what purports to be a certificate issued by a Chicago chemist. The certificate makes this chemist declare that the preparation contains an "abundance" of lecithin. In a letter to the Bureau of Investigation the chemist states that he actually reported that there was "only a trace" of lecithin! The published certificate also makes the chemist say

'Stardom's Hollywood Diet is so well balanced and contains such complete and superior proteins, minerals, lecithin and vitamins that it can well replace one or two fat-forming meals each day without lowering your resistance or vitality. It will maintain the necessary reserve of the human body with nourishing elements that will not end in FAT.'

From the explanatory letter sent to the Bureau of Investigation, it seems that the statement just quoted is a pure invention of the advertisers of Stardom's Hollywood Diet and formed no part of the chemist's original report.

Requests for information regarding Stardom's Hollywood Diet have poured in from all parts of the country, from the Atlantic to the Pacific and from Canada to the Gulf. For that reason, it was felt justifiable to investigate the preparation, so that information could be furnished both physicians and laymen. The report from the A M A Chemical Laboratory follows.

REPORT

"The Bureau of Investigation requested the A M A Chemical Laboratory to investigate Stardom's Hollywood Diet. Original packages were purchased on the open market. The label bore the following notation:

Stardom's Hollywood Diet—A Reducing Food Containing Vitamins A B C D E. No Drugs. No Laxatives. A Pure Food Product. Reduce With Safety.

"A cursory examination indicated that the product was apparently not a drug but consisted of a 'feed.' It was deemed advisable to have the product analyzed by a consulting laboratory specializing in foods and feeds, rather than by the A M A Chemical Laboratory. The consulting laboratory reported that the product contained approximately 180 Gm (6 oz) of essentially vegetable material having a brown color and an odor resembling chocolate, it also contained a small amount of chloride. In addition, the product was also referred to a well-known food authority and microscopist, who reported that the sample consisted essentially of soya bean flour mixed with cocoa. Quantitative determinations yielded the following:

	per cent
Moisture	3.1
Crude Protein (N \times 6.25)	38.3
Crude Fat	8.4
Ash	8.8
Crude Fibre	2.3
Nitrogen Free Extract	39.1
Chloride calc. as sodium chloride	1.73

"The foregoing compares favorably with what would be expected for soya bean flour though it is a little lower in protein than the average soya bean flour. This may be because of the dilution resulting from the addition of cocoa, or it may be due to a lower protein content in the soya bean flour used in the preparation of the product.

"From the foregoing analysis it appears that Stardom's Hollywood Diet consists essentially of soya bean flour or meal to which has been added cocoa and some salt. No other constituents were found in the mixture.

From the chemical and microscopical analysis, it seems that Stardom's Hollywood Diet is essentially soya bean flour to which has been added a minute amount of cocoa and salt. Ordinary soya bean meal can be purchased for about \$33 a ton. Refined soya bean flour sells for about \$5 or \$6 a hundred pounds. Assuming that the higher-priced refined soya bean flour is used in making Stardom's Hollywood Diet, there would be in a package which is labeled \$2 (but is frequently sold for \$1) 2¼ cents' worth (6 ounces) of soya bean flour, with an insignificant amount of cocoa and salt. This should allow a handsome margin for advertising, overhead and exploitation.

The woman who seeks a sylph figure is told to substitute a teaspoonful of the product to be taken in the place of breakfast and another teaspoonful to be taken in the place of luncheon. A heaping teaspoonful of Stardom's Hollywood Diet was found to weigh 8 grams. This would mean that the

recommended breakfast and luncheon each would furnish less than 31 calories. The average fuel requirement for the breakfast of a woman leading a sedentary life is between 400 and 600 calories, the total fuel requirements for the day ranging from 1,800 to 2,300 calories. In her excellent book, "Feeding the Family," Doctor M S Rose, professor of nutrition at Teachers College, Columbia University, outlines a suggested reducing diet for an overweight woman. For a proposed breakfast in this diet Dr Rose recommends a medium sized apple, one egg, a slice of toast, a cup of coffee, and one and a half teaspoonfuls of skim milk, having a total fuel value of 200 calories. There is then to be taken at 10.30 a.m. some bouillon and a water cracker (22 calories), a luncheon, comprises a medium serving of lean cold roast beef, two thin slices of rye bread, some lettuce and cottage cheese salad (285 calories), at 4.30 a cup of tea and a water cracker (10 calories), dinner includes a large serving of boiled cod with lemon, one-half medium sized boiled potato, a large serving of cauliflower, a scant teaspoonful of butter, watercress and egg salad with a small amount of French dressing, half an orange, and a demi-tasse of black coffee, making for the dinner 490 calories. Then at bedtime a half cup of hot skim milk, making an additional 45 calories, or a total fuel value for the day's food of 1,052 calories.

Such a diet has balance, which may be as important as total calories. The diet recommended in the exploitation of the nostrum Stardom's Hollywood Diet must of necessity be hopelessly unbalanced. Then there is always the likelihood that a woman who has simply had a teaspoonful of soya bean flour for her breakfast and another teaspoonful of the product for her luncheon will become so ravenously hungry by dinner time that she will eat twice as much as she would under ordinary conditions.

It is hard to make the public understand that the reduction of weight is not necessarily the simple process that so many consider it. The senseless taking of "salts," "crystals" and the innumerable other purgatives that are sold as obesity cures, the unwise self-administration of the potent thyroid and of the much more dangerous dinitrophenol, must, in the aggregate do the public health of the country incalculable damage. Because individuals taking such treatments only occasionally die from the results, the belief has developed that there can be no particular harm in taking the innumerable nostrums put out by shrewd exploiters who literally live on the fat of the land.

Correspondence

HYPERPARATHYROIDISM

To the Editor.—In THE JOURNAL, May 26, page 1764, appears an editorial entitled "Hyperparathyroidism: A Chapter in Successful Laboratory Research." This editorial presents a misleading picture. Mandl is a surgeon, the finest piece of writing that has ever been done on this subject is by Donald Hunter of London, the interest in parathyroidism in America is due more to the clinical work of Dr. Max Ballin than to any other person or group of persons. The American Medical Association conferred its gold medal on Dr. Ballin for his presentation of this subject at the New Orleans session. The enormous importance of the roentgenologists' contributions to this subject is entirely ignored—such work as Camp's at the Mayo Clinic.

Most unfortunate of all, the most positive statement in the editorial is incorrect, namely, that the operation should not be attempted unless the blood chemistry is thus and so. Aside from ample clinical examples which have come under my observation, I would refer you to one of the Mayo staff meeting reports stressing the point that there are classic cases in which the tumor has been demonstrated that have never shown an abnormal blood chemistry.

At the Toronto meeting of the American Orthopedic Association, one of the authors referred to in the bibliography of

your editorial took Drs Ballin and Funston to task for asserting that generalized osteitis fibrosa cystica is always associated with parathyroid tumor, saying that in Boston they had a case in a sea captain who had been operated on some three times or so and no parathyroid tumor was present. Since that time, on the insistence of the patient, and not because of the doctor's confidence in his blood chemistry results, the tumor has been located—too late, however, to help the patient.

The chapter of our knowledge of parathyroidism is not a subject that the blood chemist should select to deify his guild, but rather a brilliant example of the results that can be obtained when the clinician, roentgenologist and pathologist work together for the common good.

PLINN F MORSE, M D, Detroit

Pathologist, Harper Hospital

YAWS AND SYPHILIS

To the Editor—In THE JOURNAL, January 13, page 148, was a communication from Dr C S Butler of New York dealing with the much debated topic of yaws and syphilis. With reference to a critical review that I made of the subject, which appeared in the *Tropical Diseases Bulletin*, the statement is made that "Blacklock proves the proposition that yaws and syphilis are the same thing." This appears to be a misapprehension on the part of Dr Butler.

My incentive in endeavoring to appraise the significance of the usual diagnostic points by which yaws is said to be distinguishable from syphilis was the necessity for putting the matter as clearly as possible for students. All that emerged was that the usual differential points will not in fact serve as diagnostic; this, however, does not appear to warrant the conclusion that I have proved that yaws and syphilis are the same. It is necessary to emphasize that this problem of yaws and syphilis is by no means easy to solve and is not yet solved.

If, as Dr Butler complains, I did not make reference to his work, it was possibly because he is one of those who consider that it has already been settled and because the views of authors who had previously reached this conclusion were already included in my article. For example, I referred to the work of Branch, who, as early as 1907 in a paper in the *Annals of Tropical Medicine and Parasitology* (1:371, 1907), wrote, "We have seen that it is only in the frambesial eruption that yaws differs from syphilis, but even the frambesia is identical with the syphilitic papilloma on a moist surface."

Dr Butler later discussed the contents of my paper in an editorial article in the *American Journal of Clinical Pathology* (2:239 [March] 1934). Here, in addition to the misapprehension of my views mentioned, there is introduced a very definite misrepresentation in the following paragraph: "Professor Blacklock quotes many more or less important writers along the line of the yaws-syphilis investigations but has little to say about his own countrymen who have borne the brunt of it in defense of what they knew to be true. Nor aught but silence has he for the group of Americans, principally U S naval medical officers, who have, by research and writing, defended Hutchinson's view for the past thirty years."

The reader derives from this statement a belief that the work of Americans on the question of yaws and syphilis has been entirely ignored in my papers. That this is not so must be clear when I point out that the following American authors are quoted by me in my two articles: W J Baetz, E W Goodpasture, H H Hazen, E H Hudson, G R Lacy, F B Mallory, Thomas McCrae, J E Moore, William Osler, G W Raiziss, M A Reasoner, Otto Schobl, A W Sellards, Marie Severac, J H Stokes and F L Zimmermann.

Especial reference was made by me to the very important experimental work on the subject carried out by Sellards and

Goodpasture in 1923 and Sellards, Lacy and Schobl in 1926, and to the valuable contributions of many other American authors.

I am sorry to occupy your space with this sort of correspondence, but it is necessary to state these facts so that American readers may see from them that Dr Butler's remarks are not justifiable.

D B BLACKLOCK, M D, Liverpool, England

Professor of Parasitology, Liverpool

School of Tropical Medicine

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

THERAPEUTICS OF RUBEFACIENTS AND OF COUNTERIRRITATION

To the Editor—Dozens of remedies to be rubbed in are advertised by radio newspapers, posters and pamphlets for the treatment of any and all chest disturbances, whether of a respiratory muscular or bony origin. If there are any benefits that can be gotten from their use, exactly what can be confidently looked for? The desire to rub something on in my experience of thirty years is helpful only to those desiring to do something. As no known drug to date will destroy any bacillus or coccus in the chest, what possible benefit can result in smearing the chest with a nialodorous greasy ointment? Is it possible that there are reflexes that I know nothing about? I want to know. A patient with a temperature of 102 to 104 F wrapped in woollens covered with smelly greases is an object of sincere pity to me. If there is anything at all to such treatment, will you explain it all thoroughly? Millions of dollars are being expended annually for patent greases that I feel confident are highly injurious. Turn on the light. Please omit name.

M D Oklahoma

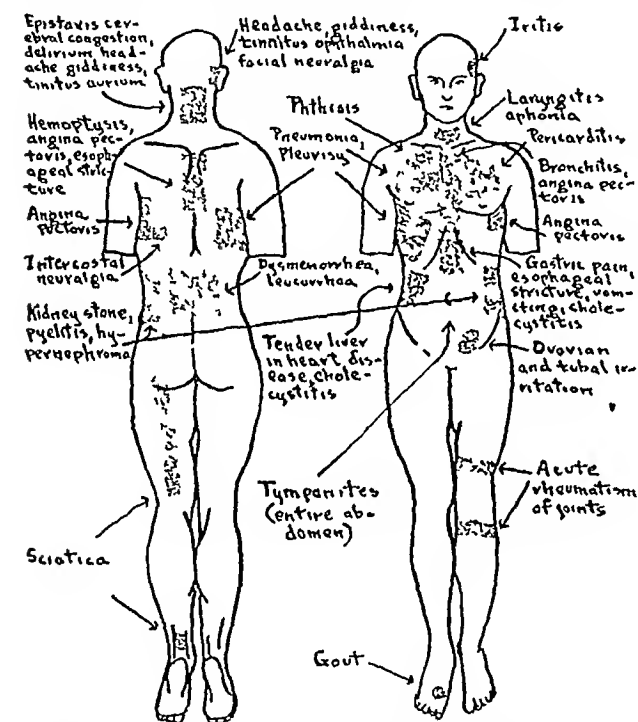
ANSWER—For purposes of the brief review of referred pain and counterirritation necessitated by our correspondent's inquiries, the central nervous system may be considered to receive sensory stimuli from three sources: (a) the skin, (b) the connective tissues, muscles, tendons and joints, and (c) the viscera. It is well known of course that, when painful stimuli or varying temperatures and pressures are applied to the skin, the site, nature and degree of these applications come fairly accurately into the consciousness, and it is also a matter of common experience as well as of experimental observation that some sort of sensory impulses reach the brain from the deeper lying structures and enable one to possess at all times an awareness of the position of one's limbs, furthermore, sensations of pain and pressure may also arise from muscles, tendons, joints and connective tissues. But in health nothing comes steadily into consciousness that reminds one of the presence of the visceral organs, though many of them are continuously in active motion. The parietal pleura may give rise to pain because of its partial innervation by the intercostal nerves, but the lungs and heart are insensitive except to traction. The parietal peritoneum also is sensitive, especially to traction, the mesenteries are sensitive to traction but they, as well as the substance of the stomach (including the mucosa), the intestine and the liver may be cut without pain, as may the kidneys (after removal of the fatty capsules) and the bladder, though the latter will not submit to being pulled. It is probable that the pains of intestinal colic, labor, dysmenorrhea, peptic ulcer and the distended liver of cardiac decompensation are due to changes in the tension of the parietal peritoneum and the mesenteries, for such diseases as pulmonary tuberculosis, chronic nephritis and carcinoma of the liver may be entirely painless. Nevertheless the allegedly insensitive organs may at times register the insult that is being offered them by causing certain areas of skin to become both painful and hyperesthetic (hypersensitive) to usual stimuli. This is the phenomenon that is called "referred pain" and it is explained as follows:

The development of the skeletal muscular and nervous structures of the human as of all other vertebrate embryos is of a segmental nature, as is evidenced by the fact that the afferent (toward the brain, i e, sensory) fibers in the dorsal roots of the spinal nerves come from definitely segmented areas of the skin. Some of these areas are lower than the segments of the cord which their nerves enter because of the downward course taken by the nerves during growth, but by severing all the dorsal roots save the one in question at the moment it is easy

to observe the relationship of the remaining clearly demarcated area of skin sensitivity to the segment of the cord at which the nerve enters. The muscles are also considerably displaced from their primitive positions during development, but it is nevertheless possible to trace their nerves also to a portion of the cord which was a part of the same segment from which the muscles originally derived. Now the dorsal roots also receive afferent fibers from the viscera, they follow the course of the autonomic nerves but they are distinctly not a part of the autonomic nervous system, since they do not form synapses in any of the ganglions and plexuses of this system and have been shown to be similar in structure and to have had an analogous segmental origin as the spinal nerves from the muscles and skin. The internal organs have descended too during development but their afferent nerves go back to the portion of the cord representing in each instance the segment from which both the nerves and the organ developed. If one such segment of the cord is considered—for example, a certain left cervical segment—into whose posterior spinal roots there enter sensory fibers from both the organs and skin areas that originally budded off from this segment one can understand how stimuli passing up from the organ may be reflected in the skin area—how coronary pain can be felt in the left shoulder and

as well as in a few instances of artificially induced referred pain in normal subjects, and were able in each case to obtain considerable, often complete, relief.

The accompanying diagram shows the usual points of referred pain and the sites at which local application of "counter irritants" may be expected to be the most helpful. Why irritation over the painful area, which would seem to be just the opposite of the method successfully employed by Weiss and Davis, should cause the disappearance of pain is also not entirely understood, but it is worthy of note that the congestion and burning characteristic of rubefacient action are often succeeded by more or less anesthesia. Macleod (*Physiology and Biochemistry in Modern Medicine*, ed 6, 1930) prefers to relate the phenomenon to the competition of incompatible reflexes for the control of a common motor path, in which case the one that will succeed in gaining control and in suppressing the other will depend on the relative strengths of the stimuli. He cites an interesting experiment of Head, who was an early investigator in this field. "The tip of the glans penis is supplied with receptors for cold and pain but may be devoid of heat spots. If it is dipped into water at 40 C the pain spots alone are stimulated and a disagreeable painful sensation results. If the temperature is raised to 45 C the cold spots also are stimulated and the pain is displaced by a vivid sensation of cold. About the corona of the penis heat spots also occurs. If this region is also immersed the quality of the sensation changes to one of exquisitely pleasant warmth. If the water employed in the experiment is at a temperature higher than 45 C the painful sensation persists and no sense of warmth is felt. The sensations of pain and warmth are incompatible and cannot occur simultaneously." Edmunds and Gunn (*Cushny's Pharmacology*, ed 9, 1928) think that something more than the relief of pain is at times induced by counter irritation and that most probably an alteration in the caliber of the vessels is promoted. However undeniably valuable as the effects are at times, our correspondent is certainly warranted in his opinion that money is being wasted in enormous amounts on "patent" counterirritant greases. Beckman (*Treatment in General Practice*, ed 2, 1934) describes the preparation and uses of mustard poultices and plasters and turpentine stupes. It is probable that with these agents alone all that is possible with this type of therapy may be accomplished.



Usual points of referred pain and sites at which local application of 'counterirritants' may be expected to be the most helpful

arm and over the sternum and up into the anterior neck and jaws. Perhaps it is not precisely understood, but at least the close association of fibers from distant and unlike parts at the point of their common embryonal origin is seen. Clear understanding of the subject has been attained by no one as yet, but the hypothesis of Mackenzie (*Symptoms and Their Interpretation*, ed 4, 1920) is a distinct advance toward exact knowledge. According to this conception, irritation of an organ causes a play of impulses to pass along its afferent fibers to their segment in the cord higher than this they cannot rise for some reason (at least they do not come into the consciousness as "pain"), but the incessant bombardment of these impulses causes an "irritable focus" to appear in the cord at this point. At the same time, however, normal afferent impulses from the skin and muscles are reaching this segment and when they pass through the irritable focus they are sufficiently disturbed to signal pain to the brain. What comes then into consciousness is the usual pain in the skin, though the stimulus was actually applied higher up the nerve. Weiss and Davis (*Am J M Sc* 176 517 [Oct] 1928) have felt that a test of this hypothesis would be to block the afferent cutaneous impulses from painful skin areas in visceral disease by infiltration of the site with a local anesthetic. This they did in a number of cases of referred pain of cardiac, pulmonary, pleural, esophageal, gastric, gallbladder, cecal, kidney and pelvic origin

USE OF CAFFEINE SODIOBENZOATE IN PREMATURE INFANTS WITH KIDNEY DISTURBANCE

To the Editor—I would greatly appreciate a discussion of the proper management of the following case keeping in mind an absence of hospital and laboratory facilities. A premature infant of approximately eight months was very weak from birth and was unable to nurse. It was kept alive by incubator oxygen intraperitoneal saline solution tube feedings of breast milk and intramuscular injections of caffeine sodiobenzoate. The caffeine sodiobenzoate is the product of a reliable drug house. At the end of four or five days the infant improved and was able to take its feedings from a small bottle. However a sterile abscess had formed at the site of an earlier injection of caffeine sodiobenzoate. Since the abscess showed no tendency to absorb it was opened widely with the evacuation of much semifluid necrotic material no frank pus being present. About this time edema was noted about the face and extremities the urinary output having been scanty since birth. In spite of wide incision and daily irrigations of the wound with a sterile nontoxic solution the wound showed no tendency to heal and the edema progressed to a point of generalized anasarca. During this time almost no urine was passed. This was highly concentrated and contained a large amount of albumin many hyaline casts and a few red cells. On the tenth day the infant died presumably from acute nephritis. Points of interest to me are the following. Should caffeine sodiobenzoate be used for stimulation of the newborn and if so in what dosage? Does sterile necrosis often follow use of this drug in the newborn? In the case reported what means if any could have been used to combat the nephritis other than correct treatment of the wound? Should fluids by mouth have been restricted?

H W DORR M D Ashton Idaho

ANSWER—Caffeme sodiobenzoate may be used as a stimulant in premature infants although its use perhaps is not as frequent as some of the other stimulants. The development of a sterile abscess in the case under consideration should not be attributed to the drug or preparation used necessarily but rather to the infant's poor circulation and lack of absorption.

Atropine sulphate and epinephrine are frequently given hypodermically to premature infants as a stimulant. Perhaps aromatic spirit of ammonia in a dosage of from one to five drops by mouth is more frequently used. Its action is usually quite satisfactory. In a list of stimulants, brandy and whiskey should be included and, depending on the indications present, may be given in amounts varying from three to ten drops every three hours.

The presence of acute nephritis in new-born premature infants has been observed under a number of conditions. In general

these are considered to be the result of infection. Syphilis should be named as a frequent etiologic factor in the producing of severe kidney changes. Transitory urinary changes may be seen when the mother is having acute nephritis or eclampsia. These changes usually clear spontaneously during the first two or three weeks. The development of "hydrops fetu universalis" has been shown to be related to the presence of nephritis in the mother during pregnancy. Edema in small premature infants is frequently seen during the first days of life, usually affecting the extremities and genitalia. A large number of these are probably the result of a circulatory weakness. The edema may involve the deeper structures and there may be fluid accumulation in the body cavities. The chilling of newborn infants and especially premature infants and the accompanying subnormal body temperature are always a factor in the production of edema. The special forms of edema, sclerodema and sclerema are occasionally seen. It may be impossible to make an absolute differentiation between these.

So far as the treatment is concerned, as a general statement fluids by mouth should not be restricted. The maintenance of adequate fluid intake, normal body temperature and normal elimination are important.

MENSTRUATION AND ABNORMAL BLEEDING IN GIRLS

To the Editor—I have a patient aged 15 years who began to menstruate at the age of 13. Menstruation occurred every twenty-eight days and was normal in amount for a few months. Then she began to flow more freely until there have been times of five months continuous bleeding from the vagina. Of course there has been considerable weakness resulting from this loss of blood. Physical examination has been essentially negative except for secondary anemia. Blood examination about Sept. 1, 1933 showed red blood cells 3,260,000, white blood cells 4,350, hemoglobin 75 per cent. The following treatments have been used with no decrease of flow or improvement in any way: rest in bed, corpus luteum intramuscularly 1 cc daily for ten doses, ergot, calcium lactate, antuitrin S 1 cc daily for ten days intramuscularly, theelin 1 cc intramuscularly every day for seven days, ovarian substance, transfusion of blood from pregnant woman, curettement, negative x-rays every month for seven treatments. Have you any suggestions for further treatments? Please omit name. M D, New York

ANSWER—This girl has had too many different forms of treatment, and apparently not one of them has been used sufficiently long to determine its therapeutic effect. It is assumed that the term negative curettement implies that a normal endometrium was found. From the history, however, a hyperplasia of the endometrium is suggested. Certain of the remedies used are entirely useless in the treatment of this condition, such as ovarian substance and estrogenic preparations (theelin, amniotin and the like). In some cases, Novak has obtained encouraging success with the use of an anterior pituitary-like luteinizing substance obtained from the urine of pregnant women (Antuitrin S, Follutein). However, this form of treatment is usually temporary and must be repeated with each hemorrhage. Nevertheless it is preferable to the use of radiation therapy or operation in a girl of 15 years. Repeated small transfusions will help replace some of the blood that is lost and may improve the quality of the blood. Of course, a thorough general physical examination should be made to rule out any possible systemic cause and careful studies of the blood also should be made. Small doses of thyroid may be tried and occasionally repeated curettements have a curative effect. In some instances insulin produces a cessation of the irregular bleeding. As a last resort about 250 or 300 mg. hours of radium should be employed. This treatment may have to be repeated.

USE OF BLOOD INJECTIONS IN CEREBRAL HEMORRHAGE AT BIRTH

To the Editor—Several days ago I was surprised to hear a lady say the following: When my daughter-in-law's baby was born the doctor used instruments. Three days after the birth the doctor told my son that he would transfer some of his (the father's) blood into the infant to foretell any chance of cerebral hemorrhage which sometimes followed the use of instruments. The lady asked me if I had ever done it. I frankly told her no and what was more I had never heard of its being done nor could I see the reason for waiting three days after the possible cause of hemorrhage before applying the remedy. However, being only a plodding country doctor of thirty-nine years practice I may have missed the technique. I write to you for the information. Is it modern practice to give an infant a transfusion of the father's blood three days after its birth to prevent the possibility of hemorrhage when instruments have been used? This patient lives in Salt Lake City, Utah.

M D, Utah

ANSWER—The practice of injecting blood intramuscularly into babies who are suspected of having sustained intracranial hemorrhage is sanctioned by general usage. The administration of blood has also been suggested as a prophylactic remedy in babies whose birth has been prolonged or difficult or who have been delivered with forceps. It is not possible to explain

exactly why the blood was injected on the third day in the case mentioned. It is known, however, that late hemorrhages may occur, that oozing may continue from the rupture of large or small vessels, and that the amount of damage resulting from a hemorrhage is in direct proportion to the quantity of blood that has been extruded. Briefly, the answer to the query may fairly be stated with the following assumption.

The physician probably suspected late hemorrhage or continued oozing, which led him to administer intramuscularly blood on the third day of the infant's life.

USE OF PATCH TESTS

To the Editor—Please give me your opinion regarding the patch method used in testing with substances such as face powders and soaps, especially in cases in which there is a question of occupational responsibility such as one using soaps and paints also in those who may purchase certain articles of jewelry, ear drops, neck pieces, as furs and jewelry if one were to use the articles such as soap, paint and face powders on the skin or, in other words use a patch test that would be considered reliable as positive proof of that particular article being the cause of dermatitis. Please omit name. M D, Iowa

ANSWER—The question as stated is not entirely clear. Most likely the inquirer desires to have a general opinion of the value of patch tests in the diagnosis of hypersensitiveness to face powders, soaps, and the like. If the condition is a truly allergic one such as a hyperesthetic rhinitis, asthma or eczema, the ordinary method of performing skin tests should be employed. In such instances the materials may be put on scratches made in the epidermis and a positive reaction may be expected in from fifteen to twenty minutes.

If the hypersensitiveness is not of the allergic type, the usual symptom is a dermatitis and scratch tests are of no avail. In such instances, patch tests are of value. The usual types of materials with which patch tests are rational are various house plants, wool, silk, cotton, fur dyes, ointments, lotions, soaps and creams. Synthetic jewelry, rims of spectacles and similar articles may cause a dermatitis and may be adapted to the method of contact tests. A positive patch test indicates that the patient's skin is sensitive to the material. It does not prove that the clinical dermatitis for which the patient consults the physician is necessarily due to that material. In the performance of patch tests it must also be borne in mind that many materials are irritating per se if allowed to be in contact with an individual's skin for any length of time. Hence the use of patch tests with such irritating materials as iodine solutions, mild caustics, tar and cleaning preparations must be carefully controlled by their action on normal persons. In general it may be said that the procedure of specific diagnosis by the patch method has found a considerable and widespread application in the field of dermatology and if used rationally will frequently point out the causative agent of a dermatitis.

CONGENITAL SYPHILIS AND JUVENILE DEMENTIA PARALYTICA

To the Editor—I have a boy aged 9 years under my care for the treatment of congenital syphilis. He has a 4 plus Wassermann reaction of both the blood and the spinal fluid. For the past year he has been treated with bismuth salicylate (1 gram, 0.065 Gm.) intramuscularly at weekly intervals for periods of from six to eight weeks alternated with intravenous injections of neosarsphenamine, in a dosage from 0.2 to 0.3 Gm. every week for eight injections with rest periods of two or three weeks between the series. Following one series of five injections of bismuth salicylate symptoms developed referable to the central nervous system and resembling those of meningeal irritation. The spinal fluid at this time was 4 plus with no evidence of any other infecting agent. He also has a congenital cataract of the left eye. Otherwise he is in fair health and the physical examination reveals no other gross pathologic change. His average weight is 65 pounds (29.5 Kg.). I should appreciate an outline of treatment in this case. Please omit name.

M D, New York

ANSWER—Although other details of the spinal fluid examination than the Wassermann reaction are not supplied, the fact that the spinal fluid Wassermann is strongly positive in a boy of 9 who has no clinical evidence of neurosyphilis leads one to anticipate the possibility of the subsequent development of juvenile dementia paralytica. Treatment with the arsphenamines and heavy metals (bismuth and mercury) would probably not prevent this eventuality, no matter how long treatment was prolonged. Recent experience has shown that fever therapy is applicable to the treatment of juvenile neurosyphilis as well as to central nervous system involvement in the acquired disease. The most favorable type of case for its use is in pre-paretic asymptomatic neurosyphilis. This is the probable situation that confronts the correspondent in this case.

It is generally agreed that, of the various methods of producing artificial fever, malaria is by far the most satisfactory,

both in increased incidence of serologic improvement and in the maintenance of good health (e g, prolonged remissions in dementia paralytica) over long periods. It is suggested, therefore, that this patient be treated with induced malaria. This form of fever therapy should not be given except by a physician who is experienced in its use. After eight to twelve paroxysms of fever have been completed and the malaria terminated by the use of quinine, a short course of six injections of 0.3 Gm of neoarsphenamine at weekly intervals should be given for its combined tonic and antimalarial effect. Immediately on completion of this course, treatment should be started with tryparsamide, which is particularly valuable in neurosyphilis, both congenital and acquired. The average intravenous dose of tryparsamide for a boy of this age and weight would be 15 Gm. Weekly injections should be given to a total of from twelve to sixteen injections to the course, each course being separated by an eight or ten weeks course of injections of bismuth salicylate, 0.1 Gm. No rest periods should be allowed. This form of alternating treatment with tryparsamide and bismuth salicylate should be continued for at least two years after the completion of the malaria and should be controlled by periodic physical examinations and serologic tests of the blood and spinal fluid, carried out at intervals of six months.

Visual damage from tryparsamide need not be a more serious problem in a boy of 9 who is able to cooperate with descriptions of subjective visual sensations than in the adult. The presence of a congenital unilateral cataract is not a contraindication to the use of this drug.

On completion of this outline of treatment the patient should be followed with subsequently repeated physical and laboratory examinations in order to guard against possible progression. Such examinations should be carried out every six months for the first three years and thereafter yearly or biannually for the next fifteen to twenty years.

PROPHYLAXIS OF RINGWORM OF FEET

To the Editor—Where large bodies of men use the same shower baths what prophylactic measures are considered best for the prevention of trichophytic infection of the feet? Bathrooms in barracks have glazed tile floors and walls. I have been using foot tubs containing antiseptic solution for men to step into before entering and after leaving shower baths. The tile floors are scrubbed thoroughly each day. Formerly wooden gratings were used under showers for men to stand on, sufficient gratings being furnished to allow for sunning on alternate days weather permitting. What is the consensus as to the use of wooden gratings? Please omit name.

M D, Virginia

ANSWER—The use of 1 per cent sodium hypochlorite solution in foot baths or 'wells' built into the floor has been shown to be efficient as prophylaxis in ringworm of the feet. It is also cheap. The sodium hypochlorite can be purchased from a number of chemical companies in steel carboys in a strength of 20 per cent. The solution in the pans should be changed every second day. The pans or "wells" are so placed as to necessitate all the men walking through the solution on their way to the shower baths and also just prior to putting on their clothes. A complete description of this method of prophylaxis has been given by

Osborne, E D and Hitchcock, Blanche S. The Prophylaxis of Ringworm of the Feet *THE JOURNAL* August 15 1931 p 453
Osborne E D Putnam E D and Rickloff, R J Personal Experiences in the Prophylaxis and Treatment of Ringworm of the Hands and Feet *New York State J Med* Nov 1 1933

Wooden gratings are of doubtful benefit, especially if the method of prophylaxis as outlined is used.

TYPHOID FEVER CARRIERS

To the Editor—As part of a study I am making of a specific phase of typhoid fever control I am confronted with a number of technical questions and have been unsuccessful in finding the required information. To check the dangers resulting from typhoid carriers some medical authorities advise the removal of the gallbladder. 1 Why does *Bacillus typhosus* settle and propagate in the gallbladder and in what way do surgical measures correct these conditions? 2 What states if any legally require that the gallbladder must be removed to cure a chronic carrier? 3 Why are most of the carriers women? Whatever information you may be able to supply will be greatly appreciated and acknowledgment will be made as to the source of the data. Should you know of some published material that may give the required information references to available material would be of great assistance to me in making this study.

N N WOLPERT New York.

ANSWER—1 Presumably typhoid bacilli are found in the gallbladder during the acute stages of the disease as well as being widely distributed elsewhere in the intestinal tract. It has been suggested that in gallbladder typhoid carriers the

reason the organisms persist is that the gallbladder was diseased prior to the typhoid infection. An analogy has been drawn with the almost universal frequency with which a pathologic condition of the nasal aural pharynx is found in cases of chronic diphtheria carriers.

2 So far as we know, no state requires removal of the gallbladder in chronic carriers, and it would probably be undesirable to make such removal compulsory. Some state health departments encourage it and in Massachusetts, for instance the cost of removal is borne by the state, when the person is a food handler. However, prior to operation, it is important

- (a) To have at least a year elapse after the disease in order to make sure that the carrier condition will not clear up spontaneously.
- (b) To obtain a specimen of bile in order to make sure that the carrier's condition is located in the biliary tract.
- (c) To make sure that the general condition of the patient is good.

3 There is some doubt as to the accuracy of the observations that more women are carriers than men. This fallacy has probably arisen from the fact that the typhoid carriers are usually detected in connection with food outbreaks, and women are more frequently food handlers than men.

The following references may be of interest

Bigelow G H and Anderson G W. Cure of Typhoid Carriers *THE JOURNAL* July 29 1933 p 348.
Santner H F and Coughlin F E. Typhoid Carriers in New York State with Special Reference to Gallbladder Operations *Am J Hyg* 17 711 (May) 1933.

TREATMENT OF SECONDARY ANEMIA

To the Editor—Will you please enlighten me as to the following: What definite results may be expected in cases of uncomplicated secondary anemia with the use of copper, iron and other advertised tonics?

M D, New York

ANSWER—Uncomplicated secondary anemia is taken to imply a hypochromic anemia not dependent on such conditions as infection, cancer, chemical poisons, nephritis, cirrhosis of the liver or leukemia. Complications such as infection or severe damage to vital organs are conditions that may inhibit the effectiveness of iron in hypochromic anemia. Uncomplicated hypochromic anemia of the idiopathic type associated with gastric achlorhydria, hypochromic anemia attributable to defective nutrition and chronic blood loss are promptly alleviated by adequate amounts of inorganic iron, as, for example, by the daily administration by mouth of 6 Gm of iron and ammonium citrate 4 Gm of ferrous carbonate or 2 Gm of reduced iron. Defective nutrition leading to hypochromic anemia may arise from deficient diets—common in children and women—from improper absorption from the gastro-intestinal tract and perhaps, from dysfunction in the utilization of iron and blood building substances. Improper absorption may be dependent on numerous factors, such as diarrhea and gastric achlorhydria, the latter condition, together with deficient diets, is often etiologic in the hypochromic anemia of pregnancy.

The addition of copper to therapeutic preparations of iron has not been shown to be of significant value in the anemias of adults alleviated by iron therapy. It has been shown that in young children the addition of small amounts of copper to therapeutic iron preparations in some cases may accelerate the rate of hemoglobin formation, but it is the iron preparation not the additional copper, that is the essential drug for cure. As for "other advertised tonics," the list is a long one but iron in adequate doses remains the sine qua non for uncomplicated hypochromic anemia. The Council on Pharmacy and Chemistry has stated that a search of the literature fails to reveal that, in man, the addition of copper to iron is of any therapeutic advantage. In view of the lack of specific evidence of the value in man of combinations of copper and iron, the Council has not accepted combinations containing copper and iron.

COMBINED SYPHILIS AND TUBERCULOSIS

To the Editor—What is reputed to be the effects good, bad or indifferent of active antisyphilitic treatment in the face of a tuberculosis if the latter is (a) active (b) quiescent or (c) arrested?

REUBEN HOFFMAN, M D. Henryton Md

ANSWER—Infection of a person with both tuberculosis and syphilis is thought by some to exert a good influence on the course of both diseases causing them to run a milder course than if they were uncomplicated. The measures used in the treatment of pulmonary tuberculosis would not be likely to alter this, but antisyphilitic treatment except of the mildest kind, is apt to affect tuberculosis unfavorably, even, in some

cases, bringing on a rapidly fatal military dissemination. Syphilis is a slow disease, while pulmonary tuberculosis may rapidly destroy life. Therefore unless the syphilitic infection is so recent that it is actively contagious, its importance must be rated as slight compared to that of an active tuberculosis.

Iodine holds its place among antisyphilitics because of its power to dissolve inflammatory infiltrates. This action, however useful it may be in the treatment of syphilis, is directly antagonistic to the walling off process, on which the cure of pulmonary tuberculosis depends. It is clummed by some that mercury and bismuth compounds and the arsphenamines exert a milder action of the same sort. Whether this is true or not it is well known that mercury and bismuth compounds, when given too vigorously, lessen resistance. Some forms of arsphenamine are said to lessen coagulability of the blood and thereby predispose to hemorrhage. The febrile reactions caused by arsphenamine are damaging to the phthisis patient. Fever therapy, useful in dementia paralytica and in resistant syphilis in general, is so dangerous in the presence of pulmonary tuberculosis that it is contraindicated except in dementia paralytica that yields to no other treatment, in which the physician feels that the risk is justified.

Active tuberculosis complicated with an old syphilis should be treated as if there were no syphilis present. If it is thought that the syphilis is recent and still contagious, mild treatment with mercury or bismuth compounds may be given, kissing and sexual relations prohibited, and the nurse's hands protected by rubber gloves whenever there is a possibility of contamination by most secretions of the patient. Arsphenamine of any kind should not be used during the febrile stage of tuberculosis. J. E. Moore, discussing the question of the treatment of syphilis in the presence of active pulmonary tuberculosis, confesses "wholesome respect for the danger." (The Modern Treatment of Syphilis, Springfield Ill., Charles C. Thomas, 1933, p. 214).

When the tuberculosis is quiescent, a course of mercury or bismuth compounds in about half the usual dose may be given. This will prevent a possible Jarisch-Herxheimer reaction. After a short rest a course of neoarsphenamine in doses of from 0.15 to 0.45 Gm intravenously every fifth day may be tried. In addition to questioning the patient about any illness or distress following the previous injection, and examining the urine for albumin and casts and the skin of the patient for any itching eruption, one should take the patient's temperature before each injection and none should be given if it is above normal. The course of neoarsphenamine should be followed immediately by a course of mercury or bismuth compounds. After this a rest period should be allowed. Combined courses of mercury or bismuth compounds with neoarsphenamine are not advisable.

Arrested tuberculosis is not a contraindication for antisyphilitic treatment, except that iodine should be avoided or used only with great caution in cases of fibroid tuberculosis. The patient should be regarded as having decreased resistance. The cardinal principle of the treatment of syphilis is that the treatment must stimulate, not depress, the patient's resistance. All drugs should be given in moderate dosage.

Tuberculosis of the suprarenal gland is a definite contraindication to the use of arsphenamine. Tuberculous involvement of the kidneys or liver may render antisyphilitic treatment very difficult. Lymph gland tuberculosis permits fairly active treatment of syphilis. Schamberg and Wright mention the frequent occurrence in Negroes of large glands that diminish to some extent under antisyphilitic treatment but do not subside entirely. (The Treatment of Syphilis New York, D. Appleton & Co., 1932, p. 600).

Skin tuberculosis, at least lupus vulgaris tuberculosis verruosa cutis and the tuberculides often improve on the moderate use of mercury or bismuth compounds or neoarsphenamine. The therapeutic test is therefore of little value to differentiate them from the syphilis.

FUNCTIONAL TEST OF EFFICIENCY OF CIRCULATION

To the Editor—In Queries and Minor Notes in THE JOURNAL June 6, 1931 the injection of saline solution intracutaneously for determining the efficiency of the circulation was described. I should like to have the explanation of why the wheals disappear more rapidly in the area where the circulation is poor or below the point of rupture or obstruction kindly omit name and address.

M D District of Columbia

ANSWER—It is well known that when the circulation to an extremity is diminished, deficient or suddenly cut off there develops an anoxemia in the affected part producing an increase of salt concentration together with a relative increase in acidity. These two factors greatly increase absorbability of injected fluids especially water and saline solution. For this reason it is apparent that an intracutaneous injection of physiologic solu-

tion of sodium chloride into wheals will be absorbed rapidly, depending on the degree of circulatory impairment. The normal absorption rate should be between forty and sixty minutes. In certain circulatory disturbances, especially thrombo-angitis obliterans, the rate of absorption may be as rapid as five or six minutes, and in sudden vascular occlusion or rupture of a large artery the disappearance of the wheal is likewise rapid.

FOUL BREATH

To the Editor—Because of the fact that (1) hyperacetoneuria as in diabetic acidosis produces an acetone breath, (2) hyperuremia as in uremia produces a "urea breath" and (3) hyperalcoholemia produces an alcoholic breath the following questions have occurred to me that you may be able to answer: 1. Is it possible that many of the cases of so-called halitosis exist because of certain foul-smelling substances accumulating in the blood that are volatile and of unknown chemical composition? 2. Has any one thus far been able to elaborate any apparatus by which the degree of odor can be measured? 3. Is there any such thing as an "odorimeter" that could be used to correlate the degree of odor to the breath with the extent of such similar offending odors or volatile substances in the blood? 4. It has been my experience that many cases difficult to diagnose, many cases included in the classifications of psychoneuroses, hysteria, epilepsy and neurasthenia or those generally presenting bizarre or physically unexplainable symptoms frequently show an offensive halitosis as the only outstanding objective sign. Most of these cases have been treated for this symptom unsuccessfully in that the halitosis arose from some nasopharyngeal, gastro-intestinal, oral, dental or upper respiratory changes. Many of these patients have had repeated and thorough examinations of every sort and in the hands of the leading experts in the various specialties but still have (a) their symptoms and (b) their foul breath. Has it even been suggested that some of these poorly understood conditions might arise from the accumulation of unrecognizable (chemically) volatile foul-smelling waste products in the blood which in turn explains the foul breath? 5. Has it been mentioned in the literature of epilepsy that the foulness of the breath runs parallel to the attacks? I would appreciate the answers to these questions and also your opinion as to whether or not this question is one that can be studied under present day laboratory facilities and whether in your opinion the theory is a feasible one or was it thrown by the wayside years ago by ancient clinicians?

WALTER M. BARTLETT, M.D. Greenwich Conn.

ANSWER—It must be conceded that there are patients whose breath does have an unpleasant odor yet whose examination fails to reveal a good explanation. It may be possible, as suggested in question 1 and 3, that this is due to the presence in the expired air of volatile chemical compounds as yet unidentified. Chemists in the perfume industry make use of an apparatus for measuring odors. Possibly such an apparatus could be modified and utilized for study of the odors of the breath, and such a study might provide some interesting results.

The foul breath of the epileptic patient has been referred to in the literature, but it does not appear that definite conclusions can be reached as to a relationship between the foulness of the breath and the occurrence of attacks.

CORNEAL ULCERS

To the Editor—A boy, aged 9 years, has had repeated corneal ulcers since the age of 18 months. The attending ophthalmologist tells me that the ulcers are always superficial, never leave any opacity and always heal in from ten days to two weeks. The child has never gone more than six months without some eye trouble of this kind. The mother tells me that the child's eyes are always worse in the spring. Even while the eyes are normal strong light seems to hurt them. The child has also a refractive error which has been corrected. He has complained some of headache in the past six months. He has been on a good diet, taking cod liver oil and has a nap every day. His habits are good. There is a history of tuberculosis in the grandfather and grandmother both dying from this cause but no exposure. He has had fair general health. He was a full term baby, normal at birth and the delivery was normal. He had measles at 7 years of age, whooping cough at 3 and chickenpox at 2. His tonsils and adenoids were removed at 5 years of age. His developmental history is normal. His father and mother are both living and well. He has a sister aged 8 living and well. His physical examination is essentially negative except for carious teeth. His weight is 40 pounds (18 Kg) and he is 44½ inches (112 cm) tall. Examination of the urine is negative. The Wassermann reaction is negative. Tuberculin reactions (intradermal) have been repeatedly negative in dilutions of from 0.1 to 10 mg. The blood count reveals red blood cells 4,120,000 and hemoglobin 88 per cent. He is alert, bright and cooperative but is in only the first grade of school. He has been out so much I should like to have some suggestion as to the etiology of this condition. I forgot to mention that all sinuses are negative to roentgen examination by a competent man. I should also like some references on the recurrent type of corneal ulcer as seen in the child, preferring pediatric literature rather than from the standpoint of the eye, ear, nose and throat man because I am interested chiefly in the etiology of this condition.

M. C. CARLISLE, M.D. Waco Texas

ANSWER—A great diversity of opinion exists as to the etiology of recurring corneal ulcers in infancy and childhood. The condition is most commonly observed between the ages of 2 and 12 years. Infants and children who have repeated cor-

neal ulcers are also frequently affected with rhinitis, eczema of the scalp and face, hypertrophied tonsils and adenoids and general glandular enlargement. Many manifest the symptoms of the exudative diathesis, as described by Czerny. Early pathologic changes are to be found in the superficial layers of the substantia propria, before the epithelium and Bowman's membrane are affected. The epithelium is soon found to be raised from Bowman's membrane, and leukocytes, some lymphocytes and fixed corneal cells are found between the layers of the cornea nearest the ulcer. The symptoms of intense photophobia blepharospasm and profuse lacrimation are not proportionate to the corneal involvement.

Some authors believe that the disorder is on a neuropathic basis, induced by auto-intoxication. Not all individuals are equally susceptible, those having a scrofulous, exudative or lymphatic diathesis being most liable to show the condition. Others believe that the lowering of body resistance following infectious diseases, chronic illness and malnutrition is the predisposing factor. Most of the children reported suffering with this condition have been well nourished. The affliction has been associated with acne rosacea in adults, though this is rare in children.

The preponderance of opinion seems to base the occurrence of the ulcers on a tuberculous etiology. Whether due to the tubercle bacilli, to their toxins, or to other causes has not been established. The tuberculin skin reactions are strongly positive in as high as 90 per cent of infants and children having corneal ulcers. Those who consider the disease a manifestation of a hypersensitiveness of the patient to tuberculin recommend a desensitization of these children as a therapeutic measure.

The fact that the mother states that the condition is always worse in the spring might lead one to think of a vernal catarrh. This disease is chiefly a disturbance of the conjunctiva characterized by pale elevations, especially on the conjunctiva of the lid. The process rarely involves the cornea, though in severe cases ulcers may occur and produce opacities. This condition is more to be differentiated from trachoma than from phlyctenular conjunctivitis or keratitis. Vernal catarrh may recur each spring for years, and it eventually disappears.

The following references are suggested:

- Wood C. A. Ocular Diseases of Infancy and Childhood in *Abt's Pediatrics* Philadelphia W. B. Saunders Company, 1926 vol. VIII chapter cxc, p. 315.
Gilbert, W. Augenerkrankungen im Kindesalter in *Praundler und Schlossman's Handbuch der Kinderheilkunde* Leipzig F. C. W. Vogel, 1921 vol. 6.
Ginestet, Etienne. *Ophthalmologie infantile* Paris Octavo Doin 1922.
Heine L. *Die Krankheiten des Auges* Berlin Julius Springer 1921.
Casperis Horton. Phlyctenular Keratoconjunctivitis *Am. J. Dis. Child* 34: 779 (Nov.) 1927.

INCUBATION PERIOD AND TREATMENT OF GONORRHEA

To the Editor—What is the outside period of incubation in gonorrhea and in syphilis? What is the usual time under reasonably good treatment, for the cure of an acute case of gonorrhea in a girl of 19? Please omit name.

M. D. California

ANSWER—The period of incubation of gonorrhea is seldom over a week, although a female patient may not be distressed by symptoms until more time has elapsed. In fact, some patients with rather marked infection are comfortable throughout. In practice, if infection is not evident by the eighth day on pelvic examination there is small likelihood of the trouble appearing at a later date.

Although, theoretically, syphilis has been said to have a possible period of incubation of as much as three months, a person who develops no lesions within four or five weeks is relatively safe.

Acute gonorrhea of the external genitalia should under average conditions cause no discomfort after three or four weeks. A latent infection, with a possibility of transmission on sexual intercourse, usually persists for some months.

RESISTANT URTICARIA

To the Editor—A query by M. D. Washington (*THE JOURNAL* April 21, p. 1325) asking for information regarding resistant urticaria interested me because of many similar cases in my practice. There is found in every one of the resistant cases a very low response to the Van Slyke test some of them as low as 32. The patients all recovered after the figure had been raised above 65. The extreme acidity of the blood was evidently the exciting cause in these cases. To raise the alkaline content of the blood by the administration of alkalis brings only transient relief. When raised by diet the result is permanent. This information is offered for what it may be worth.

J. J. SARBROUGH M. D. Montgomery, Ala.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

- ALABAMA Montgomery, July 10-13 Sec. Dr. J. N. Baker, 519 Dexter Ave. Montgomery.
AMERICAN BOARD OF OPHTHALMOLOGY Butte, Mont., July 17 Sec. Dr. William H. Wilder, 122 S. Michigan Blvd. Chicago.
ARIZONA Basic Science Tucson June 19 Sec., Board of Basic Examiners, Dr. Robert L. Nugent University of Arizona Tucson Medical Phoenix, July 3 Sec. Dr. J. H. Patterson, 320 Security Bldg., Phoenix.
CALIFORNIA San Francisco July 9-12 and Los Angeles July 23-26 Sec. Dr. Charles B. Pinkham 420 State Office Bldg. Sacramento.
COLORADO Denver, July 3-6 Sec. Dr. Wm. Whitridge Williams, 422 State Office Bldg. Denver.
CONNECTICUT Regular Hartford July 10-11 Endorsement Hartford July 24 Sec. Dr. Thomas P. Muddock 147 W. Main St. Meriden Homeopathic New Haven July 10 Sec. Dr. Edwin C. M. Hall, 82 Grand Ave. New Haven.
DISTRICT OF COLUMBIA Basic Science Washington June 25-26 Medical Washington July 9-10 Sec. Commission on Licensure Dr. W. C. Fowler, 203 District Bldg. Washington.
ILLINOIS Chicago, June 26-29 Supt. of Regis., Dept. of Regis. and Edu., Mr. Eugene R. Schwartz Springfield.
INDIANA Indianapolis June 19-21 Sec. Board of Medical Registration and Examination, Dr. William R. Davidson Room 5 State House Annex Indianapolis.
KANSAS Topeka June 19-20 Sec. Board of Medical Registration and Examination, Dr. C. H. Ewing, Larned.
MAINE Augusta July 5-6 Sec. Board of Regis. of Medicine, Dr. Adam P. Leighton Jr. 192 State St. Portland.
MARYLAND Baltimore June 19-22 Sec. Dr. Henry M. Fitzhugh 1211 Cathedral St. Baltimore.
MASSACHUSETTS Boston July 10-12 Sec. Board of Regis. in Medicine Dr. Stephen Rushmore 144 State House Boston.
MINNESOTA Minneapolis June 19-21 Sec., Dr. E. J. Engberg 350 St. Peter St., St. Paul.
MISSISSIPPI Jackson June 26-27 Sec., State Board of Health Dr. Felix J. Underwood Jackson.
NATIONAL BOARD OF MEDICAL EXAMINERS The examinations in Parts I and II will be held at centers in the United States where there are five or more candidates June 25-27 and Sept. 12-14 Ex. Sec. Mr. Everett S. Elwood 225 S. 15th St. Philadelphia.
NEW JERSEY Trenton June 19-20 Sec., Dr. James J. McGuire 28 W. State St. Trenton.
NEW YORK Albany Buffalo New York and Syracuse June 25-28 Chief, Professional Examinations Bureau Mr. Herbert J. Hamilton, Room 315 Education Bldg. Albany.
NORTH CAROLINA Raleigh June 18 Sec. Dr. B. J. Lawrence, 503 Professional Bldg. Raleigh.
NORTH DAKOTA Grand Forks July 3-6 Sec. Dr. G. M. Williamson 4½ S. 3d St., Grand Forks.
PENNSYLVANIA Philadelphia and Pittsburgh July 10-14 Sec. Board of Medical Education and Licensure Mr. W. M. Demison, 400 Education Bldg. Harrisburg.
RHODE ISLAND Providence July 5-6 Dir. Public Health Commission Dr. Lester A. Round 319 State Office Bldg. Providence.
SOUTH CAROLINA Columbia, June 26 Sec., Dr. A. Earle Booser 505 Saluda Ave., Columbia.
SOUTH DAKOTA Rapid City July 17-18 Dir. Division of Medical Licensure Dr. Park B. Jenkins Pierre.
TEXAS Fort Worth June 21-23 Sec. Dr. T. J. Crowe, 918 1920 Mercantile Bank Bldg. Dallas.
UTAH Salt Lake City June 27-29 Dir. Department of Registration Mr. S. W. Golding 326 State Capitol Bldg., Salt Lake City.
VERMONT Burlington June 20-22 Sec. Board of Medical Registration Dr. W. Scott Nay Underhill.
VIRGINIA Richmond, June 20-22 Sec. Dr. J. W. Preston 28½ Franklin Road Roanoke.
WASHINGTON Basic Science Seattle July 16-17 Medical Seattle July 19-21 Dir. Department of Licenses Mr. Harry C. Huse, Olympia.
WEST VIRGINIA Wheeling July 9 State Health Commissioner, Dr. Arthur E. McClue Charleston.
WISCONSIN Milwaukee, June 26-29 Sec. Dr. Robert E. Flynn 401 Main St. LaCrosse.

Illinois January Examination

Mr. Eugene R. Schwartz, superintendent of registration, Illinois Department of Registration and Education, reports the written examination held in Chicago, Jan. 23-25, 1934. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Fifty-four candidates were examined, 47 of whom passed and 7 failed. The following schools were represented:

School	PASSED	Year Grad	Per Cent
Howard University College of Medicine		(1932)	76
Chicago Medical School	(1933) 86*	(1934)	82.85
Loyola University School of Medicine		(1933)	79* 86*
Northwestern University Medical School		(1933)	82
82* 84* 84* 86* 87†			
Rush Medical College		(1931)	80
(1933) 78 79 79 81 83 85 85 87 87			
School of Med. of the Div. of the Biological Sciences	(1933)		81 85

University of Illinois College of Medicine	(1933)	78,
78 * 81 * 82 * 83 * 84 * 85 * 86, 86 * 87, (1934) 82 84, 88		
Tulane University of Louisiana School of Medicine	(1921)	83
Harvard University Medical School	(1931)	85
University of Minnesota Medical School	(1930)	86
University of Wisconsin Medical School	(1929)	80
University of Manitoba Faculty of Medicine	(1930) 81,	82
University of Western Ontario Medical School	(1929)	83
Friedrich Wilhelms Universität Medizinische Fakultät	(1933)	76*
Berlin Prussia, Germany		
Ludwig Maximilians Universität Medizinische Fakultät	(1924)	81*
München Bavaria Germany		
School	FAILED	Year
Chicago Medical School	(1932) 70, 71	Grad
Loyola University School of Medicine	(1933)	Per
University of Illinois College of Medicine	(1933)	Cent
Friedrich Wilhelms Universität Medizinische Fakultät	(1929)	77‡
Berlin Prussia, Germany		
Universitatea Regele Ferdinand I in din Cluj Facultatea de Medicina si Farmacie	(1927)	69‡
		58‡

* License withheld for certificate fee

† This applicant has received an M.B. degree and will receive an M.D. degree on completion of internship. License withheld

‡ Verification of graduation in process

§ Grades below 60 per cent

Oregon Reciprocity Report

Dr Joseph F Wood, secretary Oregon State Board of Medical Examiners, reports 2 physicians licensed by reciprocity at the meeting held in Portland, Jan 2, 1934. The following schools were represented

School	LICENSED BY RECIPROCITY	Year	Reciprocity
Creighton University School of Medicine	(1932)	Grad	with
University of Oregon Medical School	(1929)	Kansas	California

Book Notices

Human Embryology and Morphology By Sir Arthur Keith M.D. F.R.S. LL.D. Master of the Buckton Browne Research Firm Fifth edition. Cloth Price \$10 Pp 558 with 535 illustrations. Baltimore William Wood & Company 1933

As the title indicates this book reviews the evolution of man from the embryologic and comparative anatomic aspects. In the preface the author says 'Throughout the text I have striven to keep in mind that I am writing, not for professional embryologists and anatomists, but for men who are to be practical physicians and surgeons.' In the first edition (1901) he kept as closely as possible to what is essential for the understanding of human anatomy and fully capitalized the teratologic evidence. The pleasing style of the original lectures has been preserved as in succeeding editions the field has been more completely covered. The present edition exceeds the fourth by about 13 per cent, the chief additions are new illustrations, a chapter on experimental embryology, and 'notes' that call attention to recent work and give literature references. The illustrations are for the most part diagrams such as a clever draftsman could draw on a blackboard. They have the inaccuracies of such sketches and in some cases in which the illustrations have been copied there are errors inexcusable in a published work. To any one who has embryologic material to study they are wholly inadequate however the book was written for students who have no opportunities for laboratory work. Many of the original diagrams are packed with information and are highly illuminating. The adult anatomy of certain organs such as the brain the intestine and the urogenital apparatus can be understood only in the light of their developmental history. These are presented in especial detail. More space is devoted to the nervous system than to general embryology and early development together and the account is clear and particularly helpful for an understanding of the anatomy of the brain. The value of the comparative point of view is abundantly demonstrated. There is a good account of the development of the mesenteries and of other peritoneal relations. While theoretical considerations such as those concerning the metamorphosis of the head and limbs are not accepted by all morphologists, they are supported by evidence, they help the student to understand complex relations and they are accordingly justified in a textbook. The index is adequate, the typography excellent.

Die Tonuskrankheiten des Herzens und der Gefässe ihre Biologie und Therapie Von Prof. Dr. J. Pal Paper Price 18 marks Pp 228 with 20 illustrations. Vienna Julius Springer 1934

This monograph on the disturbances of vascular tension is by one of the best known continental contributors to the literature on this subject. Throughout the discussion a credible attempt is made to keep the physiologic mechanisms and processes constantly correlated with the clinical phenomena. A clear and concise review of the biologic aspects of muscle tonus is followed by a far fuller consideration of the normal and pathologic biology of the heart, arteries and capillaries. More than half of the monograph is devoted to the clinical disturbances of vascular tension hypertensive disease and hypotension. The discussion of the etiology and pathogenesis of hypertensive disease is unfortunately inadequate. There is no consideration of the newer American work on these fascinating and vitally important aspects of the problem. Pal considers generalized hypertension to be of toxogenic origin, the emotional constitutional and hereditary factors are given but scant attention. There is an attempt to distinguish between 'primary hypertension' and 'toxogenic hypertension,' particularly in considering the effects of hypertensive disease on the kidneys, such divisions are arbitrary and tend to confuse rather than clarify the issue. Though the illustrations are not numerous, they are carefully chosen and well executed. Of especial value are several fine photomicrographs showing arterial changes. The thoracic roentgenograms intended to illustrate changes in cardiac contour and size appear to be less wisely chosen, for several are exaggerated examples. The bibliography is almost wholly continental, particularly German and Austrian. There is an unfortunate lack of appreciation of the significant advances made elsewhere, for example, the discussion on angina pectoris includes no mention of the work of Sir Thomas Lewis and many others on myocardial ischemia or histanoxia. In many respects the monograph is a review of the author's previously reported work with fully three pages of the bibliography devoted to his own publications. Reference to American literature is almost wholly lacking. The book is printed on good quality paper, but the paper cover is of the flimsiest grade. The book has its greatest value as a review of the work and views of the author, who has contributed much that is important in the development of knowledge concerning that dread triad cardiovascular-renal disease. The monograph should be of considerable interest to those who are making a special study of these problems, although it contains little that has not already been published. Students and physicians without special interests in this field will find ample material and ideas in the several American monographs on the subject.

The Queen Charlotte's Text Book of Obstetrics By the Following Members of the Staff of the Hospital. Aleck W. Bourne M.B. FRCS FCOG Obstetric Surgeon to Outpatients St. Mary's Hospital. Trevor B. Davies M.D. FRCS FCOG Gynaecological Surgeons Hospital for Women. Soho L. Carnac Rivett M.C. FRCS MCOG Surgeon Chelsea Hospital for Women. L. C. Phillips M.S. FRCS MCOG Assistant Surgeon Hospital for Women. Soho C. S. Lane Roberts M.S. FRCS MCOG Obstetric Surgeon Royal Northern Hospital and Leslie H. Williams M.D. M.S. FRCS Obstetric Surgeon to Outpatients St. Mary's Hospital. Third edition. Cloth Price \$6 Pp 679 with 301 illustrations. Baltimore William Wood & Company 1934

The first two editions of this book (1927 and 1930) bore the title 'The Queen Charlotte's Practice of Obstetrics.' In the present edition Leslie Williams has replaced J. B. Banister as one of the six authors. In general, the book is almost identical with the previous two editions except for the addition of a few new illustrations and revisions of a few chapters. The opening of an isolation block in 1930 for cases of puerperal infection has afforded the authors a wealth of experience in the diagnosis, care and treatment of this disease. In spite of the added experience it is still the practice at Queen Charlotte's Hospital to evacuate the uterus in cases of febrile abortion and in some instances to instil glycerin into the uterine cavity. Likewise in cases of puerperal sepsis with blood stream infections, the authors recommend instillation of glycerin into the uterus or uterine irrigations. Eclampsia is treated conservatively, but veratrine is advocated for the reduction of blood pressure. This drug usually produces a sharp drop in the blood pressure but at best this is temporary and it may prove harmful. In the treatment of placenta praevia the authors follow the present

general trend of performing a cesarean section for a certain number of these cases. They encountered no maternal death in their series of forty-nine cesarean sections for this complication. In the first edition the authors reported a series of fifty-four cesarean sections with three deaths (5.5 per cent). For the induction of labor by rupture of the membranes the statement is made that an anesthetic is usually required for primiparas, but this is contrary to general experience. The authors still prefer the classic cesarean section, as evidenced by the fact that they devote nine and a half pages to the description of this operation and only half a page to the cervical cesarean section. Even in 1934 the authors still quote Kerr and Holland's 1921 figures to show a mortality of 7 per cent for 4,160 classic operations and a death rate of 15 per cent for thirty-three cases of lower segment operations performed in the British Isles. The high death rate for the thirty-three low operations is undoubtedly due to the fact that these were the first few operations performed by British operators, who were slow to take up this operation (except Munro Kerr). The authors should compare their series of classic operations with the report by Greenhill (*Am J Obst & Gynec* 19 613 [May] 1930) for the Chicago Lying-in Hospitals 874 low, cervical operations, with a maternal mortality rate of 1.26 per cent. In spite of the fact that in the review of the first edition (*THE JOURNAL*, Sept 24, 1927, p 1084) attention was called to a number of De Lee's illustrations that were copied without mention being made of the source, the same illustrations appear in the present edition with no indication of their origin. The appearance of the third edition testifies that the book is undoubtedly popular in the British Isles.

Patogenesi e terapia della sindrome di Morgagni Adams Stokes. Dal Prof. Luigi Condorelli aiuto della II clinica medica della r Università di Napoli. Paper. Price 30 lire. Pp 107 with 59 illustrations. Naples. V Idelson 1933.

Expressing the hope that the work may be of use to general practitioners as well as to cardiologists the author introduces this small volume by reminding physicians that the treatment of heart block is frequently groping for a drug valuable to one patient with the Adams-Stokes syndrome may be dangerous to another, since the pathogenesis of the syncopal attacks is notoriously diverse from subject to subject and even from time to time in the same individual. The discussion of pathogenesis occupies seventy-four of the eighty-one pages of the text. By abundant reference to literature and analysis of much of the author's own clinical and graphic material, the modern concepts of the pathogenesis of the syndrome are clearly told. Adams-Stokes attacks occurring during partial heart block and those during complete auriculoventricular dissociation are considered separately. In the section on complete heart block, the author reports one example of a hitherto undescribed type of peculiar, recurrent, ventricular fibrillation and gives full clinical and pathologic details. The part of the book devoted to treatment is small, but the suggestions are succinctly put and well worth attention. As a prelude to treatment, a series of functional and pharmacologic tests is advised for the purpose of establishing the pathogenesis of the attacks. Because electrocardiographic examination is foremost among these preliminaries, it might be inferred that Adams-Stokes attacks can perhaps be properly treated only by those practitioners who have such mechanical aids constantly at their disposal. That the author is himself equipped to gather and analyze important data by less complicated means is quite evident. The detailed instructions for treating paroxysms of ventricular fibrillation and associated syncope for example, are particularly practical and surprisingly optimistic in view of the hopeless prognosis so universally assigned the condition. The less sensational but more common disturbances of conduction and their treatment by atropine, epinephrine, digitalis, barium chloride, the purine bases, stimulants, sedatives and other measures are also outlined. One realizes with a feeling of regret that the language in which it is written will prevent the wide dissemination which this monograph deserves. It is a logical sequel to the author's recent '*Die Ernährung des Herzens und die Folgen ihrer Störung*' (Dresden and Leipzig: Theodore Steinkopff 1932) and as such will be missed by those without a knowledge of Italian. We are at least, indebted to the latter tongue for

the paradox of a language, unable to render the equivalent of "reizbildung" or "kupplung" but offering, with inimitable onomatopoeia a description of the auscultatory signs of ventricular fibrillation in which we are told that the sound is "come un fruscio di ali." There is an index to subject matter and to authors. The bibliography, listing 211 works, is purposely limited to those actually cited in the text.

13 let nauchnoy meditsiny na Severnom Kavkaze 1920-1933. Otvetsenny redaktor I. L. Benkovich [Thirteen Years of Scientific Medicine in North Caucasus]. Cloth. Pp 244 with illustrations. Rostov na Don. Izdatel'stvo 'Severny Kavkaz' 1934.

The volume is the official publication of the Scientific Medical Soviet of North Caucasus. It embraces the accomplishments of the scientific and medical activity for the period between 1920 and 1933. In the introductory statement by the secretary of the organization one learns that North Caucasus constituting under the czars one of the backward, neglected and oppressed "foreign territories," has been converted under the new regime into a flowering spot of culture and science. Combining as it does about a hundred related nationalities it has become one of the frontier strongholds of the Soviet Union. The scientific and investigative work of the newly developed network of scientific institutes (twenty-two in all) was directed by the party and the government toward the solution of definite problems. A single plan of research to constitute an organic part of the entire plan of Soviet Russia was worked out. The possibility of planned scientific work within the conditions of socialist reconstruction has been answered in the positive. Its advantages are the avoidance of overlapping, the focusing of attention on the problems of the leading industries and obligatory attention to the specific problems of a given territory and the various nationalities residing there. The volume contains twenty-four papers dealing with original research and studies in the various branches of scientific and practical medicine. Endogenous diseases of this cattle grazing country such as echinococcosis and brucellosis, were made a subject of a special study. Notable advances were made in the reduction of maternal and infant mortality and in the study of children and adolescents. The necessity of carrying into scientific and practical work the philosophy of dialectic materialism of Marx-Lenin is heavily underscored. Judged by our standards the plan is comprehensive and the results achieved notable. The papers represent creditable work of a high order. Particularly interesting are the physiologic studies of the subcortical ganglions, the anatomic studies of the circulation of parenchymatous organs by means of an original method of colored celluloid corrosion preparations. Its inventor, Dr. Golubev established the existence of a closed vascular circulation within the spleen. Reconstructive surgery, transplantation of organs, and blood vessel surgery are among other subjects reported. The paper and print are a vast improvement on the former consignments from the Union of Socialist Soviet Republics.

Pathologie de l'appareil urinaire (reins, vessie). Par Pasteur Vallery Radot, professeur agrégé à la Faculté de médecine de Paris. Paper. Price 22 francs. Pp 201 with 10 illustrations. Paris: Masson & Cie 1933.

Masson et Cie, Parisian editors, under the direction of Dr. A. Sezary, are publishers of several elementary volumes on medical subjects, which are similar to our American compendiums. The volume under review is a member of this series. Pasteur Vallery-Radot overcame a difficult problem when he compiled this small elementary volume on the diseases of the kidney and bladder. It was planned primarily for students, especially beginners in the special field of urology, and likewise to remind the general practitioner of those basal facts which he must remember in establishing an accurate diagnosis of disorders of the kidneys and bladder. Many valuable and helpful facts are arranged systematically. This volume is paper bound and is divided into four chapters dealing with symptoms, physical and special examinations, and brief descriptions of renal and bladder diseases. The first chapter deals with a description of those symptoms complained of by the patient, such as hematuria, albuminuria, pyuria, polyuria and oliguria. The second chapter deals with the physical examination and includes cystoscopy, ureteral catheterization, radiography, urinalysis, test of renal function, and pain radiation.

The final two chapters describe the principal disorders of the kidneys and bladder, separately considered. The nephritides are given considerable space (seventy pages), while the surgical diseases are handled more briefly. Brief accounts of renal disorders include amyloid kidneys, pyelonephritis, perinephritis, lithiasis, cancer and tuberculosis, hydronephrosis, polycystic kidney and nephroptosis. Inflammations, stones and tumors of the bladder are considered. This work gives the elementary clinical and pathologic facts and can be recommended to those interested in a short clear reminder. It should be commended for its accuracy and brevity in the presentation of a large and difficult subject.

The Surgery of the Sympathetic Nervous System By George E. Gask, CMG DSO FRCS Professor of Surgery University of London and J. Paterson Ross, MS FRCS Reader in Surgery University of London. Cloth Price \$4.15 Pp 163 with 43 illustrations. Baltimore: William Wood & Company 1934.

The authors have presented a brief survey of the subject of surgery of the sympathetic nervous system as it exists to date. The monograph contains no new contributions to any phase of the subject. It is divided into four chapters. The first deals with the anatomy and physiology of the sympathetic nervous system. The anatomy is discussed in a clear and concise, although brief, manner. The discussion of physiology is too cursory to be of value either to the surgeon or to one seeking specific information concerning the function of this system. This phase has, however, been somewhat further elucidated in the discussion of the various clinical conditions. The second chapter is concerned with disorders of circulation. Various tests of the functional capacity of the vasomotor mechanisms and their clinical significance are discussed. The various operative procedures are then considered along with a discussion of their clinical application to circulatory disturbances. In chapter III the application of sympathectomy to disorders of the abdominal viscera is discussed, and in the last chapter the utilization of this surgical procedure for the relief of pain. For the most part the text is quite clear, but at times, particularly when dealing with physiologic matters, it becomes confused, even contradictory, as on page 49, where one reads that excision of the diseased proximal portions of an artery may be more efficacious in producing dilatation of the peripheral vessels than simple ligation, because the vasoconstrictor impulses have been prevented from reaching the peripheral vessels. This is directly contradictory to all anatomic and physiologic knowledge concerning the pathway of constrictor impulses, which the authors have been at some pains to elucidate only a few pages before (p. 43) and to their further discussion (p. 50), in which they bring out that the effect is probably due to the interruption of afferent impulses of a pressor nature. This is the most striking example of rather confused thinking, which is to be found also in a number of other places. On the whole the book is an acceptable introduction to the field it considers, but modern surgery of the sympathetic nervous system is deserving of much more thorough adequate treatment. The publishers are to be congratulated on the clear pleasing typography and the illustrations, which are all beautifully reproduced.

Psychiatrische Vorlesungen für Ärzte Von Prof. Dr. Kurt Schneider, Direktor des klinischen Instituts der Deutschen Forschungsanstalt für Psychiatrie (Kaiser Wilhelm Institut) in München. Boards. Price 3.40 marks. Pp 140. Leipzig: Georg Thieme 1934.

This little book represents a type of publication found often in Germany but seldom in this country—a handbook of psychiatry for the general practitioner, in which the author attempts to give the physician an outline of those conditions likely to be encountered in general practice rather than to compile a handbook of the psychoses. The point of view stresses the organic background of many of the mental conditions, although the volume itself begins with a study of the two most important functional psychoses, schizophrenia and cyclothymia. These two disorders are briefly studied and their therapy is emphasized. A good discussion of the psychopathic personalities and of neurasthenia is included since these conditions are much more important to the general practitioner than are psychoses, the book deals with them more fully.

Separate chapters are devoted to children's abnormalities and to suicide, two psychiatric entities of considerable importance but usually dealt with as symptoms of major mental disturbances. It must be pointed out that the point of view of the chapter on child guidance is old fashioned and does not fit in with the mental hygiene practices of this country. The whole book must be looked on as a superficial approach to the problems of psychiatry. The entities dealt with are handled in a sketchy fashion, and the practitioner who really wanted to know about these disorders would scarcely find much in this book that would be of value to him. No new views are brought out, and while the style is easy and interesting and the terminology is kept simplified, there is no glossary for the technical terms that must necessarily creep in whenever a specialty is being presented for the practitioner. It is questionable whether this book would be of much help to the American practitioner since the courses in psychiatry now being given in medical colleges are sufficiently complete to render a volume of this kind unnecessary.

Die geburtshilflichen Operationen Ihre Ausführung und Anwendung Ein Lehrbuch für Studierende und Gebrauchsbuch für Ärzte Von Prof. Dr. med. Heinrich Marilius, Direktor der Universitäts-Frauenklinik, Göttingen. Paper. Price 12.50 marks. Pp 256 with 276 illustrations. Leipzig: Georg Thieme 1934.

The object of this book is to describe in a concise manner the technic of obstetric operations without quoting statistics or bibliography. After a short description of the genital tract and fetus the author discusses the various mechanisms of labor and in the following chapters covers the technic of forceps delivery, operations employed in breech presentation, versions, embryotomy, episiotomy, vaginal hysterotomy and abdominal cesarean section. A short chapter is devoted to the treatment of abortion. The text is written clearly and to the point; the handy volume is profusely illustrated, excellent drawings, reproductions of photographs and colored pictures speak for themselves, the print and paper leave nothing to be desired. Seldom does one find a book that is so full of valuable information. The publication can be heartily recommended to every practitioner of medicine.

The Evolution of the Vertebral Column. A Contribution to the Study of Vertebrate Phylogeny By H. F. Gadow, MA, PhD, FRSE, Edited by J. F. Gaskell and H. L. H. Green. Cloth. Price \$6.75. Pp 356 with 123 illustrations. Cambridge: The University Press, New York: The Macmillan Company 1933.

The problem of the evolution of the vertebrae has been one of the author's principal interests throughout a period of forty years. The book is a report of investigations and thought on the morphologic problems of the vertebrate phylum. It contains research on various lines of development of the vertebrae which serve as a guide to the morphologic scheme of vertebrate evolution. The sudden death of the author left the manuscript unfinished—a task that was performed by the editors. Certain chapters are therefore incomplete. The author emphasizes that all vertebrates possess a vertebral column, the evolution of which passes through several successive stages, their phylogenic causal features being on the whole faithfully repeated by the developing individual; that is, the phylogenic changes produced during evolution by alteration of environment are simulated by ontogenic changes that take place during the development of the individual. The material for building the spinal column develops from the notochord, which is of endodermal origin, and from muscular and connective mesodermal tissue, which surrounds the chorda, furnishes the walls of the spinal canal and further extends as septums through most parts of the body. The principal tendencies in evolution of a physiologically adequate axial skeleton reveals the successive, repeated supercession or substitution of the original central axial material by sheaths or mantles that are placed more peripherally. The mammalian vertebral column has reached the highest stage morphologically, the tendency initiated by the reptiles of forming highly efficient bony vertebrae by fewer ossifying units at the expense of others having reached a perfection greater than in birds. This book should be of interest to the students of comparative anatomy but does not contain information of practical value to the general practicing physician or surgeon.

L'artériectomie dans les artérites oblitérantes Étude expérimentale et thérapeutique. Par René Leriche professeur à la Faculté de médecine de Lyon et Pierre Stricker. Paper. Price 40 francs. Pp 197 with 78 illustrations. Par Masson & Cie 1933.

This summarizes work done by one of the pioneers in the surgical treatment of peripheral vascular lesions. It includes considerable work by his associates but represents the Leriche school of experience. The book contains experimental research on arteriectomy in the treatment of certain obliterating arteritides. There is a discussion of the pathologic anatomy of obliterating arteritides and explanations of the physiologic and pathologic aspects of the subjects. The author outlines the clinical indications for arteriectomy, including traumatic obliterations, monoarteritis of undeterminable origin and embolic obliteration of the arteries. He next discusses primary arteriectomy in wounds and contusions and spontaneous rupture, arteriectomy in obliterating arteritis and their arteriographic indications. The illustrations include diagrams reproductions of photographs and photomicrographs. There is a bibliography of the articles written by French authorities.

Operative Gynecology By Dr H v Pehnm Privy Counsellor Professor of Obstetrics and Gynecology and Dr I Amreich Privatdozent for Obstetrics and Gynecology of the University Vienna. In two volumes. With an introduction to the edition in English by George Cellhorn M.D. Professor of Clinical Obstetrics and Gynecology Washington University School of Medicine St Louis Mo. Authorized translation made by I Kraeger Ferguson M.D. Associate in Surgery University of Pennsylvania. Cloth. Price \$2.50 per set. Pp 779 with 467 illustrations. Philadelphia C London I B Lippincott Company 1934.

This monumental work is divided into three parts. The first part, on general principles, is devoted to a discussion of sepsis and antiseptics anesthesia preoperative and postoperative treatment, postoperative complications and their therapy, hemorrhage and hemostasis and methods of opening the abdomen. In the second part the surgical anatomy of the female pelvis is described. It is recognized today, more than ever before that a well developed anatomic background is a requisite for a successful operative experience. In this book the pelvic connective tissue, ureters arteries veins and lymphatics of the genital system and rectum and the nerve supply are described in greater detail than can be found in any other book of this kind. The authors own dissections are reproduced in pictures of startling perfection. The colored full page illustrations, accompanied by extensive explanatory legends, come close to actual work on the cadaver. The part on operative technic follows that on anatomy. It starts with a graphic description of the radical abdominal and vaginal hysterectomy. The flowing style is as enjoyable and instructive as the pictorial accompaniment. All the other operations are presented with the same wealth of detail, the surgical procedures being described step by step. Indications for each operation based on contemporary literature and the authors' own experiences are discussed at length, thus contributing to perfection of surgical judgment of the reader. Selectiveness of tried operative methods cannot be considered as a shortcoming. Of course, there occur minor differences in the approach to certain problems as compared to ideas prevalent in America. For instance, discussion of ethylene anesthesia has been omitted. Jansky's and the international classification of blood grouping and paraffin (Percy) method of blood transfusion are not described. The use of dextrose injections in postoperative treatment is not mentioned. The excellent quality of paper and the large type contribute to the reader's enjoyment. All in all, this treatise represents an unusual combination of art and science that cannot be too highly recommended.

The Cancer Problem and Its Solution By Hastings Gifford FRCS. Cloth. Price 2s 6d. Pp 59. London H K Lewis & Company Ltd 1934.

In a highly interesting and purely philosophical discussion, the author concludes that cancer is a national punishment or scourge that affects all civilized nations in which there is an ever increasing growth of national degeneracy. According to his theory there is a definite and direct connection between cancer of the individual and the decadence of the race. He further believes that the behavior of mankind is so completely irrational that the present generation is in the hands of an uncontrollable destiny and that like all other peoples in history

we are fated to become nationally senile to complete our cycle and to die as other nations have died, that some great calamity or terrible plague is needed to rouse us out of our apathy, and that cancer is the scourge that has been visited on us to accomplish this deed. Four causes of predisposition to cancer are cited: senescence, disuse, excessive stimulation and heredity. The author especially stresses the neglect of work or exercise of function as leading to premature degeneration of the intestinal tract, and that out of this degeneration cancer finds its congenial soil. As the author himself points out, the scientific mind, accustomed to precise clinical and laboratory data will be interested in but not convinced by his thesis. He believes that there are already adequate data for the solution of the cancer problem, that such data merely require a proper correlation to supply the solution, and that we need not concern ourselves with the addition of new facts. This may be true, but it is impossible to prove and appears a rather dangerous position to adopt, and certainly one that might greatly hinder or make impossible any further progress in cancer research. One cannot help but be struck with the simplicity of the solution of so complex a problem as the cause and prevention of cancer that is presented by the author, a simplicity that naturally arouses a certain degree of skepticism. It cannot be denied however that the ultimate solution of the cancer problem may lack the complexity which we suspect. The author presents his point of view in an interesting manner and attractive style. It is well worth reading, particularly because of the broad and social point of view that it presents and on account of its interesting philosophical speculation.

Gelenksteifen und Gelenkplastik Von Professor Dr Erwin Payr, Gehilmer Medizinalrat, Direktor der chirurgischen Universitätsklinik Leipzig, Teil I. Pathologische Biologie der Gelenke. Pathogenese und pathologische Anatomie der Ankylosen. Klinik Diagnostik und Anzeigstellung. Paper. Price 120 marks. Pp 880 with 240 illustrations. Berlin Julius Springer 1934.

The author of this book is well known and his name commands the highest respect and closest attention. The subject matter is divided into the pathology, biology and comparative anatomy. The manuscript is written with the usual German accuracy and verbosity. At times one finds twenty-five large pages of closely printed manuscript without an illustration. The book contains reproductions of photographs, roentgenograms, gross and microscopic sections and diagrams. One anticipates many redeeming features in the second volume and will be sadly disappointed if the surgical treatment is not presented in an admirable manner by manuscript and illustrations. The price of this paper bound volume is a glaring overcharge.

Keeping a Sound Mind By John J B Morgan Professor of Psychology Northwestern University. Cloth. Price \$2. Pp 440 with one illustration. New York Macmillan Company 1934.

This book is offered for the dual purpose of serving as a textbook in courses of mental hygiene and as a guide to enable the college student to apply the principles of mental health to himself. The two purposes can hardly be competently dealt with in one book and in the present volume, it would seem that the author has compiled a work better fitted for self guidance than for teaching. The mental hygiene principles are well laid out. The chapters are systematic and the points brought out in each are interesting and graphically presented by means of short illustrative situations and admonitory disquisitions. Most of the material is taken directly from the literature of mental hygiene although direct quotations are not made and it is so modified that it fits systematically into chapters with such descriptive titles as 'Mental Conflicts,' 'Mastery of Fear and Counteracting Defects.' Since the mental hygiene movement is so largely made up of freudian and adlerian doctrines, these predominate in the present volume, though the author has also drawn much interesting material from the field of experimental psychology. When reading a book of this sort, the question arises whether mental conditions are not overemphasized in the patient's mind to the extent that efforts which he makes to correct an existing or supposed disorder may be detrimental to him and the hortatory method of administering psychotherapy is a questionable one in cases in which there is real pathologic change. On the other hand this book is well written and it adheres to the beliefs current

in its field so closely that it cannot be severely criticized. However, it is certainly not a scientific textbook and the techniques presented, in some spots, for the purpose of determining mental health cause one to wonder where the author obtained his ideas, but the book will probably be just as useful as the many other works of its ilk.

Le dualisme de la contraction cardiaque. Recherches expérimentales du laboratoire de thérapeutique de l'Université de Liège. Par F. Henrijean. Docteur Honoris causa des Universités de Paris de Lyon de Toulouse etc. Paper. Price 50 francs. 1 p. 350 with 97 illustrations. Paris: Masson & Cie 1933.

This monograph, which is published posthumously is the "scientific testament" of the thirty years work which Henrijean put into the study of cardiac contraction. He presents evidence obtained by himself and others to defend the proposition that two systems exist in the heart one essentially excitatory and the other essentially contractile. The QRS complex he ascribes to activity of the former and the T wave to the activity of the latter. In this work the author has gone a long way to reconcile his original contentions with the modern classic concepts. His views as explained in this monograph are somewhat different from those in his monograph published three years before. The complexity of the presentation and the originality of the author's point of view make this work suitable only for the advanced student of cardiology.

Traitement des maladies rhumatismales par la sanocrysin. Par Knud Secher. médecin chef à l'Hôpital de Bispebjerg Copenhague. Second edition. Paper. Pp. 84 with 25 illustrations. Copenhagen. Levin & Munksgaard. Paris: J. B. Baillière et Fils 1933.

This edition records the author's experience in the treatment of rheumatic disease since 1933. He outlines in detail the indications for the control of the condition and dosage of sanocrysin, with a complete discussion of the course of treatment. Gold salt was originally introduced by Møllgaard in 1914 in the treatment of pulmonary tuberculosis. The compound used is sodium thiosulphate and gold, known under the name of sanocrysin. A complete bibliography is given.

Medicolegal

Malpractice Hypodermic Needle Left in Pleural Cavity—Remhold was suffering from acute pneumonia and it became necessary "to perform an operation known as 'tapping the lungs'." Dr. Spencer, using procaine hydrochloride to deaden the pain, operated. He used a syringe carrying a hypodermic needle approximately 23½ inches long. According to the testimony the physician, when he withdrew the syringe from his patient's body, uttered an exclamation of surprise, handed "what looked like a part of the syringe" to the nurse and asked for another one which was given him. The syringe handed to the nurse "looked like the point was broken off" and thereafter the patient had an awful pain in his chest on the inside. An opening was made into the chest and a drainage tube inserted. According to the record the operation was scientifically and properly performed and the wound was sewed up and healed normally. No attempt was made at any time while the patient was in the hospital to remove the needle and apparently he was not notified of its presence. The patient continued to suffer constant pain in his chest, which was so severe on physical exertion as to prevent his doing manual labor. The needle in the left pleural cavity was discovered later by a roentgenographic examination, but an effort made to remove it was abandoned as too greatly endangering the patient's life and it remained in the plaintiff's body at the time of the trial. The patient sued his physician charging negligence and unskillfulness in handling the hypodermic needle inserted into the plaintiff's pleural cavity in such a manner as to allow the needle to become detached from the syringe and negligently and unskillfully leaving the needle in the pleural cavity and in discharging the patient as cured without informing him of his condition. Judgment was given in favor of the plaintiff and the defendant-physician appealed to the Supreme Court of Idaho.

The Supreme Court found that the evidence was adequate to show that the pain suffered by the patient subsequent to the operation resulted from the presence of the hypodermic needle in his chest and diminished the patient's ability to perform manual labor. It held that testimony to show the extent of the pain and its effect on the patient's ability to perform manual labor was properly admitted. There was no such uncertainty as to whether the patient's pain and suffering were caused by the hypodermic needle or by some other cause as to require the jury to guess or conjecture as to its cause. The roentgenograms in the case were properly proved and admitted in evidence. Testimony by the roentgenologist, a physician as to the probable course of events if the needle remained in the patient's body, was properly admitted. The admission of life tables to prove the extent of the patient's future suffering and loss was proper, notwithstanding the fact that there was evidence that the patient had in previous years been injured and had had several operations for varicose veins on one of his legs. No evidence was introduced to show that the injury he had suffered or the operations performed resulted in any impairment of the patient's health likely to diminish the span allotted by the life tables to men of his age. The evidence was sufficient to support the verdict against the defendant-physician and the judgment entered on it. The judgment was therefore affirmed by the Supreme Court.—*Remhold v Spencer (Idaho)*, 26 P. (2d) 796.

Malpractice Alleged Negligence in Treatment of Gunshot Wound—On August 24, McDermott was shot, the bullet passing through the right axillary fold. He was immediately taken to a hospital, where the wound was cleaned and gauze packs were applied in front where the bullet entered and in the back where it passed out. Drs. Lamb and Gray, who were called to treat the patient arrived about an hour after the patient was admitted to the hospital. They found his radial pulse good and no evidence of injury to any nerve trunk. There was no bleeding. They concluded therefore not to probe the wound but to care for the patient and to await developments. His condition remained good until September 3, when it was discovered that a blood clot had formed internally, that the circulation was impaired and that the nerves in the arm did not react properly to tests. A third physician was then called in, and the following morning the three physicians operated. When the blood clots were removed, the vein bled profusely. Its distal end was tied, but its proximal end was not. Bleeding ceased. Thereafter, however, a blood clot formed in the vein, passed into the heart and thence into the lung and thus caused the patient's death.

McDermott's widow sued Drs. Lamb and Gray for malpractice. While the suit was in progress Dr. Gray died and his widow as executrix of his estate was substituted as a party. The complaint as to Dr. Lamb was dismissed by the plaintiff. At the close of the evidence for the plaintiff, the then defendant Dr. Gray's widow requested the court to direct the jury to return a verdict in her favor, but this the court refused to do. A judgment of \$20,000 was entered against her and she appealed to the Supreme Court of Arkansas.

The plaintiff based her action in part on the charge that Dr. Gray was negligent on August 24, when he did not open the wound to determine whether or not the bullet had severed an artery or a vein but she introduced no evidence to support that charge. On the other hand the defendant called five or six physicians who testified that in their opinion it would have been bad practice to go into the wound to determine whether a vein had been severed, probing might puncture the axillary artery, axillary vein or a nerve controlling the arm and the severance of any of them would endanger life and diminish the chance of recovery. The only purpose of entering the wound on August 24 would have been to stop hemorrhage, and since hemorrhage had stopped before Dr. Gray arrived it would have been unreasonable for him to open the wound. It was better for him to await developments, after giving antitoxin. The only expert witness called by the plaintiff did not controvert this testimony.

As further ground for her suit, the plaintiff charged that the defendant was negligent in failing to ligate both ends of the vein during the operation on September 4. All the expert

witnesses agreed that where a vein is recently severed, both ends should be ligated. There was no testimony showing or tending to show that that procedure should be followed where the tissues had sloughed, opening a hole into the vein some days after the original injury, the mishap not being discovered until after internal bleeding had taken place sufficient to form two clots the size of a lemon. Under such circumstances, the medical witnesses agreed, the operating physician should ligate the bleeding end of the vein, but that it was not his duty to ligate the proximal end if it was not bleeding, because of the lapse of time, a blood clot was necessarily present in the non-bleeding proximal end of the vein and the manipulation would be likely to disturb the clot. This testimony, the court thought, was not in conflict with that of the medical expert who testified for the plaintiff, that if a section of the axillary vein had been taken out, both ends should have been ligated, for in this case no part of the vein was removed.

In the absence of expert testimony in support of the plaintiff's theory, the jury should not have been allowed to speculate on whether or not the physicians who were in attendance on the plaintiff's husband followed a proper professional course. The uncontradicted testimony showed that they treated the patient with the degree of skill and learning ordinarily possessed and exercised by members of their profession in good standing in the community, that they used reasonable care in the exercise of their skill while attending him, and that they exercised their best judgment. That is all that the law of Arkansas requires of physicians.

Because the trial court erred in refusing to direct the verdict for the defendant the Supreme Court dismissed the suit—*Gray, Et al v McDermott (Ark)* 64 S W (2d) 94

Workmen's Compensation Acts Paralysis Agitans Following Trauma—On Aug 12 1928 in the course of his employment, Moffett, a strong able bodied man 24 years old, was lifting cases of canned peas. A case weighed 40 pounds, but two cases happened to be stuck together and Moffett unexpectedly encountered a load twice as great. He immediately felt pain in his right side and back at the top of his hip bone, and had to discontinue his work. He was treated by a physician, who diagnosed the case as 'antero posterior lumbago'. On returning to duty the next day, Moffett was assigned to light work. When on that day he visited his physician's office he was more nervous than usual. Within three weeks he had a pronounced tremor in his left foot, which gradually spread to both legs his tongue and his head. Ultimately he became unable to perform his duties with his then employer and found lighter work, which he followed until it became impossible for him to work at all.

Moffett's disability immediately incident to the accident was adjusted by the payment of compensation and hospital expenses, Oct 19, 1928, and the industrial accident board of Montana heard nothing further concerning the case until September 1930. Then Moffett claimed compensation for total disability. The board disallowed his claim and he appealed to the district court, Gallatin County, which ordered the payment of compensation. Moffett's employer and his employer's insurance carrier appealed to the Supreme Court of Montana.

The question for determination, said the Supreme Court, was whether or not the accident was the proximate cause of Moffett's disability. All physicians who testified agreed that he was suffering from Parkinson's disease (paralysis agitans) or the parkinsonian syndrome, commonly known as shaking palsy either of which totally disables its victim and is progressive and incurable. As to its proximate cause however, there was a conflict of medical opinion. Medical science has not definitely determined the cause of Parkinson's disease or of the parkinsonian syndrome in the individual patient, but it follows trauma, infection or emotion, and therefore medical authorities have adopted the theory that it may be caused by any one of those conditions.

In the present case the testimony ruled out emotion and the type of infection which medical experts used principally as the basis of their deductions concerning the causation of the disease. There was no evidence that Moffett ever had encephalitis lethargica (sleeping sickness) or that there had ever been

a case of that disease in the community. If gonococci were present—a conclusion left in doubt by the testimony—it was not shown that they constituted an infection known to be followed by this disease, which ordinarily attacks the aged and but rarely the young. The evidence thus ruled out practically all the theoretical causes except trauma. Dr Kelly testified that in his opinion Moffett's condition "was caused at the time of the injury." Dr Rodes, who thought Moffett was suffering from the parkinsonian syndrome and not from Parkinson's disease, was "inclined to believe or feel that the accident was not the cause." Dr Cooney believed that injury was not the cause. Dr Treacy was of the opinion that the injury did not cause Moffett's condition but that his condition was "almost certainly a result of an infection which resulted in encephalitis lethargica." A report from Dr Bolton surmised that Moffett's condition was "probably due to previous infection." The medical witnesses frankly admitted, however, that they did not know, and that the "authorities" did not know, what causes Parkinson's disease or the parkinsonian syndrome. The statements made by the doctors, said the court, hardly rise to the dignity of expert opinions; they are more in the nature of surmises based on the pathology of the disease than on facts which an attorney would be entitled to include in a hypothetical question propounded in the case. Under all the rules of evidence when an expert witness after answering a hypothetical question, admits that he does not know the answer and that no one in his profession does, the expert's answer should be stricken from the record and wholly disregarded by the trier of the facts. The so-called opinions of the medical experts the Supreme Court concluded were too speculative and conjectural to support the finding of the industrial accident board denying compensation to Moffett.

Moffett produced all the evidence possible. No known authority could furnish positive testimony that would have induced the board to award compensation. But because medical science has not progressed to a stage where one learned therein can say positively 'this is the cause' or 'that is not the cause,' one who has indubitably sustained an industrial accident, followed by a disease which totally incapacitates him and which it is known may follow such an accident, is not to be denied compensation. The law does not require the impossible. Moral certainty only is required, or that degree of proof which produces conviction in the unprejudiced mind. If the fact that the claimant would not be in his present condition if he had not been injured is fairly deducible from the uncontroverted testimony, then the evidence preponderated against the finding of the industrial accident board and warranted the district court in declaring that its findings against the claimant were unreasonable.

The Supreme Court found the evidence sufficient to support the judgment in Moffett's favor but remanded the case to the district court for proper action with respect to certain stated modifications of the award previously made—*Moffett v Bozeman Canning Co (Mont)*, 26 P (2d) 973

Society Proceedings

COMING MEETINGS

- American Association for the Study of Neoplastic Diseases Baltimore June 21-23 Dr Eugene R Whitmore 2139 Wyoming Avenue N W Washington D C Secretary
- American Ophthalmological Society Lucerne in Quebec Canada July 9-11 Dr J Milton Griscom 2213 Walnut Street, Philadelphia Secretary
- Minnesota State Medical Association Duluth July 16-18 Dr E A Meyerding, 11 West Summit Avenue St Paul Secretary
- Montana Medical Association of Helena July 11-12 Dr E G Balsam Box 88 Billings Secretary
- New Mexico Medical Society Las Vegas July 19-21 Dr L B Cohenour 219 West Central Avenue, Albuquerque Secretary
- North Pacific Pediatric Society Vancouver B C June 18 Dr R H Somers 1305 Fourth Avenue Seattle Secretary
- Pacific Coast Oto Ophthalmological Society Butte Mont July 16-18 Dr F C Cordes Fitzhugh Building San Francisco Secretary
- Pacific Northwest Medical Association Salt Lake City June 21-23 Dr C W Countryman 407 Riverside Avenue Spokane Wash Secretary
- Utah State Medical Association Salt Lake City June 21-23 Dr Leland R Cowan 305 Medical Arts Building Salt Lake City Secretary
- Wyoming State Medical Society Casper July 16-17 Dr Earl Whedon 50 North Main Street Sheridan Secretary

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American J Digestive Diseases and Nutrition, Chicago

1 190 (March) 1934

- Amebiasis and Amebic Dysentery C F Craig New Orleans—p 4
Amebic Dysentery in Chicago H N Bundesen Chicago—p 9
Certain Atypical Types of Amebiasis P W Brown Rochester Minn—p 10
Migraine, an Allergic Phenomenon A F R Andresen, Brooklyn—p 14
Diagnosis and Management of Gall Tract Particularly Gallbladder Disease Proposal for Better Standardization of Methods B B V Lyon, Philadelphia—p 18
Gastric Ulcers Associated with Cinchophen Poisoning Report of an Instance with Consideration of the Possible Etiologic Relationship L Bloch and D H Rosenberg Chicago—p 29
Sympathetic Secretory Innervation of the Gastric Mucosa S G Baxter, Montreal—p 36
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Nutrition in Health and Disease C J Barborka Chicago—p 44
Why Peptic Ulcers Are Missed on X Ray Examination W H Stewart and H E Illick New York—p 52
Treatment of Amebic Dysentery H W Soper St Louis—p 58
Primary Carcinoma of the Liver in Infancy Report of an Instance R A Kordenat Chicago—p 60
Unusual Problems in Plastic Surgery of the Colon J M Lynch and V Hurley New York—p 66
Multiple Fissures of the Anus in a Case of Tertiary Syphilis L A Bue and W L Butsch Rochester Minn—p 69
Tuberculous Ulceration of the Rectum and Sigmoid as Observed Proctoscopically C L Martin Chicago—p 70

American Journal of Diseases of Children, Chicago

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- Hypophyseal Infantilism Treatment with an Anterior Hypophyseal Extract Preliminary Study E K Shelton and L A Cavanaugh Santa Barbara Calif, and H M Evans New York—p 719
Electrocardiographic Studies During Pneumonia in Infants and in Children A F Abt and M I Vinneour Chicago—p 737
Clinical Radioscopic Studies of the Heart in Children Roentgenologic Criteria of Cardiac Enlargement Size of Angle of Clearance of Left Ventricle as Criterion of Ventricular Enlargement May G Wilson New York—p 750
*Tuberculin Ointment Patch Test E Wolff with assistance of M H Teitler San Francisco—p 764
Intranuclear Inclusions Incidence and Possible Significance in Whooping Cough and in a Variety of Other Conditions H A McCordock and Margaret G Smith St Louis—p 771
Frequency of Pyuria in Anomalies of the Urinary Tract in Children J A Bigler Chicago—p 780
Selection of Malnourished School Children R Franzen New York—p 789
Immunity Produced by Diphtheria Toxoid J Greengard Chicago—p 799

Treatment of Hypophyseal Infantilism—Shelton and his associates treated six children for a secretory deficiency of the anterior hypophysis. The diagnosis was presumptive in five cases and was verified in one. Four patients were treated by the intraglandular injection of a growth-stimulating fraction of the bovine anterior hypophysis. One was treated with desiccated thyroid and desiccated whole pituitary gland given orally, one was left untreated for twenty-three months and then given the growth-stimulating fraction of the bovine anterior hypophysis. The two latter patients served as controls. The growth increment of the four treated patients was considerably in excess of the expectancy, as computed from the average growth rate for the previous four years, and was slightly in excess of the theoretical normal rate for their ages. It was not definitely determined whether the rate was in direct ratio to the amount of substance administered or whether the potency of the filtered material was altered by the addition of a preservative. The authors believe that the growth increment was greater in the first few months of treatment than subsequently. This may have been due either to a difference in the physio-

logic response or to the difference in the material. One child changed in configuration and appearance. The growth increment for the two control cases was slightly in excess of the expectancy, but below the theoretical normal. The growth increment for the control case, in which the growth-stimulating fraction was given later, was in excess of the theoretical normal and several times the previous rate. The authors do not consider that stimulation of growth has been proved except in one case. Careful observation for at least a year is necessary to verify the results in the other children.

Tuberculin Ointment Patch Test—In the tuberculin ointment patch test, Wolff applies the ointment in the paravertebral region between the eighth and eleventh thoracic vertebrae or on the medial brachial surface. The skin is cleansed with green soap and water, dried, bathed with benzene and dried again. A pea-sized drop of the tuberculin ointment is applied on the right side and a similar sized drop of the control ointment is applied on the left side. Each of these drops is covered with a 2 inch (5 cm.) square of adhesive tape. The test is read in forty-eight hours. The adhesive tape is removed after soaking with benzene and the area is cleansed with benzene. The reaction may be clearly observed ten minutes after the tape is removed. Positive reactions exhibit papules, erythema, induration and pigmentation. A weak positive test shows a few (not more than twenty) discrete pale rose papules of a diameter of from 1 to 3 mm. A medium reaction shows many vividly red papules. A strong reaction shows, in addition, yellow-brown pigmentation of the test area plateaus of induration and marked reddening. The papules may show formation of vesicles. In weak reactions it is advisable to palpate the area in order to detect the follicles and to make a comparison with the control. The author obtained an agreement in 95.8 per cent of the cases between the ointment patch tests and the intracutaneous tuberculin tests (all dilutions) performed on 190 children. The ointment patch test is generally comparable in results with an intracutaneous injection of 0.1 cc of old tuberculin, 1:100.

American J Obstetrics and Gynecology, St Louis

27 473 632 (April) 1934

- Application of Endocrinology to Gynecologic Problems E Novak Baltimore—p 473
Effect of Changes in the Amount of Protein on Pregnancy and Lactation D Macomber Boston—p 483
Effects of Pregnancy on Organ Weights of the Albino Rat M Abramson Minneapolis—p 492
Diffusible Serum Calcium in Pregnancy H O Nicholas H W Johnson and R A Johnston Houston Texas—p 504
Variations in Serum Calcium and Phosphorus During Pregnancy I Normal Variations J W Mull and A H Bill Cleveland—p 510
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Fetal Mortality in Contracted Pelvis with Prolonged Labor and Delivery Through Birth Canal C H Peckham and K Kuder Baltimore—p 537
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Some Attempts to Influence the Menstrual Cycle in the Monkey C G Hartman Baltimore—p 564
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*Smallpox Vaccination of the New Born Report on Eight Hundred and Eight Attempts Leabelle Isaac New York—p 580
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Intrapartum Gas Bacillus Infection A A Marchetti New York—p 613
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- Carcinoma of Cervix Uteri with Complete Procidentia W F Boulikali
Cleveland —p 620
- Dystocia Following Cervical Amputation H C Hesselstine Chicago
—p 621
- Umbilical Cord Clamp H T Kane Washington D C —p 623

Smallpox Vaccination of the New-Born—On the basis of 808 vaccinations of new-born infants, Isaac concludes that there is practically no danger associated with the inoculation of mature infants immediately after birth. Reactions are apt to be more severe in premature infants, and it is advisable to postpone vaccination until they show a satisfactory gain in weight. The percentage of takes depends largely on the freshness of the vaccine, but girls seem more susceptible than boys, and more positive reactions are obtained on the thighs than on the arms. Positive reactions do not adversely affect the weight curve and rarely cause elevations of temperature. Moreover, they are not affected by, nor do they affect, the incidence or course of the common intercurrent infections—conjunctivitis, thrush and impetigo. Children of mothers giving positive blood Wassermann reactions rarely show takes.

American Journal of Ophthalmology, St Louis

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- Hereditary Optic Atrophy (Leber's Disease) A J Bedell Albany, N Y —p 195
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- Enophthalmos in Horner's Syndrome H P Wagener Rochester Minn —p 209
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American Journal of Pathology, Baltimore

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- *Hyperactivation of the Neurohypophysis as the Pathologic Basis of Eclampsia and Other Hypertensive States H Cushing New Haven Conn —p 145
- Cardiovascular Renal Changes Associated with Basophil Adenoma of the Anterior Lobe of the Pituitary (Cushing's Syndrome) H E MacMahon H G Close and G Hays Boston —p 177
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- *Renal Lesions of Rheumatic Fever J L Blaisdell Toronto —p 287
- Primary Amyloid Disease of the Heart Report of Case J W Budd Los Angeles —p 299
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- Addenda to a Theory of Pigmented Moles G F Laird New York and Margaret R Murray —p 319

Hyperactivation of the Neurohypophysis in Hypertensive States—Cushing observed a heavy infiltration of basophilic elements in the posterior lobe in six of nine pituitary bodies from fatal cases of eclampsia and in a number of glands from cases of essential or nephrovascular hypertension. In advancing years there is a tendency for the basophilic cells to wander in large numbers into the posterior lobe. The condition has been looked on merely as a concomitant of old age, particularly when attended by atherosclerosis and renal disease. In essential hypertension, as in eclampsia, lesions affecting the terminal arterioles of the kidneys have been thought to indicate a primary nephrovascular disorder. Necroses in eclampsia, however, are not limited to the liver, nor are the terminal arteriolar lesions in essential hypertension confined to the kidneys. In neither instance do the histopathologic observations account satisfactorily for the clinical symptoms. From his observations the author concludes that the source of these

hypertensive disorders lies in the posterior lobe of the pituitary body, that the extent of basophilic invasion from the pars intermedia is a measure of posterior lobe activity and that excessive infiltration by these elements represents the histopathologic basis of eclampsia and essential hypertension in young persons and may possibly also be related etiologically to the atherosclerosis of old age.

Renal Lesions of Rheumatic Fever—Blaisdell studied the kidney lesions in sixteen cases of rheumatic fever. A perivascular inflammatory reaction of the acute nonsuppurative type, affecting the smaller arteries and arterioles, was present in eight cases. Evidence of perivascular scarring was noted in four, while a recurrent type of inflammation was encountered in two. The inflammatory reaction is usually seen in the adventitial and periadventitial tissues, with occasional infiltration and destructive changes in the medial coat. Intimal changes, consisting of an endothelial swelling and proliferation are inconstant. Glomerular damage which was well marked in only one case, is to be regarded as dependent chiefly on nutritional disturbances brought about by vascular changes. Little evidence of active or healed inflammatory processes was noticed in the glomeruli. No evidence of the specific vascular lesions described by Pappenheimer and Von Glahn was observed in the cases studied. The lesions described, which in general bear a close resemblance to perivascular foci of inflammation found in the myocardium, may be looked on as constituting a definite type of interstitial nephritis. It is seldom, however, that sufficient alteration in structure to justify a diagnosis of renal disease during life occurs.

American Journal of Physiology, Baltimore

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- Adrenal Secretion in Man Reactions of Blood Vessels of Human Extremity Sensitized by Sympathectomy to Adrenalin and to Adrenal Secretion Resulting from Insulin Hypoglycemia N E Freeman R H Smithwick and J C White with collaboration of B Cannon and H Heyl Boston —p 529
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- Effects of Follicle Stimulating and Luteinizing Pituitary Extracts on Ovaries of Infantile and Juvenile Rabbit R Hertz and F L Hisaw Madison Wis —p 1
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- Effect of Fluid Deprivation and Fluid Intake on Revival of Dogs from Adrenal Insufficiency W W Swingle J J Pfaffner, H M Vars and W M Parkins Princeton N J —p 144
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American Journal of Psychiatry, Baltimore

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Psychiatric Resources of New York Brief Description for Those Attending the 1934 Meeting S W Hamilton White Plains N Y—p 1097

Total Protein of Cerebrospinal Fluid in Neurosyphilis
—Schube presents a study of the total protein of the cerebrospinal fluid measured to 1 mg per hundred cubic centimeters of cerebrospinal fluid from 446 patients with uncomplicated and untreated neurosyphilis. There were 357 cases of dementia paralytica, forty eight cases of tabes without psychosis and forty four cases of cerebrospinal syphilis with psychosis. The average value for the total protein of the cerebrospinal fluid was 75.4 for all cases of neurosyphilis, 79 in dementia paralytica 57.9 in tabes without psychosis and 65.68 in cerebrospinal syphilis with psychosis. The middle 50 per cent of the cases had a total protein falling between 41.01 and 109.79 mg for all cases of neurosyphilis, between 43.7 and 114.3 mg in dementia paralytica 37.06 and 78.74 in tabes without psychosis and 31.96 and 99.4 mg in cerebrospinal syphilis with psychosis. There is no true difference between any of the means excepting neurosyphilis and tabes without psychosis, and dementia paralytica and tabes without psychosis. In these two instances the difference is so pronounced that there is no question concerning its existence. If 39.99 mg per hundred cubic centimeters of cerebrospinal fluid is accepted as the upper limit of normal protein, it was found that 23.09 per cent of all the cases of neurosyphilis possessed normal values and that 20.72 per cent of the dementia paralytica cases, 29.16 per cent of the cases of tabes without psychosis and 34.09 per cent of the cases of cerebrospinal syphilis with psychosis possessed normal values.

American Journal of Public Health, New York

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American Journal of Surgery, New York

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American Journal of Syphilis and Neurology, St Louis

18 145 288 (April) 1934

Observations on Syphilis of the Heart Coronary Ostia and Coronary Arteries I With Especial Reference to the Clinical Picture Presented by Syphilitic Stenosis of the Coronary Ostia M C Pineoffs and W S Love Jr Baltimore—p 145
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General Paralysis Nonfever Treatment by Cerebral Lipoids and Tryparsamide E T Hoverson Kankakee Ill—p 221
Superinfection (?) Following Malarial Therapy for Neurosyphilis A Tobias St Louis—p 232
The Precipitation of Beef Heart Antigen by Cerebrospinal Fluid of Neurosyphilitic Patients B S Levine Chicago—p 239

Nonfever Treatment of Dementia Paralytica—Hoverson used a preparation of cerebral lipoid prepared by the Wilson Laboratories first on six patients who were deemed unfit for fever therapy. He gave 1 cc of the preparation intraglutally every other day until an arbitrary number of

twenty injections per person was given. No other form of antisyphilitic therapy was used. Marked mental improvement was noted in five of the patients. In order to improve the laboratory observations, tryparsamide was administered in the usual 3 Gm dose for a period of ten weeks. This was given concurrently, before or after the lipid medication. No marked degree of clinical improvement was observed following as small a number as ten injections. The author observed that lipid and tryparsamide medication together will exert a greater effect in producing improvement from the laboratory point of view than either one will give alone. A gain in weight and mental improvement were noted as before with the first six patients, but in addition more striking serologic results were obtained. He has given the foregoing treatment to twenty-five patients. He found that the injection of a preparation of cerebral lipids in conjunction with the administration of tryparsamide has given a remission rate of 48 per cent in twenty-five cases of dementia paralytica. The treatment is ambulatory and no ill effects have been experienced. This method offers a form of therapy that is applicable to all stages of central nervous system syphilis.

American Review of Tuberculosis, New York

29 373 488 (April) 1934

- *Time Interval Between Primary Infection and Superinfection as a Factor in Immunity to Tuberculosis. Experimental Study. H. Sewall, E. de Savitsch and C. P. Butler. Denver—p. 373.
- Micromotion Picture Study of the Growth of Tubercle Bacilli from Cold Blooded Animals. R. W. G. Wyckoff. New York—p. 389.
- Susceptibility of Chickens to Human and Bovine Tubercle Bacilli. W. H. Feldman. Rochester, Minn.—p. 400.
- Pathologic Changes Induced in Chickens by Human and Bovine Tubercle Bacilli. W. H. Feldman. Rochester, Minn.—p. 415.
- Childhood Type Tuberculosis as Revealed by the X-Ray. H. F. R. Watts. Boston—p. 424.
- Tuberculosis in Negro Children. C. B. Gibson. Meriden, Conn.—p. 430.
- *Calcified Abdominal Lymph Nodes. C. B. Gibson. Meriden, Conn.—p. 447.
- Tubercle Bacilli in the Gastric Contents of Tuberculous Children. Study of Fifty Nine Cases. Ira Gouley. Livermore, Calif.—p. 461.
- Demonstration of Tubercle Bacilli in the Sputum, Feces and Stomach Contents of Tuberculous Children. Comparative Study. Lucy Mishulow, Camille Kereszturi. New York, and D. Hauptmann. Brooklyn, assisted by Mildred Melman and Marie Romano—p. 471.
- Tubercle Bacilli in the Sputum and Feces of Children Without Pulmonary Tuberculosis. J. P. Nalbant. Northville, Mich.—p. 481.

Immunity to Tuberculosis—Sewall and his associates inoculated two groups of guinea pigs with virulent tubercle bacilli in quantities of 0.1 and 0.01 mg, respectively. Half the animals of each group were retained as controls. In the first experiment the dose of infecting bacilli was 0.1 mg. Six guinea-pigs were superinfected with the same dose after fifty-three days, and six after seventy-four days. Twelve controls received only the infecting dose. In the second experiment the infecting dose was 0.01 mg of bacilli. A superinfecting dose of 0.1 mg was administered to six guinea-pigs after fifty-three days, to six after seventy-four days and to six after ninety-five days. The results seem to furnish positive experimental evidence that superinfection has the power, under certain conditions, to increase fibrosis, and in the segregation of foci of infection and actively stimulate resistance to the implantation of fresh foci of disease, if not, indeed, to cause the absorption of established foci. The results of the experiments indicate that the interval of time elapsing between infection and superinfection is a factor of paramount importance in the production of immunity.

Calcified Abdominal Lymph Nodes—Gibson investigated 200 children with diagnoses of various forms of tuberculosis. Abdominal roentgenograms revealed calcified abdominal lymph nodes in nineteen of these patients. He is convinced that the routine use of abdominal roentgenograms in children is important not only as a diagnostic aid but also for the knowledge of tuberculogenesis that may be furnished by this procedure. A single plate may not give the desired information. Serial roentgenograms of the abdomens of children suspected of having tuberculosis should be taken over a period of years. A positive diagnosis of tuberculosis of the abdominal lymph nodes cannot be made until calcification occurs and the disease becomes demonstrable by roentgenogram.

Anatomical Record, Philadelphia

58 321 430 (March 25) 1934

- Ontogenetic History of the Mitochondria and Golgi Network of the Hepatic Cell of the Chick. A. J. Dalton. Boston—p. 321.
- Histochemical Studies on the Mammalian Kidney. I. Glomerular Elimination of Ferrocyanide in the Rabbit and Some Related Problems. I. Gersh and E. J. Stieglitz. Chicago—p. 349.
- Id. II. Glomerular Elimination of Uric Acid in the Rabbit. I. Gersh, Chicago—p. 369.
- Experiments on Developing Rats. I. Limits of Fetal Regeneration. Behavior of Embryonic Material in Abnormal Environments. J. S. Nicholas. New Haven, Conn.—p. 387.
- Transplantation of the Adult Hypophysis into Young Salamander Larvae. R. K. Burns, Jr., Rochester, Minn.—p. 415.

59 1 134 (April 25) 1934

- Amyl Acetate. A Useful Solvent for Embedding Masses. D. H. Bar. Albany, N. Y.—p. 1.
- The Mitotic Index of the Thyroid Gland in Guinea Pig and Rat. Hilda Friedman and I. Loeb. St. Louis—p. 5.
- The Early Development of the Membranous Labyrinth in Mammalian Embryos with Special Reference to the Endolymphatic Duct and the Utriculo-Endolymphatic Duct. B. J. Anson. Chicago—p. 15.
- Giant Cells in Omental Grafts of Whole Rabbit Embryos. A. J. Waterman. Brooklyn—p. 27.
- *An Infrahyoid Muscular Anomaly in Man. J. L. Jackson. Winnipeg, Manit.—p. 41.
- Growth and Regeneration of Tissue in Frog Tadpoles Following the Administration of an Extract of the Anterior Pituitary Gland. W. E. Herrell. Charlottesville, Va.—p. 47.
- Pericardial Patency and Partial Ectocardia in a New Born Orang Utan. C. F. De Garis. Baltimore—p. 69.
- Micromanipulative Study of Blood Capillaries. B. W. Zweifach. New York—p. 83.
- The Change in Position of the Eyeballs During Fetal Life. A. A. Zimmerman. Chicago. E. L. Armstrong. Duluth, Minn. and R. E. Scanlon. Minneapolis—p. 109.

An Infrahyoid Muscular Anomaly—During the dissection of a male subject, aged 53 years, Jackson found an anomalous muscle 110 mm in length, extending in the midline of the neck from the posterior aspect of the manubrium sterni to the middle of the anterior aspect of the body of the hyoid bone. It is asserted that it occurred as the result of a faulty cleavage of the undifferentiated pre-muscle mass in early embryonic life. In support of this statement reference is made to the comparative anatomy, comparative embryology and human embryology of the subhyoid region. An examination of the literature fails to reveal any reference to this muscle. The author suggests that it be termed *Musculus sternohyoideus azygos*, indicating at once its attachments and its unpaired character.

Annals of Internal Medicine, Lancaster, Pa

7 1201 1344 (April) 1934

- Splanchnic Nerve Section in Juvenile Diabetes. I. Selection of Cases for Operation. G. de Takats, G. K. Fenn and Ruth A. Trump. Chicago—p. 1201.
- Consideration of Gastric Ulcer Cancer Problem. Report of Case of Ulcerating Carcinoma in Which the Gastric Acidity Changed from Normal to Anacidity While Under Observation. H. Shay and E. M. Schloss. Philadelphia—p. 1218.
- *Felt's Syndrome. Report of Case with Complete Postmortem Finding. A. E. Price and J. B. Schoenfeld. Detroit—p. 1230.
- Tuberculosis of the Spinal Cord. F. L. Jennings. Oak Terrace, Minn.—p. 1240.
- Value of a Neutralization Test of Gastric Acidity in Patients with Duodenal Ulcers and So Called Pylorospasm. J. S. Levy. Little Rock, Ark.—p. 1244.
- Acquired Heart Block with Adams Stokes Attacks Dependent on Congenital Anomaly (Persistent Ostrum Primum). Report of Case with Detailed Histopathologic Study. W. M. Yater. Washington, D. C. C. W. Barrier. Fort Worth, Texas and P. E. McNabb. Washington, D. C.—p. 1263.
- *Analgesic Effect of Hepatitis and Jaundice in Chronic Arthritis Fibrositis and Sciatic Pain. P. S. Hench. Rochester, Minn.—p. 1278.
- Calcification of the Pleura. J. Head. Chicago—p. 1295.
- Allergic Shock. III. From Substances Other Than Pollen and Serum. G. L. Waldbott. Detroit—p. 1308.
- Report of Two Unusual Cases of Primary Carcinoma. I. Primary Carcinoma in the Liver with Cirrhosis of the Liver. Occurring in a Female. II. Primary Carcinoma in the Jejunum. R. Finkelstein and M. Jacoby. Brooklyn—p. 1319.

Felt's Syndrome—Price and Schoenfeld report a case in which the arthritic manifestations of Felt's syndrome, characterized by clinical chronicity and relative benignity of the objective features were present. There was swelling of the involved joints with a moderate amount of interosseous atrophy and limitation of motion without roentgenologic evidence of bone absorption or destruction. The microscopic appearance of the knee joint was not distinctive. The active inflammatory process involving the periarticular tissues and synovial mem-

brane was typical of a chronic infection. The authors conclude that the pathologic process responsible for this symptom complex (arthritis, splenomegaly and leukopenia) is not new or distinctive but probably results from a chronic infection.

Analgesic Effect of Hepatitis and Jaundice—During the past four years Hensch made observations on the effect of intermittent intrahepatic jaundice on the chronic pain experienced by sixteen patients with chronic arthritis, fibrositis and sciatica. In two of the cases the intrahepatic jaundice apparently was not related to drugs, in fourteen it was considered to be toxic hepatitis caused by cinchophen. Coincident with the onset of jaundice, fourteen of the patients received partial or complete relief of pain for variable periods. In five of the six cases in which the joints were swollen reduction of the swelling, sometimes complete, was noted. Five of the sixteen patients experienced complete relief of pain for from two weeks to eight months, and in one instance for seven years after the disappearance of the jaundice. Four patients noted complete disappearance of pain with the onset of fatal hepatitis and jaundice caused by cinchophen, the analgesia persisted until death. In one case, complete relief of pain was noted only for the duration of icterus, in another case pain disappeared completely at first, returning slightly during the latter part of the period of jaundice. Two patients had marked, although not complete, relief of pain during the period of jaundice, and for two weeks and five months, respectively after the jaundice subsided. No amelioration of pain was experienced by two patients with slight jaundice. One patient noted some relief, which later was lost, even in the presence of definite icterus. In an additional case of chronic infectious arthritis and hepatitis caused by cinchophen, without jaundice, the patient did not become jaundiced and the pain was not relieved.

Archives of Internal Medicine, Chicago

53 481 632 (April) 1934

- Infections with *Pneumococcus* Type III and Type VIII. Characterization of Pneumonia Caused by *Pneumococcus* Type III and That Associated with a Biologically Closely Related Organism *Pneumococcus* Type VIII. M. Finland. Boston and W. D. Suthiff. Chicago —p. 481.
- *Acute *Streptococcus Viridans* Endocarditis. Report of Four Cases with Autopsy Observations in Two. I. W. Held and A. A. Goldbloom. New York —p. 508.
- Studies of the Blood in Normal Pregnancy. V. Conductivity. Total Base. Chloride and Acid-Base Equilibrium. W. J. Diekmann. Chicago and C. R. Wegner. St. Louis —p. 527.
- Id. VI. Plasma Cholesterol in Milligrams Per Hundred Cubic Centimeters. Grams Per Kilogram and Variations in Total Amount. W. J. Diekmann. Chicago, and C. R. Wegner. St. Louis —p. 540.
- Constancy of Iron in the Blood Plasma and Urine in Health and in Anemia. A. Marlow and F. H. L. Taylor. Boston —p. 551.
- Congestive Heart Failure. XVIII. Clinical Types of Nocturnal Dyspnea. W. G. Harrison Jr. J. A. Calhoun and T. R. Harrison. Nashville, Tenn. —p. 561.
- Difference in Creatine Concentration of the Left and Right Ventricular Cardiac Muscles. D. P. Seecof. New York. C. R. Linegar and V. C. Myers. Cleveland —p. 574.
- *Thoracic Stomach. Report of Five Cases. H. W. Goodall and L. H. Hoyt. Boston —p. 594.
- Chronic Idiopathic Steatorrhea. Roentgenologic Observations. A. M. Snell and J. D. Camp. Rochester, Minn. —p. 615.

Acute *Streptococcus Viridans* Endocarditis—Held and Goldbloom observed that *Streptococcus viridans* was the cause of four cases of acute, rapidly fatal endocarditis occurring on the basis of a previously diseased valve. This form of endocarditis is usually preceded by an acute infection. The primary infection precedes the acute endocarditis by only a few days and it may efface the symptoms of endocarditis, making the diagnosis of acute endocarditis caused by *Streptococcus viridans* impossible before death, as in the case in which the condition was preceded by pneumonia. In the authors' cases the symptoms of septicemia were in the foreground. They believe that the reason the cases reported had a rapidly instead of a protracted fatal course is that there was almost a total loss of the reactive power of the reticulo-endothelium of the endocardium. A primary factor in the nonreactive quality of the reticulo-endothelium was the immediately preceding acute infection. Because the reticulo-endothelium of the endocardium was nonreactive, local inflammatory changes were minor and destructive changes were maximal.

Thoracic Stomach. Report of Five Cases—Goodall and Hoyt believe the condition of thoracic stomach to be fairly common. Its seeming rarity is due to the fact that cases,

especially of the type in which the greater part of the stomach is below the diaphragm have been overlooked by the roentgenologist and probably by the pathologist. The clinical symptoms are characteristic enough to permit a tentative diagnosis. Dyspnea due to slight exertion and occurring in the latter part of life as well as unmitigated gastro-intestinal symptoms with negative routine roentgen observations, are suggestive of thoracic stomach. The final diagnosis is made by the roentgenologist and this necessitates a routine determination of the length of the esophagus in all gastro-enteric examinations. The occurrence of ulcer in the thoracic stomach cannot always be demonstrated by roentgenograms.

Archives of Ophthalmology, Chicago

11 591 750 (April) 1934

- Surgical Treatment for Iridocyclitis. A. Fuchs. Vienna, Austria —p. 591.
- Seborrheal Blepharitis. Note on the Value of Roentgen Therapy in Its Chronic Stages. S. S. Greenbaum. Philadelphia —p. 604.
- Newer Forms of Bifocals. A. Cowan. Philadelphia —p. 611.
- Orbital Lymphoma in Chronic Lymphatic Leukemia. Report of Case. M. Cohen. New York —p. 617.
- Siderosis Bulbi (Xenogenous). J. Levine. New York —p. 625.
- Ocular and Oral Pemphigus. Report of Case with Anatomic Findings in the Eyeball. R. C. Smith and E. A. Myers. Superior, Wis., and H. D. Lamb. St. Louis —p. 635.
- Neurofibroma of the Choroid. D. Freeman. Baltimore —p. 641.
- Treatment of Unilateral Cataract with Contact Glasses. M. F. Little. Hartford, Conn. —p. 646.
- Paralysis of Divergence. W. H. Stokes. Omaha —p. 651.
- Ocular Changes Accompanying Disturbances of Calcium Phosphorus Metabolism. Preliminary Study. S. N. Blackberg and A. A. Knapp. New York —p. 665.
- Popular Medieval Ophthalmology. J. J. Walsh. New York —p. 670.
- Ocular Complications of Erysipelas. J. Bellows. Chicago —p. 678.

Archives of Otolaryngology, Chicago

19 415 536 (April) 1934

- Persistence of Apparent Sinus Pain After Multiple Operations. S. R. Skillern Jr. Philadelphia —p. 415.
- Prophylactic Mediastinotomy for Perforating Esophageal Foreign Bodies. Report of Three Unusual Cases. F. L. Lederer and L. Z. Fishman. Chicago —p. 426.
- Infection of the Petrous Bone. Rationale of Treatment and Report of a Case. E. A. Sunde. Brooklyn —p. 436.
- Local Amyloid Disease of the Upper Air Passages. Report of Five Cases. J. O. Beavis. Ann Arbor, Mich. —p. 439.
- *Fatal Complications of Otitis Media with Particular Reference to the Intracranial Lesions in a Series of Ten Thousand Autopsies. C. B. Courville and J. M. Nielsen. Los Angeles —p. 451.
- *Periarteritis Nodosa of the Temporal Bone. J. G. Druss and J. L. Maybaum. New York —p. 502.
- Diverticula of the Thoracic Portion of the Esophagus. Report of Forty Two Cases. P. P. Vinson. Rochester, Minn. —p. 508.

Fatal Complications of Otitis Media—Courville and Nielsen reviewed the protocols of 10,000 necropsies with special attention to the intracranial complications of otitis media and mastoiditis. The highest death rate occurs in the first year of life, when intracranial complications are inclined to be less common. In some cases otitis media is an incidental finding and plays no part in the fatal issue of the case (terminal otitis). In infections of the petrous pyramid, extradural abscess and meningitis are the most common. Thrombosis of the cavernous sinus and abscess of the temporal lobe are extremely rare, and unequivocal cases have not yet been described in the literature. The authors discuss dural infections, subdural abscess, dural fistula, the incidence, pathogenesis and consequent complications of thrombosis of the venous channels, the distribution of metastatic foci secondary to thrombosis of the lateral sinus, the chronic forms of arthritis and their role in the formation of arachnoid cysts, primary and secondary types of meningitis, otitis as a cause of encephalic abscess and retrograde extension of infection by way of the venous channels as a cause of abscesses of the parietal and frontal lobes.

Periarteritis Nodosa of the Temporal Bone—Druss and Maybaum describe the clinical features and histologic alteration in the temporal bone in a case of periarteritis nodosa. The smaller arterioles in the bone marrow of the petrous pyramid showed changes characteristic of periarteritis nodosa in the acute stages. Some showed subintimal proliferation with narrowing of the lumens, fibrinoid necrosis of the media and adventitia and perivascular cellular infiltration, mainly of the polymorphonuclear variety. In one of the vessels in the region

of the subarcuate fossa there was a definite aneurysmal dilatation as a result of a hyaline degeneration and necrosis of the media, intimal proliferation and perivascular infiltration were also noted. Certain of the periosteal vessels, particularly about the nerves and ganglions, showed the alterations usually found in arteriosclerosis, such as thickening of the intima and reduplication of the internal elastica. Three patches of otosclerosis were noted in the labyrinthine capsule, one in the region of the oval window, the site of predilection, another in the modiolus and a third in the promontory at the outer insertion of the secondary tympanic membrane. A careful study of the blood vessels in these otosclerotic areas was made, but the characteristic changes found in periarteritis nodosa were not seen. Except for the changes that have been noted, the middle ear and labyrinth were essentially normal.

Archives of Pathology, Chicago

17 453 606 (April) 1934

- Experimental Atherosclerosis in the Rabbit Compared with Human (Coronary) Atherosclerosis T Leary Boston—p 453
- *Abscesses of the Liver Caused by Bacteroides Funduliformis. Report of Two Cases D C Beaver J C Henthorne and J W Macy Rochester Minn—p 493
- *Isolation of Ether from Human Tissues A O Gettler and H Siegel New York—p 510
- Histologic Changes in the Knee Joint with Advancing Age Relation to Degenerative Arthritis F Parker Jr C S Keefer W K Myers and R L Irwin Boston—p 516
- Subcutaneous Tuberculous Lesion of Cattle Morphologic Study W H Feldman Rochester Minn—p 533

Abscesses of the Liver Caused by Bacteroides Funduliformis—Beaver and his associates present two cases of hepatic abscess caused by Bacteroides funduliformis. The genus Bacteroides (Bergey) comprises certain anaerobic nonsporulating bacilli. It is probable that infections of this type are not rare and that the large intestine and the genito-urinary tract of the male seem particularly vulnerable to primary infection. In the colon infection appears to originate principally in infected carcinomas, although the focus may be cryptic. From the primary focus, direct hematogenous dissemination may occur to the liver or the lungs, with clinically demonstrable bacteremia frequently supervening. Such infections are extremely serious and offer a grave prognosis. Their clinical syndrome is typical of an extreme degree of toxicity, with a high, remittent type of fever, chills, perspiration and weakness progressing to exhaustion. The physical signs vary with the localizations of the infection. The lesions of the liver, as the authors have observed them, have been essentially chronic granulomatous abscesses, frequently multilocular and spreading with destructive changes, necrosis of tissue and exudation. In the lungs, the lesions have appeared as small septic infarcts, patches of bronchopneumonia or small abscesses. Firm, solid, grayish or hemorrhagic nodules were found most often. The gravest areas resembled beginning caseation necrosis. Other investigators have described large putrid or gangrenous abscesses of the lungs with empyema associated with organisms of this group. Such lesions are apparently primarily pulmonary, usually the result of an aspirated infection. Guinea-pigs and rabbits are susceptible to experimental inoculation with Bacteroides funduliformis. The lesions produced were abscesses, similar in appearance to those occurring in man.

Isolation of Ether from Human Tissues—Gettler and Siegel outline a micromethod for isolating ethyl ether from human tissues. The organs removed at necropsy are placed quickly in glass jars, sealed tightly and put in a refrigerator. When the material is ice cold, about 600 Gm is ground up quickly, and 500 Gm of the ground mass is mixed with 200 cc of ice cold water and placed in a 2 liter flask. An additional 300 cc of water and 1 cc of liquid petrolatum are added. The mixture is distilled with steam until 200 cc of distillate is collected. A long well cooled condenser, the tip of which has been bent to resemble an adapter, is used. The bent tip should dip into 25 cc of ice water contained in the receiving flask, the latter being at all times entirely surrounded by ice. The entire 200 cc of distillate is poured through the safety tube into a modified rectification flask and 1 Gm of granulated zinc is added. The receiving tube is surrounded by a bath of solid carbon dioxide in acetone and should contain 0.15 cc of water.

so that the ether is collected over water as a separate layer. The rectification flask is heated, an asbestos centered wire gauze and a microburner being used. As soon as the solution begins to boil, the flame is regulated so that the liquid boils gently in the bulb for about fifteen minutes. During this time the steam must not be permitted to rise beyond half the height of the liquid. Then the flame is increased gradually so that the steam is made to rise in one minute until it passes the bend. The ether, if present, will be found unfrozen in the calibrated receiver. When the rectification is completed, the receiving tube is removed from the acetone bath, lightly stoppered and allowed to stand at room temperature until any ice in the calibrated receiving tube melts. The volume of recovered ether (upper layer) is read immediately. The authors isolated and measured ether in amounts as small as 0.06 cc in 500 Gm of tissue. In tissues containing from 0.3 to 0.9 cc of ether in 500 Gm, the recovery is 83.6 per cent (average). The recovery of ether is fairly constant and can be used for estimating the amount originally present in the tissues. Determinations of the microboiling point served to identify the isolated liquid as ethyl ether.

Archives of Surgery, Chicago

28 617-808 (April) 1934

- Congenital Clefts of the Face and Jaws Survey of Three Hundred and Fifty Cases in Which Operation Was Performed H P Ritchie St Paul—p 617
- *Anatomic Basis for the Study of Splanchnoptosis Paths of Visceral Descent Preliminary Report Agnes C Viator Boston—p 659
- Influence of Congestion on Tuberculosis O R Hyndman and H Landt Iowa City—p 684
- Surface Temperature Test in Vascular Occlusion and Vasomotor Spasm Its Value in Relation to Sympathectomy R C Shaw Preston England—p 706
- Obstructive Jaundice Due to Diffuse Contracture of the Extrahepatic Bile Ducts H K Ransom and K D Malcolm, Ann Arbor Mich—p 713
- Tumors of the Salivary Glands J D Martin and D C Elkin Atlanta Ga—p 727
- *Experimental Bone Transplantation with Especial Reference to the Effect of Decalcification R K Chormley and W G Stuck Rochester Minn—p 742
- Cholecystitis Due to Bacillus Aerogenes Capsulatus Report of Case with Nine Cases from the Literature I Graef and M Sturtevant New York—p 771
- Acute Appendicitis Second Report of One Thousand Consecutive Cases E P Quinn Bismarck N D—p 782
- A Review of Urologic Surgery A J Scholl Los Angeles E S Judd Rochester Minn J Verbrugge Antwerp Belgium A B Hepler Seattle R Gutierrez New York and V J O'Connor Chicago—p 786

Anatomic Basis for Splanchnoptosis—According to Viator the most easily displaceable viscera are the kidneys, the stomach, the redundant portions of the colon, the liver, the lungs and the heart. When the kidneys and suprarenals are projected forward, they enter the lumbo-iliac inclined planes which furnish direct paths for descent. As the kidneys descend, they separate from the suprarenals. The intervisceral attachments elongate and make traction on the suprarenals. The latter elongate but remain fixed. Traction is also made on all the structures of the hili. The distending stomach normally finds a descending oblique plane which guides it downward, forward and to the right. The fundus remains under the left vault of the diaphragm. The movable part of the first portion of the duodenum shares in the movements of the antrum, and it may undergo traction, pressure, kinking, torsion or obstruction. The spleen tends to descend with the stomach and elongate its lowest portion becoming tongue shaped and extending downward and forward on the splenic flexure. The transverse colon is always more or less redundant, forming one or more loops. When the loops are unfolded, they tend to descend to exert traction on their attachments and to cause kinking and stasis at their angles. The liver remains under the right vault of the diaphragm. It is subject to forward backward and lateral rotations, however within the limits of its attachments. When the traction exceeds the limitations, the tissues of the attachments yield and the liver becomes wholly or partially elongated or otherwise modified in shape. The lungs always remain attached at their hili but descend by elongation or by other changes in shape, as the thorax shares in the changes in body form and in the altered action of the diaphragm due to ptosis. The heart, owing to the pericardium and the other firm mediastinal tissues, remains attached to the structures at

the base. However, it tends to rotate downward and from left to right toward the median line, the apex leading. The portion of the heart to the right of the median line also moves medially.

Experimental Bone Transplantation and Effect of Decalcification—Ghormley and Stuck studied the rate and the type of healing of grafts taken from bone of different regions and structures and the effect on the rate and the type of healing that could be produced by "decalcification" of experimental animals. Their experiments revealed that periosteal transplants in old animals do not produce new bone. Cortical transplants do not completely die but unite slowly with the bone of the host and decreased calcification is seen roentgenologically at the end of three months. Cancellous bone from the humerus or the tibia unites more rapidly and firmly than cortical bone. It gives roentgenographic evidence of increased calcification at the end of three months. Animals placed on a decalcifying diet until the time of the transplantation gave evidence of greater active production of new bone round both the cortical and the cancellous transplants.

Arkansas Medical Society Journal, Fort Smith

30 245 264 (May) 1934

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Observations on Pellagra L H McDaniel, Tyrone—p. 251
Psychosis Due to Capidine Addiction S T Rucker, Memphis, Tenn.—p. 256

Bulletin of Neurol Inst of New York, Baltimore

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Diagnosis and Localization of Tumors of the Spinal Cord by Means of Measurements Made on X-Ray Films of Vertebrae and Correlation of Clinical and X-Ray Findings C A Elsberg and C G Dyke New York—p. 359
Symptoms and Diagnosis of Extradural Cysts C A Elsberg C G Dyke and E D Brewer New York—p. 395
Demonstration of Normal Cerebral Structures by Means of Encephalography IV Subarachnoid Cisterns and Their Contents C G Dyke and L M Davidoff New York—p. 418
Intermittent Obstruction of the Foramen of Monro by Neuro Epithelial Cysts of the Third Ventricle Symptoms Diagnosis and Treatment B Stookey New York—p. 446
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A Note on the Occurrence and Significance of Air in the Subdural Space After Encephalography F Cramer New York—p. 506
Nitrite of Amyl Test for Differentiation of Tumors of the Brain from Vascular and Chronic Inflammatory Lesions Preliminary Report C C Hurre New York—p. 513
Etiology of Headache I Headache Produced by Injection of Air for Encephalography C A Elsberg New York and R W Southerland Brentwood, N.Y.—p. 519
Averin as a Basal Anesthetic for Craniotomy I M Davidoff New York—p. 544
Parasagittal Gliomas Report of Four Cases C B Masson New York—p. 546

Localization of Tumors of the Spinal Cord—Elsberg and Dyke examined the roentgenograms of 100 normal spines and the roentgenograms of eighty-six patients in whom the diagnosis of intradural or extradural tumors of the spinal cord had been verified. In addition the roentgenograms of a number of patients with intramedullary growths, syringomyelia and other intramedullary diseases which had produced a localized enlargement of the spinal cord and a series of patients in whom at operation, adhesions of the arachnoid were found as the only grossly visible lesion were studied. Measurements were made of the size of the vertebral canal in fractures of the vertebrae. The study showed that in tumors of the spinal cord there is often an increase in the size of the vertebral canal at the level of the growth, which can be recognized only by measurements of the space between the pedicles. This enlargement of the canal was found in 42 per cent of sixteen cases and was especially frequent in tumors between the tenth thoracic and the sixth lumbar vertebra. The cases of extradural tumor showed the increase in the size of the canal in 18 per cent of growths in the cervical and upper thoracic regions in 12 per cent of growths between the fourth and the ninth thoracic vertebra and in 60 per cent of growths below the level of the ninth thoracic vertebra. The enlargement of the vertebral canal occurred in fourteen of nineteen cases of extradural tumor. In nine of these, other changes were recognized in the bone which made diagnosis possible. In five the nature and location of the lesion could be demonstrated only

by the measurements of the interpedicular spaces of the vertebrae. In the midthoracic region, a pathologic increase in the size of the vertebral canal was much more frequent in the cases in which the expanding lesion was extradural. At the level of the tumor the inner borders of the vertebral pedicles were often flat and sometimes concave. This was of diagnostic significance only when associated with a measurable increase above the normal in the size of the interpedicular space.

Symptoms and Diagnosis of Extradural Cysts—According to Elsberg and his associates the characteristic syndrome of compression of the spinal cord by an extradural cyst consists of the following. The individual is an adolescent presenting the history and symptoms of a progressive spastic paraplegia. Pain is absent or is not a prominent symptom. The objective disturbances of sensibility are slight and their upper level is in the midthoracic region, usually at the sixth or seventh thoracic dermatome. The manometric tests demonstrate a subarachnoid block with the characteristic spinal fluid changes of cord compression. Measurements on anteroposterior roentgenograms show that the interpedicular spaces of three or more vertebrae somewhere between the fourth and the tenth thoracic vertebra are enlarged. The pedicles of the affected vertebrae, especially those of the sixth, seventh and eighth, are narrowed and atrophic. This combination of symptoms and signs with the characteristic changes in the bony part of the spine justify the diagnosis of large extradural cyst.

Amyl Nitrite Test for the Differentiation of Tumors—Hare used the amyl nitrite test in eighteen cases of tumor of the brain, in twenty-two cases of vascular lesions, in eighteen cases of chronic inflammatory disease and in approximately fifty persons who showed no evidence of organic disease of the brain. In sixteen of the cases of tumor of the brain the rise of the fluid in the manometer varied between 330 and 520 mm. In several cases the spinal fluid was forced out of the top of the manometer tube. In two cases the level of the fluid rose to 260 and 270 mm. Necropsy several months later revealed cerebral tumors with extensive cerebral softening in both cases. In nineteen cases of cerebral arteriosclerosis or marked vascular lesions, the inhalation of amyl nitrite by the patient caused a rise of spinal pressure to between 130 and 315 mm. In three patients, two of whom were suffering from a high degree of hypertension the rise was to 455, 400 and 360 mm, respectively. In sixteen of the patients presenting inflammatory lesions, mostly cases of chronic encephalitis or syphilis, the rise varied between 85 and 320 mm. In two cases of arterial hypertension superimposed on the inflammatory disease the fluid mounted to a level of 360 and 400 mm, respectively. The pressure readings for the majority of the control group were about equally distributed slightly above and below the 320 mm level. From these results the author concludes that the amyl nitrite test is of value as a diagnostic aid in differentiating between expanding lesions and inflammatory or vascular diseases of the brain and that it is not of value as a method of differential diagnosis between pathologic and normal conditions in the brain.

California and Western Medicine, San Francisco

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Practical Observations Based on Eight Hundred Thyroidectomies A B Cooke, Los Angeles—p. 217
Malpractice As an Attorney Sees It R E Swing, San Bernardino—p. 221
Subphrenic Abscess H B Stephens and E Rouff, San Francisco—p. 224
Chronic Sinus Infection New Method for Its Treatment F C Krichev, Oakland—p. 228
Minor Back Injuries T C P Gocher, San Francisco—p. 234
Anorectal Fistulas Advances in the Treatment M S Woolf, San Francisco—p. 238
Injuries of the Intra Abdominal Hollow Viscera E Butler, San Francisco—p. 242
Compulsory Health Insurance F L Hoffman, Philadelphia—p. 245

Chronic Sinus Infection—Kratav employed topical and general administrations of antigenous endo antigens prepared according to the method of Krueger, in the treatment of chronic and subacute sinus infections. This procedure apparently results in an increased ability of the host's tissues to handle the infecting agent. The tissue response is largely phagocytic in nature. It is not possible to employ a fixed scale of dosage. Individual

variations in tolerance are considerable, although the author did not observe untoward reactions in his series of forty-five cases. His analysis of the end results in the forty-five cases treated by this method shows satisfactory improvement in 95 per cent and marked improvement or cure in 66 per cent. He has started treatment with the weaker solution, administering the antigen hypodermically three times a week, the first dose being 0.1 cc intradermally and 0.1 cc subcutaneously. It has been found more satisfactory to make these injections in two separate areas, 2 or 3 inches apart. The intradermal dose remains the same throughout the treatment, while the subcutaneous dose is raised as rapidly as possible to the maximum, usually from 0.5 to 0.8 cc, four or five maximal doses of the weaker solution being given. Care should be exercised always to remain just below the reaction dosage. Reactions are rarely encountered and are never severe but the author feels that treatment is more satisfactory when they are avoided. The stronger solution is used now and the same procedure is followed. The entire course requires from ten to fourteen weeks for completion.

Canadian Public Health Journal, Toronto

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- A Five Year Survey of Maternal Mortality in Manitoba 1928 1932 F W Jackson Winnipeg Manit R D Defries and A H Sellers Toronto—p 103
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Florida Medical Association Journal, Jacksonville

20 429 488 (April) 1934

- Hypothyroidism in the Adolescent Girl with Particular Reference to Social Delinquents T Z Cason Jacksonville—p 437
A State Health Department's Service to the Medical Profession II Hanson Jacksonville—p 442
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Illinois Medical Journal, Chicago

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- Peridural Anesthesia in Abdominal Surgery J R Harger Chicago—p 317
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Some of the Essentials in the Diagnosis and Treatment of Urgent Acute Appendicitis E S Murphy Dixon—p 325
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Indiana State Medical Assn. Journal, Indianapolis

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- The Pediatrician and the Otolaryngologist J C Carter Indianapolis—p 143
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Iowa State Medical Society Journal, Des Moines

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- Intrathoracic Tumors Report of Five Cases and Review of Literature W D Runyon and M C Wheelock Sioux City—p 184
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Hernia of Jejunum Through an Aperture in the Mesentery of the Small Intestine S W Barnett Cedar Falls—p 202

Johns Hopkins Hospital Bulletin, Baltimore

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- Studies on the Adrenal IV The Oral Administration of the Adrenal Cortical Hormone and the Use of Fresh Glands Therapeutically A Grollman and W M Firor Baltimore—p 216
Sino Auricular Block with Ventricular Escape F W Light Jr Reading Pa—p 225
*Relation of Allergy to Immunity in Tuberculosis H Rothschild J S Friedenwald and C Bernstein Baltimore—p 232
Study of Character and Degree of Protection Afforded by the Immune State Independently of the Leukocytes A R Rich and Clara M McKee Baltimore—p 277

Relation of Allergy to Immunity in Tuberculosis —
Rothschild and his associates obtained complete desensitization to tubercle bacilli and to tuberculin in tuberculous guinea pigs by a prolonged and properly graded course of subcutaneous injections of Koch's old tuberculum. The desensitizing power of purified tuberculoprotein is less in proportion to its power to produce allergic reactions than is that of Koch's old tuberculum. Long continued daily subcutaneous injections of massive doses of concentrated glycerin broth in some instances desensitize tuberculous guinea-pigs to tuberculin. This nonspecific desensitization is not due to the glycerin contained in the broth. It is not known whether this nonspecific desensitization is free from the danger of perifocal reaction. Infection in desensitized immune animals does not introduce into the histologic picture of tuberculous lesions features that are novel to the pathologic condition of human tuberculosis. In these respects the reaction of the desensitized animals was equal or superior to that of the nondesensitized controls. So far as the inhibition of spread of lesions from the site of infection to the viscera may be used as evidence of local fixation of bacilli the desensitized, nonallergic immunes were able to resist the spread of infection as successfully as the allergic immunes.

Journal of Biological Chemistry, Baltimore

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Journal of Comparative Neurology, Philadelphia

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- Frequency of Atypical Neurons in Spinal Ganglions Under Normal Conditions and After Lesions of the Roots Nerves or Ganglions R W Barris, Chicago—p 325

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- *The Filtering Capacity of Lymph Nodes C K Drinker Madeleine E Field and H K Ward Boston—p 393
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- *Studies on Typhus Fever XII Passive Immunization of Guinea Pigs Infected with European Virus with Serum of a Horse Treated with Killed Rickettsiae of the Mexican Type H Zinsser and M Ruiz Castaneda Boston—p 471
- Use of Adsorbents in Immunizations with Haptens J Jacobs New York—p 479
- Viable Leishmania Donovani in Nasal and Oral Secretions of Patients withkala Azar and Bearing of This Finding on the Transmission of the Disease C E Forkner and Lily S Zia Peiping China—p 491
- Lymphomatosis Myelomatosis and Endothelioma of Chickens Caused by a Filterable Agent II Morphologic Characteristics of the Endotheliomas Caused by This Agent J Furb New York—p 501
- Quantitative Studies on Precipitin Reaction Role of Multiple Reactive Groups in Antigen Antibody Union as Illustrated by an Instance of Cross Precipitation M Heidelberger and F E Kendall New York—p 519

Filtering Capacity of Lymph Nodes—Drinker and his associates, using a series of anesthetized dogs, perfused the popliteal lymph node alone and the popliteal and iliac lymph nodes with solutions containing dog erythrocytes and streptococci. The perfusions have been carried out under conditions of lymph flow and pressure within the limits of those occurring in the actively moving dog, or after a severe degree of inflammatory swelling has developed. The study indicates that normal lymph nodes possess a high degree of filtering efficiency—an efficiency so great as to make it fairly certain that in a part kept at rest early in an infection practically no microorganisms would escape the nodes in the line of drainage.

Studies on Typhus Fever—The experiments of Zinsser and Ruiz Castaneda demonstrate that under suitable experimental conditions guinea-pigs can be protected from infection with the European type of virus by the serum of a horse immunized with killed rickettsiae of the Mexican type. These results seem to them to bear on the differences of opinion that exist concerning the closeness of the relation between the two types of virus. It is their opinion that the differences are much less fundamental than they have been supposed to be and that it is not impossible that they depend largely on minor modifications (adaptations, possibly reversible) sustained in the course of the passage of the Mexican, so-called New World virus through rats and rat fleas. The results of these experiments show beyond question that the serum of a horse treated entirely with Mexican rickettsiae acquires a Weil-Felix reaction, agglutinates the European louse vaccines of Weil and protects against the European virus. The results support the view that closely relates these two infectious agents. These results are of importance with regard to the development of a protective serum for prophylactic and therapeutic application to the European disease, because in the

past, it has not been possible to obtain, with the European virus anything like the large accumulations of rickettsiae that the authors have been able to produce with the Mexican strain by their roentgen method.

Journal of Nutrition, Philadelphia

7 367 480 (April 10) 1934

- Effect of Heat on Biologic Value of Meat Protein Agnes Fay Morgan and Grace E Kern Berkeley, Calif—p 367
- *Influence of Roughage on Protein Digestibility W H Adolph and M Y Wu Peiping China—p 381
- Biologic Availability of Soybean Carbohydrate W H Adolph and H C Kao Peiping China—p 395
- Effect of Thyroidectomy and Thyroid Feeding on Milk Secretion and Milk Fat Production of Cows W R Graham Jr, Guelph Ont—p 407
- Comparative Study of Specific Dynamic Action of the Amino-Acids Alanine and Glycine C M Wilhelm Omaha—p 431
- Neurologic Disturbances in Rats Reared on Diets Deficient in Vitamin A S B D Aberle New Haven Conn—p 445
- Relation Between the Physical Character of Food and Dental Caries in Albino Rats C A Lilly and Leona Wiley Ann Arbor Mich—p 463
- Analyses of Meats V A Toseani V R Rupp and W S McClellan New York—p 473

Influence of Roughage on Protein Digestibility—Adolph and Wu fed rats different amounts of filter paper, china clay and rice chaff with a cooked rice diet. The results indicate that neither varying the total amount of food nor adding large amounts of these bulk materials produces any significant effect on the degree of digestibility of the food protein. China clay was fed in amounts up to 80 per cent of the total intake. It would appear that great bulk in the alimentary canal does not interfere with the action of proteolytic enzymes. Agar-agar caused a rapid passage of the food material through the alimentary tract and showed distinctly lowered values for protein digestibility. An experiment with two human subjects in which cabbage fiber was fed with a meat-rice diet showed a slight tendency toward a lowered degree of protein digestibility only when the fiber was ingested in an abnormally large amount. The authors believe that lowered values for nitrogen digestibility on a given diet result only when the food material passes through the alimentary tract with unusual rapidity.

Journal of Pharmacology & Exper Therap, Baltimore

50 347 450 (April) 1934

- Sodium Salt of C C Cyclohexenylmethyl N Methyl Barbituric Acid (Eupan) Anesthesia in Laboratory Animals W P Kennedy Edinburgh Scotland—p 347
- Circulatory Responses to Acetylcholine in Normal Dogs and in Dogs with Experimental Aortic Regurgitation I Brotman G Brewer and W F Hamilton Washington D C—p 354
- Action of Mescaline and Some Related Compounds G S Grace Oxford England—p 359
- Comparative Absorption of Certain Salicylate Esters by the Human Skin E W Brown and W O Scott Edgewood Md—p 373
- Action of the Enzymes of the Venom of Crotalus Adamanteus on the Proteins of Blood and Milk E E Dunn Cincinnati—p 386
- Separation of the Enzymes and Toxic Principles of the Venom of Crotalus Adamanteus E E Dunn Cincinnati—p 393
- Physiologic Action of Tolyldiamine and Its Relation to Experimental Jaundice H J Wolff Rochester Minn—p 407
- Observations Regarding the Mechanism of Gastrointestinal Inhibition by Barbituric Acid Compounds J P Quigley and K R Phelps Cleveland—p 420
- *Correlation of Visceral and Somatic Activity Following Administration of Hypnotics (A) Barbitol Compounds and (B) Tribrom Ethanol (Avertin Crystals and Fluid) J P Quigley O W Barlow and C K Himmelsbach Cleveland—p 425

Visceral and Somatic Activity Following Use of Hypnotics—Quigley and his associates studied the effect of a range of doses of pentobarbital, amytal and barbital administered intravenously on the tone and motility of the stomach, ileum and colon by the balloon method in trained, unanesthetized dogs. The action of barbital has been checked by direct observations using the paraffin bath method. The visceral response has been correlated with the hypnotic action of these compounds. Motor activity of the intestine was depressed in a qualitatively similar manner by each of the barbitals. Maximal depression frequently developed most rapidly in the colon and last in the stomach, complete recovery usually occurred early in the ileum and late in the stomach. With doses of the barbiturates producing equal degrees of hypnosis gastro-intestinal depression was longest with barbital, intermediate with amytal and shortest

with pentobarbital. Excitation from barbitol and pentobarbital was more frequent with small than with moderate dosages. The maximal dose of amytal produced marked restlessness. The frequency with which excitement or restlessness was observed was greatest with amytal and least with pentobarbital. Dosages of tribrom-ethanol having a slight hypnotic action markedly depressed the gastro-intestinal tract (order of depression, stomach, ileum, colon), but the visceral effects persisted only from 0.6 to 0.8 time as long as the period of hypnosis. The somatic depression produced by tribrom-ethanol fluid exceeded that from tribrom-ethanol crystals, in that the maximal effects of the fluid developed somewhat earlier, were of greater degree and persisted from one and one-half to two times as long as with the crystals. This indicated that the rate of absorption of an aqueous solution of tribrom-ethanol fluid from the dog's colon equaled or exceeded that of a similar solution of the crystals. The amylene hydrate contained in the fluid may have produced a moderate irritation of the colon.

Journal of Urology, Baltimore

31 423 606 (April) 1934

- Cancer of the Bladder. Study Based on Nine Hundred and Two Epithelial Tumors of the Bladder in the Carcinoma Registry of the American Urological Association. The Committee on Carcinoma Registry. H. J. Kretschmer, Chicago, Chairman. B. S. Branniger, New York. W. T. Bransch, Rochester. Minn. A. L. Dean, R. S. Ferguson, and E. J. Keyes, New York, and G. G. Smith, Boston—p. 423.
- Diverticulum of the Ureter. R. L. Davis, San Antonio, Texas—p. 473.
- Unusually Large Renal Calculus and Ureteral Calculi with Marked Calcium Deposits in Other Organs. C. H. Lwell, Madison, Wis.—p. 487.
- Clinical and Pathologic Study of Congenital Obstruction of the Urethra. Report of Four Cases. O. S. Lowmley and T. J. Kirwin, New York—p. 497.
- Carcinoma of the Bladder. Review of Two Hundred and Seven Cases. Report of Two Personal Cases. W. C. Stirling and C. A. Hopkins, Washington, D. C.—p. 517.
- *Thrombosis of the Renal Veins. A. B. Hepler, Seattle—p. 527.
- Gas Bacillus Infections in Urology. A. E. Goldstein and B. S. Abes, Baltimore—p. 547.
- Typhoid Pyonephrosis. Its Urologic and Public Health Significance. C. B. Higgins and N. W. Roome, Chicago—p. 587.

Thrombosis of the Renal Veins.—Hepler reports two cases of thrombosis of the renal veins. One represents a postscarlatinal thrombosis of the vena cava that evidently existed for some time with the establishment of a collateral circulation. Visceral involvement was late and started as a hemorrhagic infarction of the left kidney from a secondary thrombus in the left renal vein. Recovery after removal of the left kidney was prevented by a secondary thrombosis of the right renal vein ten days later. However, the marked improvement following nephrectomy indicates the feasibility of surgical intervention even in the presence of extensive extrarenal thromboses if the condition is unilateral, as it is in half of the reported cases, and the infarction is not overshadowed by the primary or associated disease. The fact that this lesion presents a definite syndrome consisting of sudden onset of hematuria, lumbar pain and tenderness and rapid, progressive enlargement of the kidney, should ensure its more frequent clinical recognition. With this presumptive evidence the additional cystoscopic observations of unilateral bleeding, reduced or absent function and an enlarged outline of the kidney with no shadows on excretory urography, are diagnostic. The condition is not uncommon in infants, in whom it is usually primary and associated with severe enteritis overshadowing the infarction, as it did in the author's other case, and precluding the possibility of surgical intervention. In these cases at the time of total infarction of one kidney there is frequently a beginning capillary thrombosis on the opposite side. In older children and adults the thrombosis is usually secondary and unilateral. Although practically all thrombi arise on the basis of infection, suppurative thrombophlebitis is rare in infants. It usually occurs between the ages of 25 and 50 years and is secondary to severe suppurative lesions of the kidney, either hematogenous or ascending. In the surgical treatment of pyogenic infections of the kidney, the possibility of an infected thrombus in the renal vein as a continued source of blood stream infection must be considered.

Maine Medical Journal, Portland

25 63 84 (April) 1934

- Significance of Childhood Type of Tuberculosis. E. A. Greco, Portland—p. 68.
- Undulant Fever. A. B. Libby, Gardiner—p. 72.

New England Journal of Medicine, Boston

210 781 830 (April 12) 1934

- Hernia of the Diaphragm. Esophageal Type in Adults. P. E. Truesdale, Fall River, Mass.—p. 781.
- Inherited Ectodermal Dysplasia of the Anhidrotic Type. Case Report. J. M. Hiebert, Nutley, N. J., and J. Garland, Boston—p. 784.
- Hydronephrosis Due to Subepithelial Fibrosis. Treatment by an Adaptation of Rammstedt's Technique. S. N. Vose, Boston—p. 786.
- Local Anesthesia in Obstetrics. C. T. O'Connor, Boston—p. 788.
- Rigid Flatfoot. Remodeling. F. J. Cotton and G. M. Morrison, Boston—p. 792.
- Separate Ossification Center for the Internal Malleolus. A. P. Aitken, Boston—p. 793.
- Salivary Glands. Its Long Continued Use in Cardiac Insufficiency with Latent Edema. J. M. Dixon, Stockbridge, Mass.—p. 800.
- History of Lead Poisoning in Boston. Note. R. Fitz, Boston—p. 807.
- Intracranial Lesions. G. Horrax, Boston—p. 806.

210 831 882 (April 19) 1934

- Cancer of the Breast. End Results. Massachusetts General Hospital. 1921, 1922 and 1923. R. B. Greenough and G. W. Taylor, Boston—p. 831.
- Id. End Results. Massachusetts General Hospital. 1924, 1925 and 1926. C. C. Simmons, C. W. Taylor and R. H. Wallace, Boston—p. 836.
- Observations on the Problem of Maternal Mortality. E. S. Brackett, Providence, R. I.—p. 845.
- Health Insurance in England. H. B. Brackenbury, London, England—p. 851.
- *Snapping Thumb in Childhood. Report of Eight Cases. H. W. Hudson, Jr., Boston—p. 854.
- Strangulated Inguinal Hernia with Unusual Complications in an Infant of Five Weeks. Report of Case. J. I. Golden, Medford, Mass., and H. H. Hamilton, Malden, Mass.—p. 857.
- The Mechanism of a Sprained Ankle. A. P. Aitken, Boston—p. 858.
- A Comfortable Breast Swathe. E. M. Dalrymple, Boston—p. 859.
- The Heel Shifting Operation for Flat Feet and Others. F. J. Cotton, Boston—p. 860.

Snapping Thumb in Childhood.—In contradistinction to the usual statements regarding age, sex and cause of the snapping thumb in childhood, Hudson offers eight cases (two bilateral) seen within two years all occurring at the age of 3 or earlier, with no distinctive sex incidence. The same etiologic factor, localized tendon enlargement leading to disproporition between the tendon and its sheath, was present and the flexor pollicis longus was affected in each case. In only one instance was there a definite history of trauma and in no instance had the fingers or hand been used in an abnormal fashion. In one case a familial incidence was recorded. Six of the eight cases, including both the bilateral instances, were proved by operation.

New Orleans Medical and Surgical Journal

86 651 714 (April) 1934

- Transurethral Resection of Prostatic Bars, Hypertrophies and Cancer. E. G. Ballenger, O. T. Elder and H. P. McDonald, Atlanta, Ga.—p. 651.
- Treatment of Menstrual Disorders by Hormone Therapy. Report of Thirty Cases. J. T. Witherspoon, New Orleans—p. 659.
- Therapeutic Paradox. Case Report. M. K. King, Savannah, Ga.—p. 664.
- Trees for Street Ornamentation. N. F. Thiberge, New Orleans—p. 666.
- Law of Negligence and Malpractice as Applied to Physicians. T. P. Brady, Brookhaven, Miss.—p. 670.
- Hypothyroidism. W. H. Brandon, Clarksdale, Miss.—p. 675.

Northwest Medicine, Seattle

33 115 150 (April) 1934

- Sleep and Its Disorders. A. T. Mathers, Winnipeg, Manit.—p. 115.
- Diabetes Mellitus. Outline of Its Treatment. C. H. Hofrichter, Seattle—p. 119.
- *Insulin in Diabetes Mellitus. Effect of Diet on Its Dose. R. Holcomb, Portland, Ore.—p. 121.
- Dysmulinism. Glucose Tolerance Tests in Irritable Colon. J. C. Brougher, Vancouver, Wash.—p. 125.
- Surgery of the Colon and Sigmoid. C. T. Sweeney, Medford, Ore.—p. 128.
- Social Hygiene. Venereal Disease and Economics. A Ten Year Study of Their Interrelation in Washington. W. R. Jones, Seattle—p. 131.
- Active Immunization Against Diphtheria Using Commercial Alum Precipitated Toxoid. Report of Two Hundred and Fifteen Cases. F. J. Kenny, Edmonds, Wash.—p. 136.

Insulin in Diabetes Mellitus.—Holcomb determined the insulin requirements of forty-three diabetic patients on various diets. His observations reveal rather definite evidence that

the insulin requirement is dependent not alone on the grams of carbohydrate in the diet but also on the fat and all other elements entering into the metabolism. There is no constant scale of insulin dosage for a given quantity of carbohydrate in the diet. The ratio between grams of dextrose and units of insulin varies widely, not only in different patients but also in the same patient under various conditions of health and activity. The total calories of the diet more nearly determine the insulin dose than does the total dextrose, and the so-called dextrose equivalent of insulin varies too widely to be recognized as a useful constant factor in determining insulin dosage in diabetes.

Ohio State Medical Journal, Columbus

30 193 272 (April 1) 1934

- Syringomyelia and Syringobulbia E. Scott H. LeFever and Mary Oliver Columbus —p 213
Hypermetria Cytaract Its Prognosis and Treatment D. T. Vail Jr Cincinnati —p 223
Clinical Study of Gastro Enteritis with Especial Reference to Continuous Intravenous Method of Treatment R. A. Lyon J. G. Van Der Mark and A. G. Mitchell Cincinnati —p 227
Strangulated Inguinal Hernias in Infants G. O. Hedlund Painesville —p 234

Psychiatric Quarterly, Albany, N Y

S 227 434 (April) 1934

- Narcosis and Mental Function J. H. Quastel Cardiff Wales —p 227
Relation of Startle Reactions to the Cardiac Cycle C. Landis and T. W. Forbes New York —p 235
Psychogenic and Constitutional Factors in Homosexuality Their Relation to Personality Disorders G. W. Henry New York —p 243
Folie à Deux Report of Several Cases W. R. Webster Marcy N Y —p 265
Cerebral Metastatic Melanoma Simulating Cerebrospinal Meningitis and Encephalitis Case J. S. Grewal New York and W. E. Kelly Middletown N Y —p 276
A Cephalic Monster Report of Case of an Unusually Voluminous Meningo-Encephalocele D. T. Dubow and F. M. Kramer New York —p 286
Arm to Carotid Circulation Time in Normal and Schizophrenia Subjects H. Freeman Worcester Mass —p 290
Coexistence of Psychoses of a Different Type in the Same Individual A. Gordon Philadelphia —p 300
Mental Treatment of Stammering L. P. Clark New York —p 306
Organization of Psychiatric Clinics N. D. Black Marcy N Y —p 319
What the Community Worker Expects from the Mental Hospital Alice J. Webber Syracuse N Y —p 326
What the State Hospital Expects of the Community Social Worker Eva M. Schied Utica N Y —p 331
Hereditary and Environmental Factors in the Causation of Dementia Praecox and Manic Depressive Psychoses H. M. Pollock B. Malzberg and R. G. Fuller —p 337

Public Health Reports, Washington, D C

49 497 524 (April 20) 1934

- Heart Disease Brief Review of Etiology and Incidence and Possibilities of Preventing the Diseases Especially the Rheumatic Type R. Olsen —p 497
Annual Physical Examination Study at the Atlanta Federal Penitentiary W. F. Ossenfort —p 508

49 525 554 (April 27) 1934

- Standardization of Gas Gangrene (Perfringens) Antitoxin Ida A. Bengtson —p 525

Southwestern Medicine, Phoenix, Ariz

18 109 150 (April) 1934

- Allergy Introduction O. H. Brown Phoenix Ariz —p 109
Food Allergy Resume of Literature Personal Observations O. H. Brown Phoenix, Ariz —p 109
Some Practical Aspects of Brain Tumor Diagnosis L. Stone Topeka Kan —p 115
Childhood Tuberculosis Discussed with Especial Reference to Preventive Measures M. K. Wylder Albuquerque N M —p 120
Id Etiology and Diagnosis C. V. Barley Tucson Ariz —p 123
Id Public Health Problem J. R. Earp Santa Fe N M —p 128
Hay Fever in Central Arizona and Its Treatment with Oral Extracts E. A. Gatterdam Phoenix Ariz —p 130
Intestinal Amebiasis F. J. Milloy Phoenix Ariz —p 133
Malpresentations and Their Management D. Fournier Phoenix Ariz —p 137

Tennessee State Medical Assn Journal, Nashville

27 65 96 (March) 1934

- Birth and Death Registration in Tennessee R. H. White Nashville —p 65
Intra Ocular Hemorrhage R. S. Leach Knoxville —p 68
Hypothyroidism F. E. Marsh Chattanooga —p 76
Diet Vitamins and Teeth A. G. Jacobs Memphis —p 78

27 97 138 (April) 1934

- Spinal Cord Compression with Abstracts of Cases T. D. McKinney, Nashville —p 97
Analgesias in Pregnancy W. B. Anderson, Nashville —p 105
The Problem of Heart Disease C. S. Burwell Nashville —p 111
Nonvalvular Heart Disease W. E. Bryan Chattanooga —p 116

United States Naval Med Bulletin, Washington, D C

32 133 256 (April) 1934

- Ray Organization and Problems in the United States Navy I. W. Jacobs —p 133
Ray Observations of Pneumonia Treated with Specific Antiserums J. B. Helm D. Ferguson and H. J. Noble —p 147
Appendicitis Plea for More and Earlier Operations J. J. A. McMullin —p 152
Human Response to Immunization with Type I Pneumococcus Vaccine D. Ferguson —p 155
Botulism W. W. Hall and B. V. D. Scott —p 162
Spinal Anesthesia Physical and Physiologic Considerations J. Londres —p 171
Gravity Control Method of Giving Spinal Anesthesia R. D. Joldersma —p 175
Relief of Pain and Discomfort Following Tonsillectomy and Submucous Resection F. F. Lane —p 179
Congenital Abnormalities of the Kidney Ureter and Bladder Report of Ten Cases M. S. Mathis —p 183
Eight Years of the Kahn Test F. M. Rohow —p 189
Gunshot Wounds in Nicaragua H. V. Hughes —p 191
Extermination of Bedbugs on Board Ship R. E. Baker —p 193

Western J Surg, Obst & Gynecology, Portland, Ore

42 189 250 (April) 1934

- Exploration of the Abdomen and Appendectomy for Atypical Symptoms Results Five Years After Operation in One Hundred Cases C. W. Mayo Rochester Minn —p 189
Intrapertoneal Hernias Through Mesentery Defects Gatewood Chicago —p 191
The Acute Abdomen J. Z. Mraz and A. L. Blesh Oklahoma City —p 199
Sarcoma of the Duodenum Treated by Partial Duodenectomy C. S. Williamson Green Bay Wis —p 207
A Handy Incision in Simpler Cases of Gallbladder Surgery A. Schwytzer, St Paul —p 211
Lymphosarcoma of the Cecum in Childhood C. F. Dixon Rochester Minn —p 216
Metastatic Perinephric Abscess J. R. McVay, Kansas City Mo —p 220
Radical Operation for Carcinoma of the Penis Report of Seventy Nine Cases W. E. Leighton St Louis —p 226
Acute Hydranmios and Hydrocephalic Anophthalmic Monstrosity Report of Case S. J. Tillum, Crown Point N M —p 232
The Gorter Problem with Especial Reference to Diagnosis and Treatment A. B. Cooke and H. H. Greenway, Los Angeles —p 235

Sarcoma of the Duodenum Treated by Partial Duodenectomy—Williamson cites a case of primary sarcoma of the duodenum in which the tumor started as a fibroma of the duodenum and underwent malignant degeneration. The diagnosis of a duodenal tumor was made during the course of an exploratory laparotomy. A preliminary posterior gastro-enterostomy was performed six months later in anticipation of extirpating the tumor. A partial duodenectomy was successfully performed about eleven months after the diagnosis and the patient had an uneventful recovery. The duodenum is infrequently involved by malignant conditions, making its partial or complete resection necessary or desirable. The author believes that when such a condition exists, other factors being equal, operation should be undertaken with a reasonable hope of success, although, as in his case, it may be necessary or desirable to precede the actual attack on the duodenum by a preliminary gastro-enterostomy. The reimplantation of the common bile duct and the major pancreatic duct into the intestine either together or separately can be done with a high degree of success and has been done experimentally by Mann and his co-workers. It seems that the surgeon is justified in attempting a curative type of operation for a resectable tumor of the duodenum even though it may necessitate the reimplantation of the common bile duct, the ligation of the duct of Santorini and the reimplantation of the duct of Wirsung.

West Virginia Medical Journal, Charleston

30 145 192 (April) 1934

- Clinical Significance of Oxygen Therapy A. L. Barach New York —p 145
Soft Tissue Injuries Frequently Associated with Fractures of the Long Bones F. A. Scott Huntington —p 154
Cardiac Disease Consideration of Some of the Factors Involved in Diagnosis and Classification W. V. Wilkerson Montgomery —p 162
Uveitis W. F. Beckner Huntington —p 169
Nasal Mechanics Sobieska S. Hall and H. V. Thomas Fairmont —p 175

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Anæsthesia, Manchester

11 87 130 (April) 1934

*Postoperative Pulmonary Complications H F Griffiths —p 89
Normal Regulation of Respiration S Wright —p 110

Postoperative Pulmonary Complications — Griffiths recommends that 1 The preoperative and postoperative use of sedatives should be limited, as all sedatives tend to depress the respiratory center. 2 Larger doses of atropine than are usually employed should be prescribed to diminish excessive secretion of the bronchial mucus. The suggested dose is $\frac{1}{50}$ gram (0.0013 Gm) for adults and proportionately less for children according to the age. 3 No binder should be applied to the patient's abdomen, dressings should consist only of a roll of gauze secured by deep sutures. 4 All patients should be made to exert strong expiratory movements at frequent intervals for at least the first forty-eight hours after operation. The use of mixtures of carbon dioxide and oxygen appear to be contraindicated, because they cause strong inspiratory movements, which may result in the mucus entering deeper into the lung. Also patients, when conscious, are rendered extremely uncomfortable by the administration of these mixtures. The complications that are most frequently encountered are acute bronchitis or bronchopneumonia of varying severity, which may clear spontaneously, or obstruction of bronchioles by tenacious mucus may cause collapse of part of one or both lungs. Treatment should be directed toward the expulsion of the mucus by coughing, rather than to hyperventilation by mixtures of carbon dioxide and oxygen.

British Journal of Dermatology and Syphilis, London

46 113 160 (March) 1934

So-Called Primary Complex of Tuberculosis in the Skin E Bruusgaard —p 113
Removal of Inferior Cervical Ganglions and Its Effect on Hyperhidrosis and Cyanosis of the Hands and Feet H Leslie Roberts —p 126
Infection Allergic Complex in Arspienamine Dermatitis Reactions with Especial Reference to Dermatophytosis J H Stokes and G V Huichar —p 134

British Journal of Ophthalmology, London

18 129 192 (March) 1934

Observations on Some Matters Associated with Experimental Corneal Grafting J W T Thomas —p 129
Supplementary Note on Iris Inclusion for Chronic Glaucoma H Herbert —p 142
Relationship of Histamine and Intra Ocular Pressure B W Rycroft —p 149
Richard Banister. Additional Facts in Relation to the Father of British Ophthalmology R R James and A Sorsby —p 156
Voluminous Orbitocranial Osteoma. Consecutive Cerebral Abscess of Nasal Origin J N Roy —p 159
Bilateral Papillitis Following Antirabic Inoculation Recovery H S Cormack and L A P Anderson —p 167
Oxycephaly in Brothers M R Sawhney —p 169
Chronic Retrobulbar Neuritis and Amblyopia of Toxic Origin. New Method of Treatment N N Ray —p 170

Journal of Mental Science, London

80 1 186 (Jan) 1934

Melancholia. Historical Review A J Lewis —p 1
Psychoses Associated with Childbirth D N Parfitt —p 43
Analytic Review of a Series of Cases of Insanity with Pregnancy C B Bamford —p 58
Female Homicides J H Morton —p 64
*Some Observations on Lipoid Metabolism in Mental Disorders J S Sharpe —p 75
*Blood Cholesterol in Epilepsy in Relation to Treatment by Dehydration and Ketogenesis J H McLean —p 82
Bicolored Guaiac Reaction in Mental Hospital Practice S W Hardwick —p 87

Lipoid Metabolism in Mental Disorders — Sharpe states that the lecithin content of the blood in mental disorders shows no important variation from the normal. The cholesterol content of the blood in early dementia præcox is decreased about 25 per cent. Later there is an increase of about 30 per cent and it remains at that level. This increase may be due to a hyperactivity of the suprarenals. The coefficient of utilization is low. In melancholia and confusional insanity the cholesterol content of the blood is slightly increased above the normal. The coefficient of utilization is low in these groups, denoting deficient oxidation and low metabolic activity. Cases of recurrent mania

show a high blood cholesterol, particularly during an acute attack. The cyclic nature of the condition suggests that it is caused by a derangement in metabolic activity, probably involving the suprarenals, as evidenced by the blood cholesterol increase. The coefficient of utilization is high, indicating increased metabolic rate. There exists in the blood in certain melancholic and confusional states a powerful depressor substance having a choline-like action on the isolated frog heart. This substance is antagonized by epinephrine. Normally the depressor substance is in such small concentration as to be almost undetectable. In dementia præcox and recurrent mania this substance exists in small quantities, approaching the normal figure as determined by the physiologic test. Choline added to active serum disappears on standing after a few hours at laboratory temperature. The choline added to serum inactivated at varying temperatures remains. Some substance having the properties of an enzyme is destroyed by heating. These observations suggest that there is a deficiency or complete absence of such a substance (conveniently termed "cholinase") in melancholia and confusional insanity. Hypotonia is a clinical feature of these cases.

Blood Cholesterol in Epilepsy — McLean attempts to correlate the work of Shaw and Sharpe with the methods of treating epilepsy by dehydration and ketogenesis. Sackett's method was used for the determination of cholesterol. The cases investigated were all of many years' standing. The patients were confined to bed without medication. Blood was collected at intervals of four hours. The observations indicate that the amount of blood cholesterol is lowered at the time of an epileptic attack. The author believes that the increase in concentration of cholesterol and urea in the treatment of epilepsy by dehydration is due entirely to the mechanical effect of the limitation of fluids. He suggests that the mechanical effect of limitation of fluids is assisted by the increased concentration of cholesterol. He placed two patients on a strict ketogenic diet for fourteen days. The results show a rise in the cholesterol level during ketosis. They are not conclusive, however.

Journal of Physiology, London

81 1 146 (March 29) 1934

Electrical Responses of Light Adapted and Dark Adapted Frogs Eyes to Rhythmic and Continuous Stimuli R Granit and L A Riddell —p 1
*Dietetic Factors Influencing the Glucose Tolerance and the Activity of Insulin H P Himsworth —p 29
Pinelectomy in Rats with a Critical Survey of the Literature Dorothy H Anderson and A Wolf —p 49
Oxytocic Property of the Blood of the Cow G H Bell and S Morris —p 63
Effect of Ligation of Posterior Coronary Vessels on Electrocardiogram in Experimental Bundle Branch Block. I G W Hill —p 70
Humoral Control of the Secretion by the Submaxillary Gland of the Cat Following Chorda Stimulation J Secker —p 81
The Adrenals and Glucose Tolerance H Banerji and C Reid —p 93
Adrenalin Like Action in Extracts from Prostatic and Related Glands U S v Euler —p 102
Neuromuscular Isochromism and Chronologic Theory of Curarization L Lapicque —p 113

Dextrose Tolerance and the Activity of Insulin — Himsworth presents experiments which show that the administration to a rabbit of a diet rich in fat decreases the sugar tolerance, retards and diminishes the action of insulin on the blood sugar, prevents or delays the progressive improvement of sugar tolerance that occurs on injection of consecutive doses of dextrose, and impairs the ability of insulin to diminish the hyperglycemia following intravenous injection of dextrose. The administration of a diet rich in carbohydrate improves the sugar tolerance, accelerates and increases the depression of the blood sugar by insulin, favors the progressive improvement of sugar tolerance after consecutive injections of dextrose, and does not impair the action of insulin in reducing the hyperglycemia after intravenous administration of dextrose. The author concludes that these results can be explained on the basis of the experimental observation that fat diets and starvation diminish the susceptibility of an animal to insulin, while carbohydrate diets and the administration of dextrose increase the susceptibility to insulin. He suggests that the susceptibility of an organism to insulin can be explained by the hypothesis that insulin is prepared and secreted by the pancreas as an inactive substance, that it is activated in the body by an unknown factor, and that

the production of this unknown activator is increased by the administration and diminished by the withdrawal of carbohydrates

Journal of State Medicine, London

42 187 248 (April) 1934

- Citizenship and the Care of Cripples Georgina Buller —p 188
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Journal of Tropical Medicine and Hygiene, London

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- Contribution to History, Origin and Distribution of Lymphogranulomatosis Venerea in South America W E Coutts —p 97
Castellani's Test for Albuminuria W H Hoffmann —p 99
British Solomon Islands Health Surveys, 1933 S M Lambert —p 100

Castellani's Test for Albuminuria—Hoffmann gives Castellani's test for albuminuria, which is as follows. The filtered urine, 5 cc, is placed in a test tube and 15 cc of liquefied phenol is added by pouring it slowly down the sides of the tube by means of a pipet. The liquefied phenol will collect at the bottom of the tube. If within two minutes a definite white ring forms where the two liquids come in contact the test is considered positive, namely, the urine contains albumin. The author has found that it is quite as sensitive as other similar methods and that it always shows the reaction in a clear and distinct way. He has never seen false positive reactions in the negative urines that have been examined as controls. He finds the method exceedingly useful for the daily routine work of the practitioner and still more for hospitals and laboratories. It is also an easy control for other tests in doubtful cases.

Lancet, London

1 611 666 (March 24) 1934

- Causal Fallacy E G Howe —p 611
Acute Pneumococcal Pharyngitis R G Henderson —p 615
Monocytosis and Agranulopenia in Vincent's Infection of the Mouth and Throat S J Hartfall —p 620
Comparison of Tests for Syphilis J E Nicole and E J Fitzgerald —p 623
Transplantation of Living Grafts of Thyroid and Parathyroid H B Stone J C Owings and G O Gej —p 625

Acute Pneumococcal Pharyngitis—Henderson presents the case records of eleven patients with acute pneumococcal pharyngitis. There was little variation in the clinical manifestations throughout the group. There was no suggestion of contact with an acute or recent case of lobar pneumonia or bronchopneumonia or another similar pneumococcal tonsillitis. There was, however, a severe epidemic of pneumonia and influenza in the city at the time. All the cases were sporadic except in one there was no associated injury or illness (a fish salesman who had just returned to work after being off duty for a fortnight with so-called influenza). The onset was rapid, attended with fever of from 100 to 103 F and shivering. Local symptoms were remarkably constant, viz severe sore throat, dysphagia and tender cervical glands, which in most of the cases were definitely enlarged. In all there was intense inflammation and edema of the pharynx with membranous involvement of the tonsils, uvula, soft palate and posterior pharyngeal wall. Macroscopically, the exudate was similar in appearance in each case. Those seen early showed a gray slimy glistening adherent exudate. Soon, however, there appeared erosion of the mucous membrane with petechiae and the membranous exudate rapidly became dark and necrotic. Local tissue destruction and sloughing resulted, but there was no characteristic fetor. In three of the patients respiratory embarrassment was sufficient to warrant tracheotomy. In ten cases there was an associated pneumococcal septicemia. Only one patient recovered, all the others had a rapid and fatal termination. A throat swab and blood culture were taken on admission in each case but once, an early case, in which death occurred eight hours after admission and a blood culture was omitted. This patient, however, showed the pneumococcus in the throat in practically pure

culture, and had all the typical signs and symptoms. The pneumococcus was found as the predominating organism in the throats of all patients and all the blood cultures taken showed an associated pneumococcal septicemia. Serologic examination of the various strains of pneumococci showed that one patient was infected with type I, four with type III and six with group IV.

Transplantation of Living Grafts of Thyroid and Parathyroid—Stone and his associates believe that in the transplantation of living grafts of thyroid and parathyroid tissue a proper site should be selected and the form and size of the grafted material, the adaptation of the graft to the chemistry of its host and the existence of a state of deficiency causing a physiologic need of the tissue to be grafted should be considered. They have secured cross grafts of thyroid and parathyroid tissue which when removed, seemed to be entirely healthy and growing vigorously at varying periods from twenty-one to eighty days after the implantation. There have been a great many failures but the proportion of success has been sufficient to show that cross grafting of these endocrine glands is possible when all the conditions of the experiment are favorable. The method has been applied to two cases of human parathyroid tetany and four cases of thyroid deficiency. One of the tetany patients has lived one year since the first graft and the other seven months. They are entirely well clinically, and their blood calcium has returned to normal from a low level of 46 and 62 mg per hundred cubic centimeters, respectively. The thyroid cases are too recent to make any report on. The details of the technique of tissue culture for these grafts of endocrine glands follow, in general, the principles well established for the growth of mammalian tissue. A small fragment is placed, under sterile conditions, on a coagulated medium and kept in a thermostat until it begins to liquefy the surrounding medium by its growth and chemical activity. It is then transplanted to a new culture medium. In actively growing tissues this may have to be done every second to fourth day. The medium consists of Tyrodes solution with extract of beef embryo as a stimulating substance, and serum and plasma derived from the animal in which the graft is to be placed. Enough serum and plasma to form a coagulum of fibrin are always used.

Medical Journal of Australia, Sydney

1 361 394 (March 17) 1934

- Port Phillip's Early Doctors 1835-1839 G T Howard —p 361
Detection and Estimation of a Dinitrophenol New Drug for the Treatment of Obesity A Bolliger —p 367
Calibration of the Sphere Gap Voltmeters Employed at X-Ray Treatment Centers in Sydney W H Love —p 369
The Problem of Mentally Defective Children in New South Wales from the Educational and Vocational Points of View A E Machin —p 370

Detection and Estimation of Alpha-Dinitrophenol—Bolliger states that, by the addition of a solution of methylene blue to a solution of dinitrophenol methylene blue, dinitrophenolate is obtained, which crystallizes in fine bronze-colored needles. This compound is sparingly soluble in most solvents forming a green solution. Its solubility in chloroform is greater. The acidified solution is extracted with chloroform, and to the neutralized chloroform extract a dilute solution of methylene blue is added. If dinitrophenol or a similar compound is present the chloroform extract will become green. To examine urine for traces of dinitrophenol, 20 cc of urine in a separating funnel is acidified with one tenth of a volume of a 70 per cent solution of sulphuric acid. It is then extracted by gentle shaking for about three minutes with half its volume of chloroform. Permanent emulsions should be avoided. If, after standing, a sufficient quantity of chloroform does not separate cleanly, the chloroform must be separated by centrifugation. About 10 cc of the chloroform extract is transferred to a test tube containing 1 Gm of calcium carbonate. The contents are mixed well and 0.0001 normal methylene blue, chemically pure (about 0.004 per cent), is added in small drops. The mixture is shaken after every drop till the first change of color occurs. It is then filtered through a dry filter into another test tube and an equal amount of distilled water is added. It is shaken thoroughly and the water is removed. If the chloroform shows a distinct green color which cannot be extracted by further washings with water alpha dinitrophenol is present in the

urine In the detection of dinitrophenol in the blood stream of a nonjaundiced person, serum acidified with a few drops of sulphuric acid is thoroughly shaken with an equal amount of chloroform. Then the mixture is centrifugated and the chloroform extract is pipetted off and filtered through a dry filter into a test tube containing some calcium carbonate. Then 0.0001 normal methylene blue is added in small drops till the mixture begins to change color. After filtering, the presence of dinitrophenol is indicated by a green tint of the chloroform extract. For the quantitative determination by titration of dinitrophenol in proprietary medicines, a known amount is dissolved in a 5 per cent solution of sodium hydroxide. After the solution is acidified with a 70 per cent solution of sulphuric acid, the dinitrophenol is extracted with several lots of chloroform. The combined chloroform extracts are treated with calcium carbonate, filtered and made up to a known amount. An aliquot part of the chloroform extract is transferred to a separating funnel and 0.0001 normal methylene blue is added from a buret. The technic of the titration is the same as the one described for the determination of trinitrophenol with methylene blue. The methylene blue combines with the dinitrophenol to give the chloroform-soluble methylene blue dinitrophenolate. Therefore, on extraction the watery layer originally containing the methylene blue turns yellow, while the chloroform takes on a green color. The end point is reached when the watery layer becomes colorless. The test described is not specific for 2,4-dinitrophenol. A similar compound is given by 2,4,6-trinitrophenol and this can be differentiated from the dinitro compound by the greater solubility in chloroform. In general it seems that all polynitro derivatives of phenol and naphthol with a nitro group in orthoposition to the hydroxyl group form with methylene blue an addition product, which dissolves in chloroform with the formation of a green color.

Practitioner, London

132 305-416 (March) 1934

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Endocrine Aspects of Sterility E Novak—p 313
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Sterility in the Female R A Gibbons—p 336
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Menstruation and Its Relation to Disease W C W Nixon—p 356
Anesthesia in Labor Review of Modern Progress F B Parsons—p 366
General Principles of Diagnosis and Treatment in Pulmonary Tuberculosis H M Davies—p 374
Unusual Case of Hydatidiform Mole G G Kayne—p 386
Medicolegal Problems in General Practice III Medicolegal Aspects of Mental Disorder J G P Phillips—p 391

South African Medical Journal, Cape Town

S 157 196 (March 10) 1934

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Collapse Therapy in Pulmonary Tuberculosis Its Place and Its Scope D P Marais—p 169
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Significance of Focal Infection in Practice G Buchanan—p 177

Tubercle, London

15 289 336 (April) 1934

- *Immediate Results of Phrenic Evulsion in the Control of Apical and Upper Lobe Cavitation Series of Fifty Cases A W Russell—p 289
Some Aspects of the Work of the Sanatorium Industrial Villages of Papworth and Preston Hall N Bardswell—p 292
Delayed Pleural Shock Following an Artificial Pneumothorax Refill and Presenting Some Unusual Features Case C E H Anson—p 296
*Anatomic Changes in the Diaphragm Following Phrenicectomy Report of Eleven Necropsies W S Stanbury—p 300

Phrenic Evulsion in Control of Cavitation—In his fifty cases Russell found phrenic evulsion to be of definite value in controlling cavities in the apex and upper lobe. It should be considered in all such cases, no matter what size or type of cavity may be present. It is of most value in combination with artificial pneumothorax. As a method of dealing with adhesions preventing effective collapse it offers an alternative to cutting which is effective, easily performed and practically without complications. It was relatively of more value in women the figures being 63 per cent in women and 47 per cent

in men. Upper lobe cavitation occurred approximately twice as frequently in the left lung as in the right. Phrenic evulsion was relatively of more value in left-sided lesions (59 per cent) than in right-sided lesions (47 per cent). The operation appeared to affect thick-walled and thin-walled cavities equally. It was of most value in controlling medium sized cavities (62 per cent). The average length of phrenic nerve evulsed was 17 cm. The average rise was 4.8 cm. There was a better average rise of the left diaphragm by 0.6 cm. In 78 per cent the paralyzed diaphragm showed paradoxical movement.

Anatomic Changes in the Diaphragm Following Phrenicectomy—Stanbury gives an analysis of eleven necropsy cases of atrophy of the diaphragm following section of the phrenic nerve. In all but one case the operation of choice was evulsion by the method of Felix. The duration of the paralysis noted in the series varied from three weeks to six years. Atrophy of the diaphragm is evident as early as the third week after section of the phrenic nerve and is complete by the fourth month. After paralysis, one half of the diaphragm is elevated and eventrated into the thorax. With stretching it becomes a thin whitish membrane of parchment-like thinness. Histologically, the atrophy of the paralyzed half of the diaphragm is seen to be complete and uniform. In one case only, a few normal muscle bundles were seen in one area, scattered among atrophic fibers. This probably represents an accessory nerve supply rather than actual regeneration. In view of the marked distortion of the abdominal viscera in ten of the cases, three of which presented a fatal gastroduodenal obstruction, the possibility of such complications must be considered seriously when advising phrenicectomy for the treatment of pulmonary disease.

Fukuoka-Ikwadagaku-Zasshi, Fukuoka

27 23 34 (March) 1934

- Heredity of Tuberculous Cerebral Sclerosis T Yamamoto—p 23
Experimental Studies on Formation of Pyocyanous Toxin Pyocyanase and Pyocyanolysine S Tsutsumi—p 27
Investigation on Normal Vital Capacity in Japanese Laborer and Its Correlation with Size of Body K Yoshinaga—p 30
*Clinical Investigations on Summer Encephalitis in Japan S Naka S Kungo and K Kurowa—p 30

Summer Encephalitis in Japan—Naka and his associates point out that whether the acute encephalitis that occurs in Japan every year during the summer months is identical with epidemic encephalitis (Economo) is a disputed matter. They report their observations in seventy-six cases. They found that this form of encephalitis occurs only during the summer months. In this respect the disorder differs from the epidemic encephalitis described by Economo. The disease occurs for the most part among the poorer classes, whose houses are small and too warm. This type of encephalitis is also differentiated from epidemic encephalitis by the fact that it affects older persons (77 per cent were more than 40 years old) and small children primarily. It was revealed that approximately two thirds of the patients had passed through a disease that impairs the resistance of the brain or of the entire organism (cerebral hemorrhage, high blood pressure, nephritis, headaches, neuralgia, hydrocephalus, febrile diseases, general debility or congenital syphilis). The eliciting factor in 74 per cent of the cases was physical exertion during exposure to the summer heat. The prodromal stage lasts generally only one day, rarely two or three days, and in exceptional cases four or five days. The symptoms listed in the order of their frequency are headache, lack of appetite, general debility, nausea and vomiting, drowsiness and disturbed sleep. It is surprising that the sleep disturbances are comparatively rare. The disease usually begins with high fever, and the pulse is relatively slow. On the first or at the latest on the fourth day, the patient becomes delirious or comatose. After this stage either convalescence occurs or a condition of apathy supervenes. The psychic symptoms of this phase are total amnesia regarding the delirious phase, slow thinking, perseveration, apathy, astereognosis and various forms of aphasia. During this stage there frequently exists somnolence as the result of fatigue. In contradistinction to epidemic encephalitis, symptoms on the part of the cerebral nerves are comparatively rare. The pressure of the cerebrospinal fluid is normal or slightly increased. There is always a pleocytosis

(average about 60 cells per cubic millimeter) Phase I of the Nonne Apelt reaction is always positive. The course of this form of encephalitis is comparatively short. In patients who recover, the symptoms disappear in from nine to twenty eight days. The mortality rate is 63 per cent, death occurring between the fourth and twelfth days. The authors reach the conclusion that the Japanese summer encephalitis is a distinct disease entity which differs from acute meningitides, the epidemic encephalitis described by Economo, the encephalitis described by Strumpell Leichtenstern and alcoholic pseudo encephalitis. The symptomatology indicates that it is an acute inflammation of the midbrain and end brain or an acute panencephalitis.

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Statistical Observations and Morphologic and Biologic Studies on Parasitic Amebas of Human Intestinal Tract Hirayama Sigeki—p. 35
Ferments of Tubercle Bacilli S. Kawabata—p. 37
Studies on Fermentative Decomposition of Histidine S. Sakisaka—p. 40

Anatomy of Cerebral Arteries of Rabbits D. Miyata—p. 41
Blood Picture of Summer Encephalitis in Japan T. Matsumura S. Komiya S. Tachibana M. Fujibayashi and N. Kojima—p. 44

Blood Picture of Summer Encephalitis in Japan—Matsumura and his associates made hematologic studies in thirteen typical cases of summer encephalitis. They found that the erythrocyte number is within normal limits. In the cases that take an acute course there are slight changes in the size and shape of the erythrocytes and normoblasts. The hemoglobin content averages 78.6 per cent. During convalescence the hemoglobin content is slightly reduced. The number of leukocytes increases. The degree of the increase corresponds to the severity of the disease process; it is highest during the severest stage of the disease. After this stage has passed, the number of leukocytes gradually decreases again. The neutrophil leukocytes are as a rule greatly increased, particularly during the severest stage. During convalescence they decrease again. The lymphocytes, however, are decreased during the severest stage of the disease and reach normal values during recovery. The monocytes are slightly below normal. The eosinophil leukocytes disappear or decrease noticeably during the height of the disease process, and the basophil leukocytes seem to be decreased. Plasma cells were found in only two cases. The average number of blood platelets is normal, but in severe cases their number seems to decrease at the height of the disorder and to increase during convalescence. The sedimentation speed of the erythrocytes is increased. The coagulation time, the bleeding time and the resistance of the erythrocytes show no noticeable changes.

Japanese Journal of Obstetrics and Gynecology, Kyoto

16 431 518 (Oct.) 1933

- Statistics of Uterine Cancer E. Terada—p. 432
Biologic View of the Twin Fetus (Supplement) II. Twins in Japan G. Oku—p. 457
Statistical Investigation on the Time Interval Between the Marriage and the First Parturition and Those of Successive Two Parturitions T. Kunita—p. 466
Experimental Study of Thyroid Function During Pregnancy Parturition and Puerperium Part I. Metabolism of Iodine During Pregnancy and Puerperium VI. Effects of Preparations of Endocrine Gland to Metabolism of Iodine U. Nakamura—p. 470
Histologic Study of the Cancer in the Human Being Part I. Investigation of Chromatin T. Ota—p. 472
Influence of X Rays Irradiation on Urogenital System Part IV. Study on Kidney with Formation of Ureterofistula (Histologic Change of Kidney After the Formation of Utero Ureteral Fistula) S. Takita—p. 476
Experimental Study on Effects of Thyroidectomy to Pregnancy K. Nojima—p. 483

Lues (Bulletin Soc. Japonaise de Syph.), Kyoto

10 13 20 (Feb.) 1934

- Metastatic Parenchymatous Keratitis in Syphilitic Rabbits I. Distribution of Spirochaeta Pallida in Early Stage T. Funabashi—p. 13
Spirochetes in Lymph Nodes of Syphilitic Rabbits II. Change in the Spirochete Content of the Spleen S. Watanabe—p. 16
Experimental Laws of Mouse I. Spirochaeta Pallida in Iliac Lymph Nodes H. Misaizu—p. 18
Passive Immunity to Syphilis in Rats K. Yasumoto—p. 19
Contribution to Clinical Study of Periostitis and Osteitis in the Early Stage of Frambesia K. Iseki—p. 20

Periostitis and Osteitis in Frambesia—Iseki observed two cases of jaws. One patient, a woman of 19, showed spindle-shaped swelling in the second segment of both her middle fingers accompanied by slight pain. The patient contracted the infec-

tion one year before from her child and then presented frambesic papules and afterward generalized papules, which were cured by three injections of arsphenamine. Six months later the papules returned, and about three months afterward the lesion appeared in the right hand, and in two months more it appeared in the left. Roentgen examination showed that both middle fingers were obviously thickened at the second segment, the shadow being especially well marked on the inner side. The right one presented slight swelling of the outer side of the bone. Also the first phalangeal joint of the left hand was affected. The other patient, a girl of 10, had the same spindle-shaped swelling in the first segment of the second finger of the right hand. She had suffered from frambesic papules for two or three months, and they were still to be seen. She presented swelling of the middle part of the left tibia, in which there was slight pain. There was also a frambesic papule on the left middle finger and one on the left joint of the knee. As these patients have been suffering from the early stage of framnesia with positive seroreaction and were healed readily by the administration of arsphenamine, the lesions may be safely regarded as being of frambesic origin. They may be considered as a periostitis and osteitis of the phalanges in the secondary stage and not in the tertiary (gummosis) stage. The cure, in the latter case, which is destructive in nature, is usually only slowly brought about through specific treatment.

Liege Médical

27 529 560 (April 22) 1934

- *Treatment of Myocardial Insufficiency by Dextrose and Combined Dextrose Insulin Guillaume—p. 529
Peripheral Facial Paralysis of Familial and Relapsing Type M. Schachter—p. 542

Treatment of Myocardial Insufficiency—Guillaume believes that the rationale of treating myocardial insufficiency by dextrose and insulin is sound. The utilization by the cardiac muscle of the increased supply of energy should be advantageous. In several cases good results were obtained, but a favorable outcome was not constant. Dextrose and insulin appeared to have an especially favorable action in cases in which the pulse showed alternation and in cases in which the electrocardiogram showed an inversion of the T wave in two leads. Even the results obtained in cases of angina pectoris were encouraging. In painful infections of the heart, however, this treatment was without action. The author states that the treatment is without danger to the heart and may be tried with impunity.

Presse Médicale, Paris

42 553 576 (April 7) 1934

- *Choleraform Syndrome in Serious Toxic Infections of Early Infancy L. Ribadeau-Dumas—p. 553
Thrombophlebitis of Left Upper Arm Revealed by Effort. Resection of Segment of Thrombosed Vein. Arterial Denudation Recovery P. Huard—p. 556
Contagiousness of Tuberculosis A. Gismondi—p. 558
General Anesthesia with Tribrom Ethanol by Rectal Route in Otomalarthology A. Malherbe G. Thevenard and R. Vilemski—p. 560
*Oxygen and Carbon Dioxide Inhalations in Therapy of Intoxication by Suffocating Gases D. Cordier—p. 561

Choleraform Syndrome in Infections of Infancy—

Infantile cholera is a syndrome and not a morbid entity. Ribadeau-Dumas believes that the ratio of cell chlorides to plasma chlorides is a practical method of evaluating the changes in cellular ionic equilibrium. Thus normally in a child the cell chloride is 18 per cent and the plasma chloride 3.6 per cent, giving a ratio of 0.5. In the choleraform syndromes resulting from an infection this ratio is elevated. Coincidentally the renal function is disturbed, and oliguria, albuminuria and cylindruria appear. The blood urea is increased, it being common to observe 1 or 2 Gm. or more. In two children with the choleraform syndrome observed by the author the cell-plasma chloride ratio was 0.6. One patient recovered and the other died. He concludes that hyperchloremia may exist without modification of the cell-plasma chloride ratio. Under such circumstances dextrose solution is used to reduce the level of both the tissue and plasma chlorides. When the cell-plasma chloride ratio is increased, bicarbonate solution is used to reduce the level of both the tissue and plasma chlorides. When the cell-plasma chloride ratio is increased, bicarbonate solution is

used to reduce it. In children an isotonic solution is employed. Finally, in hypochloremia an isotonic salt solution is used.

Inhalations for Intoxication by Gases—Cordier believes that it is not logical to treat asphyxias without lesions of the lungs by the same method of therapy as those due to suffocating gases associated with serious pulmonary lesions. In acute phosphene poisoning, for example, the oxygen of the arterial blood and the saturation of the hemoglobin are diminished. The p_{H_2} also is progressively lowered. Likewise the proportion of free carbon dioxide in the plasma becomes higher than normal, especially at the moment of death. In the lung of a person affected with pulmonary edema due to a suffocating gas the volume of air that can circulate is naturally limited. Finally, the respiratory center in this type of poisoning is not deprived of stimulus, since the carbon dioxide content of the plasma is raised by the condition itself. In both types of intoxication there is therefore a lack of oxygen. In carbon monoxide poisoning, however, the free carbon dioxide is diminished. With these essential differences in mind the author concludes that in asphyxias without lesions of the lungs a treatment consisting of inhalation of oxygen, oxygen and carbon dioxide or air and carbon dioxide may be used. In those caused by suffocating gases, oxygen alone is capable of combating the anoxemia. Carbon dioxide mixed with oxygen or air can only serve to aggravate the acidosis, dyspnea, edema and asphyxia in conditions of this nature.

42 577 592 (April 11) 1934

Spreading Torpid Cellulitis of Abdomino-Inguinal Region P. Chevalier and A. Fiehrer—p. 577

*Enteralgic Crisis and Chronic Appendicitis of Enteralgic Nature P. Jacquet—p. 578

Important Point in Diagnosis of Operability of Cancer of Rectum in Man R. Leibovici and R. Soupault—p. 580

*Role of Neurovegetative System in Permanent Arterial Hypertension J. Olmer and J. Carbonel—p. 581

Enteralgic Crisis and Chronic Appendicitis—Jacquet describes a condition that differs from simple colic and in its acute rhythmic pain of several hours' duration justifies the name of enteralgic crisis. Morphine may attenuate the condition but does not interrupt it. The crises occur in series and in certain seasons of the year. Often they arise during the night accompanied by nausea, bilious vomiting, fever sometimes, and pain beginning in the right hypochondrium below the costal margin. Conforming to its colic character the abdomen is relaxed and palpation of the abdomen is only slightly painful, if at all. Violent pulsation of the abdominal aorta is usually visible and palpable. The crisis ends in the morning at the time when colonic digestion ends. It leaves the patients panting, prostrate and in a state of chill in the severe cases. After a short convalescence no signs of the attack remain. Various causes appear to be responsible at different times for this picture. Ptosis of the right colic angle, fecaliths and pericholecystitis have been determined in some instances. The most frequent cause is chronic appendicitis, sometimes, in fact, enteralgic crises are the only symptom of appendicular disease. Sensitivity of the appendix to pressure often arises only at the onset of a crisis and endures only a few hours after. Retrocecal appendices have been found in most of these cases that have come to operation. Of four with the appendix in the normal position, three were tuberculous. Tenderness to palpation was most marked over the ileocecal region. The author states that enteralgic appendicitis, regardless of anatomic form, offers an excellent prognosis from the operative standpoint.

Neurovegetative System in Hypertension—Olmer and Carbonel believe that epinephrine is the logical substance with which to test the role of the neurovegetative system. It is the product of secretion of the suprarenal medulla and is therefore physiologically allied to the neurovegetative system. Their technique is as follows. The arterial tension is measured with the oscillogram of Boullitte. Three successive measurements are made and the last is retained. Small doses of epinephrine (1 or 0.5 cc of 1:1,000 solution) are given intramuscularly. The tension and pulse are measured immediately after the injection, each minute for ten minutes, then every ten minutes for an hour, and finally every half hour until the pressure and pulse return to normal. This test was applied to twenty-four hypertensive and nine normal subjects. In two of the hypertensive patients the arterial tension was slightly increased

(1 cm of mercury) for forty and twenty minutes, respectively. In the twenty-two others a reduction of the blood pressure occurred. Of the nine normal persons, no notable change occurred in four, in five there was a diminution in arterial tension. Thus epinephrine produced in hypertensive persons an important and lasting reduction of the arterial tension, while the modification of pressure in normal persons was slight. In this differential action lies the proof of the derangement of the vegetative nervous system in hypertension. The authors conclude that, excepting perhaps in renal hypertension at the onset, the nervous system and vegetative metabolism are always disturbed in hypertensive persons.

Schweizerische medizinische Wochenschrift, Basel

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Disappointments and Failures in Treatment of Heart Disease by Family Physician J. Karcher—p. 345

Guiding Principles in Treatment of Leukemias and Malignant Granulomas O. David—p. 351

Neurologic and Mental Syndrome of Rickets M. Schaechter—p. 353

Rupture of Healthy Kidney Without Definitely Definable Trauma J. Schürmann—p. 355

*Rare Complication in Removal of Adenoids Case of Nasopharyngeal Torticollis Piotet—p. 355

Nasopharyngeal Torticollis—Piotet relates the history of a girl, aged 8, who after removal of the adenoids, felt severe pains in the left side of the neck. Examination revealed that the head was inclined to the left side, the cervical muscles were rigid and the slightest movement of the head caused pain. The temperature fluctuated between 37.8 C (100 F) and 38.5 C (101.3 F). The fever and the fact that the sternocleidomastoid muscle was neither rigid nor painful excluded the diagnosis of simple torticollis. After thorough examination, the author discovered a small retropharyngeal abscess from which pus was discharged. After two months of subfebrile temperature his patient recovered. He points out that besides the extreme cases, in which a luxation of the atlas takes place, there occur milder cases, in which a luxation does not take place. His case belonged to the latter group. As to treatment, he says that a recent luxation can be reduced by continuous extension by means of a special apparatus for the treatment of torticollis. If applied later, this treatment will have satisfactory palliative effects.

Minerva Medica, Turin

1 529 568 (April 21) 1934

Synthesis of Medical Diagnosis C. Gamma—p. 529

*Clinical Significance of Investigation of Tonsils R. Olivetti and E. Malan—p. 535

Malignant Lymphogranulomatosis and Concomitant Infection Due to Diplococcus Crassus F. Sabatelli—p. 542

*Influence of Calcium Therapy on Behavior of Glutathione in Tuberculosis E. Baroni—p. 548

Chronic Glomerulonephritis with Convulsive Uremia and Meningeal Reaction C. Renzo—p. 551

*Neosarsphenamine in Treatment of Typhoid C. Re—p. 555

Tonsil Investigation—By means of aspiration, Olivetti and Malan investigated the tonsils of fifty patients presenting nephropathies, polyarthritis, rheumatism and cryptogenic sepsis. Of the various generalized reactions following tonsillar trauma, the authors consider the changes in the leukocytes, preceded or not by leukopenia, signs of tonsillar involvement. The absence of quantitative variations would indicate that the tonsils are not affected. They preferred aspiration to tonsillar traumatism such as massage, rolling and thermic stimulations because, when produced by means of a suitable instrument, aspiration causes a constant traumatism in all cases and is a traumatizing maneuver which often rids the tonsils of numerous cheesy deposits. The authors first took a leukocyte count and then aspirated the tonsil for from thirty to forty-five seconds with a Worms-Le Mee glass pipet, the aspirating force being furnished by an electric motor of one-fourth horse power. After this the leukocyte count was taken every fifteen minutes for the first hour and every thirty minutes during the next two or three hours. In a number of patients in whom the test was positive the tonsil was the seat of a latent chronic infection. In considering the miniature focus resulting from aspiration, the authors accept the hypothesis of superinfection rather than reinfection, the reaccretion of disease symptomatology being interpreted on the theory of a renewed passage of germs through the old point of entry. The recrudescence of articular pains

hematuria or fever observed after tonsillar aspiration is important, especially when the disease of the patient did not previously indicate a focal origin. The authors emphasize the clinical importance of the curves showing absolute and relative neutrophilia. The curve indicating only leukopenia shows that the tonsils are not involved. All such patients presented an absolute neutropenia in addition to an absolute and relative lymphopenia.

Calcium Treatment and Glutathione in Tuberculosis—Baroni studied the behavior of reduced glutathione of the blood in twenty patients presenting pulmonary tuberculosis. The patients were given daily intravenous injections of 10 cc of a 10 per cent solution of calcium gluconate for ten consecutive days. The glutathione rate was estimated in blood taken immediately before treatment, after the fifth injection after the tenth injection and five days after the last injection. Of twenty patients, eighteen showed a marked increase in the glutathione rate, while two did not present any changes. After five days of suspension of treatment, sixteen patients showed increased values, three unmodified values and one lower values. After fifteen days, eleven patients showed stationary values and nine diminished values. The increase in the glutathione rate of 90 per cent of the cases, which was protracted during the days following the treatment, is attributed by the author to a reduction of intra-organic oxidative processes due to the calcium ion.

Neosphenamine in Treatment of Typhoid—Re states that the treatment of typhoid with neosphenamine should be tested on a large scale. The febrile period is shortened. This indicates that, when a rapid improvement of the general condition is evinced, the probability of complications diminishes proportionately and saves the defensive reserves of the organism. The treatment starts with a dose of 0.15 Gm of neosphenamine or, in robust individuals if thought necessary, 0.3 Gm. The preceding dose is repeated at intervals of from two to three days or the successive dose is increased. It is not possible in this regard to fix a rule, but attention must be given to the tolerance of the individual patients. Several authors have advised increasing the doses to 0.6 Gm, but the author never raised them beyond 0.45 Gm.

Archivos de Medicina Cirugía y Espec, Madrid

37 361 388 (April 7) 1934

*Desensitization by Autovaccines in Chronic Colitis H G Mogena — p 361
Meaning of Ammoniemia in Origin of Eclamptic Crisis J Botella Llusá — p 363

Desensitization by Autovaccines in Colitis—Mogena advises the use of autovaccines for the treatment of chronic spastic mucous colitis of bacterial origin. He obtains the organisms from the colon with the aid of rectosigmoidoscopy, the technic of which he describes. Cultures are prepared from the different types of organisms isolated from the colon and are killed by heat without the addition of an antiseptic. Intradermal injections of the cultures are given to the patient. The intensity of the reactions is observed one-half hour and twenty-four hours after the injection, and a vaccine prepared with the organisms whose cultures produce the most intense reactions. It is advisable to begin desensitization with small doses of the vaccine and to increase them gradually. Repeated small doses maintain the allergic condition. The author treated thirty-two patients suffering from chronic mucous spastic colitis and he was able to follow the results in twenty-six of the group. There was complete disappearance of the symptoms in sixteen cases, marked improvement in seven and failure in three. Two patients, in the group of three failures, probably had colitis of tuberculous origin because they reacted positively to the tuberculin test. Although the length of the treatment cannot be as yet determined, it is advisable to use the vaccines for several months in order to obtain complete desensitization. If the autovaccine treatment fails during the first few months, it is advisable to repeat the entire process and search for a new allergic reaction. New material is taken from the colon and new cultures and new intradermal injections are made. As a rule, the new cultures show the presence of other bacteria not previously observed, the vaccines from which give finally satisfactory results. The author used autovaccines, also in eight cases of advanced ulcerative colitis. The technic followed both

in the preparation and in the administration of the vaccines was the same as that used in cases of chronic spastic mucous colitis. In this group he obtained the following results. There was lasting improvement in one case slight improvement in two cases and no change in the remaining five. The author believes that these results are due to the fact that chronic spastic mucous colitis is of allergic origin (due either to alimentary or to bacterial allergens), while chronic ulcerative colitis is not of an allergic nature.

Beitrag zur klinischen Chirurgie, Berlin

159 335 446 (April 14) 1934

Arteriovenous Anastomosis S Schumacher — p 335
*Treatment of Purulent Peritonitis B Bretnier — p 340
Surgical Treatment of Perforated Gastric Ulcer H Pich — p 346
Rare Case of Multiple Adenomas of Kidney Dschu Yu Bi — p 356
Course of Healing Processes in Bone Fracture E W Lexer — p 372
Diffuse Acute Osteomyelitis U Loewe and G von Pannewitz — p 382
*Thrombo Anguitis Obliterans R Hanser — p 390
Contribution to Arteriovenous Anastomosis O Voss — p 414
Palliative Gastric Resection in Ulcer Disease and Its Late Results F Mori — p 424

Treatment of Diffuse Peritonitis—Bretnier reports ten cases of diffuse suppurative peritonitis treated with the method of irradiating the intestine with ultraviolet rays during the course of the operation. The method was originated by Havlicek, whose purpose in irradiating the intestine during the operation was to study the circulation. Havlicek noticed that the convalescence of patients who had been irradiated was painless and brief. In the last three years he has operated in 108 cases of diffuse suppurative peritonitis without a death. The latest large statistics of Kirschner on diffuse peritonitis showed a general mortality rate of 47.7 per cent and for those of appendicular origin a mortality rate of 38.5 per cent. Havlicek removes the focus of infection, after which a coil of intestine is brought out if possible with its mesentery and the omentum. This is irradiated on either side with ultraviolet rays from a distance of about 35 cm, the procedure lasting from five to twenty-five minutes. Of the author's ten patients eight recovered and two died. The theory explaining the effect of the treatment is as follows. The patient with peritonitis dies, as a rule, because of cardiac failure. This failure is due to withdrawal of a large amount of blood that is stagnating in the splanchnic capillaries; the patient is said to bleed into his own splanchnic area. Irradiation of the intestine releases the histamine, the effect of which is to open the direct arteriovenous anastomoses and to raise the pressure within the portal vein. Circulation is thereby quickened, the minute volume is increased and the danger of cardiac failure is obviated.

Thrombo-Anguitis Obliterans—Hanser reports three cases of anguitis obliterans in patients whose ages were 43, 38 and 37 years. Death in the first case was caused by a morbid process in the coronary arteries identical with that causing gangrene of the right lower extremity. In the other two cases the coronary arteries presented the picture of anguitis obliterans. Sudden death in these cases was attributed to cardiac or coronary causes. The blood vessels of the extremities were not involved. The author considers anguitis obliterans a generalized inflammatory disease of the vascular system, and capable of localization. The process may involve internal blood vessels without simultaneous involvement of the extremities. The term "juvenile gangrene of extremities" is justified as a clinical concept, however, it represents only one manifestation of the generalized blood vessel disease of the organism when considered from the point of view of pathology. The concept that the disease is caused by suprarenalema and should therefore be treated by suprarenalectomy and sympathectomy meets with the objection that epinephrine, while narrowing the lumen of the blood vessels of various territories has the opposite effect on the coronary arteries and widens them.

Deutsche medizinische Wochenschrift, Berlin

60 591 632 (April 20) 1934 Partial Index

Life Expectancy in Patients with Blood Diseases E Masing — p 591
Significance of After Fluctuation (Everything After S) for Estimation of Heart Disease H Quincke — p 595
Topography of Cardiac Infarct in Acute Coronary Occlusion A Hinrichs — p 598
Appendicitis and Fecal Concretion as Result of Disturbed Function of Appendix K Westphal — p 600

Medizinische Klinik, Berlin

30 497 532 (April 13) 1934 Partial Index

- Modern Problems in Nutrition of Patients E Grafe—p 497
 Disturbances of Sympathetic Functions and of Metabolism in Dermatoses B Spiethoff—p 502
 *Severe Agranulocytosis with Fatal Outcome After Treatment with Typhoid Vaccine H Schur—p 504
 Coronary Occlusion as Cause of Sudden Death W Neugebauer—p 508
 *Treatment of Spinal Disturbances in Pernicious Anemia E Mester—p 512
 *Quartz Lamp Irradiation in Trigeminal Neuralgia R Ausch—p 513
 Urethral Tuberculin Reaction M Oppenheim—p 514
 Experimental Investigation on Influence of Ligation of Spermatic Duct on Testicle E R Welcker—p 515

Agranulocytosis After Treatment with Typhoid Vaccine—Schur reports a case of agranulocytosis with severe myeloid reaction in blood and spleen, which developed after treatment with typhoid vaccine. A review of the literature disclosed five other cases of changes in the blood following treatment with typhoid vaccine. In the first there developed a temporary thrombopenia and a hemorrhagic diathesis, in the second a mixed lymphatic and myeloid reaction, in the third a chronic lymphatic leukemia, in the fourth a chronic myeloma, and in the fifth, as in the reported case, an agranulocytosis. The literature describes two cases of neutropenia and lymphatic reaction following paratyphoid. From the fact that the typhoid toxin may cause various changes in the hematopoiesis from a simple thrombopenia to agranulocytosis with myeloid or lymphatic reaction and to chronic myeloma and lymphoma the author concludes that these disorders must be related and he emphasizes that investigations on the pathogenesis of leukemia should be considered in this regard. These observations have practical significance in that they prove the necessity of caution in the use of bacterial toxins, particularly typhoid toxins.

Treatment of Spinal Disturbances in Pernicious Anemia—Mester reports that in the treatment of the spinal complications of pernicious anemia he obtained good results with daily injections of a preparation containing liver, arsenic, strychnine and sodium glycerophosphate. He discusses the histologic aspects of the spinal changes that develop in pernicious anemia and reaches the conclusion that it is of vital importance to begin the treatment early.

Irradiation in Trigeminal Neuralgia—In a case of refractory trigeminal neuralgia Ausch resorted to treatment with the cold quartz lamp. In sixteen sessions the rays were applied from the outside at the infra-orbital foramen, as well as intra-orally along the entire right maxilla. The final result was complete freedom from pain, which has persisted for more than a year. The author employed this method in more than twenty cases and on the basis of his observations he concludes that the cold quartz lamp should always be tried before resorting to alcohol injection or to a surgical intervention in trigeminal neuralgia. Since July 1933 the author's method has been adopted by a clinic, and favorable results have been corroborated. He admits that ultraviolet irradiations in cases of trigeminal neuralgia are not new as such. The new aspect of his method is that the cold quartz lamp makes it possible to approach the second and third branches of the trigeminal from the oral side. The burner of the cold quartz lamp can be brought into direct contact with the mucous membrane.

Munchener medizinische Wochenschrift, Munich

81 625 660 (April 27) 1934 Partial Index

- Blood Group Serologic Constitution and Wassermann Reaction Z Poehlmann—p 625
 *Pathogenesis Nature and Therapy of Neuralgias and Chronic Myalgias G Benzur—p 627
 Tonsillectomy During Acute Inflammations F Zollner—p 634
 Muscular Exercises in Internal Diseases R Trumpp—p 642
 *New Method of Treatment of Lupus Vulgaris W Richter—p 644

Neuralgias and Chronic Myalgias—Benzur shows that neuralgia and neuritis frequently are not sufficiently differentiated. Pain may be the only symptom of a mild neuritis, but he thinks that only in this case can the two be identified. In most cases neuralgia is the symptom of a disturbance in some other part of the body, although neuralgias, particularly sciatica, may be caused by pressure on a nerve. The author considers that he is justified, however, in stressing the reflex neuralgias because the neuralgias and neuralgia-like pains that are not

caused by neuritis or pressure are reflex manifestations. He thinks that his opinion is justified in view of the fact that the pathogenesis, the course and the cure of many neuralgias and myalgias seem to be subject to the same laws as are the reflexes. The sudden appearance and cessation, the changes in intensity, the strong influence on the pain of external conditions such as cold, dampness and drafts, the frequent relapses and the high incidence during certain periods of life are further proofs for their reflex character. The author considers that the factors essential in the development of a reflex neuralgia or a reflex myalgia are a basic disorder that elicits the reflex, a high reflex response in the nerve or muscle, a high reflex response of the entire organism and an eliciting factor. After discussing these factors he points out that in the past the treatment of neuralgia and myalgia frequently considered only one symptom, the pain, without being aware of the real cause of the pain. It is necessary to determine whether the pain in neuralgia or myalgia is caused by inflammation or pressure or is reflex in nature. If the latter is the case, the underlying disturbance has to be determined and treated. Attempts should be made to reduce the general and local reflex response by such methods as improving the circulation or by psychotherapy. Moreover, the patient must avoid eliciting factors.

Treatment of Lupus Vulgaris—Richter combines the application of a tuberculin ointment with quartz lamp irradiation. In addition to concentrated tuberculin, the ointment contains killed but morphologically and chemically intact tubercle bacilli of the bovine and human types. To promote the antibody formation in the diseased area, quartz lamp irradiation was applied from a distance of 1 meter, beginning with a five minute exposure and gradually increasing by one minute each time. The surrounding areas were covered. It was assumed that the hyperemia and the resulting increase in the functional processes of the skin would increase the action of the tuberculin ointment. On the day following this treatment, a strong reaction with the signs of an acute inflammation was noted. As a rule, the treatment was repeated after five or eight days. After ten treatments a period of rest was given for from four to six weeks. If after that further treatment was necessary, a new series of treatments was started. Thus far, the author has employed the treatment only in patients with extensive and severe lesions. In two cases the treatment was a complete success, not a single lupus nodule remained and the extensive lesions had healed with a flat faintly red scar. In another case, considerable improvement was obtained. In two other patients only a few nodules remained after the treatment, and these were destroyed by means of electrocoagulation. Three other patients are still receiving treatment and in all the lesions show a tendency to heal. In two cases the treatment failed. The combined tuberculin and quartz lamp treatment was tried also in three cases of erythema induratum Bazin and cures resulted. A patient with papillonecrotic tuberculids on both legs was likewise cured.

Wiener klinische Wochenschrift, Vienna

47 513 544 (April 27) 1934

- *Organotherapy of Peptic Ulcer K Glaessner—p 513
 Pathogenesis and Prevention of Congenital Luxation of Hip Joint F Bauer—p 517
 Rare Forms of Carcinoma of Mamma F Mandl—p 521
 Subacute Suppurating Osteomyelitis of Atlas B Kecht—p 523
 Hydroa Vacciniforme Porphyrinopathy Hepatopathy E Urbach and J Bloch—p 527
 Examination Nutrition Convulsions Icterus and Prophylaxis of Syphilis in the New Born R Wagner—p 532
 *Allergic Disturbances of the Eye J Urbanek—p 533

Therapy of Peptic Ulcer—Glaessner shows that the non-specific irritation therapy of peptic ulcer has not come up to expectations and that the results of the specific therapy that he and Loeper have introduced surpass those of other internal methods. The specific therapy consists in the subcutaneous or intramuscular injection of a neutral pepsin preparation. He gives thirty injections either subcutaneously or intramuscularly. The first ten injections are increasing amounts of pepsin, the next ten are equal amounts and the last ten are decreasing amounts. This series of treatments may be repeated after six months, because about this time relapses occur occasionally.

The pepsin therapy is combined with a dietary and a medicinal therapy. The diet is primarily lactovegetarian, but some meats and fish are permissible. The medicinal therapy consists in a dose of pure olive oil (20 Gm) to be taken before the meals and a bismuth preparation (bismuth carbonate, or bismuth subnitrate) after meals. The pepsin therapy may be employed in peptic ulcers of the stomach and duodenum and in ulcers of the esophagus and of the jejunum in which there are no irreparable changes. However, in cases of deeply penetrating ulcers that have existed for a number of years, cases presenting scar formations and severe stenoses, cases in which carcinomatous degeneration is likely or cases in which perforation threatens or there is severe hemorrhage pepsin therapy is inadvisable and surgical treatment is usually necessary. The author has employed the pepsin therapy in approximately 1,000 cases. The results were favorable in gastric and duodenal ulcers, esophageal ulcers likewise were improved, but in jejunal ulcers the results were not so favorable.

Allergic Disturbances of the Eye—Urbanek shows that the frequent demonstrations of tubercle bacilli in disturbances of the eye, particularly in cases of uveitis, prove that tuberculosis is the cause of many diseases of the eye. The fact that in a number of cases of keratoconjunctivitis a tubercle bacillema could be demonstrated indicates that the tuberculosis is the most prominent endogenous factor. As uncleanness of the skin is found in the majority of cases of keratoconjunctivitis, it is likely that an exogenous noxa enters the conjunctival sac and produces the eczematous keratoconjunctivitis. The author shows the analogy between anaphylaxis and tuberculin allergy and points out that the development of scrofulous keratoconjunctivitis requires, in addition to the general sensitization of the organism (tuberculin allergy), also a second, endogenous or exogenous, factor. He thinks that the exogenous local component is more frequent than the endogenous. He points out that scrofulous keratoconjunctivitis is particularly frequent among the poorest classes of people and he thinks that neglect is a factor in its development. During the years of starvation after the war, he noted that approximately 40 per cent of eye disorders were scrofulous keratoconjunctivitis, and nearly all of these patients had skin disorders. He observed a number of cases in which, on the basis of a tuberculous disturbance, the administration of tuberculo-protein was followed by the development of uveitis not only in the eye that had been diseased formerly but also in the healthy eye.

Zeitschrift für Kinderheilkunde, Berlin

56:143-286 (April 13) 1934

- Blood Group and Dactylogram as Constitutional Signs of Patients with Poliomyelitis. Hedwig and W. Blotvogel—p. 143
Glycogen Storage Disease. G. Biedermann and W. Hertz—p. 170
Analysis of Forms of Growth in Glycogen Storage Disease. W. Hertz—p. 177
Studies on Lead Poisoning in Nurslings and Small Children. Clinical Aspects of Lead Meningism During Nursing Age. M. Kasahara—p. 186
Studies on Lead Poisoning in Nurslings and Small Children. Cutaneous Reaction with Sodium Sulphide in Lead Poisoning in Infants. M. Kasahara and Shun Ichi Mi—p. 194
Acroderma Pigmentosum and Rickets. G. Petenyi—p. 197
Galvanic Irritability of Nerves in the New Born. E. Klasten and R. Wagner—p. 201
Human Milk During Menstruation. J. Steinert and G. Papp—p. 208
Pathogenesis of Alimentary Fever. Rietschel—p. 212
Balances of Nitrogen, Calcium, Magnesium Phosphorus and Iron in Children Aged 7 or 8 Years. Anna Petrunikina—p. 219
Body Proportions During Growth. J. Brock and A. W. Brockmann—p. 227
Capillary Resistance During Childhood. Studies on Rumpel-Leede Phenomenon and on Effect of Suction Bell on Chest and Arm. J. Brock and Anneliese Malcus—p. 237
Children's Eczema and External Irritations of Skin. T. Becker, S. Bornstein and H. Finkelstein—p. 253
Normal Values of Sedimentation Speed of Erythrocytes During First Period of Life. F. Schuricht—p. 272

Glycogen Storage Disease—Biedermann and Hertz describe two cases of glycogen storage disease in children of school age. One of the boys was almost dwarfish, he had a eunuchoid accumulation of fat at the pubic eminence, and repeated bone fractures from slight causes indicated that there was a calcium deficiency of the skeleton. In the other one, the inhibition of the growth was less noticeable and the obesity involved the trunk. The urine was practically normal in both

cases. It was always free from sugar, urobilin and urobilinogen were never increased and bilirubin was absent. Microscopic examination of the feces and test meals revealed no disturbances of the digestive function. The stability of the serum colloids of the blood was altered, and the sedimentation speed of the erythrocytes was enormously increased. The width of Weltmann's flocculation band was changed and the fibrin content of the plasma was reduced. The authors point out that the history of the parents of children with glycogen storage disease frequently reveals treated syphilis and that other relatives occasionally show degenerative psychic changes. The patients themselves have never been found to be syphilitic.

Growth Disturbances in Glycogen Storage Disease—Hertz shows that in glycogen storage disease there occur various growth disturbances. There are the aspects of a dystrophy resulting from carbohydrate hunger and the aspects of incretory disturbances. These two types of disturbances may occur alone or together. The incretory disorders known thus far indicate a disturbance in the function of the hypophyseal mesencephalic system, but anatomic changes of the hypophysis have not yet been discovered in glycogen storage disease. However, local hypophyseal disturbances frequently are absent also in adiposogenital dystrophy and in a form of dwarfism, which is now widely assumed to be of hypophyseal origin. The author concludes that a familial constitutional deficiency of the endocrine system and of the organism on the whole is highly probable in glycogen storage disease but that the high incidence of hypophyseal and cerebral manifestations nevertheless seems to indicate a circumscribed neuro-endocrine disorder.

Children's Eczema and External Irritations—Becker and his associates employed various tests without being able to demonstrate a primary increased vasomotor sensitivity as a characteristic of the skin of eczematous children. From the localization of the eczema and from its dependence on a stronger blood perfusion, it could be determined that slight external irritations, which in noneczematous persons remain below the threshold of stimulation, produce a secondary irritation of the capillaries in eczematous persons. The resulting hyperemia is considered to be important in the pathogenesis of eczematous changes. The cantharidin test was performed in order to determine whether a superficial erosion of the epidermis heals differently in the eczematous person than in the one without eczema. In seborrheic dermatitis, it revealed retardation of the healing process and increased desquamation, congestion and infiltration. The dermatosis and the reaction could be modified by alimentary measures, and thus the underlying metabolic nature of the cutaneous disturbance was revealed. The reactions observed in eczema indicated that, aside from the pathogenomic congestive-exudative component, a dyskeratotic factor is involved. In eczema the reaction is not of primary alimentary origin, as it is in seborrheic dermatitis, but is caused by a nutritional disturbance produced by inflammatory impregnation of the epidermis, which becomes more evident when the skin is inclined to desquamation. In neurodermatitis the cantharidin reaction is frequently weak and similar to that of the noneczematous person. This is due to the spastic condition of the cutaneous vessels, as the result of which a single irritation by cantharidin is not capable of producing the permanent hyperemia, which in turn is the basis for the pathologic form of the reaction. Normal reactions are obtained in cases of milk crusts, supporting the opinion that the condition is localized. The authors think that the epidermis is impaired by the exudation and that the products of the disordered epidermal metabolism increase the irritability of the vessels.

Zentralblatt für Gynakologie, Leipzig

58:961-1024 (April 28) 1934

- *Death from Eclampsia. P. Caffier—p. 962
Delivery of Twin Monsters Fused at the Thorax. Å. Ryden—p. 972
*Rapidly of Exchange of Amniotic Fluid in Human Subjects. G. Albano—p. 975
Prognosis of Manual Detachment of Placenta and of Inspection of Uterus Following Delivery in Clinic and Home. J. Granzow—p. 981
Sarcoma of Uterine Isthmus. Remarks on Pathology of Isthmus. R. Joachimovits—p. 988

Death from Eclampsia—Caffier thinks that death in eclampsia may be due to (1) asphyxia of central origin, which

in turn is caused by vascular spasms in the region of the respiratory center, (2) involvement of the heart in the tonic phase of the eclamptic attack, (3) spasm of the coronary vessels of the type that causes death in angina pectoris, (4) shock, caused either by an alteration of the center of the vagus by vascular spasm in the medulla oblongata or by an irritation of the pulmonary branches of the vagus during the tonic phase of the eclamptic attack. The postmortem examination of a woman who had died during the attack showed the heart in maximal systole. This would indicate the second mode of death listed by the author. Two other patients did not die during the eclamptic attack, but a severe cardiac disturbance developed with the eclamptic attack and was the cause of death. The postmortem examination revealed pathologic changes in the cardiac conduction system. The author thinks that the heart should be given careful attention during an eclamptic attack. He discusses a group of fatal cases of eclampsia in which characteristic renal changes were found. In all of them the amount of the functioning renal parenchyma was reduced so that practically only one kidney was functioning. The author thinks that the eclampsia takes an especially severe course in such cases.

Rapidity of Exchange of Amniotic Fluid—In studying the exchange of the amniotic fluid, Albano injected 6 mg of sodium phenolsulphonphthalein into the amniotic cavity. Since the phenolsulphonphthalein begins to appear in the maternal blood about one hour after the injection, observations on the resorption were begun at this time. Specimens of amniotic fluid were withdrawn at intervals of several hours and the quantity of phenolsulphonphthalein was determined by means of the colorimeter. The studies were made on women who were near the end of pregnancy, some were healthy and some had polyhydramnios. However, the author thinks that the studies should be made also during the earlier period of pregnancy (up to the fourth month). His investigations revealed that toward the end of pregnancy the capacity of the amniotic cavity is 675 cc. The resorption of the amniotic fluid takes place with a rapidity of 47.25 cc per hour or 0.783 cc per minute. The entire quantity of fluid is renewed in about 14.31 hours. It was found that the values determined by theoretical computation correspond to the real values, and thus it is possible to determine the resorption value at any moment of the observation period. The author thinks that the knowledge of the physiologic condition may serve as a basis in the study of pathologic conditions in the exchange of the amniotic fluid and may aid in the early diagnosis of such disorders as polyhydramnios, compensated cardiopathies, tuberculosis, death of the fetus and gestosis.

Acta Obstetrica et Gynec Scandinavica, Helsingfors

14 1114 (No 1) 1934

A Series of One Hundred Cesarean Sections. K. A. Hoffstrom—p. 1
Some Results of Extraperitoneal Cesarean Section. E. Brattstrom—p. 37

Four Cases of Interstitial Tubal Pregnancy in which Operation was Performed Before Rupture. Contributions to Early Diagnosis. M. Schroderus—p. 48

*Cutaneous and Mediastinal Emphysema in Parturient Women. A. O. I. Turunen—p. 76

*Occurrence of Follicle Stimulating and Luteinizing Factors of Anterior Pituitary Like Principle in Urine of Women Castrated by Roentgen Treatment or by Operation. H. C. A. Lassen and E. Brandstrup—p. 89

Cutaneous and Mediastinal Emphysema in Parturient Women—Turunen reports two cases of young, healthy primiparas in whom, after comparatively easy deliveries, cutaneous emphysema developed in the upper part of the body, especially on the right side. In one case a roentgenoscopy of the thorax showed that the mediastinum likewise was emphysematous. This is the first report in which this condition has been noted with cutaneous emphysema. Clinical examination revealed that the cardiac dulness was absent for several days, furnishing additional proof that mediastinal emphysema existed. It was probably the result of a subpleural tearing of the pulmonary tissue. Consequently it may be assumed that, in cases of cutaneous emphysema developing in connection with delivery, the air comes from a pulmonary rupture, enters the mediastinum

and gains access to the skin. Since this complication is extremely rare and since it could be caused by the amount of exertion necessary to normal labor, it must be assumed that anomalies of the respiratory tract or abnormal weakness of the pulmonary tissues favor its development. The author thinks that mediastinal emphysema may occur more frequently during delivery than is generally assumed but that it rarely is extensive enough to produce cutaneous emphysema.

Follicle Stimulating and Luteinizing Factors of Anterior Pituitary Like Principle in Urine of Castrated Women—In a series of women who had been subjected in thirty-six instances to roentgen castration and in ten instances to surgical castration, Lassen and Brandstrup made a total of 436 tests for anterior pituitary-like principle in the urine. The tests were made once a month for from three to thirty-one months. With the technic employed, anterior pituitary-like principle could be demonstrated only when 1 liter of urine contained in excess of 400 mouse units. In the women who had been castrated with roentgen rays, the reaction for the follicle-stimulating factor of anterior pituitary-like principle was positive in approximately 30 per cent of the urine specimens (343) examined. The reaction for the luteinizing factor of anterior pituitary-like principle was positive in 7 per cent of the specimens. The incidence of the reaction for the former factor was practically the same throughout the observation period, but the reaction for the latter factor was positive most frequently during the first half year after castration. Of the roentgen castrates, 92 per cent excreted the follicle stimulating factor of anterior pituitary-like principle in amounts of over 400 mouse units per liter at some time during the observation period, while a similar amount of the luteinizing factor of anterior pituitary-like principle was detected in 44 per cent of the cases. In the surgical castrates a positive reaction for the follicle-stimulating factor of anterior pituitary-like principle was obtained in about half the urine specimens examined, while the reaction for the luteinizing factor of anterior pituitary-like principle was positive in about 9 per cent of the specimens. The reactions for anterior pituitary-like principle are most frequent during the first six months after the operation. All ten patients excreted at some time or other after the operation the follicle-stimulating factor of anterior pituitary-like principle in amounts of more than 400 mouse units per liter of urine, most of them within the first half year after the operation. Six patients gave a positive reaction for the luteinizing factor of anterior pituitary-like principle within that period. In suitable control material less than 15 per cent of the cases gave positive reactions for the follicle-stimulating factor of anterior pituitary like principle and the reaction for the luteinizing factor of anterior pituitary-like principle was positive in from 1 to 2 per cent of the cases. Tests were made also (one in each case) on sixty-three women of the menopausal age and the reaction for the luteinizing factor of anterior pituitary-like principle was positive in 14 per cent of the cases.

Ugeskrift for Læger, Copenhagen

96 359 394 (April 5) 1934

Evaluation of Increased Blood Pressure. C. E. Rosling—p. 359
Evipan Sodium Anesthesia. Its Applicability in Dental Practice. J. V. Skaarup and I. Osier—p. 367

*Adipose Necrosis in the New-Born. H. Harpøth—p. 369

Adipose Necrosis in the New-Born—Harpøth reports a case of necrosis of the fatty tissue in an infant. Subfebrile temperature and a disturbance of the skin and subcutaneous tissues of the buttocks were noted two or three days after birth and a slowly progressive dry necrosis with undermined edges. Death occurred after seven weeks. There was infiltration of the skin 5 cm outward from the edge of the necrosis. The author says that sclerema neonatorum includes sclerema adiposum, sclerema edematosum and necrosis adiposum neonatorum. The first two diseases are excluded in this case. The results of the microscopic examination agreed in the main with those in Gelberg-Hansen's case. The condition was characterized by indistinct boundaries of fat cells and reactive infiltration of giant cells. This is believed to be the second report of superficial adipose necrosis.

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WHAT IS A NORMAL PELVIS?

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It may be surprising at first glance that the question of what constitutes a normal female pelvis should be presented as a subject for consideration. However, in the light of recent studies, I am of the opinion that this query does offer a basis for serious discussion.

In modern textbooks on obstetrics the normal female pelvis is differentiated from the normal male pelvis by characteristics of size and shape, which are generally recognized and which do not require delineation. One of the chief differences noted is the shape and size of the superior strait or inlet. In the normal male pelvis this plane is described as more or less round, with practically equal anteroposterior and transverse diameters. On the other hand, in the normal female pelvis the plane of the superior strait is described as more oval, the transverse diameter averaging 13 cm and the anteroposterior 11 cm.

Four facts have a bearing on this query. In the first place the superior strait of the fetal and of the infant pelvis in the two sexes is similar. It is round or even presents a longer anteroposterior than transverse diameter. In the second place the adult male pelvis retains much of the fetal shape, the pelvic inlet being round with diameters of approximately equal length. In the third place the adult female pelvis of many aboriginal races retains much of the fetal conformation in the shape of a round pelvis. Finally, in white women in the United States the incidence of the round pelvis, and of pelves whose longest diameter of the inlet is the anteroposterior (the so-called anthropoid type) is far greater than has been hitherto suspected.

Because of these facts it appears, first, that possibly the material for study, from which the definition of the so-called normal pelvis has been derived has been insufficient for proper evaluation and secondly, that the so-called normal or oval pelvis is the result of the influences of civilization rather than those of race or sex. The fact that aboriginal races have easy labors is well established. If it is true that these women in general possess the round type of pelvic inlet it is at once clear that the round fetal head fits such a pelvis to far greater mechanical advantage than obtains in the "oval" pelvis of their civilized sisters.

In Jarcho's¹ recent review of the literature on this subject the following statement is made:

On the basis of comparative findings two types of pelves may be distinguished:

1 The round pelvis in which the conjugata vera is as long or nearly as long as the other two diameters of the inlet. This

From the Department of Obstetric and Gynecology Yale University School of Medicine.
1 Jarcho, Julius. The Pelvis in Obstetrics. New York: Paul B. Hoeber, 1933. p. 58.

type is found in the aborigines of America, Australia, and the East Indies.

2 The oval pelvis, in which the conjugata vera is more than one-tenth less than the other diameters of the inlet.

Upon studying the mass of statistics presented in Jarcho's work one is impressed with the comparatively small number of studies made on the fresh or the dried pelvis and the comparatively large number of data that have been derived from reviewing external pelvic measurements. With regard to the determination of the size and shape of the pelvic inlet by external pelvimetry, I would refer the reader to my recent communication² in which the fallacy of such a procedure is exposed by roentgenometric study. Prior to the employment of roentgenometry in obstetrics, exact information regarding the size and shape of the pelvic inlet in living women was not available.

It is probable, therefore, that roentgenometry will reconstruct views with regard to the characteristics of the female pelvis. That this has already occurred to a degree is witnessed by the unusual incidence in the population of what have been termed the "male" type and the "anthropoid" types of pelves emphasized by Caldwell and Moloy in 1933,³ and by me in 1932,⁴ 1933,⁵ and 1934.⁶ The round or "male" type, and the elongated or "anthropoid" types of pelves, as I pointed out in 1932, are definitely associated with both primary and secondary occiput posterior positions. That these positions are frequently met during labor is shown not only by my own studies but by those of Pride,⁷ who found in a roentgenologic study of 250 cases that at the beginning of labor the occiput was directed posteriorly three times as frequently as it was anteriorly.

Interesting, too, are the observations of J. T. Williams,⁸ who in speaking of variations in types of female pelves divides them into "feminine" and "muscular" types. The increase in the incidence of the occiput posterior position and the narrowing of the pelvic outlet noted in the latter type of pelvis, are observations which correspond in general to my own observations in the "male" and the "anthropoid" types of pelves.

In a study in which I am now engaged there have been observed to date fifty consecutive primiparous patients, of whom twenty-three possess either the round or the elongated pelvis already referred to. I believe, therefore, that female pelves corresponding to the type seen in primitive women occur with far more frequency in women of this country than has hitherto

- 2 Thoms, Herbert. Am J Obst & Gynec 27: 270 (Feb.) 1934.
- 3 Caldwell, W. E. and Moloy, H. C. Am J Obst & Gynec 26: 479 (Oct.) 1933.
- 4 Thoms, Herbert. Am J Obst & Gynec 24: 50 (July) 1932.
- 5 Thoms, Herbert. Surg, Gynec and Obst 56: 97 (Jan.) 1933.
- 6 Thoms, Herbert. The Clinical Significance of Roentgenometry in Obstetrics. J. A. M. A. 102: 602 (Feb. 24) 1934.
- 7 Pride, W. T. B. X-Ray Diagnosis paper read before the Central Association of Obstetrics and Gynecology Oct. 29, 1931.
- 8 Williams, J. T. Am J Obst & Gynec 3: 345 (April) 1922.

been suspected. The question at once arises as to which is the normal pelvis, the round or the oval type.

Stoney⁹ and Vaughan¹⁰ have suggested that oval pelves are not truly the result of racial influence but are caused by the conditions of life in modern civilization. The former says that the oval pelvis of the civilized woman is due to lack of light and vitamin D. Vaughan emphasizes the causal relationship of other factors such as posture (especially in children) and points out that differences in pelvic development may be noted in the same race living under different conditions. Thus, women of India and China who work outdoors have easy labors, while those living in cities or in seclusion have difficult labors. Jarcho¹¹ quotes the Carnegie Trust Report for 1917, which emphasizes the "easy labors and large families among the Highland women who, barefooted, haul in the nets with the men, follow the plough and engage in field work." Incidentally, I may add that their diet probably consists largely of fish, which is a well known source of vitamin D.

The effect of civilization on an aboriginal people living under poor hygienic conditions in large cities is nowhere better shown than in the studies of J. Whitridge Williams,¹² who emphasizes the effect of such an environment in producing rickets and imperfect general development which play so conspicuous a part in the genesis of abnormal pelves in the colored race.

Miller,¹³ in speaking of Williams' studies of rachitic pelves in the Negro women of Baltimore, makes the comment that

he [J. W. Williams] works in a city which is essentially Northern in mode of life and his patients live in tenements and in typical tenement surroundings, whereas the Negro of the far South both in the city and the surrounding country, whatever else he may lack has an abundance of fresh air and sunshine, the two arch enemies of rickets. Levey's report from the Touro clinic I might add corroborates these findings as to the relatively small percentage of contracted pelves among colored women in this part of the country.

In view of the facts that the so-called simple flat pelvis is frequently regarded as of rachitic etiology and that there is a great prevalence of at least the mild manifestations of rickets in the population, as witnessed by the excellent studies of Eliot¹⁴ for the Children's Bureau, it is not difficult to see how the lesser grades of flattening of the superior strait could occur. Furthermore, it is not difficult to imagine a more or less general production of the oval type of pelvis.

The observations of Hess and his associates¹⁵ are pertinent. These authors state that

Although the incidence and severity of rickets in the United States has decreased in the last five or ten years, it must not be thought that it has become a negligible disorder. A clinical survey of rickets which we carried out this winter [1930-1931 in New York City] among the poor who attended health stations showed that fully half the white infants and approximately three fourths of the Negro infants have definite signs of rickets.

The various facts that I have enumerated suggest two interesting points, both of which are, of course, entirely speculative. First, the lack of the opportunity

now provided by roentgenometry, of studying accurately a great number of pelves in living women prevented our predecessors in obstetrics from securing satisfactory data for the proper evaluation of the normal or standard pelvis. Second, the predominant type of pelvis which was formerly seen in clinics may have actually changed in character within a generation. When alterations are considered in environment surrounding female infants and adolescent children during the past twenty-five years, changes brought about not only by a great difference in diet, but by such influences as outdoor exercise and life in the open, it must be admitted that the environment for this group has changed indeed during that period. When one further considers the sedentary habits, the type of clothing, the diet and general restrictions that previously were a part of the life of female infants and children, may one not speculate as to the effect of such an environment on the adult form of the female pelvis? That changes in environment can affect skeletal changes in a large proportion of a population is witnessed in recent years by the extraordinary lessening of the incidence in children of severe rachitis.

CONCLUSION

As present-day studies of the pelvis, greatly aided by roentgenometry, increase, it is assured that a definite answer to the original question will be found. At the present time it would appear, from a purely obstetric point of view, that the adult female pelvis is preferably round rather than oval. It may be, therefore, that the query has already been answered by the pragmatism of nature.

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THE MEDICAL CARE OF PATIENTS FOLLOWING TOTAL THYROIDECTOMY

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Total thyroidectomy has been proposed by Blumgart, Levine and Berlin¹ as a method of treatment in certain forms of intractable heart disease. There naturally have arisen some objections to this apparently drastic procedure, particularly in regard to the thyroprivia and its sequelae. Our purpose in this report is to consider the aftercare of patients subjected to complete thyroidectomy, especially the treatment of myxedema. Because requests have been received from physicians asking for specific details of postoperative management and because in some instances patients have been dismissed from some hospitals shortly after the operation without further attention, this discussion appears to be timely. As patients both with angina pectoris and with congestive heart failure have been subjected to this operation, the postoperative management of the two conditions will be dealt with separately.

In those with angina pectoris, who as a rule do not have evidences of cardiac decompensation, the convalescent period following operation is usually short, uneventful and unattended by troublesome complications.

From the Medical and Surgical Clinics of the Peter Bent Brigham Hospital.

¹ Blumgart H. L., Levine S. A. and Berlin D. D. Congestive Heart Failure and Angina Pectoris. The Therapeutic Effect of Total Thyroidectomy on Patients Without Clinical or Pathologic Evidence of Thyroid Toxicity. Arch. Int. Med. 51: 865 (June) 1933.

⁹ Stoney F. Brit. J. Radiol. 3: 426 (Sept.) 1930.

¹⁰ Vaughan K. Brit. M. J. 2: 939 (Nov.) 1931.

¹¹ Jarcho Julius. The Pelvis in Obstetrics, p. 82.

¹² Williams J. W. Obstetrics, ed. 5. New York: D. Appleton & Co. 1925, p. 840.

¹³ Miller C. J. Tr. Am. Gynec. Soc. 53: 91, 1928.

¹⁴ Eliot Martha M. Children's Bureau Publication 217.

¹⁵ Hess A. F., Lewis J. M., MacLeod F. L. and Thomas B. H. Antirachitic Potency of Cows Fed Irradiated Yeast or Ergosterol. J. A. M. A. 97: 370 (Aug. 8) 1931.

These patients often are allowed to become ambulatory forty eight hours after operation and are permitted to leave the hospital from seven to ten days following operation. However, in this group the likelihood of sudden and unexpected death from coronary thrombosis or ventricular fibrillation is a constant menace. This risk may be aggravated by the emotional stress in anticipation of surgery or may be provoked by the operation itself. Fortunately, such a complication was a rare event in our cases. Within a period of four to eight

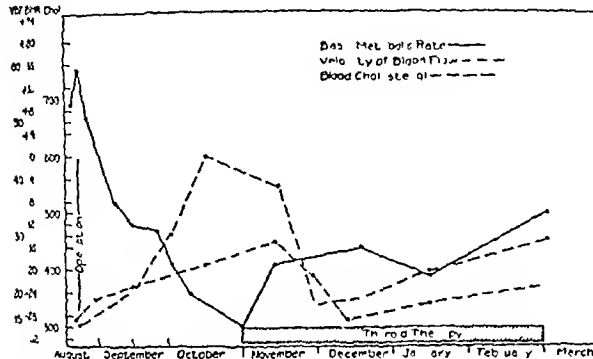


Chart 1—Progress of a patient with angina pectoris. Note the fall in blood cholesterol and the rise in the basal metabolic rate following thyroid therapy (0.030 Gm daily for one week and 0.015 Gm daily thereafter).

weeks following operation the typical symptoms and signs of myxedema will almost invariably develop and require treatment.

It has been shown that the administration of thyroid extract to elderly arteriosclerotic individuals with myxedema² may induce attacks of angina pectoris or precipitate congestive heart failure and occasionally coronary thrombosis. Although on several occasions thyroid feeding has failed to reproduce attacks of angina after surgical myxedema, such dangers are imminent, and the necessity of cautious administration of the extract is obvious. A safe rule is to give 0.030 Gm of the desiccated gland³ daily for one week and to continue with a maintenance dose of 0.015 Gm daily. The actual maintenance dosage should be determined by appropriate amelioration of the symptoms of myxedema, due regard being given to any possible untoward effects that the dosage might have on the circulation. In a very few instances, 0.015 Gm of thyroid extract daily was not adequate and a slightly larger dose was necessary, but in general it will be found that small doses are more effective in these thyroidectomized patients than in the ordinary spontaneous myxedema encountered in practice. A typical postoperative course is graphically depicted in chart 1.

The aftercare of patients operated on for the relief of congestive heart failure presents a more complicated problem in therapeutics, particularly in its relation to the management of myxedema. The postoperative convalescence was necessarily longer than in the group with angina pectoris and depended on two factors: first, the degree of decompensation at the time of operation and, second, the rapidity of the circulatory response to the deprivation of the thyroid secretion. In cases in

which cardiac compensation could be restored previous to operation by the usual medical measures, the period of convalescence in the hospital following operation was not longer than two or three weeks. After discharge, the medical regimen customarily employed in the treatment of chronic heart failure should be continued. The amount of physical effort to be permitted will naturally vary in different cases. In the group in which prolonged medical care failed to reestablish compensation and in which total thyroidectomy was done to lower metabolic demands to a level compatible with the lowered efficiency of the circulation, a much longer period of hospitalization was necessary. The full beneficial effects of the thyroidectomy did not become apparent until three or four weeks after the operation. When both signs and symptoms of heart failure disappeared, the patients were allowed to become ambulatory. As in the less seriously decompensated group, full digitalization should be maintained and a strict medical regimen observed. Occasionally it was found that less digitalis was necessary after than before operation. The eventual myxedema was effectively alleviated by thyroid extract in dosages similar to those outlined for the cases of angina pectoris. This regimen raised the basal metabolic rate from about minus 30 to a level of about minus 20, where it should be kept. A satisfactory course is shown in chart 2.

It is in this group with cardiac failure that the administration of an excessive amount of thyroid extract should be scrupulously avoided. The rise in the basal metabolic rate and the development of congestive failure can be quite rapid even on small doses of thyroid extract. This is well illustrated by the following case (chart 3).

A Negro, aged 52 with hypertension, chronic myocarditis and chronic auricular fibrillation was operated on for the relief of intractable cardiac failure. With the subsequently lowered metabolism, compensation was restored and he was able to lead a comfortable life until myxedema appeared. At this time he was given thyroid extract in doses of from 0.030 to 0.045 Gm daily. Within a period of fifteen days his basal

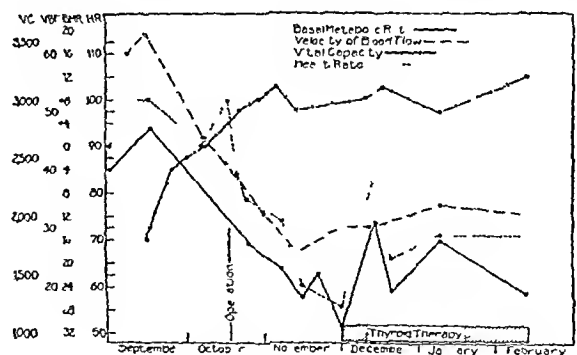


Chart 2—Progress of a patient with mitral stenosis, auricular fibrillation and refractory congestive heart failure. Note the marked fall in heart rate parallel to the fall in the basal metabolic rate after operation and the subsequent rise in both on thyroid therapy.

metabolic rate reached a level of 0 per cent and decompensation abruptly recurred, as manifested by a marked rise in pulse rate, pulmonary and peripheral edema, orthopnea and Cheyne-Stokes respirations. The basal metabolic rate rose still further after the thyroid extract was omitted, but then there was a rapid return to the previous state of compensation, which is still maintained eight months after the operation.

Myxedema has been the inevitable consequence of total thyroidectomy in all instances that were adequately followed. As a rule, the degree of myxedema was not

² Christian H. A. The Heart and Its Management in Myxedema. Rhode Island M. J. 8: 109 (July) 1925. Sturgis C. C. Angina Pectoris as a Complication in Myxedema and Exophthalmic Goiter. Boston M. & S. J. 195: 351 (Aug. 19) 1926. Means J. H. White P. D. and Kranitz C. I. Observations on the Heart in Myxedema with Special Reference to Dilatation and Angina Pectoris. *ibid.* 195: 455 (Sept. 2) 1926.

³ Armour's thyroid extract was used in this study.

marked. The symptoms complained of were puffiness of the face, lassitude, muscular pains, dryness of the skin, arthralgia, and gain in weight. In some cases, determinations of the basal metabolic rates were not reliable indexes of the degree of myxedema. Checks such as the velocity of blood flow⁴ and elevation of the blood cholesterol⁵ are occasionally helpful in guiding the course of therapy. When such measurements cannot be made, observations of the clinical status of the patient at appropriate intervals will serve sufficiently well to regulate thyroid medication. An example of such a discrepancy is a patient with angina pectoris without congestive heart failure whose basal metabolic rate was plus 1 per cent but in whom the evidences of myxedema were unmistakable. The velocity of blood flow was found to be 40 seconds and the blood cholesterol 610 mg per hundred cubic centimeters of blood. Thyroid therapy was given with beneficial results. Anemia was not encountered in our patients, probably because of the short duration of the myxedema. The association of psychosis with the hypothyroid state was encountered on only one occasion. This was in a patient with valvular heart disease and advanced congestive failure whose condition was but little improved by total thyroidectomy. There was no improvement in

three weeks. In no instance were the symptoms of sufficient severity to demand parathyroid extract. After treatment there were no recurrences.

Injury to the recurrent laryngeal nerves may occur as a result of surgical trauma and is indicated by hoarseness and possibly aphonia. Hoarseness appeared in a few cases and persisted for a variable length of time, but as yet aphonia has not been encountered. There is no specific treatment for this complication.

SUMMARY

In the postoperative care of patients subjected to complete thyroidectomy, there are three complications with which the physician is concerned: 1. Hoarseness and aphonia as a result of injury to the recurrent laryngeal nerves was very rare and required no specific treatment. 2. Postoperative tetany was quite uncommon, was never severe and was relieved by the administration of viosterol and calcium. 3. Mild symptoms of myxedema occurred almost invariably, were not necessarily paralleled by a low basal metabolic rate, and could be controlled easily by thyroid medication.

It was generally desirable to keep the metabolic rate at a level of about minus 20.

It was found that smaller doses of thyroid extract were necessary to produce the same effect in surgical myxedema than in the spontaneous type.

Finally, these patients should be given the same sort of medical advice as is given to cardiac patients in general, except so far as improvement permits an increased range of activity.

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SIALOLITHIASIS

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In searching for causes of pain, swelling and inflammation around the mouth and cheeks, the average practitioner frequently overlooks salivary calculi, because he rarely sees one.

As uncommon as salivary calculi are thought to be, one may be surprised at some figures quoted. Harrison¹ made a careful search of the literature from 1825 to 1926 and found 375 reported cases. He added twenty seven of his own. When salivary calculi are found in the duct, they are usually oval or olive shaped, if formed in the gland, they are more apt to be round or irregular. They are usually single, but one author reports the removal of fourteen stones from one gland and its duct. Stones weighing as much as 236 Gm have been reported. This particular calculus measured 1 3/4 inches long, 1 inch wide, and one-half inch thick. Bush states that these concretions may vary in size from a millet seed to a walnut. Owing to the difference in their composition, the weight is not always proportional to the size.

One case was noted in the literature as occurring in an infant less than 1 month old. They are more common in males than in females. In about 75 per cent of all reported cases of salivary calculi the stones were in the submaxillary ducts or glands, about 20 per cent in the parotid and a small number in the sublingual ducts or glands.

1. Harrison G. R. Calculi of Salivary Glands and Ducts. *Surg Gynec & Obst* 43: 431-435 (Oct.) 1926.
2. Bush E. R. A Case of Salivary Calculus in Wharton's Duct. *Indiana Med J* 16: 212 1913.

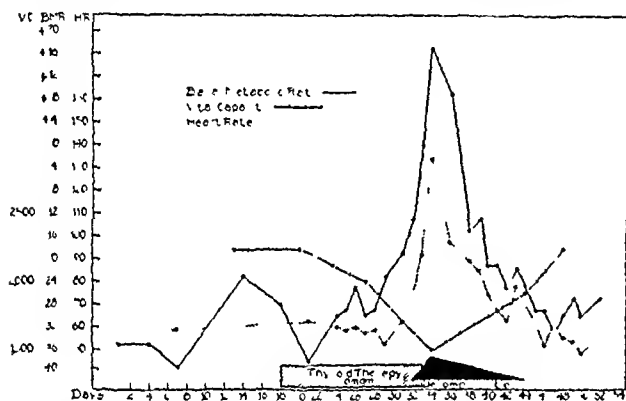


Chart 3.—Rapid development of marked congestive heart failure (indicated by the black triangle) as a result of thyroid therapy (from 0.030 to 0.045 Gm. daily). Compensation was readily reestablished when the thyroid extract was omitted.

the psychosis following thyroid therapy, and the psychosis might equally well be attributed to the effect of prolonged cardiac decompensation. In general, with the initiation of thyroid medication the signs and symptoms of myxedema were promptly controlled and in our experience easily maintained by the regimen previously outlined.

Tetany was an infrequent complication of the operation and, when evident, the symptoms and signs were mild, such as stiffness of the hands, paresthesias and muscular weakness. Trousseau's sign was invariably positive when tetany developed, but Chvostek's sign was found to be less reliable. When tetany occurred, it appeared within four to fourteen days after the operation and was readily controlled by the administration of from 5 to 10 drops of viosterol and from 4 to 8 Gm of calcium lactate daily⁶ for a period of from two to

4. Blumgart H. L., Gargill, S. L. and Gilligan D. R. Circulation in Myxedema with a Comparison of the Velocity of Blood Flow in Myxedema and Thyrotoxicosis. *J. Clin. Investigation* 9: 91 (Aug.) 1930.
Robb G. P. and Weiss Soma A. Method for the Measurement of the Velocity of the Pulmonary and Peripheral Venous Blood Flow in Man. *Am. Heart J.* 5: 650 (June) 1933.

5. Mason R. L., Hunt, H. M. and Hurvthal L. M. Blood Cholesterol Values in Hyperthyroidism and Hypothyroidism: Their Significance. *New England J. Med.* 203: 1273 (Dec. 25) 1930.

6. Aub J. C. in Cecil R. L. *Textbook of Medicine*. Philadelphia: W. B. Saunders Company 1933. p. 1259.

Badanes³ believes that three principal substances contribute to their formation, namely, calcium oxalate, globulin and mucin.

Calcium oxalate enters into the formation either as a foreign constituent from some fruits or vegetables rich in oxalates, such as asparagus, rhubarb and tomatoes, or as a salivary constituent in disorders of metabolism from a pathologic condition, or as a result of faulty nutrition.

Globulin, which is always present in the saliva mostly from the parotid secretion, is held in solution by the aid of the various salts present. Globulin is distinguished from albumin mainly by its insolubility in water. It may be precipitated from the saliva by weak acids or alkalis or a concentrated solution of neutral salts. It is also precipitated from a solution when diluted with pure water. The water one drinks with food precipitates globulin. In the churning act, while a bolus for deglutination is formed a small part of globulin, together with mucin and precipitated inorganic salts, is pressed into inaccessible places, where it finds protection as in the gingival trough around the necks of the teeth and, unless removed by chemical or mechanical means while fresh and still soft, will remain until it hardens in the course of time.

Mucin is a glucoprotein, formed from mucigen, which is found as granules in goblet cells of secreting glands. It forms the chief constituent of the cementing substance between epithelial cells. In the saliva it exists as potassium mucinate in solution. Like globulin, mucin is precipitated from solution by weak acids which have a pH range of about 1.5 to 4.9. It may also be precipitated from the saliva by strong alcoholic beverages. Mucin, in its precipitated form, swells up and is insoluble in water. It is soluble in weak solutions of neutral salts, such as chloride, sulphates and phosphates of sodium and magnesium, and will not be precipitated in their presence by acetic acid. A concentrated solution of sodium chloride renders sodium mucinate less soluble. Mucin dissolves in very weak solutions of alkalis, including lime water, but as calcium mucinate it is less soluble than as potassium or sodium mucinate.

Calcium carbonate and phosphate stones are sometimes formed around a foreign body nucleus.

SYMPTOMS

The symptoms vary. Some individuals may go for years without symptoms. There may be periodic attacks of colicky pain in the gland or duct involved. This is produced by retention of saliva and is accompanied by varying amounts of pain and discomfort in the region of the affected duct or gland, usually occurring immediately on eating or at the sight of food. The pain may be severe, especially when the patient attempts to swallow. A painful enlargement may occur, especially at mealtime. This may recede slowly, or, if the stone slips out of the duct so as to reestablish adequate drainage, the swelling may quickly disappear, at which time the patient may notice a sudden gush of saliva into the mouth.

Marked inflammatory symptoms may occur. If from prolonged blocking of the duct or for any other reason infection occurs, the mass may become tender, painful, red and swollen. Pus may be seen coming from the opening of the duct. A foul taste in the mouth, most frequently noticed after a night's rest, sometimes occurs

when the stone causes a continuous low-grade infection within the gland or duct.

DIAGNOSIS

Usually the diagnosis of salivary calculus is easily made from the history, supplemented by bimanual palpation and roentgen examination.

It is questionable whether probing a duct as a diagnostic procedure is warranted, since the duct may be perforated during the procedure. If it is necessary, a method described by Blair seems simple. A hypodermic needle filled with a local anesthetic solution infiltrates the tissues around the duct as the needle is passed in an effort to locate the stone. The needle or sound may touch the calculus and produce a grating sensation. Occasionally the stone may be seen spontaneously extruding from the orifice of the duct.

Since salivary calculi are usually rich in lime salts, they can be easily roentgenographed. Hamlin⁴ believes that negative reports are often the result of faulty technique. A calculus in the anterior two thirds of Wharton's duct can be readily demonstrated by using a $2\frac{1}{2}$ by $3\frac{1}{4}$ inch film placed horizontally between the teeth as far back in the mouth as possible, and by directing the rays from beneath the chin upward. A calculus in the posterior third of the gland itself will be best shown by taking a lateral view. The anterior two thirds of the duct cannot be demonstrated by a lateral picture because the duct will be obscured by the shadow of the mandible. Those in Stenson's duct can usually be shown on a small film held over the outside of the duct and parotid gland on the cheek.

DIFFERENTIAL DIAGNOSIS

Swelling of the parotid salivary gland must be differentiated from the following conditions: Benign tumors such as fibromyoma, endothelioma and teratoma are encapsulated, grow slowly, lie alongside the parotid gland, shell out easily and, if removed, do not recur. They may become quite large in years, if left alone. Carcinomas and sarcomas grow rapidly and soon involve the whole gland. They extend deeply among important structures such as the facial nerve and may cause facial paralysis. Swellings of the preauricular lymph glands due to pyogenic infection and syphilis must also be excluded. Mumps must not be forgotten.

Tumors of the submaxillary and sublingual glands are similar but more rare than those which occur in the parotid gland. Ranulas and mucous cysts of the floor of the mouth rarely offer much diagnostic difficulty. Lymphadenitis due to infection in the teeth or tonsils is frequently confused with sublingual or submaxillary enlargements. A careful history of the symptoms and examination as already described, together with roentgenograms of the teeth, will usually be adequate to rule out swellings due to dental origin. Ludwig's angina must also be remembered.

Mikulicz's syndrome is characterized by bilateral chronic swelling of the parotid or submaxillary or sublingual salivary glands. There may be a simultaneous swelling of the lacrimal glands. The spleen and lymph glands may also be enlarged. The syndrome is not due to a specific disease but usually results from lymphatic leukemia or less often from some infection such as tuberculosis, secondary syphilis or gout. Each of these

⁴ Hamlin, F. E. Calculus of the Submaxillary Gland and Duct. Arch. Otol. 10: 177 (Aug.) 1929.

⁵ French, Herbert. Index of Differential Diagnosis, ed. 3. New York: William Wood & Co., p. 694.

³ Badanes, D. B. Magnesium: An Aid in Preventing Calculus Formation. Dental Cosmos 71: 251 (March) 1929.

contributing factors can be easily ruled out by the proper diagnostic procedures

PROGNOSIS

Salivary calculi may recur, as shown in an article by Boss.⁶ Recurrences after operative removal are noted most frequently in the submaxillary and sublingual glands and ducts. The period between operative removal and recurrence has been noted to vary from a few months to five years. A recurrent attack may be due to (1) failure to recognize concretions of the excretory ducts of the salivary glands at operation during which these are often forced into the ducts, (2) breaking the calculus during removal and (3) transitory or permanent cicatrization of the salivary passages after removal of a stone without simultaneous extirpation of the gland. The universal preoperative use of roentgenography should localize and identify these calculi accurately so that all can be removed at the operation.

TREATMENT

The treatment may be medical or surgical or a combination of the two.

The essential medical methods include anything that will stimulate the salivary secretion. Belladonna in all forms should obviously be avoided. Simple massage of the duct may remove a stone if located in the anterior third. If acute inflammatory conditions exist, continuous hot fomentations and frequent oral irrigations with antiseptic washes should be carried out until such processes have subsided.

As stated earlier in this paper, mucin and globulin are both soluble in magnesium salts. Badanes⁷ believes that, by incorporating 0.5 per cent each of magnesium chloride and magnesium sulphate into any good toothpaste, globulin, mucin and even calcium oxalate may be dissolved. Although these two salts have a slightly bitter taste, they may be easily disguised by the sweet taste of glycerin and aromatics used as flavors in toothpaste.

INDICATIONS FOR OPERATION

When salivary calculi are found in a duct or gland they should be removed, not only for the relief of pain, but also to prevent further pathologic changes from developing. As pointed out by Waring,⁷ surgical intervention as a rule is uncomplicated, but a deep seated cellulitis of the cervical tissues has been known to follow the simple removal of a calculus.

OPERATIVE TECHNIC

Most surgeons believe that the stone should be removed by an intra-oral incision if it is situated in the sublingual gland or duct, the anterior two thirds of the submaxillary duct, or the buccal portion of the parotid gland. Total extirpation of the sublingual or submaxillary gland is indicated if a stone is present in the substance of the gland or if there is inflammation of the gland, even though the stone is in the duct. It is not advisable to extirpate the parotid gland.

Calculi usually can be removed under local infiltration anesthesia. Blocking the lingual nerve, as in the mandibular injection for extraction of teeth, also gives excellent anesthesia.

A calculus may be seen impacted in or presenting itself at the orifice of the duct. Simple extraction with

a forceps usually is adequate in such instances. If the stone is farther back in the duct, the duct may be fixed with tissue forceps or a suture, the duct incised parallel with the long axis, and the calculus removed with a scoop or forceps. If the stone has not previously been fastened, it may slip along the canal and enter the hilus of the gland. In nonsuppurative cases, the mucous membranes can be closed without drainage. If an acute inflammatory process or suppuration exists, a small strip of gauze packing or Penrose drain should be left in the incision. Since there may be considerable reaction following the operative procedures lasting for several days, frequent intra-oral irrigations, accompanied by the external application of ice, should be carried out. Drugs of various kinds may be indicated to control pain.

In cases of long standing in which multiple stones are present or when there is chronic inflammation, radical extirpation of the gland should be done. Bailey⁸ says that if symptoms recur after the removal of a stone from Wharton's duct, the gland should be removed in every case. He has found that recurrent calculus often signifies that there are still other calculi within the gland. He also believes that there is a definite relationship between Ludwig's angina and acute inflammation of the submaxillary gland.

Radical extirpation of the gland is carried out as follows. The incision is made parallel to the lower border of the mandible, which is preferable to that used in the classic operation for ligation of the lingual artery, because the main vessels are encountered more easily and without forcible traction on the skin. The platysma myoides muscle is divided along the same line and turned up as a separate layer. The facial artery and vein are identified and divided between ligatures during the dissection of the gland. The inframandibular branch of the facial nerve should be preserved if possible. Its injury will cause drooping of the corner of the mouth, owing to paralysis of the triangularis menti muscle. Although improvement may occur in time, care during the surgical steps must be observed. The accident is difficult to avoid, but there is less chance of its occurrence if the incision is made well below the border of the jaw.

REPORT OF CASE

A white woman, aged 56 when first seen had a marked tender swelling involving the left sublingual salivary gland. The swelling pushed the tongue well over to the right side of the mouth. The patient gave a history of having had many similar attacks during the previous forty years. They always subsided spontaneously but none had been as severe as this one. The attacks usually began when she was eating a meal. The submaxillary duct had been probed several times by her dentist, but without relief or diagnosis. During the past forty years she always was aware of a foul taste in the mouth, especially on arising in the morning.

A diagnosis of left sublingual salivary calculus seemed most likely. The patient was in immediate distress and roentgenograms were postponed. She was advised to irrigate her mouth frequently with an antiseptic mouth wash and to apply continuous external hot fomentations over the swollen tissues.

When seen twenty-four hours later a stone was presenting itself through the orifice of the left submaxillary salivary duct. It was easily extracted with forceps. Palpation revealed further stones and two more were milked down the duct and extracted. When fitted together they measured 3 cm in length by 1 cm in maximum diameter. They weighed 0.5 Gm. The pieces were faceted or articulated together, apparently

⁶ Boss, William. Speichelstein recidive. Beitr. z. klin. Chir. 146: 222, 1929.

⁷ Waring, J. B. H. Salivary Calculus. Virginia M. Monthly 56: 193 (June) 1929.

⁸ Bailey, Hamilton. Stones in the Submaxillary Gland. Practitioner 126: 671-674 (June) 1931.

having been broken off from one large duct stone, or over a period of years of rubbing together, three separate stones had gradually fitted themselves end to end.

Following the extraction of the calculi, the swelling and pain rapidly abated and has not recurred since (one year). Moreover, the foul taste has been absent. Roentgenograms failed to reveal any further calculi.

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GAS BACILLUS INFECTION OF ABDOMINAL WALL

REPORT OF THREE CASES COMPLICATING ENTEROSTOMY

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Considering the great number of operations done for intra-abdominal infections, gas bacillus infection of the abdominal wall, as a complication, is quite rare.

In 1925, Ochsner and Schmidt¹ reported a case of gas bacillus infection of the abdominal wall following the drainage of an appendix abscess and removal of a gangrenous appendix. Butler² has recorded two infections of the abdominal wall, one following the removal of a perforated gangrenous appendix and the other following cecostomy. Shearer's³ case of gas infection of the abdominal wall followed the removal of a nonruptured gangrenous appendix. King⁴ describes a case following appendectomy, in which he stated that the smear showed a suggestion of *Bacillus welchii*. Extensive gas infections, following drainage of appendix abscesses, are recorded by Lamprecht,⁵ Traver,⁶ Douglas⁷ and Miyamoto.⁸ Butler and Rhodes⁹ report two cases in which an extensive infection of the abdominal wall by the gas bacillus followed enterostomy for intestinal obstruction. Seven cases of infection of the abdominal wall with gas bacillus, following abdominal operation, are recorded by Eckhoff,¹⁰ one of which followed enterostomy.

REPORT OF CASES

The following three cases are briefly noted as examples of gas bacillus infection of the abdominal wall, as a complication of enterostomy for intestinal obstruction.

CASE 1—A. W., a man aged 44, was admitted to the University of Kansas Hospital, March 29, 1932 and died April 6. There was a history of a rather atypical appendicitis with the development of an abscess in the right lower part of the abdomen complicated by an obstruction of the small intestine. An operation was done the day following admission to the hospital through a right rectus incision. A large appendiceal

abscess was found and drained. An enterostomy was done at the same time in the lower part of the ileum by the Witzel technique. Aerobic cultures made of the pus from the appendix abscess showed *Staphylococcus aureus* and a gram-positive bacillus. Two days following the operation the patient's temperature rose to 104 F and he was irrational. Free drainage from the enterostomy tube and profuse drainage from the incision were noted. On the fifth day following operation, gas was noted in the subcutaneous tissues of the abdominal wall and in the wound. The wound showed a dark gray sloughing surface with a very foul odor. This suggested a gas bacillus infection. The cultures taken of the pus from the appendix abscess the day of the operation were then recultivated by an anaerobic method, and a gram-positive bacillus, producing gas was found. An intravenous injection was made into a rabbit. The rabbit was killed five minutes later and left in an incubator for twenty-four hours. Extensive emphysema was found in the subcutaneous tissues and liver. Large numbers of gram-positive bacilli were present in the liver and recovered in anaerobic culture. This gram-positive bacillus morphologically and culturally resembled *Bacillus welchii*. An autopsy showed general peritonitis due to the ruptured appendix with necrosis of the skin about the abdominal incision.

CASE 2—P. R. S., a man, aged 67, was admitted to the hospital, Nov. 28, 1933, and died, November 30.

There was a history of an old right femoral hernia. The onset of the present illness occurred four days before admission with abdominal pain and persistent vomiting. Examination revealed a strangulated femoral hernia. Study of the chemistry of the blood showed a high nonprotein nitrogen and a low chloride content. Operation was done the day of admission under local anesthesia. The bowel was in good condition and the hernia was reduced. Because of the marked distention and long duration of the hernia, a Witzel enterostomy was done through a small right rectus incision, the first loop of intestine presenting in this locality being used. Following operation the next day the patient had a temperature of 102 F but appeared to be doing fairly well. The evening of the second day he grew very delirious. At the end of forty hours discoloration and subcutaneous gas was noted in the abdominal wall, extending upward from the incision. This increased until it reached the axilla. Blisters formed in this area and the skin turned very dark, suggesting beginning gangrene. He died fifty hours following the operation. Cultures from the enterostomy wound showed a gram-positive, gas-producing organism resembling *Bacillus welchii*. A rabbit was injected and incubated. Smears and cultures from the rabbit showed an organism typical of *Bacillus welchii*. The autopsy showed an acute emphysematous cellulitis of the skin and subcutaneous tissue of the right side of the abdomen and thorax. A localized peritonitis with beginning gangrene of the intestinal loop was noted. The hernia wound was free from infection.

CASE 3—J. B., a man aged 62 was admitted to the hospital, March 15, 1932, and died March 28.

There was a definite history and manifestations of acute intestinal obstruction of six days' duration. Because of his general poor condition a Witzel enterostomy was done with local anesthesia through a left rectus incision. The omentum was interposed between the enterostomy and the abdominal wall. Distention of the small intestine was found, but the cause of the obstruction was not discovered. Five days after the enterostomy, marked drainage was noted from the abdominal wound, evidently a leakage from the intestine at the site of the enterostomy. The scrotum was edematous and his general condition was critical. Seven days following the operation, gangrene of the scrotum was noted with crepitation in the subcutaneous tissue, extending from the suprapubic region up to the enterostomy wound. Death occurred eleven days following enterostomy. General peritonitis was found at autopsy as a result of perforation at the site of the obstruction of the lower part of the ileum, and acute gangrenous cellulitis of the scrotum and abdominal wall. Cultures from the scrotum showed nonhemolytic streptococci and a short, plump, gram-positive bacillus. Anaerobic cultures made later showed a gas-producing organism of the *Bacillus welchii* type.

From the University of Kansas School of Medicine.
1 Ochsner A. J. and Schmidt E. R. Gas Bacillus Infection Originating in a Gangrenous Appendix. *S. Clin. North America* 5: 911 (Aug.) 1925.
2 Butler D. D. Postoperative Gas Bacillus Infection of the Abdominal Wall. *Ann. Surg.* 84: 841 (Dec.) 1926.
3 Shearer J. P. Gas Gangrene of the Abdominal Wall Following Gangrenous Appendicitis. *Ann. Surg.* 90: 1114 (Dec.) 1929.
4 King W. E. Gas Bacillus Infection in Civil Life. *Am. J. Surg.* 14: 460 (Nov.) 1931.
5 Lamprecht H. Gasbrand bei Appendicitis. *Arch. f. Klin. Chir.* 150: 328 (April) 1928.
6 Traver C. A. Gas Bacillus Infection Complicating Appendicitis. *New York State J. Med.* 33: 946 (Aug. 1) 1933.
7 Douglas J. in discussion on Jennings J. E. The Relation of *Welch Bacillus* to Appendicitis and Its Complications. *Ann. Surg.* 93: 840 (April) 1931.
8 Miyamoto Masaji. Gas Edema of the Abdominal Wall as a Very Rare Complication of Appendectomy. *Taiwan Igakkai Zasshi* 31: 23 (1931).
9 Butler E. and Rhodes G. Infection of Abdominal Wall with *Bacillus welchii* Following Enterostomy for Bowel Obstruction. *California & West. Med.* 32: 248 (April) 1930.
10 Eckhoff, N. J. Gas Gangrene in Civil Surgery. *Brit. J. Surg.* 18: 38 (July) 1930.

COMMENT

In the three cases cited, each presented a pathologic condition that might have caused death even though the gas infection had not been present. However, it seems very probable that the gas infection at least contributed to and hastened the lethal outcome. In case 2 the infection evidently developed directly from the enterostomy wound in the ileum. In each instance, the gas-producing organism probably came directly from the intestinal tract.

In considering the diagnosis of gas infection of the abdominal wall it must be remembered that quite an extensive emphysema may develop following closure of an abdominal wound owing to the escape of retained air through the wound into the subcutaneous tissues. This observation was especially emphasized by Russell¹¹ in 1897. A beginning gas bacillus infection is likely to be associated with severe pain at the site of the wound, commencing from twelve to forty-eight hours after an operation. This may be considered one of the early warning symptoms of the onset of this type of infection. Other well known signs and symptoms, such as swelling, skin discoloration, crepitation, foul odor, and the finding of the typical bacillus, develop rapidly, necessitating hourly observations of any suspected wound.

It is quite reasonable to expect gas infections secondary to abdominal infections, since gas-forming organisms are more or less constantly found in the intestine. Jennings¹² found a positive culture of *Bacillus welchii* in 90 per cent of appendices removed at operation. Williams¹³ has expressed the belief that the toxemia of intestinal obstruction and peritonitis is due in part at least to the absorption of the toxin of *Bacillus welchii* but such an assertion still lacks proof.

Since the gas bacillus is present in the small bowel and appendix in quite a high percentage of individuals, the use of antitoxin is quite logical in patients having operations that expose the tissues of the abdominal wall to infection from bowel content.

SUMMARY

Eighteen cases of gas bacillus infection of the abdominal wall following abdominal operations have been found recorded. To this number the three cases here briefly described are added. The diagnosis was not proved by culture in all cases, which made an error in diagnosis possible.

The mortality in the twenty-one cases has been 61 plus per cent.

Because of the possibility of gas infection of the abdominal wall following gangrene or abscess of the appendix, or any operation that involves opening the intestine, clinicians should be on the alert for this complication.

Any unusually severe pain developing in a postoperative wound within twelve to forty-eight hours should suggest the possibility of gas bacillus infection.

In the present state of knowledge, gas bacillus antitoxin seems to be of value in the treatment of gas bacillus infection and is recommended in such infections of the abdominal wall.

Bell Memorial Hospital

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12 Jennings J E. The Role of *Bacillus Welchii* in Gangrenous Appendicitis. *New York M J* 117: 682 (June 6) 1923.

13 Williams B W. The Importance of Toxemia Due to Anaerobic Organisms in Intestinal Obstruction and Peritonitis. *Brit J Surg* 14: 295 (Oct.) 1926.

OBSERVATIONS ON THE RELATIONSHIP
OF THE VIRUS OF HUMAN INFLU-
ENZA AND DOG DISTEMPER

PRELIMINARY REPORT

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Investigations that have been carried out during recent years have revealed that certain diseases of previously obscure etiology are caused by viruses—infectious agents so small that they are capable of passing through filters that hold back all known bacteria.

The list of these viruses is still increasing, and one of the latest additions has been described by Smith, Andrewes and Laidlaw¹ in a study of throat washings from influenza patients. These investigators inoculated ferrets intranasally with the bacteria-free filtrates from the throat washings and regularly observed the occurrence of a febrile condition in these animals, indicating an infectious process.

The ferret disease is characterized by a two-day incubation period, a diphasic temperature response and symptoms of nasal, catarrhal and systemic disturbances. The temperature rises often above 106 F, it subsides on the third and fourth day but rises again on the fourth and fifth day, after which it gradually returns to normal. Systemic symptoms are lethargy, inappetence and muscular weakness. The eyes and nose show a watery discharge. The symptoms usually subside within from six to ten days, after which the ferret becomes perfectly normal. According to Smith, Andrewes and Laidlaw, the disease has never been fatal in ferrets in the sixty-four cases that they observed throughout the full course of illness. This experience has been confirmed by us in our experimental work with this virus.

The postmortem changes as observed by us coincide with those described by the original investigators and are as follows. In ferrets killed during the first and second febrile periods the mucous membrane of the nasal passages shows acute inflammation. Sections across the turbinate bones show, in the soft parts, acute vascular congestion, dilated lymph channels, numerous leukocytes passing out through the epithelium, and serious derangement of this structure. There is almost invariably complete disappearance of ciliated cells, and occasionally patchy necrosis of the whole thickness of the epithelium may be observed. No histologic feature, such as an inclusion body, has as yet been discovered that can be called characteristic of the disease.

For propagation of the virus, the English investigators employed the following technic. Throat washings from eight human cases diagnosed as influenza were inoculated into ferrets. Five of these produced the disease in ferrets. Six days following the onset of the disease in man no virus was recoverable from the nasal discharges. The filtrate, prepared from an emulsion of the lung tissue from a fatal case of influenzal pneumonia likewise produced the ferret disease. Throat washings from human subjects not suffering from influenza were noninfective.

From the Lederle Laboratories, Inc.

1 Smith, Wilson, Andrewes C H and Laidlaw P P. *Lancet* 2: 66 (July 8) 1933.

Carefully checked experiments confirmed the filtrability of the virus. According to Smith, Andrewes and Laidlaw, ferrets recovered from the disease were immune to subsequent infection with the same strain of virus. In our own experiments, we found that only a percentage of such ferrets showed definite immunity. Others reacted to the second injection of the influenza virus with a rise in temperature.

EXPERIMENTAL DATA

During a visit to England in July 1933 the senior author secured a small amount of the dried virus for the purpose of testing the susceptibility of pigs in the United States to the influenza virus of man. The virulence of the virus was maintained through passage in ferrets and, in the course of this work, the virus, for some reason or other, lost its infectivity for ferrets. A fresh supply was obtained from Smith, Andrewes and Laidlaw, which, on arrival in our laboratory, proved infective for ferrets. This virus has been kept active through passage in ferrets for thirty generations.

The virus was propagated by instilling the virus into the nasal passages of the ferrets, two ferrets were used

a uniform incubation period as previously mentioned, these results, even in the limited number of suitable animals at our disposal, clearly suggest that the animals which had recovered from the infection with influenza virus had acquired a resistance to the canine distemper virus. This resistance could not be due to local changes in the nasal mucous membrane caused by the influenza virus because the subsequent tests with the distemper virus were made by injection.

These interesting changes suggested a repetition of the experiments. A second series of eleven ferrets were given two and three nasal instillations of influenza virus and then were subjected to an injection of canine distemper virus in amounts that always proved fatal to susceptible animals. The results are tabulated in the accompanying table.

Of the eleven ferrets, six received only two instillations of the influenza virus, of which only one remained well. Of the five remaining ferrets which received three nasal instillations, three remained well. All ferrets that died showed a marked delay of the distemper symptoms, which is apparent when compared with the three control animals.

The Susceptibility of Ferrets to Canine Distemper Virus Following Nasal Instillations of Human Influenza Virus

Nasal Instillations of Influenza Virus and Subsequent Temperature Reactions							Immunity Against Influenza	Dose of Canine Distemper Virus * 1/20/34	First Appearance of Distemper Symptoms, Days	Results
Ferret	First		Second		Third					
	Date	Temp	Date	Temp	Date	Temp				
20	11/29/33	104.6	12/21/33	104.5			None	0.1 cc	15	Death in 10 days
21	11/29/33	105.0	12/21/33	103.9			Questionable	0.2 cc	13	Death in 17 days
22	12/ 6/33	104.2	12/21/33	103.5	1/17/34	101.0	Immune	0.2 cc	Remained well	Immune
23	12/ 6/33	104.0	12/21/33	103.4	1/17/34	103.0	Questionable	0.1 cc	13	Death in 18 days
24	12/16/33	104.3	1/ 2/34	103.8	1/17/34	101.6	Immune	0.1 cc	17	Death in 19 days
25	12/16/33	104.4	1/ 2/34	105.0	1/17/34	102.2	Immune	0.2 cc	Remained well	Immune
26	12/21/33	104.5	1/ 2/34	103.6	1/17/34	102.4	Immune	0.1 cc	Remained well	Immune
30	1/ 2/34	105.0	1/17/34	102.6			Questionable	0.1 cc	15	Death in 10 days
31	1/ 2/34	104.1	1/17/34	104.4			None	0.2 cc	Remained well	Death in 26 days†
32	1/ 2/34	105.4	1/17/34	104.4			None	0.2 cc	17	Death in 19 days
33	1/ 2/34	103.6	1/17/34	102.6			Questionable	0.1 cc	13	Death in 20 days
Controls										
36								0.1 cc	10	Death in 13 days
37								0.1 cc	12	Death in 15 days
38								0.2 cc	11	Death in 14 days

* Five per cent suspension of spleen tissue virus injected subcutaneously.

† Not distemper.

for this purpose. At the height of the reaction, one ferret was destroyed and the virus removed and preserved in the described manner. In due time, a large number of ferrets recovered from the influenza virus were accumulated.

It is our routine practice to employ ferrets in the testing of canine distemper virus and, not suspecting a possible relationship between this virus and that of influenza, we used some of the ferrets that had recovered from the influenza infection for tests with canine distemper virus. However, it was observed that these ferrets did not react to the virus of distemper in the same manner as they usually do to such virus injection. There was a very pronounced delay of the period of incubation and, in view of this peculiarity, it was deemed advisable to subject all the remaining ferrets to an injection with the distemper virus, eleven ferrets in all having been used. The results showed that the usual period of incubation of from nine to ten days following the injection of distemper virus was extended to from thirteen to seventeen days, and two of the ferrets proved apparently immune to distemper.

In view of our experience that the strain of distemper virus, with which these experiments were made and which has been studied in more than 800 ferrets, never has failed to kill these animals and always shows

It is apparent from these experiments that the influenza virus induces some immunologic reaction in ferrets against the distemper virus. Limited cross-neutralization experiments and immunizing attempts with hyperimmune distemper serum against the influenza virus are now in progress and will be reported on at a later date.

From time to time, claims have been made of the close relationship of influenza in man and canine distemper in dog. However, no definite proof has been presented of the identity or the relationship of these viruses. The data submitted strongly point to the possibility of such a relationship and it is hoped that the experiments now in progress will further clarify knowledge with regard to these viruses.

CONCLUSIONS

The virus of influenza in man apparently induces an immunity in ferrets against the distemper virus of dogs.

The available experimental data, as indicated in this preliminary report, suggest a possible relationship of influenza in man and distemper in dogs.

Experiments are now in progress to determine the possibility of cross-immunization with the virus of influenza and the virus of distemper in dogs.

EFFECTS OF INTRAVENOUS ADMINISTRATION OF HYPERTONIC SOLUTIONS OF DEXTROSE

WITH SPECIAL REFERENCE TO THE CEREBROSPINAL FLUID PRESSURE

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Following the discovery that the introduction of concentrated solutions of various salts or of dextrose into the blood stream¹ or the gastro-intestinal tract² of an experimental animal causes a diminution in its cerebrospinal fluid pressure, hypertonic solutions have been administered clinically by different routes in attempts to reduce intracranial hypertension in patients suffering from brain trauma,³ brain tumor,⁴ meningitis⁵ or brain edema with acute infections⁶. However, more recent observations both in animals⁷ and in a small number of human beings⁸ have indicated that the initial decrease in the tension of the cerebrospinal fluid induced by these methods is superseded within from one to three hours by a persistent rise in subarachnoid pressure and an exacerbation of the initial symptoms of intracranial hypertension.

The problem, therefore, appeared to require further investigation. It is my purpose in this paper to report a study of certain clinical and rachimydodynamic effects of the intravenous administration of solutions of dextrose in various amounts and concentrations to eighty-five human subjects under controlled experimental conditions.

METHOD

Patients between 20 and 40 years of age and free of clinically determinable organic disease were chosen for this study. Ten grains (0.6 Gm.) of barbitol was administered to each patient to promote relaxation. He was then allowed to rest in the right lateral position for half an hour, after which his pulse rate and blood pressure were determined. Lumbar puncture

was then done under local anesthesia, and a glass manometer filled to the 150 mm mark with sterile Ringer's solution was connected to the spinal needle with the loss of as little fluid as possible. When a satisfactory control reading of the patient's "basic" cerebrospinal fluid pressure⁹ during from fifteen to sixty minutes had been obtained, solutions of dextrose in various amounts and concentrations were injected intravenously at the rate of from 10 to 20 cc per minute, dextrose being chosen for use in this study because, in contrast to various electrolytic salts, it is apparently nontoxic when given intravenously in concentrated solution¹⁰. During the injection and for a period of from two to six hours thereafter, the patient's spinal fluid pressure was read at least every ten minutes, in addition, his pulse rate, blood pressure and general condition were recorded half-hourly during the experiment and also at various intervals during the ensuing forty-eight hours. In twenty-four cases, moreover, lumbar and/or cisternal punctures were performed eight, twelve or twenty-four hours after the administration of the dextrose in order to determine the general course of the cerebrospinal fluid pressure subsequent to the period of continuous observation¹¹.

EFFECTS OF THE INTRAVENOUS ADMINISTRATION OF HYPERTONIC SOLUTIONS OF DEXTROSE

Clinical.—The administration of less than 55 Gm of pharmacologically pure dextrose in simple 20 to 50 per cent solution produced no adverse symptoms in our subjects,¹² when, however, more than 100 Gm of dextrose in greater than 20 per cent concentration was given intravenously to thirty-two patients, twenty-three of them subsequently complained of headaches, backaches or peripheral nerve pains, which began from one-quarter to one hour after the injection of the dextrose and persisted during the ensuing three to thirty hours. Concentrations of dextrose of from 35 to 50 per cent produced pain in the injected vein in about 35 per cent of cases, but none of our patients developed an overt phlebitis. Of the twenty-four patients who received 185 Gm or more of dextrose, fourteen subsequently showed elevations of temperature reaching 100 to 102.8 F in from three to five hours, with subsidence to normal in from three to eleven hours. Since eight of the sixty-one patients who received 100 Gm of dextrose or less also had some degree of pyrexia, the possibility of pyrogenic impurities¹³ in some of the dextrose preparations cannot be altogether excluded.

Contrary to previous comparable observations,¹⁴ no constant rise in systemic arterial blood pressure after

From the Baltimore Psychopathic Hospital. Thanks are due to Dr Harry Goldsmith, director of the hospital for his cooperation in this work.

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9 Masserman J H. Cerebrospinal Hydrodynamics. IV. Clinical and Experimental Studies. *Arch Neurol & Psychiat* to be published.

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11 In a separate series of experiments 5 cc samples of spinal and/or cisternal fluid were withdrawn at intervals of from one half to twenty four hours after the intravenous administration of the dextrose; the samples of fluid being examined for cell content and also for quantitative determinations of dextrose in relation to the simultaneous concentration of this substance in the blood. The results of these studies will be reported elsewhere.

12 This observation is in accord with the fact that 250 cc of a 20 per cent solution of dextrose seemed actually efficacious in preventing or ameliorating postpuncture headaches in a separate series of patients subjected to rapid drainage of from 20 to 50 cc of spinal fluid (Masserman J H. Central Nervous System Shock and Edema Following Rapid Fluid Decompression of the Ventriculosubarachnoid Spaces. *J Nerv & Ment Dis* to be published).

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the injection of hypertonic solutions was observed, nor was there any significant effect on the pulse rate

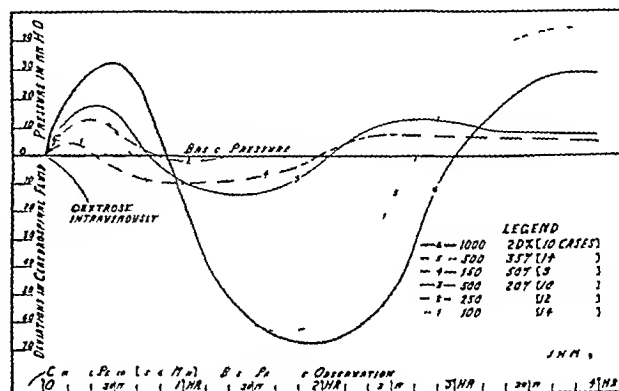
Effects on the Cerebrospinal Fluid Pressure—The average deviations of the cerebrospinal fluid pressure following the intravenous injection of various amounts and concentrations of dextrose are plotted in the accompanying chart. To summarize the data: 1 The administration of 10 per cent dextrose intravenously to sixteen patients produced an increase in cerebrospinal fluid pressure whose duration and height were in direct proportion respectively to the amount of solution administered and to the speed with which it was injected, no consistent secondary deviations in the cerebrospinal fluid pressure were observed with the isotonic preparations.¹⁷ 2 Similar but somewhat smaller initial rises in cerebrospinal fluid pressure were produced by the injection of the hypertonic solutions. 3 When more than 75 Gm of dextrose was administered in from 20 to 50 per cent solution, this initial effect was followed by a fall in cerebrospinal fluid pressure of from 26 to 162 mm of water, the curve of pressure reaching its nadir at from 50 to 170 minutes after the injection. 4 In the ensuing 50 to 120 minutes, the cerebrospinal fluid pressure then recovered to the basic level, after which (5) the upward trend continued until levels of cerebrospinal fluid tension of from 8 to 148 mm above normal were reached and, in most cases, maintained throughout the remainder of the period of continuous observation.

In the twenty-four cases in which puncture was done at from eight to twenty-four hours after the injection of dextrose, the mean of the cerebrospinal fluid pressure readings, taking into consideration the range of normal variability of the basic cerebrospinal fluid pressure,⁹ did not differ significantly from the mean of the initial spinal pressures of the same patients before the injection of dextrose. It appears, therefore, that in the majority of cases the reactive intracranial hypertension had subsided within eight hours after the administration of the dextrose.

COMMENT

The initial rise of cerebrospinal fluid pressure during the intravenous administration of the dextrose solutions is apparently an expression of the concomitant increase in cerebral venous tension produced by the rapid injection of fluids into the circulation¹⁰ and probably has no other immediate significance. On the other hand, the ensuing diminution in subarachnoid pressure in cases in which the dextrose had been administered in effective concentration¹⁷ is of greater physiologic importance and may be attributed both to a resorption of the spinal fluid¹⁸ and to a diminution in the volume of the nervous

tissue itself.¹⁰ Conversely, the rise of cerebrospinal fluid pressure to normal and above subsequent to the period of depression would then theoretically be due to (1) an increased rate of dialysis of cerebrospinal fluid from the blood, which had meanwhile been rendered relatively hypotonic to the cerebrospinal fluid through the loss of dextrose and salts in the urine, and (2) the deposition of dextrose in the nervous tissues with ensuing compensatory intercellular and intracellular edema.²⁰ The possibility of the latter two effects is of prime clinical importance, since they may well account for the recurrence and exacerbation of symptoms of increased intracranial pressure after a



Mean deviations in the pressure of the cerebrospinal fluid in sixty nine human subjects following the intravenous injection of hypertonic solutions of dextrose at rates ranging from 10 cc per minute for 100 cc to 20 cc per minute for 1,000 cc of the solution. Although the data in each series are not sufficiently numerous to justify explicit statistical derivation the respective curves nevertheless represent deviations in cerebrospinal fluid pressure of such relative constancy as to render the experimental results clinically significant.

transient initial improvement in patients suffering from intracranial hypertension treated by the intravenous administration of various types of hypertonic solutions.²¹

SUMMARY

The effects of the intravenous injection of solutions of dextrose in various amounts and concentrations were studied in eighty-five normal patients. The administration of 50 Gm or less in 20 per cent solution produced no untoward clinical sequelae other than diuresis, however, the intravenous injection of 100 Gm or more in 35 to 50 per cent solution caused headaches and other adverse symptoms in 72 per cent of cases, whereas 58 per cent of the patients receiving 185 Gm or more suffered transient pyrexia. The intravenous administration of isotonic solutions caused a transient increase in cerebrospinal fluid pressure, with hypertonic solutions in effective concentration (100 to 200 Gm in 20 to 35 per cent solution) this initial rise was followed by a secondary fall in cerebrospinal fluid pres-

15 To simplify the chart the curves plotted from these data are omitted as are the designations of the numerous coordinative points to which the average curves for the hypertonic solutions were approximated.

16 Weed L H and Hughson W. Spinal Fluid Pressure in Relation to the Bony Encasement of the Central Nervous System as a Rigid Container, *Am J Physiol* 58:85 (Nov) 1921, Intracranial Venous Pressure and Spinal Fluid Pressure as Affected by Intravenous Injection of Solutions of Various Concentrations, *ibid* 58:101 (Nov) 1921.

17 This diminution in cerebrospinal fluid pressure seems of potential therapeutic value in cases in which it is imperative to break the vicious cycle of a rapidly progressive intracranial hypertension and resultant cerebral ischemia. However, such decompression as is possible in this way may in suitable cases be accomplished through slow, repeated spinal drainages (Jackson¹⁴, Masserman¹⁵) without the risks apparently attendant on the intravenous use of strongly hypertonic solutions.

18 Foley Frederick. Resorption of the Cerebrospinal Fluid by the Choroid Plexus Under the Influence of Intravenous Injections of Hypertonic Salt Solutions, *Arch Neurol & Psychiat* 5:744 (June) 1921. Weed L H. The Absorption of Cerebrospinal Fluid into the Venous System, *Am J Anat* 31:3 (Jan) 1923. Forbes H S. Fremont Smith Frank and Wolff H G. Resorption of the Cerebrospinal Fluid Through the Choroid Plexus, *Arch Neurol & Psychiat* 19:73 (Jan) 1928.

19 Weed L H. The Effect of the Intravenous Injection of Solutions of Various Concentrations on the Central Nervous System, *Anat Rec* 16:167 1919. Ebaugh F G and Stevenson G S. Measurements of Intracranial Pressure Changes in an Epileptic and Its Experimental Variations, *Bull Johns Hopkins Hosp* 31:440 (Dec) 1920. Aycock W L. The Effects of Salt Solution of Various Concentrations upon Cerebrospinal Fluid Pressures in the Human Cerebrospinal Fluid Association for Research in Nervous and Mental Diseases, New York, Paul B Hoeber Inc # 220 1926. Weed¹⁶.

20 Hoff Hans. Experimentelle Studien zur Frage des postkommatellen Hirnödems, *Ztschr f d ges Neurol u Psychiat* 129:583 1930. Browder²⁰, Milles and Hurwitz²¹, Jackson and others²¹.

21 Foley F E B. Clinical Use of Salt Solutions in Conditions with Increased Intracranial Tension, *Surg Gynec & Obst* 33:126 (Aug) 1921. Since the blood-encephalic barrier is apparently abnormally permeable to dextrose when the central nervous system is injured by disease or trauma (Hoff²⁰) the tertiary rise in cerebrospinal fluid pressure may occur with especial force, following the administration of hypertonic solutions of dextrose to patients with post traumatic or inflammatory intracranial hypertension.

sure, which in turn was superseded within an average of three hours by a tertiary increase to levels from 8 to 148 mm of water above normal. The latter phenomenon is of clinical significance in relation to the late adverse effects sometimes observed in cases of intracranial hypertension treated by the intravenous injection of strongly hypertonic solutions.

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THE STUDENT NURSE AND TUBERCULOSIS

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Tuberculosis among nurses has long been a serious problem, although it has not been generally recognized in this country. As the morbidity and mortality from tuberculosis in the general population have decreased, the incidence of disease among nurses has become more conspicuous and the magnitude of the problem more obvious. The problem is of universal interest among physicians, since some of them send their daughters to schools of nursing, many of them teach in such schools and nearly all of them recommend nurses to their private patients.

A small group of physicians from various parts of the world has brought to light the fact that in some hospitals outrageously high percentages of students of nursing became contaminated with tubercle bacilli. It is almost unbelievable that with so much available knowledge of techniques which are effective in preventing the spread of disease, a hundred per cent of the girls who entered the school of nursing of the Ulleval Hospital in Oslo and the Ancker Hospital in St. Paul without infection from tubercle bacilli should become so infected before graduation. In view of this, it seems logical to conclude that many who were already infected on admission to the schools probably were reinfected before graduation.

In an attempt to determine how serious was the offense being committed by various types of nursing schools, we tested with tuberculin the junior and senior students in two schools of nursing in 1929. The results are seen in chart 1. School 1 has a tuberculosis service of approximately thirty beds, where the students at that time gave intimate care to patients with no protection of any avail. School 3 has no tuberculosis service as such but admits tuberculous patients. In school 3 it is possible for girls to complete their course without being assigned to a tuberculous patient. Obviously, the more exposure the more contamination with tubercle bacilli, as seen in chart 1.

Although the contamination in school 3 was a good deal less than in school 1, it was still too high since we knew that among the girls entering a university in the same city the incidence of positive tuberculin reactors was only from 30 to 35 per cent. In order to prove definitely whether most of the contamination occurred during the course of training we subsequently observed the nurses of two classes with reference to tuberculin reactions from the time they entered until they graduated. To schools 1 and 3 we added school 2

which admits tuberculous patients but does not have a tuberculosis service and a school of education.

In chart 2, one sees that slightly less than 40 per cent of the probationers who entered school 1 (with a tuberculosis service) in 1929 reacted positively to the test, but in the senior year all had become positive to the tuberculin test. In school 2, less than 25 per cent of the probationers reacted positively, while in this same class only slightly more than 25 per cent were positive in the senior year. In school 3, slightly more than 25 per cent of the probationers were positive but when the senior year was reached slightly more than 45 per cent of the class was positive. In chart 2, the percentages of positive reactors among the probationers and again in the senior years of the three schools of the class entering in 1930 are recorded. In chart 2 one also sees the percentage of positive reactors among the freshmen of the School of Education in the University of Minnesota in 1929. By the time this class had reached the senior year the positive reactions had increased only 4 per cent. One must bear in mind that these students spend one more year in school than those of the schools of nursing. From this figure it is obvious that school 1 with a tuberculosis service is transmitting tubercle bacilli to large numbers of its student nurses, whereas schools 2 and 3 are transmitting bacilli to some of their students but to a much smaller number than school 1. In fact, in the class entering school 2 in 1929 there is approximately the same increase in positive reactors by the time they had reached the senior year as in the school of education. The detailed results of this study will be reported later.

The contamination of girls who entered free from tuberculous infection was determined by the tuberculin reaction. A positive reaction indicates the presence of at least one focus of tuberculosis somewhere in the body which has rendered the tissues allergic. Certainly one would not look on a focus of living and virulent

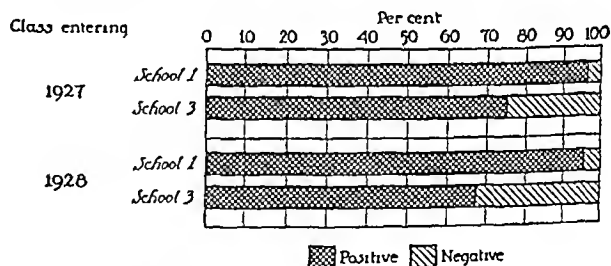


Chart 1.—Tuberculin reaction in student nurses. School 1 with tuberculosis service, school 3 without service.

tubercle bacilli, even when encapsulated, as an asset to the body, any more than one would look on allergy as an asset. Therefore, the hospitals that have infected for the first time or reinfected their students have committed a serious offense against them. A good many of these girls will suffer from clinical tuberculosis as the decades pass, and some of them will die from that disease. In fact, more than 11 per cent of the students entering school 1 negative to tuberculin in 1929 are already suffering from clinical disease. From this, one must not gain the impression that those who enter schools of nursing already positive to the tuberculin test are by any means safe. For example, of one class of six students who entered school 2 in 1932, only one reacted positively on admission. Roentgenograms of this girl's chest were clear. However by the end of the first year she had pulmonary tuberculosis with cavity formation.

We have had an opportunity to study rather carefully the sequence of tuberculosis events in the bodies of students of nursing and medicine who reacted negatively to the test on entrance to school but who became positive before graduation. Not one became positive to this test because of overwork, bad housing conditions, improper food and the like. There is always a definite exposure as the first event.

Following exposure there is usually a period of approximately three weeks during which there is no test or phase of examination to determine that the body has become contaminated. After about three weeks, the second event is the presence of sensitiveness of the tissues to tuberculin, as demonstrated by positive reaction to the tuberculin test.

From this it is known that at least one focus of tuberculosis is present. In many cases it is never possible to locate the focus by any phase of examination during life but in a small percentage, after a period of approximately from three to five months, following the development of the positive tuberculin reaction, the focus has become sufficiently large to cast a shadow on the x-ray film.

There may be no other event, in fact, in 80 or 90 per cent of contaminated individuals no other clinical changes are ever observed. However, this is only an estimate, since no one has yet traced a large group of infected individuals from the early adult period through the span of life. Nevertheless, it would seem to be a very conservative estimate based on brief periods of time during which such cases have been followed. When other events do occur they are due to the reinfection type of tuberculosis, which may be from endogenous or exogenous sources. The first clinical event may be miliary tuberculosis or tuberculous meningitis, again it may be pleurisy with effusion, pulmonary disease, tuberculosis of the bones and joints and the like, or a combination of these.

It is disappointing to see that some of the hospitals which should be true health centers and which should be putting into practice the very best that is known concerning the prevention of disease, are in reality hotbeds for the propagation and dissemination of tubercle bacilli to student nurses.

When one calls attention to the high incidence of positive tuberculin reactors among seniors or recent graduates of schools of nursing and the low incidence among entering students to many of these schools, the question is often asked as to whether these positive reactions have not been brought about through the ingestion of dead bacilli. Another question rather recently asked is whether this is not a manifestation of a general allergic phenomenon that has no particular significance. One should not be misled nor treat a serious problem lightly, for it is known that tubercle formation is present or is taking place when a human body reacts positively to the tuberculin test.

To allow a human body to become contaminated with tubercle bacilli is to set a potential stage for every scene of destruction of which the tubercle bacillus is capable. Many other pathogenic micro-organisms that contaminate the human body are soon destroyed by the protective mechanism, but not so with the tubercle bacillus. When bacilli first enter the body some of them become encapsulated, where they live year after year, ever retaining their virulence and ever ready to destroy, once they escape from their capsule. Moreover, as they pass through the stage of primary encapsulation they sensitize the body tissues so that other

bacilli that may come into the body subsequently are not so easily encapsulated and thus often cause much destruction of tissues and organs.

Thus, he who ponders long and carefully over this subject will not congratulate a parent whose infant has recently become contaminated with tubercle bacilli but is not ill. Nor will he congratulate students of nursing and medicine who appear well but who have recently become contaminated with tubercle bacilli, on the ground that they have received the proper dose to protect them.

If any physicians or any nurses who graduated five or ten years ago are not convinced of the great destruction of tuberculosis among the members of their professions, let them attempt to get in touch with their first-year classmates, most of them will be convinced.

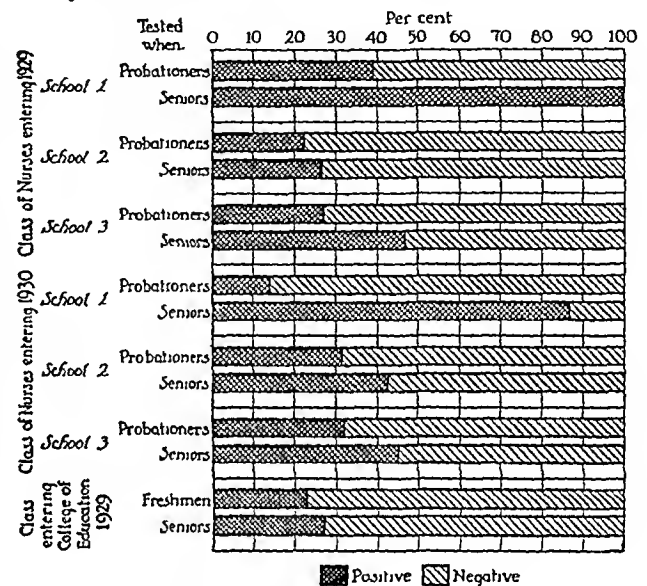


Chart 2—Tuberculin reaction in student nurses and in college of education students. School 1 with tuberculosis service schools 2 and 3 without tuberculosis service.

of the seriousness of the problem by finding that a surprisingly high percentage have been ill or have died from tuberculosis. In this country a good many physicians and nurses are engaged in sanatorium work and a good many in other phases of tuberculosis and chest disease activities in private practice. In conversing with such physicians and nurses one is amazed at the large number who have had clinical manifestations of tuberculosis and of this group the number in whom such manifestations developed either in school or soon after graduation.

The medical profession has a great responsibility in changing the situation. If it does not act, the courts will solve the problem. Already tuberculosis contracted in line of duty in a hospital has become a compensable disease. The Industrial Commission of the State of Wisconsin has drawn awards in favor of professional workers in whom tuberculosis developed while they were working with tuberculous patients.

Medical men know how to solve this problem and should not allow discredit to come to the profession and hospitals through intervention of the courts. Moreover, the future of the school of nursing is in jeopardy whenever parents become sufficiently informed as to the contamination that threatens their daughters when they enter schools of nursing. Intelligent and informed parents, who for fifteen or twenty years have given meticulous care to the rearing of a daughter, whose

success and welfare have become the pride of their lives, are not likely to allow her to enter a school of nursing without reasonable assurance that every possible effort will be put forth to keep her body free from contamination with tubercle bacilli and every other communicable disease.

Every hospital has the problem of patients with tuberculosis being admitted for some other condition, such as one requiring emergency surgery. Unless a special examination is made, the patient remains in the hospital until he has recovered from the urgent condition without the staff of physicians and nurses knowing of the presence of tuberculosis. This problem is very easily and cheaply solved by making an x-ray film of the chest of every patient admitted to the hospital. Most of these institutions already have their x-ray equipment and staff of technicians employed. Usually they are not working to capacity. Films of the chest of new patients would not tax their capacity. With paper films, which are entirely satisfactory for chest work, the total cost of making a film of the chest should not exceed 40 cents. When a patient is found to have tuberculosis, he should be admitted as previously, but adequate protection should be provided all who come in contact with him.

Some hospitals have an additional problem of a special tuberculosis service or an affiliation with a sanatorium for the tuberculous. We do not think that these should be discontinued, for they are very essential in the tuberculosis program and in the proper training of nurses and physicians. However, in these services and in the sanatoriums where students are taught, strict contagious technic, such as that employed in a diphtheria service, is essential. Nothing short of this will solve the problem, since it has been demonstrated that with modified contagious technic approximately as many student nurses become contaminated with tubercle bacilli as when no technic is used.

It is generally believed that 100 years ago nearly all young adults had been contaminated with tubercle bacilli. At that time the mortality in this country was approximately 450 per year for 100,000 population. It would seem logical to conclude, therefore, that if 100 per cent of the student nurses were contaminated there would be among them a mortality similar to that of the general population of 100 years ago. Thus, while tuberculosis in the general population has very materially decreased in the nursing profession the stage is constantly being set for the high mortality of 100 years ago.

Not long ago there was prevalent a fatalistic view which often led to the statement that nurses or physicians could not remain free from contamination with tubercle bacilli because they came in contact with tuberculous patients so frequently. Conditions have changed so much that this view is no longer justified. Marked reduction in clinical cases of tuberculosis together with the realization of its communicability, as well as actual observation, has shown that many students may go through nursing schools without becoming contaminated. If they are properly trained with regard to tuberculosis, many of them should be able to go through life without contamination.

If conditions are considered as they existed fifteen and twenty years ago, when most of the present students of nursing were infants or small children, and contrasted with present conditions, it will be readily seen that the infant of today has a much better chance of growing to adult life without contamination than

infants of that time. Therefore, it would be expected that the incidence of positive tuberculin reactors among probationers in schools of nursing would continue to decrease until the positive reactor on entrance to a school of nursing would be the exception. Already whole classes of probationers have been tested without a positive reactor being found.

Where there is no infection with tubercle bacilli, there are no tuberculous potentialities and thus no tuberculosis problem. In the schools that we have observed, there is already a tuberculosis problem among the probationers when they enter, since from approximately 15 to 40 per cent are already infected. The problem is to keep them under close observation for the development of clinical disease and treat it as early as it can be located. Unfortunately, some schools materially increase their problem by allowing the uninfected students to become contaminated. For example, among the probationers entering school 1 (chart 2) in 1930, slightly less than 15 per cent had been infected. Here the problem was small, but before the class graduated more than 85 per cent had become contaminated and the problem had been more than quadrupled. Thus, the problem exists. It is serious and can be solved only through the efforts of the medical profession and closely allied workers. Following a long period of observation and with much experience the National Tuberculosis Association has for several years in its slogans and elsewhere emphasized the importance of preventing infection with tubercle bacilli. The tumbling down of the death rate and the markedly reduced morbidity in the general population have become very noticeable. As physicians, we can do no better than to apply the same methods to schools of nursing.

COSMETICS—PAST AND PRESENT

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Cosmetics and vanity are twins and can be traced by the most ancient historical documents to the earliest records of which burials have been found, from the Egyptian tombs there is evidence that the ancients used eye and face paints, oils, solid fats and perfumes.

The two most common eye paints were malachite (a green ore of copper) and galena (a dark gray ore of lead), the latter ultimately replacing the former as the principal eye paint of the country. These substances were placed in graves in small linen or leather bags in the crude form. The prepared form, called kohl, has been found in shells, in segments of hollow reeds wrapped in leaves of plants, and in small vases.¹ Kohl was found either as a paste (now dried) or as a powder, and analyses by Barthoux² and Lucas³ showed that the material in 64 per cent of the specimens was galena, while the rest included carbonate of lead, black oxide of copper, brown ochre, magnetic oxide of iron, oxide of manganese, malachite and chrysocolla (a greenish blue ore of copper), fifty-eight specimens examined showed only a trace of antimony in three, while a fourth consisted of an antimony compound. Lucas considers it wrong to say that ancient Egyptian kohl always consisted of or contained antimony or an

¹ Lucas A. *Cosmetics, Perfumes and Incense in Ancient Egypt*. Egyptian Archaeology May 1930 p. 41.

² Barthoux J. *Les fards, pommades et couleurs dans l'antiquité*. Congress internat de geog. Cairo 4 251 256 1926.

³ Lucas A. *Ancient Egyptian Materials* pp. 59, 104, 146, 147.

antimony compound, that it is misleading to term it "stibium," an early Latin name. This mistake probably arose from the words "stimm" and "stibi" used by Pliny,⁴ to designate an antimony compound employed by the Romans in eye cosmetics and eye medicines. It is doubtful that any of these substances contained aromatic essences, for the impregnation of these substances would have required a knowledge of distillation, and it is believed that this process was not discovered until the fourth century B. C. when mentioned by Aristotle.⁵

In addition to painting around their eyes, the ancient Egyptian women probably colored their cheeks, for certain red pigments have been found in graves associated with palettes and on stones on which it was ground for use, this pigment was red ocher, occurring naturally as red oxide of iron, and is generally termed "haematite." Egypt has a hot, dry climate, so that the use of oils and fats by the poor and the rich has always been popular—the most popular being castor oil, which grows wild in this country.

The leaves of henna, an Egyptian shrub, were used in ancient Egypt in the form of a paste to color the hands, feet, nails and hair. Elliot Smith⁶ described the hair of the mummy Hontumihou (eighteenth dynasty) as being dyed a brilliant reddish which, he suggests, was done with henna. Various other authors mention the use of henna on the fingernails, others suggest the possibility that these stains on the nails were caused by embalming material.

There is evidence that certain plant perfumes such as resins and gum resins were known by the ancient Egyptians. These plant perfumes were made either by laying the petals of the flowers in solid fat or by soaking them in oil, and when these substances were thoroughly impregnated the petals were removed. Among the early Egyptian perfumes frankincense should be mentioned, and Breasted⁷ states that this can be traced as early as the sixth dynasty. Frankincense is thought to be the white incense mentioned in the papyrus Harris (twentieth dynasty), Myrrh, a fragrant gum resin is mentioned and storax (styrax) a balsam belonging to the natural order Hamamelidace was also known.

The Egyptian baths are a matter of history and these were later copied by the Greeks and subsequently became elaborate in the days of the Romans, when beauty culture reached new heights, then the tall, slim type of young woman was favored. Dieting and binding of the breasts are described by Catullus (Carm. LXXVI), those with too flat a figure used padding.

Superfluous hair in those days was considered unsightly, all well groomed girls were expected to have smooth legs, and they plucked the hair from the face, armpits and other areas of the body. Evidently the depilatories of those days were not any more successful than those of today, for Pliny the Elder states "In using every psilothrum (a depilatory ointment) the hairs must be first plucked out." Psilothra mentioned included the blood cells and liver of sea fish, with leeches and lice occasionally added. Pumice stones were also used for removal of hair, shaving was first brought to Italy in 300 B. C.

Special care was given to the teeth, the ashes of various animal substances being used as dentifrices.

False teeth, made of bone or ivory, were held in place with gold wires. Martial in a satire speaks

Haer you bought, and teeth and rouge and wax to make you pale,

You would have bought an eye as well—there wasn't one for sale

Skin tighteners and wrinkle removers were eagerly sought in those days. Ovid mentions various preparations, including the use of honey and barley to soften the skin and here one first hears of face packs such as egg washes and halcyoneum, which Pliny states consists of the thickening filth of sea foam or some slime or woolly substance of the sea which was used for wrinkles. Poppaea, the wife of the emperor Nero is said to have used a poultice made of a substance like bread dough soaked in ass's milk, which she spread over her face at night and washed off with milk in the morning, followed by a facial massage for which also this milk was used, she took a herd of asses with her wherever she traveled and used their milk for tub baths.⁸

Although hydrous wool fat, an ingredient of most beauty creams, was not brought forth until the latter part of the twentieth century, both the Greek and the Latin writers speak of the famous oesypum, a sort of hydrous wool fat salve made of the grease from sheep's wool, which had a strong disagreeable odor and was used as a softening and cleansing salve.

Toward the end of the second century A. D., Galen, a celebrated Roman physician, wrote a four volume work summarizing the literature of beauty culture to date. Many complicated facial treatments were described by Ovid in his work "Medicamina Faciei Femineae."

Various types of treatments for freckles were used, the use of rouge was widespread, even eyebrows were painted in those days. Xenophon (Oeconomicus X, 2, 5, 7) relates the still popular scene of a young husband telling his wife that instead of using cosmetics she would be much better if she kept her complexion clear and red by exercise from the usual household activities, such as weaving, kneading bread and shaking coverlets. Martial, the famous satirist of the day, in an epigram (IX, 37, 4f) states

The face you show the world is laid at night

Not in your bed, but in your hundred rouge-pots

Rouge was made mostly from vegetable dyes, among them was fucus, a product of a root of a plant, red lead also was used. The use of chalk and white lead (cerussa) intended to whiten the face in a manner comparable to the practice of enameling faces, which prevailed fifty years ago, was not neglected by Martial (1, 72, 5f) in his lines

Blackberry hued Lycoris feels delight

Knowing Cerussa makes a dark face white⁸

Beauty plasters of soft leather were worn not only by women but by men, although sometimes they were used to set off the complexion they also had their value in concealing defects or marks of the branding iron on the foreheads of rich freed men.

There are numerous references to the dyeing of hair, bleaching also was very popular. Ovid mentions the dryness, brittleness and poisoning from hair dyes. Tertullian also speaks of the danger in the use of hair dyes, however, they were more advanced in their

⁴ Bostock, J. and Riley, H. T. Natural History (trans.) Bohn's Library xxxiii pp. 33-34.

⁵ Meteorologica pp. 11-2.

⁶ Smith, E. G. The Royal Mummies Cat. gen. du Musée du Caire

⁷ Breasted, J. R. Ancient Records of Egypt 1: 620 n. d.

⁸ Wilner, O. L. Roman Beauty Cultures Classical J. 27: 26 (Oct.) 1931

prophylaxis, for Marcellus insists that after the use of his concoction the hair be bound in cloth until dry. The face was always greased before the application of a dye to prevent its being stained by some stray dripping of the dye, and the mouth was kept full of oil until the dye was dry to prevent the teeth from turning black. Vegetable, animal and mineral substances were included in the list of coloring materials. Of the latter, lead was the most popular and was acquired by allowing the most nauseating mixtures to decompose in lead vessels. Another very important dye substance was made from walnuts and acorns, which were gathered when very green and their juice applied with a comb. Wigs were very popular and were sold in the open market. The use of rouge and hair dye is a favorite subject of mythology and among the Romans it was unquestionably very popular, but it was not universal, the principal users being the courtesans and the sporting class.

The various authors from 500 B. C. to the present day make frequent references to the use of cosmetics.

In 1909 there were 429 establishments manufacturing cosmetics, doing a business of \$14,211,969. By 1931 the number of manufacturing establishments had increased to 657 doing a business of \$156,375,744, and the last report was that the wholesale value of the products sold amounted to over \$250,000,000. At the present time there are 41,000 beauty shops and 80,000 barber shops in the United States employing 170,000 women and 250,000 men.⁹ However, the latter figure in no way reveals the number employed in this work, because I investigated last year those in Boston alone. In 1932, 3,018 licenses were issued for beauty work, but it is estimated that despite the energies of the health department half as many again are engaged in this work, having as their place of business a room in their home. Boston has tried to prohibit these residential establishments not only for sanitary but for moral reasons, and now every application is first acted on by the zoning board which passes on it as to whether the location is in a business zone or whether it is residential, if residential, it is disapproved and the applicant is told not to work in that location.

Although women do and will continue to pay ridiculous prices for cosmetics that are of little or no value, still as a result of the efforts of the American Medical Association there is unquestionably an effort on the part of the manufacturers to prevent the selling of harmful substances, and the various associations of cosmetic manufacturers state that they will admit no one to membership who uses paraphenylenediamine in their compounds.

With such a tremendous increase in the cosmetic business there has been an alarming increase in the number of local disturbances of the skin, and some systemic results have also been reported. Fortunately, most of them are not severe. Many women try a new powder or cream and it immediately irritates their skin so they discontinue its use. The physician is consulted only when there is a violent reaction or when the long interval between the time of application of these preparations and the beginning of symptoms makes it impossible for the users to determine the cause of their skin irritation or the loss of previous good health. Every busy dermatologist sees one or more cases a week of some result of cosmetics, but few report these cases. Frequently they are not proved

cases, a cosmetic is suspected, the patient is advised, gets well and refuses any testing to prove the case, and one hesitates to report a case without scientific proof. Out of 437 questionnaires for the investigation of injuries from hair dyes, dyed fur and cosmetics, only sixty-two were returned.¹⁰

Powders rarely contain bacteria, although Kapp¹¹ made a bacteriologic examination of sixty-seven powders from powder boxes taken from his private patients and found various types of bacteria, these were probably contaminations from the powder puffs used. He thought that the vegetable powders injured the skin through the swelling of the powder granules in the cutaneous fat and moisture and considered rice powder the least harmful. Mineral powders irritate because some of the grains have sharp edges and spicules, especially those containing calcium sulphuricum and terra silicea. The least harmful mineral powders are those containing zinc oxide, precipitated magnesium carbonate, and magnesium silicate. Powders also are of two types—heavy and light. The light contain magnesium compounds and occasionally the heavy contain lead acetate, which has been prohibited in Germany. Numerous face powders contain orris root, which is used as a perfume fixative and may not produce a hypersensitiveness until after a long period of use.

Persons using perfumes containing oil of bergamot on unprotected skin should not expose themselves to the sun, for the combination will produce a disfiguring pigmentation.¹²

With the almost universal use of lipstick, irritation of the lips (cheilitis) is rarely encountered, for the natural dyes such as burnt sienna, cantharum and carmine used in them are fairly safe, although Miller and Taussig reported lipstick dermatitis due to the second.

Soaps containing more than 0.25 per cent of free alkali will irritate certain skins.

Pyrogallol and paraphenylenediamine (also known as urso) will irritate one in a hundred skins, and even the lay person is aware of the dangers in their use. No operator should use a hair dye on a person who has had a previous dermatitis from dye.

The various sulphites, calcium, barium, sodium, strontium and magnesium, to remove superfluous hair will frequently cause a dermatitis. The dangers of the use of thallium acetate have been known since Sabouraud pointed out its dangers in the latter part of the last century.

McKenna states that the irritating effects of cold creams is intensified by the successive application of vanishing cream and thinks that the fats block the sebaceous and sweat glands and interfere with the perspiration, causing the temperature of the skin to rise and leading to a continued dilatation of the superficial blood capillaries and eventually to an acne rosacea,¹³ a good cleansing at night will prevent this.

Freckle creams and bleaches generally contain mercury, they may cause an acute dermatitis or pigmentations such as those reported by Goeckerman,¹⁴ Wedd¹⁵ and Woltman,¹⁶ the latter reported a case of lead

10 Cole H. N. Investigation of Injuries from Hair Dyes Dyed Furs and Cosmetics. *J. A. M. A.* 88: 397-399 (Feb. 5) 1927.

11 Kapp. Cosmetic and Toilet Powders. *J. Cutan. Dis.* 30: 443-1912.

12 Downing J. G. Pigmentation from Perfume. *Berlock. Derma.* 207: 660-662 (Oct. 13) 1932.

13 McKenna R. M. B. Cosmetics. Modern Preparations. Chemical Composition and Pathological Developments Attributable to Them. *Brit. M. J.* 1: 899-902 (May 17) 1930.

14 Goeckerman W. H. Peculiar Discoloration of the Skin. *J. A. M. A.* 84: 506-507 (Feb. 14) 1925.

15 Wedd A. M. Skin Discoloration by Metallic Pigments. *Clifton M. Bull.* 18: January 1932.

16 Woltman H. W. Lead Poisoning from Face Enamel. *J. A. M. A.* 79: 1685 (Nov. 11) 1922.

9 Goodman Herman. Cosmetics and Your Skin. *Hygeia* 8: 123-125 (Feb.) 1930.

poisoning such as that seen after the continued use of face powders and enamels containing lead acetate

Men use hair tonics more than women, a man presenting desquamation of the skin on the palm and finger tips accompanied by vesicles should be questioned about a hair tonic. The use of arsenic in hair tonics has undoubtedly caused more cases of arsenic poisoning than those reported. Cole¹⁷ reports a severe dermatitis from a hair tonic containing arsenous oxide, 1.06 grams (0.068 Gm.) to the fluidounce. Cole quotes Newcomb as stating that in sixty-six toilet preparations he found that forty-six were free from wood alcohol. Perhaps with repeal, grain alcohol will not be so valuable.

Silver with its aftermath of that disfiguring condition called argyria should be warned against, and the use of potassium cyanide and oxalic acid as a hair bleach should be a criminal offense.

In all the vast array of literature, occasionally one finds an article defending cosmetics, such as Carleton's¹⁸ experiments with vanishing cream, which she tried on forty subjects. In twenty-four it proved harmless, although three of these subjects had naturally dry skin, in thirteen cases, the cream was beneficial and in only one case did the cream cause dryness. McCafferty and Genovese¹⁹ experimented with cold creams and vanishing creams on a group of twenty-five and stated that there was not one case of dermatitis produced from the use of vanishing or cold cream of a special formula. Cold cream is for the most part innocuous and is prepared from a vegetable or mineral oil such as almond oil, beeswax or liquid petrolatum, to which is added a small amount of borax to aid emulsification. Some manufacturers add spermaceti, which produces a very white cream but which is liable to become rancid and cause irritation, the quality depends on the fineness of the fats. Vanishing cream in reality belies its name, for it does not vanish. It serves as a greaseless, adhesive surface on which powder is spread. The two creams differ in that the vanishing cream is an emulsion of stearic acid in water containing soap, and cold cream is an emulsion of water in oil containing wax.²⁰ Vanishing cream should never be allowed to remain on the face.

Women at a certain age will dye their hair, and dangerous dyes should be pointed out. Perhaps one of these forbidden dyes is desired; it still can be used if the patient submits to a patch test.²¹ This test should be applied on every occasion before the dye is used. While Negresses are trying to remove the curl and kinks from their hair by the use of gluey substances such as acacia and quince seed, at the same time white women are striving for this effect by the use of permanent waves. The action of permanent waving depends on the softening action of an alkali on the cuticle of the hair. Permanent waves are made by winding the strands of hair on a rod, either spiral or croquemale, which in turn is wrapped in cloths saturated with an alkali, frequently ammonium hydroxide. Over these spindles are placed steam cylinders that are electrically wired and attached to a large stand. The hair should be tested first to determine the time needed

to produce a wave, the scalp is protected by non-inflammable shields placed close to the scalp at the base of the rod. Occasionally, one rod gets too hot or the shield is defective and small burns result. The results seen at the office vary from a superficial blistering to the involvement of the entire epithelial layer, with scarring and permanent alopecia as shown in the accompanying illustration. They are of a characteristic circular appearance about 8 mm. in size.

Rouge is composed mostly of zinc oxide to which chalk and one of the natural dyes has been added. Carmine is used in lipsticks, which are composed of wax, lard and oil of theobroma (cacao butter) in varying proportions.

Henna is probably the safest dye to use on the hair. Wrinkle removers are another group highly advertised and much sought after, they are generally of three types—astrinents, fillers and cauterizing agents. As a rule the astrinents are seldom harmful except those containing phenol (carbolic acid), as to fillers, many are the tragedies of disfigurement that have come from



Typical alopecia and scarring from a burn following a permanent wave (Hair surrounding burn has been clipped by physician.)

the injection of paraffin for the elimination of wrinkles and depressions.²²

Eyebrow pencils rival lipsticks in their popularity, they are, as a rule, harmless and are composed of finely ground carbon made into a pencil of wax or paraffin.

Liquid nail polishes generally consist of acetone containing tincture of benzoin or a solution of cellulose acetate and may be of value, by their antiseptic qualities, in preventing infections that might have resulted from the none too sterile operating tools of the manicurist.

With proper labeling of the various cosmetics and with the cosmetic expert restricting his activities to hygiene, the proper cleansing of the hair, scalp and face, and if requested the application of facial adornments and using pure materials, there will be no loss of business, in fact, there will be an increase, for many women now who fear the use of cosmetics but envy their attractive neighbor may join the ranks, although the American women are rapidly ceasing to look like barbarians and agree that the best face is the natural face.

520 Commonwealth Avenue

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TELANGIECTASIA ASSOCIATED WITH VARICOSE VEINS

TREATMENT BY A MICRO-INJECTION TECHNIC

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Telangiectases are dilatations of capillaries. They occur frequently in conjunction with varicose veins, being present to some degree in most cases. To date, there has been no satisfactory method of treatment for this unsightly complication. The new method, intravascular injection by a microtechnic, which furnishes the basis of this report, has given satisfactory results.

Varicotelangiectasia must be differentiated from the generalized capillary dilatation occurring in other conditions. The telangiectasia accompanying varicose veins is usually absent before the veins themselves become dilated. Furthermore, it is limited to the lower extremities and the dilated capillaries never project above the surface of the skin. According to Madden's¹ classification, it belongs to the group of secondary telangiectasia.

The shapes assumed by the dilated vessels vary from a straight line to the complex spider web pattern that is often seen. Their color may be pinkish, bright red or dark blue. They are much more frequent in women than in men and are seen in greatest numbers between the ages of 20 and 40 years. Thrombi are seldom encountered in these capillary loops.

The numerous former methods of therapy employed in treatment of this lesion were either ineffective or poor from a cosmetic point of view. They included the use of the cautery, surgical galvanism, multiple linear scarification, radium therapy, radiotherapy, electrodesiccation, and carbon dioxide snow. All these measures give poor cosmetic results, since they involve the production of more or less scar tissue. Furthermore, the dilated capillaries are often present in straight lines many inches long. The use of a skin destroying agent in these cases would cause widespread scar formation. Consequently, there has been a recent attempt on the part of some investigators to eradicate the lesion by the use of subcutaneous perivascular injections of irritating substances. I investigated this perivascular sclerosing method hoping that by its aid I could get improved cosmetic results in my varicose vein cases.

At the outset, it was conceded that if the subcutaneous injection of a harmless sclerosing solution could remove dilated capillaries, this procedure would offer the best method of treatment. Therefore it was decided to make a thorough testing of this technic before other types of therapy were considered. The theory behind this treatment is that the subcutaneous injection of sclerosing fluids will cause the formation of fibrous tissue. The subsequent contraction of this newly formed fibrous tissue should compress the dilated capillaries and thereby remove them completely. The accompanying table illustrates the study that was made in order to determine the effectiveness of this type of treatment.

Before the table is analyzed, it is necessary to explain the technic involved. In most cases the solu-

tion under investigation was injected subcutaneously into the area of capillary enlargement. The fluid was introduced so as to permeate the region thoroughly, the needle point first being placed below and then shifted to the sides of the capillary groups. Whenever possible it was also inserted into the spaces between the individual loops. The average amount of sclerosing solution injected was 2 cc, although the amount varied with the agent used.

A study of the table shows that seventeen different solutions were employed. The first solution used, dextrose and sodium chloride, was given up after one trial on account of the immediate and severe necrosis that resulted in the injected area. Invertose solution was used in four different concentrations, but only with the highest concentration was any degree of fibrosis noted. This was scant in amount and could be felt in the subcutaneous tissue beneath the dilated vessels. There was no evident effect on the telangiectasia.

Neoarsphenamine was then tried on account of its irritating qualities. I vividly remember cases of sphy-

Solutions Under Investigation

Solution Used	Number of Times	Amount	Result
1 Dextrose (25%) and sodium chloride (18%) aa	1	2 cc	Slough 30 mm
2 Invertose 75%	22	0.5 to 4 cc	Occasional slough fibrosis
3 Invertose 60%	70	1 to 5 cc	Usually no fibrosis
4 Invertose 37%	10	1 to 2 cc	No result
5 Invertose 30%	4	1 to 2 cc	No result
6 Neoarsphenamine* 1:20	2	3 cc	Slight fibrosis
7 Neoarsphenamine* 1:10	35	1 to 2 cc	Fair amount of lumpy fibrosis
8 Neoarsphenamine* 1:5	20	1 to 2 cc	Definite fibrotic lump
9 Neoarsphenamine* 1:4	10	1 to 2 cc	Large lump
10 Neoarsphenamine 1:10 and Invertose 60%	4	2 cc	Slight fibrosis
11 Neoarsphenamine* 1:4 and Invertose 75%	2	2 cc	Slight fibrosis
12 Sodium morrhuate 1:3	2	0.5 cc	Slight fibrosis
13 Sodium morrhuate (whole) 5%	4	0.5 to 1 cc	Fair fibrosis
14 Sodium morrhuate and water aa	18	0.5 to 1.5 cc	Slight fibrosis
15 Sodium morrhuate and Invertose 60%	4	2 cc	Slight fibrosis
16 Whole blood	1	1 cc	No result except ecchymosis
17 Fibrinolytic	2	4 minims	Scanty fibrosis
Total	212 injections		

* Stock solution of neoarsphenamine 0.45 Gm in 5 cc of water

lism in which perivascular injections were accidentally made during intravenous administration of this preparation. In each instance, a pronounced lumpy fibrosis resulted which lasted for weeks. It was decided to make use of the sclerosive quality of neoarsphenamine in these experiments. As shown by the table, varying degrees of fibrosis were obtained with neoarsphenamine, especially in the more concentrated solutions in which actual lumps were formed. However, in spite of the marked induration and fibrotic contraction that resulted no change occurred in the telangiectatic capillaries.

With the other solutions used, similar results were evident. Occasionally, fibrosis was produced, but no improvement in the capillary blemishes resulted. Furthermore, in no case was capillary thrombosis seen following the use of any of the seventeen solutions. The subcutaneous method was, therefore, a complete failure.

It was then decided to use intracutaneous injections in order to get the sclerosing action directly in the field of capillary enlargement. It was felt that perhaps the usual subcutaneous injection placed the irritating fluid

From the Varicose Vein Clinic of the Stuyvesant Polyclinic, New York.
1 Madden J F. Generalized Angiomatosis (Telangiectasia). J A M A 102:442 (Feb 10) 1934.
2 Kovacs Richard. Electrotherapy and the Elements of Light Therapy. Philadelphia Lea & Febiger 1932.

too far below the papillary capillaries to exert any direct influence on them. A series of intradermal wheals was raised, 60 per cent invertose solution being used. No vascular obliteration occurred.

Failing to influence the telangiectasia with an ordinary wheal I decided to try a high pressure intracutaneous injection. This was done in the following



Fig 1—Telangiectasia before treatment

manner. The injection was not stopped when a wheal was formed but was continued past this point. The forceful introduction of fluid placed the artificially created intercellular space under high pressure. This procedure caused the appearance of an interesting phenomenon. The wheal did not become appreciably larger. Instead, the injected fluid was seen to enter the dilated capillaries nearby, displacing the blood column in them. Evidently, an intravascular introduction of fluid had taken place in spite of the fact that the needle point was in the intradermal wheal.

This curious result has no clear explanation. The intimate connection between the lymph spaces of the skin and the capillaries is well known.³ The density of the perivascular tissues in this region is relatively great on account of the abundance of collagenous and elastic fibers. Furthermore, it has been shown that injury to the capillary wall makes it much more permeable.⁴ All these factors probably operated to cause the phenomenon, but the exact route of the injected liquid from the wheal into the capillary circulation is not known.

With this technic, a definite result on the capillaries was evident for the first time. In a few cases, thrombosis was secured and caused the subsequent disintegration of the affected tiny vessels. However, in about 50 per cent of the cases, necrosis took place at the site of wheal formation, even with the use of invertose solution in dilute form. It was therefore necessary to discontinue this method of treatment.

At this stage of the investigation, it was evident that in order to remove dilated capillaries it was necessary to bring sclerosing fluid in direct contact with endothelium. Consequently, the tiny vessels would have to be injected intravascularly. Ordinary methods of injection

would not answer this purpose. It was necessary to develop a new and finer technic, which will now be described.

MICRO-INJECTION TECHNIC

For this technic the necessary equipment includes (a) proper illumination, (b) extremely fine metal needles, and (c) a powerful binocular loupe.

The light is very important. It must be strong and so arranged as to avoid shadows. A shadow-free operating room lamp is ideal. If this cannot be procured, a good headlamp will also answer the purpose. Proper magnification, as afforded by a good binocular loupe, is indispensable, since the affected blood vessels are too small to be injected by the naked eye. The needles should be the thinnest and finest attainable.

The patient stands on a table so as to distend the capillary loops. No tourniquets are necessary. After the injection is completed, an ordinary gauze pad, held down by adhesive plaster, should be applied.

The blood vessels dealt with stand out clearly when magnified by the binocular loupe. They are either true capillaries, capillary venules, or small venules. No effort was made to distinguish between the various types, since they are difficult to differentiate even under the microscope. It has been stated before that the tissue surrounding these dilated tubules is of greater density than that of the subcutaneous tissue beneath. This fact is of importance because it helps materially in the actual injection. The papillary capillaries are surrounded by dense structures. Above and to the sides lies the highly cellular epidermis with its papillary projections. Below is a dense structure composed of interlacing fibrous and elastic tissue fibers. The tiny vessels are held firmly and do not roll away from the needle point. They are transfixed with comparative ease if the proper technic is used.

The injection should be started in healthy tissue. The fine needle point is carried toward the offending capillary, being kept near the skin surface so that it will engage the vessel directly under the epidermis. With experience, one should be able, by a gentle but firm push, to catch the needle point in the capillary wall and enter its lumen. This procedure, although delicate, is not difficult and very often capillaries of smaller diameter than the needle itself can be entered successfully, owing to the elasticity of the vessel wall.

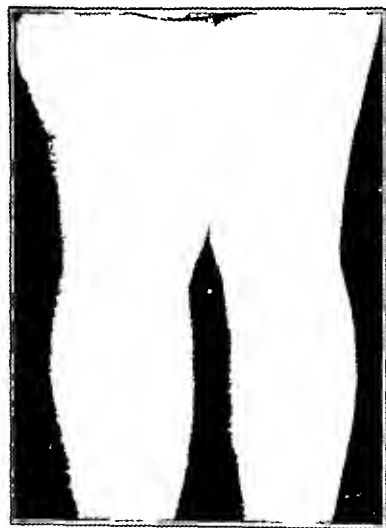


Fig 2—Telangiectasia after treatment by micro-injection method.

When the needle has been successfully engaged in the capillary, the fluid is injected rapidly, causing the vessels to swell visibly. The sclerosing solution can usually be seen as it displaces the blood in the telangiectatic tubules. Care must be observed to avoid a perivascular injection. This will be evidenced by the formation of a wheal and it is a signal to stop the

³ Sutton R. L. Diseases of the Skin ed 7 St. Louis C. V. Mosby Company 1928.
⁴ Krogh A. The Anatomy and Physiology of Capillaries rev. ed. edition New Haven Conn Yale University Press 1929.

injection in order to avoid a slough. Quinine should not be used, because it is often followed by pigmentation, which may be more unsightly than the telangiectasis itself. Sodium morrhuate, 5 per cent, may be used, but caution must be observed, since it is occasionally capable of slough production, as described by me in 1933.⁵ Any of the other mild sclerosing agents are also satisfactory for this technic.

In some cases, a successful treatment is followed by an almost magical disappearance of the capillary groups. This is especially true of spider web formations or similarly connected clusters of capillaries. In other cases, thromboses will occur and be evidenced by firm dark stripes corresponding to the blood vessels injected. These are easily seen through the thin layer of epidermis covering the thrombotic streaks and are slowly but definitely absorbed in a few weeks. The final reaction in every case is a definite, clean, scarless removal of the offending capillaries.



Fig. 3—Association of telangiectasia with varicose veins

The method described is safe and efficient. With proper technic, one can always secure a positive removal of the offending capillary dilatations. It is being extended to other flat angiomas in the expectation that equally good results will be obtained in these hitherto difficult cases.

CONCLUSIONS

- 1 Telangiectases or dilated capillaries are often present on the lower limbs of patients exhibiting varicose veins.
- 2 Previous methods of treatment have been ineffective or have given poor cosmetic results because of scar formation.
- 3 The subcutaneous perivascular injection of sclerosing fluids is useless in varicotelangiectasia.
- 4 The micromethod of intravascular injection presented successfully removes dilated capillaries.
- 5 The method is safe, does not cause scar formation and gives good cosmetic results.

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ACUTE GONOCOCCIC PERITONITIS OF THE RIGHT UPPER QUADRANT IN WOMEN

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In 1930 Curtis¹ in a paper on a cause of adhesions in the right upper quadrant, drew the following conclusions:

1 Extensive adhesions between the anterior surface of the liver and the anterior abdominal wall, characteristically of the separate "violin-string" type, are not infrequently encountered in patients operated on for relief of pelvic distress incident to gonorrheal disease of the tubes.

2 It would appear that gonorrheal disease is not so invariably limited to the pelvis as has heretofore been assumed.

3 Female patients with symptoms suggestive of gallbladder disease or pleurisy may be suffering from liver-abdominal wall adhesions complicating a pelvic gonorrheal infection.

The following three cases, encountered within the past six months in the practice of an internist, would seem to represent instances of the hitherto undescribed acute and early manifestations of gonococcic peritonitis of the right upper quadrant. They would seem to complete the picture of the condition previously described in the end stage by Curtis.

REPORT OF CASES

CASE 1—Miss X, aged 31, seen in my office, Nov. 3, 1933, complained of severe pain all around the right lower rib margin. It was most intense in front over the gallbladder area. Examination showed marked right upper quadrant rigidity and exquisite tenderness. There were no pulmonary or pleural signs or symptoms. A tentative diagnosis of acute cholecystic disease was made. This diagnosis was partially confirmed the next day by a cholecystographic report of "nonfunctioning gallbladder." The patient was hospitalized and Dr. I. S. Ravdin, in consultation, agreed with the diagnosis. After the patient had been in bed ten days, the pain, tenderness and rigidity having partly subsided, Dr. Ravdin operated. To our astonishment we found a normal gallbladder. An unusual, localized fairly dry peritonitis involved the anterior surface and edge of the liver and the adjacent peritoneal surface of the diaphragm and the anterior abdominal wall. The peritoneum in these areas was injected and had the appearance of salt sprinkled on a moist surface. A small section of the liver was taken for biopsy, a peritoneal culture was made, a drainage tube was inserted in the subhepatic fossa, and the operation was terminated after palpation of the appendix, pelvic organs, stomach and duodenum. No abnormal changes were noted in these organs.

After cogitating overnight, we decided that what we had seen was probably the acute stage of the process described in its chronic form by Curtis. Accordingly, smears were made from the drainage tract and we were promptly rewarded with the finding of a beautiful spread of typical gram-negative intracellular biscuit-shaped diplococci (fig. 1).

The patient made an uneventful recovery. When we told her the results of our examination she related the following remarkable story. Five years previously she had been desperately ill in another hospital, first with gonorrheal salpingitis and then with gonococcic septicemia. Two separate blood cultures had shown the gonococcus. She was treated by such measures as transfusions and the administration of antiserum. She finally recovered completely, much to the surprise of every one concerned. She had not told us this story prior to operation because she had been assured that all the smears and tests had become absolutely negative and she did not think that the old condition could cause her trouble in the future.

GONOCOCCIC PERITONITIS—FITZ-HUGH

2095

She stated that there had been no possibility of subsequent exposure

Our own efforts to find the gonococcus in smears from the cervix and urethra after operation were negative. No palpable evidence of pelvic disease could be demonstrated. The blood Wassermann and gonococcus complement fixation tests were negative at the time of her discharge from the hospital. The sedimentation curve showed marked acceleration, even after a week in bed, and at a time when most of the symptoms had become quiescent. The section from the liver showed a partly organized and partly acute "inflammation of the capsule with a parenchymal involvement" (fig 2). A few diplococci were seen but were not definite enough to permit a diagnosis from tissue itself. We were in no doubt, however, as to their nature in view of the smears from the peritoneal exudate. The patient is at present entirely well and has had no trouble except that the first postoperative menstrual epoch was stormy, with fever for a few days, unusual cramps, menorrhagia and dysuria. She recalled the fact that similar symptoms accompanied the period preceding the present illness.

Case 2—Mrs. Y., aged 30, was seen February 6 in consultation with Dr. Mackinnon Ellis, to whom I am indebted for the following details. The patient was the mother of two healthy sons, aged 5 and 6 years, and had been divorced three years before. She had been sick for several weeks with symptoms suggestive of "intestinal grip," such as low abdominal pain, distention and fever. The fever ranged from 98 to 101 F. lasting a few days and then subsiding to such a point that she "went out and had a few high-balls" against her doctor's orders. A relapse occurred. The temperature was higher than it had been before and there was generalized abdominal pain, distention, great sensitiveness and some rigidity. These symptoms partially subsided after about a week, when the patient was seized with severe acute pain in the right upper quadrant of the abdomen. Dr. Ellis found localized rigidity and marked tenderness. He suspected an acute cholangitic complication of the grip. The temperature rose to 103 and subsided up and down for a few days, when it began to sub-

syndrome. The patient, on being informed of our diagnosis, showed no trace of righteous indignation. She seemed anxious, however, to establish the possibility in our minds that the original infection might have occurred "some years ago."

Dr. Ellis made a pelvic examination during the early stages of the pain in the lower part of the abdomen and found nothing abnormal. She was menstruating at the time of my consultation. About five days later Dr. Ellis obtained smears from the cervix, which Dr. W. P. Belk reported as positive

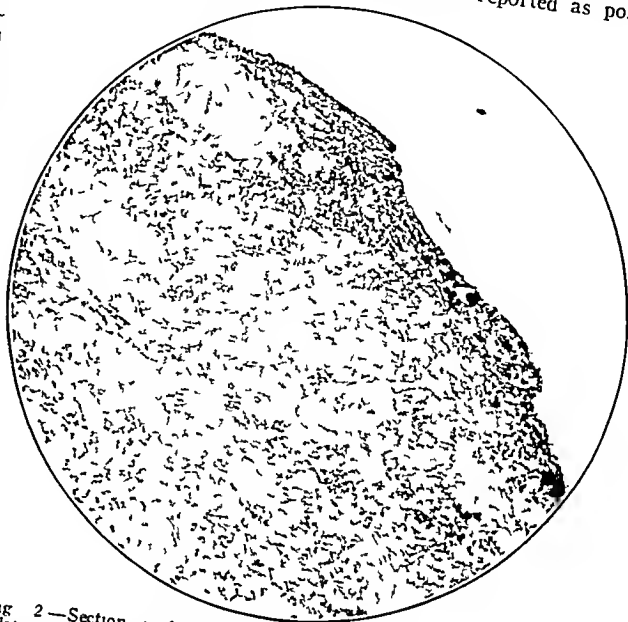


Fig. 2—Section under low power showing hemorrhage and fresh exudate at surface organized exudate below and normal liver tissue at the bottom and left

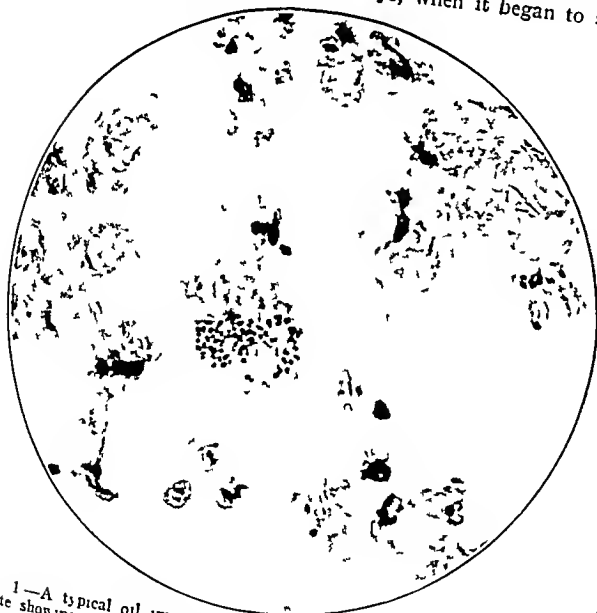


Fig. 1—A typical oil immersion view of a smear from the peritoneal exudate showing a cell packed with gram-negative diplococci

side and the pain, distention and rigidity gradually disappeared. It was at this juncture that I saw the patient. My examination revealed nothing except slight tenderness in the right upper quadrant and suprapubic region and a slightly elevated temperature. Questioning brought out the fact that a week prior to onset of the low abdominal pain and the fever there had occurred well marked leukorrhea and some dysuria which had lasted for a few days. I told Dr. Ellis the story of the first case reported in this paper and we agreed that his patient probably had the same

for gonococcus. A week later Dr. F. E. Keene found clinical evidence of gonorrhea in his examination of the cervix and stated also that the left ovary was inflamed. He, too, obtained positive smears from the cervix.

The patient made an uneventful recovery. The urinalyses, January 4 and 16, were negative. The blood count, February 8, showed red blood cells, 3,500,000, white blood cells, 8,800, and hemoglobin, 87 per cent. The differential blood count showed neutrophils, 69 per cent (19 per cent nonfilament), lymphocytes, 25 per cent, monocytes, 3 per cent, eosinophils, 1 per cent, and basophils 1 per cent. February 8, the gonococcus complement fixation test was negative and the sedimentation curve showed marked acceleration (20 mm fall in twenty minutes and 25 mm. fall at the end of an hour).

CASE 3—Miss Z., aged 34, presented a picture almost identical with that of patient 2 except that I had the opportunity of examining her during the latter part of the acute stage of the localization of the pain in the right upper quadrant. Her contribution to this syndrome, beautiful "new snow" creaking frictions audible all along the right upper margin of the anterior abdominal wall, is perhaps of considerable importance. She, too, had had an irregular moderate elevation of temperature for three weeks with prodromal symptoms of leukorrhea and dysuria, followed by low abdominal pain, rigidity and distention prior to the sudden severe localization of symptoms in the right upper quadrant. There was marked acceleration of the sedimentation rate, little or no leukocytosis and a moderate secondary anemia. The complement fixation test was positive. The pelvic examination subsequently revealed no gross abnormalities. After rest in bed for three days, the frictions disappeared and after one month from the onset she had recovered entirely. One of three cervical smears showed the typical gram-negative intracellular diplococcus. She admitted the probable correctness of the diagnosis but could not assign a likely date of contact.

COMMENT

The first case is the only one in which there is real proof of the presence of acute gonococcic peritonitis

Even here it must be admitted that the proof is incomplete in that no cultural identification of the gram-negative biscuit-shaped diplococcus was undertaken. There seems to be no reasonable doubt, however, that this was acute gonococcal peritonitis. In the two subsequent cases, in which the diagnoses were made only on the basis of experience from the first case, there is no personal doubt that the same peculiar localized gonococcal peritonitis existed in the right upper quadrant.

From the admittedly incomplete data at hand the clinicopathologic picture is reconstructed in the following manner. At some indefinite time presumably following a previous gonorrheal infection, or possibly a reinfection, there occurs a brief period of leukorrhea, slight transient dysuria, cramps and perhaps a somewhat abnormal menstrual epoch. This train of symptoms suggests that a mild pelvic reactivation has occurred. Vague low abdominal pain, distention and slight irregular fever follow promptly. Within from one to three weeks, sometimes after a brief interval of apparent quiescence, there occurs acute severe pain in the upper part of the abdomen with distention and rigidity, which quickly localizes in the right upper quadrant. The pain in the right upper quadrant, rigidity and febrile relapse last for from a few days to a week and simulate very closely the picture of acute hydrops or acute empyema of the gallbladder. The pain is made worse by coughing, sneezing, laughing or twisting the trunk muscles, and it is not relieved by strapping the lower part of the chest. A quiet deep breath does not cause much pain and the diaphragm moves fairly well. The peristaltic sounds are normal or only slightly diminished. The anterior abdominal wall below the right costal border is rigid and exquisitely sensitive. A crunching to and fro type of friction may be readily heard just over this area of the abdominal wall, at least during the subsiding stage of the acute process. The fever, pain, distention and rigidity subside within from three to six weeks from the first onset of symptoms. After this the "chronic stage" begins, which may be symptomless or characterized by the later manifestations described by Curtis. The prognosis for recovery from the acute stage is uniformly good, and the ultimate outlook as to life itself is apparently equally good. It would seem probable, however, that recurrent gonococcal invasions of the right upper quadrant might occur in certain cases.

During the stage of acute peritonitis in the upper part of the abdomen there is little or no leukocytosis and only a moderate "left shift" in the neutrophil formula. There is, however, a marked acceleration of sedimentation rate. The gonococcus may be obtained from the peritoneum during the (subsiding?) acute stage if one is fooled into operating. The gonococcus may or may not be obtained subsequently from the cervix or the urethra. A reasonable doubt as to the diagnosis must remain if the organism is not demonstrated. Sometimes in these cases there is apparently no gross evidence of residual gonorrhea in the pelvis. The gonococcus complement fixation test is not helpful (negative in two instances and positive in one during convalescence from the acute phase).

It should be emphasized that these cases do not seem to fit the picture of the previously reported² instances of virulent generalized acute gonococcal peritonitis, which is said to be very uncommon.

The clinical manifestations of this syndrome would seem to be rather clear cut. It is probably true that internists and general practitioners, who would be the most likely observers of the condition, have overlooked a number of these cases. It is obvious that the differential diagnosis of the condition must include a careful consideration of basal pleurisy, pneumonia, "intestinal grip," "devil's grip," colitis, cholecystitis, perforating peptic ulcer, pyelitis, an early stage of shingles, appendicitis and all forms of peritonitis. On the operating table the appearance of the lesion has a greater resemblance to a mild localized "zuckerkuß" change with little or no fluid than it has to an acute peritonitis. It should not be necessary, except in unusual circumstances, to establish the diagnosis at operation.

SUMMARY

1 In three cases of what is believed to be acute gonococcal peritonitis of the right upper quadrant in young women, the clinical and pathologic features are sufficiently distinct and uniform to justify the belief that the diagnosis may sometimes be made without great difficulty.

2 These cases, which represent the acute stage, help to complete the picture of the condition the end stage of which has been described by Curtis as "violin-string" adhesions between the anterior surface of the liver and the anterior abdominal wall occurring in women with present gonorrheal salpingitis or a previous history of that condition.

2020 Locust Street

Clinical Notes, Suggestions and New Instruments

TRAUMATIC INFECTED INTERSTITIAL MYOSITIS AS A CAUSE OF PARANEPHRIC ABSCESS

ALFRED BROWN, M.D. OMAHA

Professor of Surgery University of Nebraska College of Medicine

In December 1927¹ I called attention to the occurrence of an abscess of the lumbar region which was situated outside the perirenal fat in a space bounded in front by the posterior parietal peritoneum and perirenal capsule, behind and laterally by the deep muscles of the back, above by the diaphragm and below by the lower boundary of the false pelvis. This type of abscess I considered to be due to trauma in the form of a muscle strain or contusion which caused a tear either of the muscle fibers themselves or of the capsule of the muscle, from which a localized area of hemorrhage or exudate resulted. Subsequent infection of this area caused the abscess. Two cases were cited which appeared to bear out this hypothesis, which at the time was offered as a hypothesis without definite proof. In the paper I wrote "If this assumption of hemorrhage as the causative factor in this type of abscess is correct, and it seems to be most reasonable, it is questionable whether these abscesses should be classified as true paranephric abscesses or rather as abscesses of the paranephric body of Zuckerkandl and Gerota, which is a continuation of the subperitoneal fascia of the abdominal wall and lies outside the true perirenal fat."

If hemorrhage results from muscular violence, such as a sudden strain which is presupposed in this condition, it would come from the tearing apart of a few muscle fibers resulting from the sudden violence. The blood escaping from the surface of the muscle would enter the fatty layer covering this surface and would not reach the perirenal fat as it would not perforate the fascia of Gerota unless that structure were

² Norris, C. C. *Gonorrhea in Women*. Philadelphia: W. B. Saunders Company, 1913. pp. 355-360.

¹ Brown, Alfred. *Retroperitoneal Lumbar (Paranephric) Abscess*. J. A. M. A. 90: 666-668 (March 3) 1928.

torn, and a tear of this fascia, because of its mobility, would not be apt to occur from muscular violence."

As can be seen from the foregoing description, the etiologic factor was purely an assumption and at the time was offered without proof other than deduction. Since that time, however, I have had the opportunity of studying a case of trauma to the back which furnished material not only clinical but also pathologic, which seems to demonstrate conclusively that this

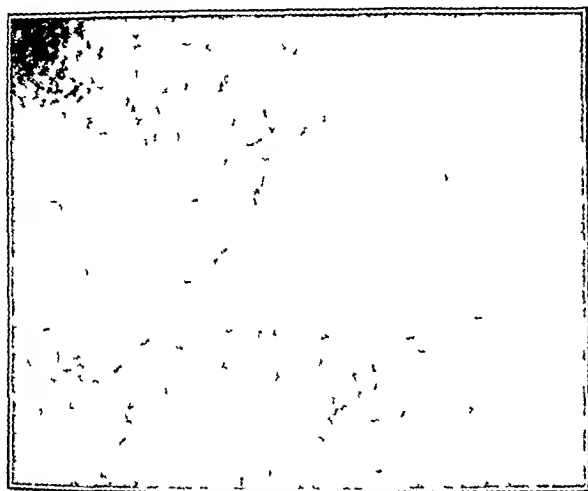


Fig 1—Section under low power showing collection of round cells, destruction of muscle fibers and newly forming connective tissue

type of abscess is the result of muscle trauma in the position described and that the assumption offered is correct

REPORT OF CASE

D B, a schoolboy, aged 15 years, admitted to the University Hospital, Nov. 23, 1929, complained chiefly of pain in the right side of the abdomen, front and back, and in the region of the right kidney.

October 16, five weeks and three days before, the patient was hit in the back with a chair while scuffling in school. For about thirty seconds following the blow he was dazed and paralyzed, after which he fell in a chair and felt a sharp pain in the right kidney region. After two or three minutes he got up and after five or ten minutes the pain had left him. Four days later, October 20, the patient began to feel a dull aching pain, which lasted five days, at which time, the patient said, relief was obtained by a visit to an osteopath, who stated that he replaced four vertebrae which had been knocked loose. This same afternoon, October 25, the patient's arm was accidentally jerked, and he nearly lost his balance, bending his back, again causing pain. Three or four days later he had the "flu," which made the pain quite severe.

Some time during the first week of November he noticed a soft sore mass in the right upper quadrant of the abdomen. This increased in size and soreness for several days, until it became very painful except when he kept his breathing very shallow. About November 10 it felt as if this mass had broken, and his symptoms were greatly relieved. For two or three days before and after this feeling of the mass breaking he had coughed once or twice each morning and brought up a yellow sticky material that contained blood, which was sometimes bright red and at other times dark red. A few days after the apparent breaking of the mass the patient felt a hard lump in the right side of the abdomen which he could move easily nearly over to the midline and into the right upper quadrant. This mass was very sore on palpation. It felt about as big as a hen's egg. A few days later the lump could not be found by the patient. It had last been pushed to the right upper quadrant. About the same period, during which the patient could feel this lump, he states that when he pressed along the hip on his right side it felt as if he was forcing fluid from this region.

He had had only slight pain since the breaking of the first mass and had practically none on entrance to the hospital.

He was advised to enter to have an abscess in the right side of the abdomen drained.

Since the accident the patient had lost 27 pounds, or 113 Kg, his weight having dropped from 149 to 122 pounds, (67.6 to 55.31 Kg). This he attributed largely to pills that he had been taking for about a week and a half, which caused about six to ten bowel movements a day.

The previous history was good. He had had his tonsils removed, had sprained an ankle and had a few minor injuries in the fall, otherwise he had always been well. He had never had any burning on urination, frequency, retention or nocturia.

The family history was negative.

Physical examination by the house surgeon was negative except locally, which disclosed a very evident tenderness on palpation in the right upper quadrant posteriorly. A palpable mass in this region gave the impression of being part of or the entire right kidney.

The patient's temperature ranged from 98.6 to 96 F. Most of the time it was subnormal. The pulse varied during the days of examination from 60 to 96, with a variation of about 20 beats each day. The respirations were from 18 to 22.

The day following admission the urine was clear, the specific gravity was 1.020, the reaction was acid and there was no albumin, no dextrose and no acetone. Microscopic examination showed debris, a few leukocytes and a few epithelial cells.

The day after admission the blood count was: red blood cells, 4,940,000, hemoglobin, 80 per cent, leukocytes, 13,800, polymorphonuclears, 75 per cent, lymphocytes, 24 per cent, transitional cells, 1 per cent. December 1, the leukocytes numbered 14,000, December 4 (two days after operation) there were 14,300, December 10 (eight days after operation) there were 7,700, with polymorphonuclears, 61 per cent, and lymphocytes, 39 per cent. The Wassermann reaction was negative.

The presence of a paranephric abscess was suspected and measures were taken to determine the condition of the urinary tract.

In a report on the roentgenograms, November 26, Dr. James S. McAvoy stated that studies made with special references to the kidney, ureter and bladder tract did not demonstrate any gross bony abnormality. The kidneys were markedly obscured by gas, especially on the left side, that on the right showed no

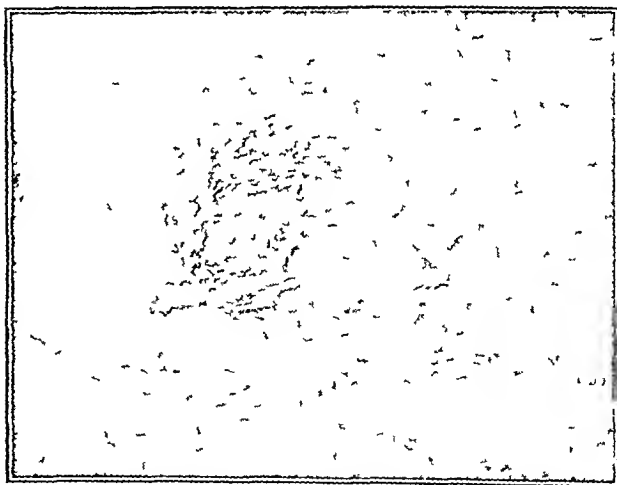


Fig 2—Section under low power showing interstitial myositis with milary abscess

appreciable increase in size. There was no evidence of renal calculi.

November 29, ureteral catheterization was performed by Dr. C. A. Owens, and Dr. Carleton B. Peirce made the following report on a pyelogram:

"Ureteral catheterization on the right side followed by injection demonstrated a rather large renal pelvis, the minor calices having short thick necks the cusps rather shallow. There is an apparent incomplete filling of the inferior calices. The outer margin of the kidney is well defined. We would be curious

about the urinary findings as possibly indicating some localized pathology causing the defect in the inferior calyx which we cannot attribute to inadequate pressure"

In the light of the conditions found at operation the roentgen examination is of great interest, showing as it does a squeezing of the calices of the lower pole of the kidney by the pressure of a mass outside the perirenal fat

Operation was performed, December 2 The preoperative diagnosis was hematoma in paranephric space, infected, and the postoperative diagnosis was the same

An oblique kidney incision was made over the right kidney and deepened to the perirenal capsule (fascia of Gerota) At the lower part of the incision opposite the fourth lumbar spine, a definite mass of material consisting of broken down blood clot and a small amount of pus surrounded by newly formed connective tissue was found in and in front of the psoas and quadratus lumborum muscles This extended up to and involved the lower portion of the perirenal capsule, but the perirenal fat and kidney were uninvolved A fragment of the wall of the abscess was removed for microscopic examination, a cigaret drain was inserted and the wound was closed

The material consisted of a small portion of muscle which in part appeared to be replaced by connective tissue

Microscopic examination disclosed that adjoining one surface of the muscle was a dense exudate of fibrinopurulent material



Fig 3—Interstitial myositis under high power

associated with an underlying overgrowth of connective tissue both of mature and of fibroblastic cells In the muscle itself there was considerable amount of connective tissue overgrowth associated with numerous focal areas of leukocytic infiltration, as shown in the accompanying illustrations

The pathologic diagnosis was acute and chronic interstitial myositis

The postoperative convalescence was rapid and uneventful, and the patient was discharged on the eighth postoperative day with the wound almost healed

December 21, eleven days after discharge, the patient returned to the follow-up clinic and the report made at that time stated that the condition was wonderfully improved The patient had gained 26 pounds (11.8 Kg) and the wound was in excellent condition

CONCLUSIONS

It would seem clear from the observations made in this case that there exists a type of traumatic abscess of the back involving the contents of the paranephric space which is due to muscle trauma accompanied by hemorrhage The first result of the trauma is interstitial myositis in which, if infection follows, small abscesses form which may coalesce and, with the infected hematoma, form a large abscess

This type of abscess is separate and distinct from the abscess involving the perirenal fat and might more properly be designated "paranephric" than "perinephritic" abscess

Medical Arts Building

NEUTROPENIA FOLLOWING THE ADMINISTRATION OF AMIDOPYRINE REPORT OF A CASE

I S ZINBERG MD LAWRENCE KATZENSTEIN MD, AND
L E WICE MD, BALTIMORE

A W, a Jewish woman, aged 46, admitted to the private medical service of the Sinai Hospital, March 1, 1934, complained of fever, cough, and shortness of breath, of seven days' duration

The family history was unimportant The only noteworthy events in the past history were an appendectomy twenty five years previously and an uncomplicated pneumonia in March 1933 A review of the systems shows the patient to have been

TABLE 1—Blood Counts to March 13

	White Blood Cells	Polymorphonuclear Leukocytes, per Cent
On admission	17,000	96
March 2	19,300	90
March 3	24,100	96
March 4	20,200	91
March 6	11,500	84
March 13	7,850	78

in good health except for high blood pressure with headaches during the last ten years These headaches have been relieved by one or two tablets of acetylsalicylic acid However, about five years before the patient was given a white pill, other than acetylsalicylic acid, for a headache About an hour later she had a severe chill lasting fifteen minutes As both the physician who wrote the prescription and the pharmacist who filled it are now dead, the identity of the "white pill" must remain a mystery With this one exception, the patient states that she has taken no other sedatives or antipyretics besides acetylsalicylic acid and codeine

The present illness started, Feb 23, 1934, with a chill, fever, cough, expectoration of rusty sputum, and shortness of breath During the following week these symptoms increased in severity, and the patient was hospitalized, March 1

On physical examination the patient was obese and acutely ill and presented typical signs of pneumonia of the left lower lobe Aside from a loud blowing systolic murmur at the apex of the heart and moderate abdominal distention, the remainder of the examination was negative

Laboratory examination revealed red blood cells, 4,100,000, hemoglobin, 85 per cent (Sahli), white blood cells, 17,000, polymorphonuclear leukocytes, 96 per cent, lymphocytes, 4 per cent All cells appeared normal Examination of the urine and stool was negative, blood sugar was 114 mg per hundred cubic centimeters, and the blood urea was 35 mg The blood Wassermann test was negative Typing of the sputum showed pneumococcus type I

TABLE 2—Blood Counts March 28-April 10

	White Blood Cells	Polymorphonuclear Leukocytes, per Cent	Meta myelo cytes, per Cent	Lympho cytes, per Cent	Mono cytes, per Cent
March 28	4,200	25	4	68	3
March 30	8,700	53	2	44	1
April 3	8,800	49		48	3
April 10	8,400	67		31	2

After three weeks the temperature was normal, and there was no longer evidence of pneumonia The blood counts during this period are given in table 1

During this time the patient received no antipyretics out was given the following barbiturates two dial-Ciba tablets, March 4, 1½ grain (0.1 Gm) of phenobarbital, March 5 and 6, 7½ grains (0.5 Gm) of barbitol, March 9 to March 12 and daily from March 13 to 16, 1½ grains of phenobarbital, March 20, and 5 grains (0.3 Gm) of barbitol, March 22, 23 and 24

March 25 at 10 55 p. m. the patient had a chill lasting about ten minutes with a subsequent mouth temperature of 100 F The only complaint was marked weakness, and examination showed nothing noteworthy The next day the temperature was normal Because of a headache 5 grains of acetylsalicylic

acid and 5 grains of amidopyrine were given at 1 25 p m. Five grains of barbital was given at 9 o'clock. The next morning, March 27, the patient had a chill lasting about five minutes, with no other objective changes. That afternoon the blood count was white blood cells, 2,700, polymorphonuclears 28 per cent, lymphocytes, 71 per cent, monocytes, 1 per cent. Succeeding counts are given in Table 2.

From March 28 to April 10, the convalescence was uneventful. No antipyretics were given, and the only sedative used was codeine.

TABLE 3—Blood Counts April 11-April 14

	White Blood Cells	Polymor- phonuclear Leukocytes, per Cent	Lympho- cytes, per Cent	Mono- cytes, per Cent
During the chill				
At 9 30 p m	4,600	18	80	2
At 3 40 p m	1,300	47	56	1
At 4 40 p m	1,500	42	53	
At 8 40 p m	1,400	49	51	
April 10	2,200	18	80	2
April 13	4,200	37	60	3
April 14	7,800	36	61	2

April 11 at 1 30 p m 5 grains of amidopyrine was given. At 2 45 p m the patient had a severe chill lasting fifteen minutes, with a subsequent rise in mouth temperature to 101.4 F. Later in the afternoon she became perfectly comfortable and has suffered no ill effects whatever from the experience.

The blood counts at this period are given in table 3.
2320 Eutaw Place

REACTIONS TO CERTAIN BARBITAL DERIVATIVES

FLORENCE L. MEREDITH, M.D., BOSTON

The following case has a bearing on the subject recently discussed by Loveman.¹

A white woman, aged 39, took one allonal (allylisopropyl-barbituric acid with amidopyrine) tablet at night Jan 28 1928. In the morning she noticed three roundish inflamed areas one each on the front of the neck, the side of the neck and the inner aspect of the midhigh region. They were deeply red in the center and shaded off into the normal skin. They itched slightly and felt warm subjectively and objectively. She applied an ointment, and in three or four days the diffuse redness and itching had disappeared, leaving, however, clearly defined reddened areas about 1 inch in circumference. Because those on the neck were disfiguring, she consulted a dermatologist who made a diagnosis of cryptococcc infection, prescribed medication to produce epidermal scaling and disinfection, and told her that it would probably be years before they entirely disappeared.

She used the medication faithfully for several weeks but discontinued it finally, as it seemed to her to perpetuate the redness. Scaling occurred to some degree but without any change in the underlying tissue. Itching continued as long as the medication was used.

After she stopped all forms of treatment, the lesions finally settled down to clear-cut rather deeply pigmented brownish areas. Although aware of the fact that the first lesions had followed the taking of allonal, about six weeks after the lesions first appeared she again took allonal, with the result that the three original lesions reappeared exactly as they did at first.

She has not taken allonal since then but exacerbations have occurred as follows. Sedormid caused an exacerbation which appeared slowly after four or five nightly doses, dial, after one dose, phenolphthalein, contained in a liquid petrolatum preparation, after one dose, sodium amytal after one dose. The latter caused the most violent reaction of all. Amidopyrine (Pyramidon) has never caused trouble. No new lesions of the type under discussion have occurred. Each time they reappeared the redness has faded more rapidly than on the previous occasion. These three lesions have finally become nearly normal. First, minute punctate areas of normal color appeared and now only minute punctate areas of pigmentation

¹ Loveman, A. B. Experimental Aspect of Fixed Eruption Due to Allurate a Compound of Allonal. J. A. M. A. 102:97 (Jan 13) 1934.

are present which are scarcely visible. A slight exacerbation occurred during the summer of 1933 in connection with sunburn of the neck followed by deeper pigmentation in these areas than elsewhere, but as the tan faded, the final effect on these areas seemed to have been good.

Jan 25, 1934, a physician in another city prescribed Belledenal "Sandoz" as an antispasmodic. The next morning she reported that the three original lesions had reappeared, with considerable redness and itching. She took one-half tablet (each Belledenal tablet contains 1/2.00 gram [0.00025 Gm] of bellafoline, or belladonna alkaloids as malates and three-fourths grain [0.048 Gm] of phenobarbital). A week later she reported that the reaction had been intense but had subsided in three days, leaving the areas more nearly normal in appearance than they had been since 1928.

Prior to the appearance of the three lesions mentioned, the patient had been subject to a skin eruption similar to acne rosacea together with slight swelling of the forehead and hands, severe headache and digestive "upset." She had never been able to trace these symptoms to the ingestion of any particular food or drug, nor had her physicians been able to find a cause for them. Following appendectomy three years ago she became much less susceptible to these symptoms and has not had them except in connection with the same drugs that cause exacerbation of the lesions under discussion.

466 Commonwealth Avenue

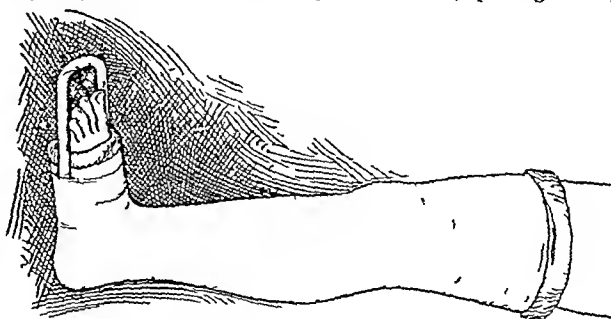
SIMPLE CRADLE ATTACHMENT FOR PLASTER CAST OF FOOT

PHILIP LEWIN, M.D., CHICAGO

A simple cradle is useful to protect the toes in cases in which a foot or leg cast is indicated. It is simply the application of a wire or plaster rope wicket to protect the toes. I am indebted to Dr. Arthur P. Picard for the suggestion.

When the cast is complete and just before the stockinet is turned down to make a French cuff, a slit is made on each side of the stockinet. It is turned back, spanning each side of the wicket, and two or three turns of plaster are applied to secure the wicket in position. Plaster rope may be used to secure the contact edges.

The wicket can be made of No. 12 gage galvanized wire shaped by hand, or of plaster rope fashioned by passing a strip



Cradle attachment for plaster cast of foot

of bandage through the partly closed hand. The distance between the ends of the toes and the wicket should be about 1 1/2 inches. The ends of the wire may be curled or bent to afford greater stability.

If desired, the cradle may be made removable by incorporating a clamp on each side of the cast and inserting the wicket when needed. A combination groove and corrugation may be used.

Wire may be used as a core for the plaster wicket. If plaster is used the ends should be spread out fan shape.

The wicket can be modified to function like a banyo splint used in the treatment of lesions of the hand and fingers. It can be used in conjunction with a walking iron. A 50 foot roll of galvanized 12 gage wire can be purchased for 20 cents. The wire of an ordinary coat hanger furnishes excellent material for a wicket.

104 South Michigan Avenue

Therapeutics**THE THERAPY OF THE COOK
COUNTY HOSPITAL**EDITED BY BERNARD FANTUS, M.D.
CHICAGO

NOTE—In their preparation, these articles are submitted to the members of the attending staff of the Cook County Hospital by the director of therapeutics, Dr. Bernard Fantus. The views expressed by various members are incorporated in the final draft prepared for publication. The series of articles will be continued from time to time in these columns.—ED

THERAPY OF RHEUMATIC FEVER**PROPHYLAXIS**

1 The patient's resistance should be increased by
(a) A nutritious diet, including an abundance of vitamins

(b) The administration of cod liver oil

(c) An outdoor life

(d) Graduated tonic cold hydrotherapy

2 Chilling, especially when fatigued, should be avoided by

(a) Warm clothing (but not to the extent of sweating)

(b) Avoidance of prolonged exposure to cold and wet. Wet garments, especially shoes and stockings, should be changed at the earliest possible moment

(c) One should change to a warm climate. Rheumatic fever does not occur in the tropics

3 Adequate treatment of the primary infection should be given by

(a) Keeping the patient in a warm room if mild symptoms of a cold are present

(b) Absolute rest in bed, if there is a fever, and for as many days of normal temperature as there has been temperature abnormality

(c) Isolation of cases of catarrhal fever, or enforced absence from school on the part of children so infected

4 Removal of foci of infection in

(a) The tonsils. Frequently repeated tonsillitis is an indication for tonsillectomy, or whenever rheumatic fever, chorea or carditis follows tonsillitis, provided there is evidence of infection in the tonsils

(b) Abscessed teeth

(c) Other tissues

TREATMENT

1 Absolute rest in bed should be insisted on

(a) For several (at least three) weeks after the temperature has become normal and the arthritic symptoms have subsided

(b) For several months, if there is any evidence of heart involvement, particularly in children. A walk to the bathroom may bring on a relapse

2 Chilling should be avoided by

(a) Adequate but not excessive bed coverings

(b) Drying the skin and changing (with due care against exposure) the night gown and, if necessary, the bed clothing when these are wet with sweat

3 Analgesics to be employed are the following

(a) While no cure for rheumatic fever and not even shortening the duration of the disease, salicylate is in adequate doses often almost specific in checking pain and joint inflammation. When it fails to do so within

three days, it may as well be abandoned for that particular attack. Salicylization is best accomplished by giving sodium salicylate (prescription 1 or 2) in doses of 1 Gm., 75 per cent for women, from 30 to 50 per cent for children (prescription 3) every hour, generally for eight or ten doses or until pains are relieved, or until salicylism (severe tinnitus, excessive sweating,

PRESCRIPTION 1—Sodium Salicylate

R Sodium salicylate 30.00 Gm
Sodium bicarbonate 60.00 Gm
Divide into thirty powders

Label One powder in a glassful of seltzer water every hour until relieved or until symptoms of intolerance (severe tinnitus, excessive sweating, vomiting, delirium)

PRESCRIPTION 2—Sodium Salicylate

R Sodium salicylate 30.00 Gm
Sodium bicarbonate 90.00 Gm
Divide into thirty blue powder papers

R Citric acid 30.00 Gm
Divide into thirty white powder papers

Label One of each in half a glass of water every hour until the condition is relieved or until symptoms of intolerance appear

PRESCRIPTION 3—Sodium Salicylate

R Sodium salicylate 5.00 Gm
Potassium bicarbonate 10.00 Gm
Cinnamon water 60.00 cc
Syrup of cinnamon to make 120.00 cc

M Label Two teaspoonfuls in water every hour the dose being reduced on the appearance of symptoms of intolerance

PRESCRIPTION 4—Sodium Salicylate

R Sodium salicylate 40.00 Gm
Divide into ten powders

Label Dissolve powder in 4 ounces of thin starch water and use as a retention enema every eight hours

and vomiting, especially prone to occur if there is carditis or delirium) is complained of. Mild sweating or tinnitus may be disregarded. Then a dose may be given every two hours, possibly for two days, every three hours, possibly for three days, every four hours for four days, and so on, the salicylate being continued in this manner, in gradually decreasing dosage, in order to lessen liability to relapse. Recurrence of symptoms calls for prompt resumption of the original dosage, which may not now be as successful. When the salicylate is not tolerated by the stomach, it may be administered by rectum after a cleansing enema (prescription 4).

(b) Amidopyrine (prescription 5) in doses of 0.3 Gm. every hour until pain is relieved, then at slowly but progressively increasing intervals, is indicated in

PRESCRIPTION 5—Amidopyrine

R 30 Amidopyrine tablets 0.30 Gm

Label One every hour until the pain is relieved then every two hours and at gradually increasing intervals

cases that do not respond to salicylate. When this agent is employed, the leukocyte count should be controlled, to forestall the development of granulopenia.

(c) Morphine (see Pain) may be administered hypodermically at once in a sufficient dose to relieve the pain, repeated every four hours in half the preceding dose, and discontinued as soon as the pain-relieving effect of the other remedies has been secured.

4 Resistance should be increased

(a) Alkalis (prescription 6) in sufficient dosage to render the urine alkaline are probably of value in

PRESCRIPTION 6—Sodium Citrate

R Sodium citrate 30.00 Gm
Syrup of orange 60.00 cc
Water to make 120.00 cc

M Label Teaspoonful in lemonade or orangeade or added to dose of salicylate every two hours

antagonizing the tendency to acidosis, which is believed to lessen resistance.

(b) Protein shock therapy is useful in obstinate cases, especially in those with a tendency to relapse, e g, by typhoid vaccine (from 40 up to 75 million) intravenously. It is contraindicated in elderly individuals and those crippled by organic disease.

5 Local therapy includes

(a) Absolute rest to the affected joint by pillows, sandbags or light, easily removable splints (not plaster of paris).

(b) Warmth, e g, wrapping of the affected joints in cotton pads 1 inch thick, 2 or 3 feet long and covering one and one-half times the circumference of the joint, the cotton being placed between layers of gauze and tied on with tapes.

(c) Compresses of hot half-saturated solution of magnesium sulphate.

(d) Rubefaction by means of methyl salicylate (which may be diluted with oil for tender skins) painted on two or three times daily and covered with a cotton bandage.

(e) Blisters (prescription 7) against obstinate pain and tenderness.

PRESCRIPTION 7—*Cantharides Plasters*

R Six Cantharides plasters 1 by 1 inch each

Label Apply one over the most tender point for eight hours. Apply another one over the next most tender point and so on.

(f) Aspiration of joints tensely distended with fluid.

6 The general regimen includes

Water in abundance, a liquid diet during the febrile period, and liberal semisolid and general diet later. Protein need not be restricted.

Laxatives as required.

7 Convalescence may possibly be expedited by the following:

(a) Iron, as in the form of pills of ferrous carbonate (0.3 Gm) may be given three times daily, to each of which arsenic trioxide, 0.002 Gm, might be added (prescription 8), to help in overcoming the anemia.

PRESCRIPTION 8—*Arsenic Trioxide*

R Arsenic trioxide 0.06 Gm
Mass of ferrous carbonate 10.00 Gm

Mix and divide into thirty pills

Label One three times a day after meals

(b) Iodide is believed to be of possible value in the prevention of undue fibrosis. It may be given in doses of 0.3 Gm three times daily after meals. The syrup of ferrous iodide (1 cc) is compatible with iodide and may be combined with it as in prescription 9.

PRESCRIPTION 9—*Potassium Iodide and Syrup of Ferrous Iodide*

R Potassium iodide 10.00 Gm
Syrup of ferrous iodide 30.00 cc
Syrup of orange flowers to make 120.00 cc

M Label Teaspoonful in milk three times daily after meals

PRESCRIPTION 10—*Cod Liver Oil*

R Emulsion of cod liver oil 240.00 cc

Label From one teaspoonful to one tablespoonful three times daily after meals

(c) Cod liver oil (prescription 10) may serve to improve nutrition in a patient much emaciated. It should not be given, however, until the fever has subsided, the appetite has returned, and a liberal amount of food is being taken.

8 Relapses may be prevented by the measures described for prophylaxis. Tonsillectomy is to be considered, but not until the patient has completely recovered and then only if the tonsils are definitely diseased.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS
H A CARTER Secretary

SPECIAL COMMITTEE ON PHYSICAL THERAPY OF THE CALIFORNIA STATE MEDICAL ASSOCIATION

A special committee on physical therapy of the California State Medical Association was appointed by the council of the California State Medical Association at its meeting in September, 1932. At that time Dr John Severy Hibben Pasadena, was selected as chairman. Later the four following men from different parts of the state were appointed: Dr Rodney F. Atsatt, Santa Barbara, Dr Howard Naffziger, San Francisco, Dr R. Leslie Langnecker, San Francisco, and Dr Charles L. Lowman, Los Angeles.

One of the reasons advanced for creating such a committee was the suggestion that many members of the medical profession do not fully understand that physical therapeutic agents are a part of the regular professional armamentarium in the practice of medicine and surgery and that those practicing physical therapy should have opportunities to receive ample training and postgraduate instruction given by qualified physicians or teaching institutions other than by salesmen of physical therapy apparatus or commercial lecturers.

The first activity of the committee was to make a survey of all the medical colleges, hospitals and medical societies in the state. A questionnaire was sent to four medical colleges. The returns showed that only two of these colleges offered instruction in physical therapy. Then a questionnaire was sent to thirty-nine county medical societies and each was asked to appoint a special committee to cooperate with the state committee. It was hoped that in this way interest and attention might be directed toward physical therapy, not necessarily to increase the use of it but to improve the quality of that practice. Of the thirty-nine county medical societies, fourteen have already created special committees on physical therapy.

A questionnaire was also sent to fifty-one hospitals in the state. In answer to the question "Do you possess a physical therapy department," thirty-five out of the thirty-nine replied "yes" and four answered "no." The committee offered its advice to the hospitals contemplating establishing physical therapy departments. The committee also suggested to the chairmen of the medical hospital boards having physical therapy departments that they encourage the presentation of papers at the meetings in order to stimulate a better and more intelligent discussion of the value and limitations of the subject.

Numerous papers and lectures were given and films shown before medical societies and hospitals. The committee has also sponsored several radio talks on the subject of physical therapy. It hopes to be able to offer free instruction on courses in physical therapy and also have available a list of accredited institutions which offer graduate and postgraduate instruction. The special committee is now trying to reestablish contact with the medical societies that have not appointed committees and cooperate with the committees that have been appointed. This cooperation will include a more detailed survey of hospitals and institutions practicing physical therapy, promotion of the teaching of physical therapy to graduates and undergraduates in medical schools and hospitals, the making of a survey of such schools to ascertain in writing their curriculum and requirements for admission, number of students graduated each year and whether diplomas are given, securing the cooperation of manufacturers and distributors in an effort to do away with commercial courses, ascertaining the number of physical therapy treatment to the public and under what authority they operate, encouraging the presentation of papers on physical therapy subjects at meetings of state and county

medical societies and at hospital staff meetings, and making sure that physical therapeutic literature and books are obtainable in medical and hospital libraries.

The purpose and achievements of this committee are commendable. The Council on Physical Therapy hopes that more state medical societies will follow the example of the California State Medical Association by establishing special committees on physical therapy with the aim of cooperation with the Council on Physical Therapy in a program intended to lead to fuller appreciation of the importance and use of physical therapy in the treatment of disease. Further reports on the status of physical therapy in other states will be published when available.

VICTOR DIATHERMY APPARATUS ACCEPTABLE

The General Electric X-Ray Corporation of Chicago manufactures the following apparatus, designed to generate high frequency electrical currents for therapeutic purposes:

V2857 Vario Frequency Diathermy Outfit with Auto Condensation Coil and Meter arranged for operation on 115 volt, 60 cycle alternating current. Shipping weight 155 pounds or 70 Kg (fig 1).

V2858 Same as foregoing but for operation on 230 volt, 60 cycle alternating current. Shipping weight 155 pounds or 70 Kg.

V2855 Vario Frequency Diathermy Outfit, without Auto Condensation Coil arranged for operation on 115 volt, 60 cycle alternating current. Shipping weight 150 pounds or 68 Kg.

V2856 Same as foregoing but for operation on 230 volts, 60 cycle alternating current. This apparatus is also obtainable for 25.49 cycles on special order. Shipping weight 150 pounds or 60 Kg.

Several of these units have been investigated in laboratories and clinics acceptable to the Council. The reports indicate that the machines are reliable and satisfactorily constructed. Furthermore, the merchandising policies of the corporation conform with the Official Rules of the Council.

These machines are marketed under the trade name "Vario-Frequency." As interpreted by the firm, high frequency generators equipped with this feature enable the operator of these devices to vary within limits the frequency of the diathermy current generated. The corporation does not claim specific biologic effects for the range of frequencies ordinarily obtained in diathermy or obtained by the selection of various taps. The investigation of the Council confirmed the claim that, by the selection of various taps provided, the frequency of the diathermy current can be varied. The Council regarded the machines as satisfactory generators of



Fig. 1—Victor Vario Frequency Diathermy Machine

the frequency of the diathermy current can be varied. The Council regarded the machines as satisfactory generators of

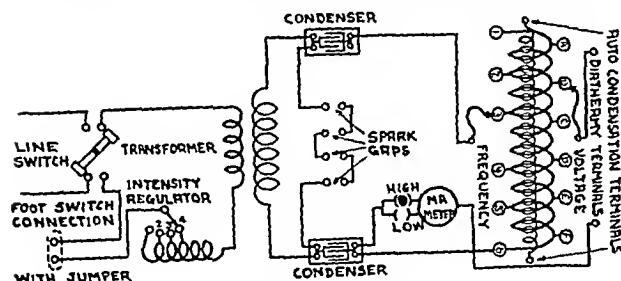


Fig. 2—Schematic diagram of circuit

high frequency electric current for use in electrosurgery and the practice of physical therapy. Figure 2 is a schematic diagram of the circuit.

The Council declared the apparatus eligible for acceptance and included them in the list of accepted devices.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary

SOLUBLE BARBITAL (See New and Nonofficial Remedies, 1934, p. 104)

Medinal—A brand of soluble barbitol—U S P. Manufactured by Schering & Glatz Inc. New York. U S patent 780,241 (Jan. 17, 1905 expired) and 879,499 (Feb. 18, 1908 expired). U S trademark 269,753. Medinal Tablets 5 grs. Medinal Suppositories 10 grs.

PROCAINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1934, p. 60)

The following dosage forms have been accepted:

Ampule Solution Procaine Hydrochloride 2% 1 cc. Each cubic centimeter contains procaine hydrochloride U S P 0.02 Gm. (1/50 grain) in aqueous solution.

Prepared by the Cheplin Biological Laboratories Inc. Syracuse, N. Y. No U S patent or trademark.

Ampule Solution Procaine and Epinephrine 3 cc. Each cubic centimeter contains procaine hydrochloride U S P 0.02 Gm. (1/50 grain), epinephrine 0.04 mg. (3/1000 grain) and sodium bisulphite 0.001 Gm. in an aqueous solution containing less than 0.5 per cent of chlorbutanol.

Prepared by the Cheplin Biological Laboratories Inc. Syracuse, N. Y. No U S patent or trademark.

CHINIOFON (See New and Nonofficial Remedies, 1934, p. 138)

Chiniofon-Winthrop—A brand of chiniofon—N N R. Manufactured by the Winthrop Chemical Company Inc. New York. No U S patent or trademark. Tablets Chiniofon Winthrop 0.25 Gm. (4 grains). The tablets are coated with keratin.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING RELATIVELY RECENT DECISIONS FOR THE INFORMATION OF BOTH THE PROFESSION AND MANUFACTURERS.

PAUL NICHOLAS LEECH, Secretary

RECENT REVISIONS OR ELABORATIONS OF THE COUNCIL'S RULES OF INTEREST TO MANUFACTURERS AND THE MEDICAL PROFESSION

1 Scope of N N R

Soaps—The Council considered the question of the eligibility of soaps for inclusion in New and Nonofficial Remedies. It was pointed out that soap is not primarily a medicinal agent nor is it a new and nonofficial remedy, but it is a *borderline* preparation between cosmetics and therapeutic agents. The Council concluded for the present not to consider soap preparations which are employed simply for their detergent effect and for which no unwarranted therapeutic claims are made.

Cosmetics—The Council has reaffirmed its previous decision that cosmetic preparations which are marketed with no special therapeutic claims are outside the scope of the Council's consideration.

The Term 'Open Market'—Under the heading "Substances Described in New and Nonofficial Remedies" (N N R 1934, p. 15) occurs the following statement:

An article will not be accepted or retained unless it is found in the open market under the name of the firm under which it is submitted or accepted.

The Council's attention was directed to some difficulties that had arisen in the interpretation of this provision, which is the result of a recent revision. It was pointed out that, if the interpretation of the phrase "open market" is restricted to drugs found at retail, the Council would probably overlook instances in which shipments of drugs in quantity may go to institutions, eventually to be dispensed, and which are pre-

sumably as much in need of supervision by the Council as drugs sold over the counter. The Council decided that the term "open market" contemplates both the retail and the wholesale dispensing of drugs and directed that the statement quoted be elaborated by addition of the following:

The term open market contemplates both the wholesale and the retail merchandising of drugs.

2 Rule 1—Composition

Labeling of Ampules.—In conformance with the conclusion of a combined contact committee representing the manufacturers of pharmaceuticals, the U S Food and Drug Administration and the American Medical Association, the Council last year adopted the ruling that, in the case of products marketed in ampules, the individual ampule label or unit package thereof must bear the description "— cc size" together with the explanatory statement "Each ampoule contains a sufficient amount to permit withdrawal and administration of — cc." This statement may be made on a separate slip attached to the ampule or ampule package. As the result of experience in the carrying out of this ruling, the Council later held that it should not apply to ampules containing more than one dose and further that in the case of serums and vaccines marketed in syringes the explanatory statement need not contain the word "withdrawal."

Label Declaration of Preservative in Pollen Extracts.—While the Council's rules have always required that manufacturers make known the nature of preservatives used in mixtures, there has been no requirement that these be specifically declared on labels and in advertising. In the recent consideration of a pollen preparation it was brought out that the firm is now using a dextrose-phenol menstruum for the product. It was pointed out that the label declaration of the preservative phenol would be of service to the physician in that it would enable him to determine whether or not there is bacterial contamination when the solution becomes cloudy. There is less difficulty with solutions made up with a preservative and occasionally cloudiness does occur which does not necessarily indicate bacterial contamination. It was therefore decided that the manufacturers of Council-accepted pollen extract preparations be required to declare on labels and in advertising the identity and amount of the preservative contained. It was further required that appropriate revision of labels and advertising be made by Jan 1, 1935.

3 Rule 4—Indirect Advertising

Permanently Affixed Names.—The comments to the Council's rules provide that when the name or initials or other distinctive mark of the article is permanently stamped on the container, on the article itself, or is on the stoppers or seals, the product is in conflict with rule 4. Recently a manufacturer asked permission to imprint the firm name on its uncoated tablets. The firm stated that the various classes of tablets on which it was desired to make such imprint represent over three fourths of the firm's output of uncoated tablets. The Council decided that whereas the use of such permanently affixed name on a single variety of tablets would be an infringement of rule 4, such use when involving all or a greater part of a firm's output does not conflict with the intent of the rule.

4 Rule 6—Unwarranted Therapeutic Claims

Submission of New Therapeutic Claims.—It was brought to the Council's attention that no rule specifically requires that new therapeutic claims made for articles subsequent to the time of their acceptance be submitted to the Council, although it has been held that such new claims should be submitted for review before they appear in advertising copy. In order to make the rule clear on this point the Council adopted the recommendation of its Committee on Rules and Procedure that the comments to rule 6 (N N R 1934 p 19) be revised by insertion after the word "product" (line 6) of the following sentence:

Therapeutic claims made subsequent to the acceptance of an article must be submitted to the Council for review, provided such claims exceed or substantially modify those made at the time of acceptance.

The Use of Films for Advertising.—The Council's attention has been brought to the use of films to advertise medicinal preparations. The Council's Committee on Rules and Pro-

cedure held that such films should be subjected to Council scrutiny so far as they may relate to the rules governing therapeutic claims and lay or professional advertising. While this activity is essentially a form of advertising, the committee pointed out that it is closely pertinent to rule 6 (Unwarranted Therapeutic Claims) and held that the comments on this rule seems to be the appropriate place to provide for the review of such films. The Council directed that the second paragraph under Unwarranted Therapeutic Claims (N N R 1934, p 20) be amplified by addition of the following sentence:

The Council holds that the terms advertising and advertising literature include films and similar devices for informing the public or the profession.

5 Rule 8—Objectionable Names

Coined Names for Salts and Pharmaceutical Preparations.—The Council adopted the following recommendation of its Committee on Rules and Procedure:

1 That coined names for salts be not accepted unless such names indicate both components as for example "Ephedrine Sulphate", the name Ephedrine is acceptable only for the base and

2 That coined names for new substances marketed as pharmaceutical preparations be not accepted unless such names adequately indicate the identity or dosage form of the article for example a new hypnotic Aliphal Powder, and

3 That for the present, this rule be not made retroactive in its application.

In conformance with this action, the Council adopted the following addition to the "Explanatory Comments" on the rule:

Difficulty frequently arises from the application of coined names to salts. For example, a firm introduces the hydrochloride of a synthetic base under the name "Artifisialin". Subsequently the firm decides to introduce the lactate of the same base. If this is called "Artifisialin lactate" the name "Artifisialin" will now mean the base instead of the hydrochloride which is being marketed under that name. In order to avoid this confusion the Council holds that coined names for salts will not be accepted unless such names indicate the components of such salts thus "Artifisialin hydrochloride" the name "Artifisialin" unqualified, is acceptable only for the base. A similar difficulty may arise when a product is marketed first only as a pharmaceutical preparation to which the manufacturer wishes to apply a short coined name, for example, an elixir of a new hypnotic under the name "Aliphal". If later the manufacturer elects to market the substance also in powder form, an entirely new name would become necessary and this would cause confusion both to the profession and to the trade. The Council therefore holds that coined names for new substances marketed as pharmaceutical preparations will not be accepted unless such names indicate the type or dosage form of the preparation thus "Elixir of Aliphal" "Aliphal Powder" not "Aliphal" unqualified.

Names of Barbitol-Amidopyrine Mixtures.—The Council considered the question of creating simple generic names for preparations representing mixtures of barbitol and amidopyrine. Various names were suggested but in the end the Council doubted the desirability of contracted names. Since both ingredients are important and both are subject to idiosyncrasies, the Council held it advisable that the prescriber be definitely reminded of each component. The Secretary was directed to advise manufacturers of accepted barbitol preparations that the Council is prepared to consider (with a view of determining acceptance for N N R) mixtures (in fixed proportions) of barbitals and amidopyrine under such descriptive name as "Tablets (name of barbitol derivative)-Amidopyrine."

The Use of Brand Marks.—The Council's ruling concerning the identification of a firm's products (N N R 1934, p 22, par 2) reads as follows:

In the marketing of unoriginal articles the legitimate interests of the producer are fully served by identifying such products by appending the name or initials of the manufacturer or agent or by the use of a general brand mark. No objection will be made by the Council to the use of such brand marks provided that in no case shall such mark be used as a designation for an individual article.

The Council's attention was directed to certain brand marks that may give rise to unwarranted implications of merit or to other misunderstandings. After ruling on a particular instance, the Council decided that the statement just quoted be further clarified by addition of the following:

Names, initials or brand marks of manufacturers or agents when used to denote proprietorship shall not be of such character as to cause any misunderstanding or confusion as to their significance.

Names for Liver Oils.—The Council's rules provide for recognition of an informative coined name for a preparation that represents a distinct advance over available preparations. In accordance with this the name "Haliver Oil" for halibut

liver oil was recognized by the Council because the introduction of this oil of materially higher vitamin A content constituted a departure from the available cod liver oil. This first step appeared to be of sufficient therapeutic importance to warrant permission of a proprietary name. However, the Council holds that the originality of the departure is naturally restricted to the first step and that the introduction of oils from the livers of other animals does not involve any originality unless some other distinguishing factor is present. When, therefore, a firm asked for recognition of a proprietary name for an oil derived from the livers of mammals, the Council refused such recognition and the firm was informed that an acceptable non-proprietary name would be "Liver Oil Mammalian" followed by the name or initials of the firm.

6 Rule 10—Unscientific Articles

Hypophosphites—For years the Council has held the hypophosphites to be therapeutically worthless. In 1932 the Council accepted an emulsion of cod liver oil on the condition, among others, that the calcium hypophosphite and sodium hypophosphite which the preparation then contained be omitted. Last year the firm informed the Council that complaints had been received from users of the product that the product as marketed became more acid (rancid). The firm felt that this was due to the omission of the hypophosphites and requested permission to restore them to the formula as preservatives. The firm disclaimed any intention of claiming therapeutic effect for the hypophosphites. The Council granted the request on condition that definite statement is made in the advertising for the product that the hypophosphites are added for pharmaceutical purposes only.

Committee on Foods

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT
RAYMOND HERTWIG, Secretary

NOT ACCEPTABLE

"HONEY AS A FOOD" ADVERTISING LEAFLET

An advertising leaflet entitled "Honey as a Food," by E. R. Root, editor of *Gleanings in Bee Culture* and president of the A. I. Root Company, Medina, Ohio, was submitted to the Committee on Foods for consideration for acceptance.

This leaflet is largely a hodgepodge of misinformation concerning alleged values for honey. The use of the names of doctors, professors, bacteriologists, departments of health and hospitals gives the leaflet the semblance of an authoritative statement. The titles of the sections indicate the type of information presented.

Honey a Natural Food. Honey an Energy Food. Honey Superior to Sugar as a Sweetener. Why Honey Instead of so much Cane Sugar? Honey in Place of Sugar for Diabetes. The Deadly Parallel of White Sugar and Diabetes. Honey for Diabetes. Honey for Weak Heart. Honey for Athletes. Honey not Injurious to the Teeth like Ordinary Sugar. Honey a Destroyer of Disease Germs. Honey in Automobile Radiators.

The author states

A constituent of no slight importance in honey is lime. Unless care is taken in the selection of foods this important factor in bone building may be neglected.

Honey contributes an insignificant amount of calcium to the diet. It is incorrectly alleged that ordinary cane sugar "taxes the digestive organs" in the statement:

Since it does not require a change in form before assimilation honey unlike cane sugar does not tax the digestive organs. Before sugar can be admitted to the blood it must be in invert form like the sugars in fruits or honey.

A normal person has no difficulty in digesting cane sugar, one of the most readily digestible of foods. Claims alleging superiority of digestibility of honey over cane sugar serve only to mislead. It is further claimed that:

Candy eating, when it comes to be a habit is ruinous to the teeth as well as to the whole body. There is plenty of authority to show that common white sugar (sucrose) eaten in the quantity that it is very injurious to the teeth while honey a natural sweet is not. Among the authorities that may be mentioned that testify that white sugar is injurious to the teeth are Dr. J. C. Turner a distinguished English

dentist Dr. J. S. Wallace. Sir Henry Baldwin the king's dentist Dr. A. C. Jones etc. etc. Some of these, including Dr. Williams, assert that honey is not harmful to the teeth. Any dentist of standing will tell his patients that the candy-eating habit is the most potential cause of the decay of the teeth. This enormous consumption of refined cane sugar is believed to be responsible in large measure for sugar diseases the principal one of which is diabetes. There are some interesting facts that go to show that diabetes keeps pace in this country almost directly with the consumption of cane sugar. Cane sugar is demineralized and therefore not as healthful as the unrefined sugars. But the great abuse of modern civilization is the foolish indulgence in demineralized devitalized foods of all kinds. It is significant therefore that deaths from diabetes keep pace with the per capita consumption of white sugar. Physicians who have made a special study of sugars, especially honey are recommending the natural sweets found in fruits and in honey instead of so much cane sugar.

There is no objection to eating candy as long as the diet in toto contains sufficient of the essential food substances, vitamins, minerals, proteins and certain fats. Candy is not specifically detrimental to the teeth, the incomplete diet however, is detrimental. It has not been shown that the replacement of cane sugar with honey would give greater protection to the teeth. Honey has practically the same limited nutritional values as cane sugar. No authoritative data indicate that cane sugar is specially the cause of diabetes. Although assuming, for the sake of argument, that the excessive use of cane sugar may be related to an apparent increase of diabetes, there is no justification for the implication that the substitution of honey for cane sugar in the American diet would alter the situation. The digestion of cane sugar in the gastro intestinal tract produces invert sugar, the chief ingredient of honey. There is no objection to the use of refined sugars or foods as such. Their excessive use, however, replacing foods furnishing necessary vitamins, minerals and proteins for the body's needs, is detrimental.

An especially deceptive type of claim hazardous to the health of the diabetic patient is:

Davidoff observed that honey was tolerated by the diabetic to whom sugar in any form was a poison. He reported his finding to the medical fraternity. A large number of people suffering from diabetes have been relieved by substituting honey in place of ordinary sugar.

A quotation of Dr. Banting, as presented, is unsupported by scientific evidence.

One cannot help but conclude that in the heating and recrystallization of the natural sugar cane something is altered which leaves the refined product a dangerous foodstuff.

An excerpt from the book "The New Dietetics" of Dr. J. H. Kellogg of Battle Creek Sanitarium implies that cane sugar is harmful and something to be feared but states that honey may be "eaten freely," an unwarranted distinction.

It is quite possible that good results would follow the exchange of at least a considerable part of the cane sugar we consume for honey.

Large quantities (cane sugar) cause acidity and give rise to gastric catarrh and indigestion. Sweet fruits such as raisins and figs, honey and maltose or malt sugar are natural and wholesome sweets and may be eaten freely.

Excessive quantities of honey, cane sugar or any other sugar may be harmful.

A misleading therapeutic claim is

Honey for Weak Heart. The objection to ordinary granulated sugar or practically all of the commercial sugars is that they are irritants; they must be changed by the digestive fluids before they can be absorbed. Large quantities of granulated sugar (sucrose) cause a severe strain upon the pancreas. A continued consumption of such sugar causes a breakdown of this organ often resulting in diabetes, a sugar disease. Doctor Arnold Lorand, author of *Old Age Deferred*, is one of the most eminent medical authorities in all Germany. In the book *Old Age Deferred* he says: "As a most valuable food for overwork of the heart and the general circulation I recommend honey." I consider it unwise to place severe cases of diabetes on a strict diet and I recommend to them the use of fruit sugar (levulose) which is often well utilized and especially in a case of diabetes with heart failure. As the best food for the heart I recommend honey on the basis of the above mentioned observations. It is the best sweet food as it does not cause flatulence and can even prevent it to a certain extent promoting the activity of the bowels. It can easily be added to the five meals a day. I recommend in cases of arteriosclerosis and weak heart. Many more references could be produced to show that honey is a quick and satisfactory restorative for weak hearts.

Honey has no specific value for the morbid conditions referred to as implied.

One of the many examples of the use of high sounding terms for impressively deceiving the credulous follows:

Doctor Paul Luttinger of New York City, Adjunct Pediatric Bronch Hospital Pathologist Bronx Hospital, Chief Pediatric Clinic Bronx Hospital, O. P. D. Lecturer on Diseases of Children at the Flower Hospital.

Medical College Bacteriologist to the Research Laboratory of the New York City Department of Health from 1913 to 1917 and for the last eight years Professor of Bacteriology and Pathology and Director of Laboratories at the First Institute of Pediatrics in the New York Medical Journal and Medical Record for August 2 1922 writes a strong article favoring the use of honey in place of so much cane sugar Among other things he says Honey may be given to children suffering from the most serious diseases except in diabetes and acute inflammatory conditions of the gastro intestinal tract Even in diabetes however small quantities of honey may be given as it is much better tolerated than sugar For the last two years I have been using a jam made from rose leaves and honey exposed to the ultra violet rays of a quartz mercury lamp in cases of rickets and tuberculosis with excellent results

The exposure of honey "to the ultra-violet rays of a quartz-mercury lamp" has no known value for the treatment of rickets and tuberculosis

Ingenuity in the art of deception through implication is shown in the statement

'Honey as a destroyer of Disease Germs Dr W G Sackett bacteriologist of the Colorado Experiment Station Fort Collins Colorado conducted an elaborate series of experiments in which he proved that some of the disease germs that attack human beings die in the presence of honey in a comparatively short time He summarizes by saying The longevity of the typhoid colon group in honey is very limited The prob ability of honey acting as a carrier of typhoid fever dysentery and various diarrheal affections is very slight Dr A P Sturtevant bacteriologist in the Bureau of Entomology Washington D C confirming this says that honey has the peculiar and distinctive property of absorbing moisture from anything that comes in contact with it A certain amount of moisture is necessary to maintain life in all living organisms so when bacteria comes in contact with honey and this vital amount of moisture is withdrawn it dies

Statements of this character for promoting a good food are absurd and ludicrous Honey has no practical value as implied for destroying disease germs inside or outside the body or for preventing disease, infection or the spread of disease

Probably the most enlightening paragraph of the entire leaflet is the closing one suggesting the usefulness of honey as an 'antifreeze' in automobile radiators

This leaflet is an offense to honest advertising and can only discredit the wholesome, popular food it would promote The public is seriously misled by false advertising of the type represented by this leaflet, which cannot therefore be listed among accepted advertising of the Committee on Foods

NOT ACCEPTABLE

LITTLE CROW COCO-WHEATS

THE COCOA COATED CEREAL

The Little Crow Milling Company, Inc., Warsaw, Ind., submitted to the Committee on Foods a mixture of farina and semolina lightly coated with cocoa, with added sodium chloride and flavored with vanilla, called "Little Crow Coco-Wheats, The Cocoa Coated Cereal"

Discussion of Label and Advertising—The name Coco-Wheats unduly emphasizes the cocoa ingredient, implying that cocoa is in major proportion in the product, whereas it is present only as a flavoring Cocoa Flavored Farina is a fitting name Since the added salt and vanilla are not declared, the label implies that the only ingredients are farina and cocoa The product name should be accompanied by the statement "flavored with salt and vanilla" The public is entitled to know all the ingredients of the foods it consumes

The label and advertising contain the following statements

Little Crow Coco-Wheats The Cocoa Coated Cereal contains essential elements necessary for infants growing children or the requirements of adults or invalids The addition of finest quality cocoa gives not only greater food value but a strong appeal to backward appetites Coco Wheats supplies vital energy quickly and easily without burdening digestion Coco Wheats is served regularly in many large hospitals rich in vitamins

This food does not contain *all* the (nutritional) requirements of adults or invalids as stated The chief nutritional or food value is the caloric energy content or fuel energy value and very subordinatedly the wheat protein The claim that it "contains essential elements necessary for invalids and growing children" connotes more important and broader nutritional values than actually possessed Vague claims of this character are misleading and should be replaced by definite statements specifically naming the nutritional or other values to be emphasized The cocoa content does not significantly add to the food value as incorrectly stated The article does not 'supply vital energy any more than do usual foods but merely provides

simple food fuel or caloric energy "Vital energy" implies "life energy" and is misleading by connotation No evidence was furnished indicating that Coco-Wheats is served regularly in many hospitals Vague alleged claims of use by hospitals deceptively ascribe imaginary special nutritional or therapeutic values to the product The advertising should specifically state why the food is recommended or for what purpose The product is not "rich in vitamins" but, to the contrary, is practically devoid of vitamins

The advertising indicates disregard of fact and resorts to vagaries to suggest deceptively greater values than warranted by fact Labels and advertising for foods should simply and specifically name the foods and their ingredients, and define their food values in easily understandable terms, in the interest of public welfare and good business competition

The company was informed of the criticisms and recommendations of the Committee but has not demonstrated willingness to comply This cereal will therefore not be listed among the Committee's accepted foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION



RAYMOND HERTWIG Secretary

KRIM-KO'S FIVE-O CHOCOLATE FLAVORED SWEETENED DILUTED SKIM MILK

Manufacturer—Krim Ko Company, Chicago

Description—Sterilized, chocolate flavored sweetened diluted skim milk containing skim milk, water, sucrose, chocolate and cocoa, tapioca flour, salt and a trace of agar, flavored with imitation vanilla extract

Manufacture—The product is prepared by essentially the same procedure as described for Krim-Ko (THE JOURNAL, June 2, 1934, p 1851)

Analysis (submitted by manufacturer) —

	per cent
Moisture	85.3
Ash	0.6
Fat (ether extract)	0.6
Protein (N x 6.25)	1.6
*Reducing sugars as invert sugar	4.5
*Reducing sugars as lactose	1.1
Sucrose (copper reduction method)	4.2
Crude fiber	0.1
Carbohydrates other than crude fiber (by difference)	11.8
*Caffeine and theobromine	0.02

* Calculated from composition of Krim Ko's Five O Drink Base (THE JOURNAL June 2 1934 p 1851) or skim milk

Calories—0.6 per gram 17 per ounce

(1) CASSEL'S EVAPORATED MILK

(2) PICKWICK BRAND EVAPORATED UNSWEETENED STERILIZED MILK

Distributors—(1) Cassel's Stores, Reading, Pa

(2) Kansas City Wholesale Grocery Co, Kansas City, Mo

Packer—The Page Milk Company, Merrill, Wis

Description—Canned unsweetened sterilized evaporated milk, the same as Page Brand Evaporated Milk (Sterilized, Unsweetened), THE JOURNAL, May 30, 1931, page 1872

COTTAGE EVAPORATED MILK

FOX RIVER EVAPORATED MILK

PETER PAN EVAPORATED MILK

Manufacturer—Libby, McNeill & Libby Chicago

Description—Unsweetened evaporated milks

Manufacture—The same as Libby's Sterilized Unsweetened Evaporated Milk (THE JOURNAL, June 13 1931, p 2037)

Claims of Manufacturer—See announcement on the advertising of the Evaporated Milk Association (THE JOURNAL, Dec. 19 1931, p 1890)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 23, 1934

THE CLEVELAND SESSION

One of the greatest medical assemblages ever held in this or any other country was the annual session of the American Medical Association in Cleveland last week. The attendance was the largest ever recorded in a city the size of Cleveland. On only three previous occasions, even in larger cities, has the attendance exceeded that of this gathering. More significant than the attendance, however, were the nature and the spirit of the occasion, the interest shown, and the significance of the actions taken by the House of Delegates.

Probably the most important of the resolutions adopted by the House of Delegates were those concerning the principles that are to guide the medical profession in its consideration of new forms of medical practice and the one expressing the unanimous belief of the House of Delegates that only the American Medical Association is entitled to voice the opinion of organized medicine on these topics. The House of Delegates also took many other important actions, which will be regularly considered in *THE JOURNAL* and which will be made available in the complete report of the proceedings of the House of Delegates, of which publication will begin in this issue.

The scientific sections of the Association were extremely well attended and the discussions lively. Moreover, the General Scientific Meetings attracted large numbers of interested listeners and established the value of such occasions as a form of postgraduate instruction.

The Scientific Exhibit at the Cleveland session was remarkable for its size, its scope, its instructive value and the beauty of presentation. With increasing experience those who participate in the Scientific Exhibit have developed methods of graphic portrayal that make the acquisition of new information a delight. The framing, the illumination and the color of the exhibits aroused general admiration. The special exhibits drew multitudes of interested physicians, and a large number of the papers read in the sections were supplemented by exhibitions of materials extending the knowledge conveyed by the manuscript itself.

The technical exhibits brought together the largest number and variety of industrial organizations catering to the medical profession that have participated in such exhibitions. The exhibitors expressed unanimous commendation of the arrangements made for them and of the manner in which physicians in attendance availed themselves of the opportunities to improve methods of practice by employment of the facilities made available. Furthermore, many exhibitors voluntarily indicated that the returns had been greater in proportion to the outlay than ever before. This may be taken as a sign of the improved economic trend at this time.

The physicians of Cleveland and the state of Ohio surpassed themselves in providing suitable entertainment. The golf tournament of the American Medical Golfing Association included 185 players and the annual banquet was a memorable event. The dinners given by Ohio physicians to the officers and to the House of Delegates of the American Medical Association were not only congenial but also convivial. Many leading physicians held open house during the week. The annual reception for the President was held in one of the most delightful of halls and the music and color of the occasion were brilliant.

As a result, no doubt, of the increasing interest of the public in medical advancement and medical affairs, the press of the country as well as the radio took special interest in the Cleveland session. National broadcasts were made from the meeting as well as many daily local broadcasts. Special correspondents were sent from newspapers in Chicago, St. Louis and New York, and all the great press syndicates were represented by scientific writers who have been attending meetings of the Association for some years.

The Cleveland session will pass into history as a new peak in scientific gatherings.

POLIOMYELITIS IN CALIFORNIA

With the news spreading widely over the United States that there is an increase in the incidence of anterior poliomyelitis in the Los Angeles area, physicians everywhere are being besieged with questions as to whether or not it is safe to travel into that district and as to whether or not the incidence is sufficiently great to be termed epidemic. The number of cases is well beyond the average incidence of infantile paralysis in the community concerned and is therefore of epidemic proportions. No one can say just when the epidemic will reach its peak. The factors concerning the duration of such epidemics are not well established. Some epidemics in southern California, according to information received from the U. S. Public Health Service, seem to extend over longer periods than elsewhere, and the curves have flatter tops than those of other similar areas. This does not necessarily mean a larger number of cases per hundred thousand of population.

The incidence of poliomyelitis is higher than normal for Los Angeles or for any other California district, and it is not considered safe to send a small child into the vicinity. The danger, of course, is small in comparison with the danger from much more contagious conditions, but the danger is definite and should not be assumed if it is avoidable. A child under six years of age falls within the most susceptible age group and for this reason would be subjected to a special hazard if taken from a noninfected area into an infected area. It is, moreover, especially difficult to protect a child against contact with infantile paralysis, since the disease seems to be distributed by carriers, as are also scarlet fever and diphtheria, so that the child might become infected from a person who is apparently well. Epidemiology establishes the fact that infantile paralysis, like epidemic encephalitis, clears up with the coming of cold weather. In the Los Angeles area the first really cool weather may not be expected until November or December.

Considerable agitation is apparent among parents as well as among physicians for mass immunization of the apparently well child, not only in the Los Angeles area but also in San Francisco and in adjacent cities. Whole blood or convalescent serum is suggested for prophylaxis. A survey of the available evidence indicates that neither of these methods has been used to a sufficient extent in well controlled experiments to provide data of value, either in favor of or against its efficiency. In measles, convalescent serum seems to have value, and, with the certain knowledge that antiviral substances for poliomyelitis exist in the serums of adults and of recovered cases, the prophylactic use would seem to be rational and might be given a trial in children who are unavoidably exposed to the epidemic area. However, the period during which such protection might continue from a single injection is not known. If such experiments are made, records should be accurately kept, as the information will be of exceeding value in determining future practice.

THE FUEL OF MUSCULAR WORK

What is the source of the energy transformed in the work of the muscles? The source of the mechanical work of the contractile tissues must be from metabolism. It has long been demonstrated that mechanical work may have little or no effect on protein metabolism. As Graham Lusk, an expert in this field of research, expressed the situation, protein itself may be resolved into dextrose and beta-oxybutyric acid, so that the question of the source of muscular power reduces itself to the consideration of behavior of metabolites of carbohydrate or of fat.¹ Every one admits that carbohydrate usually functions as the fuel of muscular work. Some investigators stoutly main-

tain that it is the sole immediate source of the energy of contraction and that fat can function in this respect only after it has been converted somehow into sugar. As Gemmill² has pointed out, evidence for or against the utilization of fat during muscular exercise in man has been obtained from observations of the respiratory quotient, the blood fats and the acetone substances. The respiratory quotient has been most extensively studied.

Rapport³ reviewed the literature on the respiratory quotient of the exercising animal. He concluded that the evidence from the respiratory quotient did not justify the belief that carbohydrate alone was oxidized to supply the energy for muscular activity. The interpretation of the significance of the respiratory quotient is difficult at best, so that, according to Gemmill, since there are two ways of interpreting the respiratory quotient, the evidence obtained from this quotient in man during exercise becomes less valid for determining a particular type of metabolism.

At the Johns Hopkins School of Medicine, Gemmill² has made a study of the total acetone bodies in the blood of three persons before and after exercise with the subjects on normal and low carbohydrate diets. He mentions the commonly accepted view that the acetone substances in the blood of men on low carbohydrate diets, in starvation and in diabetes come from the incomplete combustion of fat. Therefore, an increase in these compounds resulting from work suggests that there has been an increase in the amount of fat broken down during and after muscular work to supply the energy for the exercise. The exact mechanism for the utilization of this fat cannot be obtained from this type of experimentation, except that it does give suggestive evidence that the fat is oxidized directly and not converted into carbohydrate. Significant changes were not observed following exercise with the persons on normal diets. On low carbohydrate diets, with a general elevation of the acetone substances, a further increase was found after work. The maximal rise in each case was observed two hours after exercise. These experiments suggest that fat is used as such to supply the energy for muscular contraction in man.

Current Comment

JAMES S MCLESTER, PRESIDENT-ELECT

The President-Elect of the American Medical Association, Dr James Somerville Mc Lester, comes to office with a distinguished career of service to organized medicine. He was born in Tuscaloosa, Ala., Jan 25, 1877. He received his A B degree from the University of Alabama in 1896 and the M D degree from the University of Virginia Department of Medicine in 1899. Then followed postgraduate work at

1 Lusk, Graham. *The Elements of the Science of Nutrition*. Philadelphia: W. B. Saunders Company, 1928.

2 Gemmill, C. L. *The Effect of Exercise on the Acetone Bodies in the Blood of Man on Low Carbohydrate Diet*. *Am J Physiol* 108: 55 (April 1) 1934.

3 Rapport, David. *Physiol Rev* 10: 349 (July) 1930.

Göttingen and Freiburg in 1901 and 1902. He became professor of pathology and later professor of medicine in the Birmingham Medical College, holding this position from 1902 till 1912. This period also included postgraduate study in Berlin and Munich during 1907 and 1908. In the World War he acted as major and chief of medicine in the Base Hospital at Camp Sheridan and was promoted to lieutenant colonel in the American Expeditionary Forces, becoming commanding officer of Evacuation Hospital 20 in 1918. During this time he was a consultant in the medical service. In 1919, following the World War, he became professor of medicine in the University of Alabama School of Medicine. The special interest of Dr. McLester has been nutrition. He is the author of many articles on this subject and of books entitled "Nutrition and Diet in Health and Disease" and "The Diagnosis and Treatment of Disorders of Metabolism." He contributed the chapter on the mediastinum in the Oxford System of Medicine and the chapter on syphilis in Cecil's "Textbook of the Practice of Medicine." Dr. McLester was chairman of the Section on Practice of Medicine at the annual session of the American Medical Association in 1920. He served as a member of the House of Delegates from the Section on Practice of Medicine in 1921 and from 1929 to 1933 inclusive. He is a member of the board of regents in the American College of Physicians and also a member of many other scientific medical organizations. In 1929 he became a member of the Council on Medical Education and Hospitals of the American Medical Association, on which he has served continuously since that date. He has been also since 1933 a member of the Committee on Foods of the American Medical Association. Thus, recognition has been given to his learning and leadership. He is a genial and friendly man. In the address that he made to the House of Delegates following his election he expressed his earnest adherence to the principles that must guide the medical profession in its relationship to present economic trends. Through his election the great membership of the American Medical Association in the southern half of our country is again honored.



JAMES S. McLESTER, M.D.
PRESIDENT ELECT OF THE AMERICAN MEDICAL ASSOCIATION

EPINEPHRINE AND THE UTILIZATION OF SUGAR

Although at present there is evidence that carbohydrate metabolism is influenced to a greater or less degree by the activity of the pituitary, the thyroid, the suprarenal, and the insular tissue of the pancreas, far more is known of the activity of epinephrine and of insulin in this respect than of the other hormones. No sooner was the mode of action of insulin determined than it became plain to physiologists that there exists an antagonism between this substance and epinephrine. The two hormones were contrasted with

respect to their influence on blood sugar and on glycogen in the liver. It was shown that an increase in the output of epinephrine occurred after the administration of insulin. Largely through the work of the Coris¹ on epinephrine and glycogen in the liver, the point of view has been emphasized that to a large extent this hormone and insulin exert their antagonistic activity extrahepatically, i. e., in the peripheral tissues. The logical deduction from this conclusion is that epinephrine opposes the utilization of carbohydrate in the tissue. However, a recent study by Soskin, Priest and Schutz² throws some doubt on the validity of this view. Making careful measurements of water exchange, blood sugar and volume of blood flow to an isolated mass of muscle tissue, these investigators demonstrated not only that the retention of sugar was not decreased by simultaneous or separate administration of epinephrine but that it was increased over

that observed when sugar alone was injected. Furthermore, the output of lactic acid from the muscle accounted for less than half of the retained sugar, a fact that likewise runs contrary to the current conception. In view of the growing interest in the part played by the endocrine glands in metabolism in general, it would appear that further studies in this field are necessary with careful attention to such variables as differences in species of test animal, in sex, in age, and in time interval after administration of the hormone.

¹ Cori, C. F. and Cori, Gerty T. J. Biol. Chem. **79**: 321 (Sept.) 1928.
² Soskin, Samuel, Priest, W. S. and Schutz, W. J. Am. J. Physiol. **108**: 107, 1934.

PROCEEDINGS OF THE CLEVELAND SESSION

MINUTES OF THE EIGHTY-FIFTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT CLEVELAND, JUNE 11 15, 1934

HOUSE OF DELEGATES

First Meeting—Monday Morning, June 11

The House of Delegates convened in the Ball Room of the Hotel Statler and was called to order at 10 a. m. by the Speaker, Dr. F. C. Warnshuis.

Preliminary Report of the Reference Committee on Credentials

A preliminary report of the Reference Committee on Credentials was submitted by the chairman, Dr. J. D. Brook, Michigan, who reported that 102 delegates with proper credentials had registered.

The Speaker, not hearing any objections, declared that the preliminary report of the Reference Committee on Credentials would be accepted.

Dr. J. Newton Hunsberger, Pennsylvania, moved that the House dispense with the roll call. The motion was seconded by Dr. H. B. Everett, Tennessee, and carried.

Adoption of Minutes of Milwaukee Session

The Secretary stated that the minutes of the Milwaukee session of the Association had been printed and put into the hands of all members of the House of Delegates, and that no corrections or amendments had been received, but that a typographic error appeared in the report of the Secretary concerning the number of members reported to the House of Delegates last year. There should have been one thousand more in the official report than was indicated by the figures that were presented.

Dr. H. B. Everett, Tennessee, moved that the minutes of the Milwaukee annual session with the correction indicated by the Secretary, be adopted. The motion was seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried.

The Vice Speaker, Dr. Nathan B. Van Eppen, New York, took the chair while the Speaker read his address, which was referred to the Reference Committee on Reports of Officers.

Address of the Speaker, Dr. F. C. Warnshuis

Members of the House of Delegates

The will of this House of Delegates, expressed through your suffrage, permits me to preside during this annual session. For this renewed expression of your confidence, I am at a loss for terms adequate to the expression of my gratitude. I shall seek to merit your confidence by discharging my duties in a manner characterized by consideration and fairness to every delegate. I am dependent on your assistance to expedite the business that is presented.

This House is the supreme legislative body of our Association. As delegates you are the representatives of your state organization and their members. On you rests full responsibility for action that may be recorded and for the policies and directions that may be affirmed. Whatever may be the national problems of this federation and of its members the action that will accomplish their solution must be formulated by you who speak and act for the members of the Association's constituent units. They rightly look and appeal to you to conserve and enhance their collective and individual interests.

The cry today in all avenues of life is for intelligent achieving leadership. The responsibility for leadership in medicine and our medical relations to the public and to government rests

with this House of Delegates. I commit no violence to facts in stating that if, in these days of radical changes in governmental administration and increasing demands of society, our professional interests are subsidized and we surrender our existent relationship to society, the fault descends in a large measure on this House for having failed to mobilize all our resources to obstruct such an untoward condition and for having failed to undertake the defeat of those who seek to invade our field for the control of our professional services. I have stressed this at previous sessions. I do so again because of a deeper realization that grave changes in medical practice are being proposed and advanced.

REFERENCE COMMITTEES

At the close of the Milwaukee session I was concerned over the fact that by reason of the extended hearings before Reference Committees there was little or no discussion on the floor before a vote on a report, a resolution or a motion was recorded. A delegates report in a state journal conveyed the impression that 'Machinery was well greased and the steam roller working.' Your Speaker desires to correct such a wrong impression.

The procedures of the House prescribe that all reports and resolutions shall be referred to proper Reference Committees. Reference Committees shall hold hearings at which any delegate may appear and discuss a report or resolution. At these hearings, mooted points are clarified and dependable information imparted. The Reference Committee formulates its recommendations, which are presented at a session of this House for adoption. Should any delegate be not in accord with the Reference Committee's report, the opportunity is given him to present his views before a vote is taken. If there is no discussion when the Reference Committee's report is presented, it is assumed that delegates have attended the hearings and concur in the report.

These are not "machine" or "steam roller" tactics. They have been formulated by reason of past experiences in order to enable this House to be expeditious in disposing of the large volume of business that arises annually. There is no gag rule. Every delegate has the right to and will be given the floor to ask a question or record his views on any question that is before the House for consideration.

Reference Committee hearings are announced and posted. Your Speaker urges that delegates appear before these committees for discussion and inquiry.

Your Speaker further recommends that chairmen of Reference Committees might well offer comments on the points raised during the hearings when presenting those portions of their reports dealing with major problems or policies of the Association.

Your Speaker also recommends that consideration be given to the desirability of requesting the Association's Secretary to supply certain Reference Committees with a competent stenographer to take the minutes of a hearing and to whom the chairman can dictate his report. This would relieve chairmen of exacting burdens and conserve their time.

In designating delegates to serve on Reference Committees, your Speaker sincerely endeavors to give just representation to every state. Consideration is also given to the representation that a state has on councils, bureaus and the Board of Trustees.

CREATION OF COMMITTEES

Your Speaker recommends that the By-Laws be amended so as to abolish the Committee on Rules and Order of Business. There has been no necessity for this committee during the past ten years.

The recommendation is made that suitable amendments be adopted to create a Reference Committee on Medical Economics and one on Nominations, the Committee on Nominations to be empowered by a By-Law to nominate three Fellows for the office of President-Elect and three to succeed those trustees whose terms expire, and to make its report at the Tuesday session of the House of Delegates. Additional nominations may of course be made from the floor at the time of election.

ENCOURAGEMENT TO VISITORS

Your Speaker has taken the liberty to suggest to your Secretary that announcement be made in the BULLETIN, THE JOURNAL and the program that sessions of the House of Delegates are open to Fellows and to urge them to attend your deliberations. Many Fellows are under the impression that you sit in closed sessions. On many occasions, Fellows have stated that they wished they could attend your sessions and were greatly surprised when informed that they are more than welcome.

A clearer understanding of organizational problems and activities will result if Fellows become more intimately familiar with the functionings of their House of Delegates. To that end the suggestion is made to encourage attendance by those whom you represent and if need be that the provision for the accommodation of visiting observers be enlarged.

DECEASED MEMBERS

And now, conforming to your action, it becomes my duty to request you to pause to pay tribute to those Fellows who have served in this House and whose life's activities ended during the past year. As I announce their names there will come to each of you some thought some memory related to their services and your association with them. These memories, not transmissible in words, record our enduring tribute.

With a spirit of reverence and memory I now officially record in our records the departure from life of the following Fellows who have served in this House: Lewis H. Adler Jr., Pennsylvania; W. F. Bacon, Pennsylvania; William R. Bathurst, Arkansas; I. C. Chase, Texas; A. L. Chute, Massachusetts; LeRoy Crummer, Nebraska; John S. Davis, Virginia; A. D. Dunn, Nebraska; C. F. Eikenbary, Washington; E. F. Howard, Mississippi; John Edward Lane, Connecticut; Edmund D. Martin, Louisiana; Miles F. Porter, Indiana; George L. Richards, Massachusetts; J. F. Schamberg, Pennsylvania; W. Blair Stewart, New Jersey; D. E. Sullivan, New Hampshire; Claude A. Thompson, Oklahoma; and George B. Young, U. S. Public Health Service.

Reference Committees

The Speaker resumed the chair and appointed the following reference committees:

SECTIONS AND SECTION WORK

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W. H. Seemann

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Brien King

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Pennsylvania
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Address of President Dean Lewis

The Speaker presented the President, Dr. Dean Lewis, Baltimore, who delivered the following address which was referred to the Reference Committee on Reports of Officers:

Mr. Speaker and Members of the House of Delegates

It seems almost needless, perhaps rather presumptuous, on my part to express my appreciation of the honor that you conferred on me two years ago when you made me President-Elect of the American Medical Association in New Orleans. One must accept such an honor with humility for one must realize that one cannot discharge efficiently the duties that one assumes and must be called on frequently to make decisions that will not be approved.

During these two years the educational opportunity has been great, for I have had the privilege of attending many national, state and county gatherings. I have never had greater pride in the medical fraternity, for they have gladly assumed the responsibilities which they have been forced to meet during the depression. They have assumed these without complaint, and it is without any attempt at patronizing to say that I have known of no organization, either lay or professional that has rendered such service without complaint. The health of the people has been maintained at a high level. Whether or not the profession is to be given entire credit for this may be a matter of dispute, for it seems that the wind is always tempered to the shorn lamb, for statistics which have been gathered for a number of years have shown that the mortality and morbidity during periods of depression are always low. Social workers apparently are not fully conversant with these facts for there is a tendency on their part to credit this state of health to their unremitting, untiring and self-sacrificing efforts to ameliorate suffering and prolong life, little realizing that Providence works in strange and wondrous ways.

These are changing times, however, and the medical profession has been accused from time to time of not keeping up with the social and economic advances. Our severest critics seem to fail to realize that at any and all times the medical profession has always been the vanguard of the troops which

seek to prevent the development of disease and to care for it when it has once developed. The medical profession has no apologies or excuses to make, for cities could not have survived epidemics, international trade routes could not have been established and the span of life would not have been long enough to justify the pangs of labor. It is sometimes a wonder to me why contraceptive measures were not discussed and introduced years ago when the span of life was so short that the futility of birth must have been frequently discussed.

During the past year I have visited many societies and I find that the profession is troubled. They should realize that they provide the essential part of the care, and without their untiring effort and sacrificing service there would be no medicine, for medical knowledge demands the longest and most technical training of any profession. There would be no paths to follow and we would be lost on the unlighted, uncharted path of ignorance.

Society has been urged to place restrictions on medical practice on the solicitations and frequently the demands of the medical profession. The state in this country which has probably the best medical practice act had a wise governor who was sympathetic with the medical profession and had enough wisdom to select a committee of reputable physicians who wrote an act which he accepted without revision or reservation. This act is in strange contrast to that operative in many states, in which the politicians or laymen have tried to determine for a highly technical profession who should be qualified and how, notwithstanding the fact that fads, fanatics, quacks and cults flourish and propagate their kind in such states.

We should be concerned today with the quality of medical care. Cheap medicine is often the most expensive, and what is called expensive is often the cheapest, for through the quality are attained the objects of medical practice—decrease in mortality, lessening of morbidity and shortening of the period of disability.

One of the heaviest duties now resting on the medical profession is to raise and maintain the quality. If the quality of medical care is to be high, we must have vision and exercise judgment at the beginning, and when I say beginning, I mean when the student is admitted to the medical school. Character should have a higher assessed value than marks alone. The matriculation fee should not be so high that only the children of the well-to-do can enter, neither should it be so low that all may enter.

The quality of medicine is largely determined during the four years of the medical course but must be maintained by wise planning afterward. As I have stated before, I believe that there should be more opportunities for doctors who do not specialize. On leaving the medical schools not infrequently these men never have an opportunity to take patients to the hospitals or to associate with men whom they admired, and they are denied the chance to study gross pathology, which still remains the foundation stone of medicine. The greatest clinicians have had a sound pathologic training and when they examine and study a case they always have memories of a case which they have seen before. The best diagnoses are made on correlated clinical and pathologic observations. To furnish the material with diagnosis, verified by operation or autopsy, is one of the hardest tasks in maintaining the quality of medical care and to the solution of which we should give most serious attention.

A relatively small percentage of doctors attend medical meetings. In order to keep these doctors abreast of the newer ideas, graduate courses of instruction should be given. I was in Idaho last September and the members of the state medical society requested that some of the scientific assembly be sent to them or that doctors be sent from the central office to instruct them in the latest diagnostic procedures. Such attempts to give courses have been undertaken by a large number of medical societies and I have been particularly impressed by the plan of the Medical Society of the State of Pennsylvania, which has been supported so enthusiastically and successfully by its president, Dr. Guthrie. I believe that in the not too distant future a study of the possibilities of such graduate instruction should be undertaken by a committee of this House or by the Council on Medical Education and Hospitals which already has about all the problems that it can successfully handle.

We must preserve the idea that medicine is a profession and not a business, if we are to maintain quality. We must all concede that any one practicing medicine should be able to make a living and I am sorry to say that not infrequently the higher the ideal and the squarer the methods, the less the living.

The medical profession requires the good will and respect of the people. I know of nothing that makes people more suspicious of those engaged in the practice of medicine than the expert witness. Lay people must think that medicine does not even approach an exact science, when two men of equal distinction in medicine will give diametrically opposite statements to questions that are asked at a trial.

Members of the bar realize the futility of much expert testimony, and I would like to see the bar association approached by a committee appointed by the House of Delegates to see whether some method of procedure could be devised by which the expert witness could be eliminated. A reference board, appointed by some competent authority or commission, would probably be most satisfactory, for it could examine in camera the testimony and the documents and hand down the decision, thus avoiding the amazement concerning the conflicting statements of equally capable men.

If the quality of medicine is to be raised, control of methods that are practiced must be strictly and carefully applied. Hasty publication should be discouraged. Publication should be based on accumulated knowledge.

There are two disturbing factors in medicine. First, many doctors and lay people condone advertising. Lay people should realize that advertising in medicine is pernicious, for advertising may wilfully deceive. Commercialism and advertising are among the most demoralizing things in medicine.

As a result of the depression, doctors have had a bad time financially and they may easily be exploited by lay people, both in hospital and in health insurance. The fate of the people as regards medicine will be determined in the ward, the home and the research laboratory.

I look with confidence to the members of the House of Delegates for the solution of the many problems that confront the medical profession. Those questions should be settled by the critical analysis of the facts and data presented and not influenced by passion or the emotions which the problems of the sick so often arouse.

We should remember that it is easy to say that the people are not getting sufficient medical care, but how shall it be provided? Those who practice medicine are always being told how to do it, but those who criticize them have usually had no experience in doing it and couldn't do it at all if called on to do so. We have the right to be proud of our achievements and we can best meet every challenge directed at us by carrying on without fear and with vision.

Address of President-Elect Walter L. Bierring

The Speaker presented the President-Elect, Dr. Walter L. Bierring, Des Moines, Iowa, who presented the following address, which was referred to the Reference Committee on Reports of Officers.

Mr. Speaker and Members of the House of Delegates

During my training year as President-Elect, I have been more and more impressed with the basic spirit of democracy that governs our association. With its ever widening influence, scientific and professional the sovereign right of the individual member still reigns supreme, and this representative body, the House of Delegates, continues as the arbiter of the destiny and policies of organized medicine in America.

It needs no words of mine to say that this will be a historic session, because you are called on to consider medical problems such as have not been encountered before.

There are those without our Association who would speak with authority and much concern of our welfare regarding the solving of these problems. While we gladly listen for guidance from every available source we are confident and deeply conscious of our ability to put our own house in order.

With the evolution in technology, the development of industry and the political economic changes, modern society has come to expect a new order of medical service, different from that demanded a generation ago.

In all time medical practice has influenced and gone hand in hand with the advancement of medical education. In this changing order you cannot therefore disassociate the one from the other, and with far sighted wisdom you have already instituted through the Council on Medical Education and Hospitals a resurvey of all the medical schools of this country. No doubt this action was determined as the result of careful actuarial and factual studies, which tell but the one story—that each year more physicians are being graduated than present society can adequately support.

The time has arrived when this association must recognize its duty to the future welfare of American medicine and attack this problem with all the facilities at its command.

What changes such a resurvey may portend in the present scheme of medical education cannot be foretold but that it will require courage of a high order to mold and influence the educational forces to meet this challenge no one will deny. It should therefore enlist your fullest cooperation and support toward furthering the work of the Council during the coming year.

Your second great problem is concerned with the changing order of medical practice. Well meaning nonmedical advisers have brought to you a variety of artificial remedial plans that are supposed to solve every phase of the problem. We well know that no single "rule of thumb" proposal or method will provide the remedy. The rendering of efficient and complete medical service is still largely governed by the individualistic relation of physician to patient. Furthermore, the practice of medicine is a profession and not a business or a trade.

It is also well recognized that the practice of medicine in the crowded areas of New England and along the Atlantic seaboard is far different from that required in the rural and agricultural sections of the Mississippi Valley. Likewise the activities of the medical practitioner in the Southern states are not the same as those in the wide open spaces of the Dakotas and other Western states.

This association is indeed fortunate in having its Bureau of Medical Economics under the direction of Dr. Leland, who by personal contact has familiarized himself with the problems of medical practice throughout the length and breadth of the land and is able to present to the House of Delegates a very comprehensive picture of existing conditions. When these are further related to his sound conceptions of economic philosophy, they should be a distinct and valuable aid in your labors.

Again through the medium of a great journal and a wide awake editor and general secretary, you have been kept constantly conversant with the problems that concern the individual member and practitioner in this country.

It is sad to relate, that mighty forces have been at work to sow the seeds of discontent in the ranks of organized medicine and to destroy the faith in that leadership which is based on the sacred traditions of sacrifice and devotion to the idealism of medical service.

Would that I could bring to you the full force of the dominant words contained in the presidential address presented recently before two state medical societies, both general practitioners from the plains country, in their ringing appeal, "Stand by the American Medical Association and all will be well."

From all over this broad land the doctor looks to you, members of the House of Delegates, in fullest faith and confidence, not to solve the problem all in a day, but in your wisdom and in the spirit of unity and solidarity to point the way for each to follow gladly.

Out of the land of drought, which has tried the very souls of men, they come with the simple prayer "Give us but a little rain and we will carry on stronger than before."

REPORTS OF OFFICERS

Report of the Secretary

Dr. Olin West then presented his report as Secretary, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary.

Report of Reference Committee on Credentials

Dr. J. D. Brook, Chairman, moved that Dr. Walter Schulte be seated as delegate from Utah, since neither the delegate nor

the alternate from that state could be present. The motion was seconded by Dr. Mather Pfeifferberger, Illinois, and carried.

Report of the Board of Trustees

Dr. J. H. J. Upham, Chairman, presented the report of the Board of Trustees, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary, with the following exceptions. The portion dealing with the Bureau of Legal Medicine and Legislation was referred to the Reference Committee on Legislation and Public Relations, that dealing with the Bureau of Health and Public Instruction was referred to the Reference Committee on Hygiene and Public Health, and that dealing with the Bureau of Medical Economics was referred to the Reference Committee on Medical Economics.

Report of the Judicial Council

Dr. George E. Follansbee, Chairman, presented the report of the Judicial Council, which was referred to the Reference Committee on Reports of Officers.

Report of the Council on Medical Education and Hospitals

General Merritt W. Ireland, Washington, D. C., presented the report of the Council on Medical Education and Hospitals, which was referred to the Reference Committee on Medical Education.

Report of the Council on Scientific Assembly

Dr. Frank H. Lahey, Chairman, presented the report of the Council on Scientific Assembly, which was referred to the Reference Committee on Sections and Section Work.

Report of the Committee on Legislative Activities

Dr. E. H. Cary, Chairman, presented the following report of the Committee on Legislative Activities, which was referred to the Reference Committee on Legislation and Public Relations.

Mr. Speaker and Members of the House of Delegates

Your Committee on Legislative Activities has been consistently engaged in defending the position of the American Medical Association as formulated by this distinguished body in previous sessions. For the sake of brevity we will discuss only veterans' legislation and call your attention to the report of the Board of Trustees, which recounts some of the other work of this committee.

You recall that during the preceding national administration the medical profession opposed the continued building of veterans' hospitals which were to be used for the care of veterans who were not disabled during the World War.

In 1931 your committee with Dr. C. B. Wright as chairman, met in Washington. At this time, in company with Drs. West, Woodward, Shoulders, Johnson and Meyerding and representatives of the American Hospital Association, we made known the medical point of view to the leaders of the American Legion in Washington, to the officials of the Veterans' Bureau and to members of the national Congress. We conceded the need of veterans' hospitals to care for nervous and mental diseases and did not oppose government hospitals for the care of veterans with advanced tuberculosis.

Later Dr. W. C. Woodward and I, in cooperation with representatives of the American Hospital Association appeared before a special joint committee appointed by both houses of Congress and presented many facts concerning the medical profession and its relation to hospitalization, particularly stressing the ultimate effect which an increased hospital construction program would have on our profession.

From our contacts, we came to believe that influences were being developed which would successfully oppose any plan that required the government to continue building hospitals and broadening hospital gratuities to an ever increasing number of veterans without service disabilities. We were particularly insistent that those financially able to care for themselves should be treated at home by their home physicians. Attention was called to the abuse of the hospitalization privilege by the financially independent veteran, who was frequently transported long distances at governmental expense and paid approximately \$85 monthly while in the hospital rendering it very difficult

for the doctor to cure him. Attention of the committee was also directed to the demoralizing effect on the recipient and the welfare of the medical service in a locality this medical service being made more difficult to sustain, and the withdrawal of this support from the medical service in a given community thereby affecting seriously the future health and happiness of large groups of our citizens.

The present administration publicly expressed many views on this subject which were in harmony with the principles adopted by the members of this House of Delegates. The administration evidently recognized that there had been no definite policy established relating to veterans of the late war and that many abuses were the outgrowth of haphazard legislation and Veterans' Bureau regulations.

The need of a balanced budget made necessary an economy program that included a definite policy regarding veterans. We were greatly comforted to find that the present administration supported by the director of the Veterans' Bureau, contemplated no further building of hospitals and outlined a policy which, as stated before, we found in harmony with our views.

In February 1934 the chairman of your Legislative Committee, with the two other members Drs C B Wright and F S Crockett, met Drs Olin West and W C Woodward in Washington to oppose the Reed amendment, which comprised the four-point program of the American Legion. We were particularly interested in the second point of the Legion program which related to hospitalization and which, as written, would have required only a written statement from the veteran that he was financially unable to pay for needed care. We could see that if the law permitted an unsupported statement it might lead to multiplied abuse of hospital and transportation privileges.

Your committee was in Washington for four days, making many contacts, broadening our acquaintance among members of both congressional houses, and developing friendships here and there which we hoped would be useful in preventing legislation not in the interest of the people and detrimental to the medical profession.

Unfortunately, some weeks following our activity in Washington, House of Representatives Bill 6663, the Independent Offices Appropriation Bill was amended combining two issues, one of which concerned the veterans. This readily became a political measure of profound significance and it was not long until it became a law (March 28, 1934) after having been passed by the House of Representatives and the Senate over the President's veto.

Section 29 of the law reads as follows

Section 29. Section 6 of Public Law Number 2 Seventy-third Congress as amended by Public Law Numbered 78 Seventy-third Congress is hereby amended by adding hereto the following proviso:

Provided that any veteran of any war who was not dishonorably discharged suffering from disability disease or defect who is in need of hospitalization or domiciliary care and is unable to defray the necessary expense therefor (including transportation to and from Veterans Administration facility) shall be furnished necessary hospitalization or domiciliary care (including transportation) in any Veterans Administration Facility within the limitations existing in such facilities irrespective of whether the disability disease or defect was due to service. The statement under oath of the applicant on such form as may be prescribed by the Administrator of Veterans Affairs shall be accepted as sufficient evidence of inability to defray necessary expenses.

This law made several changes. It made statutory certain privileges already granted by executive order. It limited as you have seen hospitalization to those who were willing to make oath as to their inability to pay for medical care. A very important feature of the new law is the discontinuance of money payments to the veterans while in the hospital.

As you know the American Medical Association has consistently taken the position that the federal government ought not to provide medical nursing and hospital services for veterans who are able to provide such services for themselves for injuries and diseases in no way related to military service.

The present law goes beyond anything heretofore contemplated in that it provides for free care for nonservice disability. Under the World War Veterans Act 1924 under which the gross abuse of medical nursing and hospital privileges for veterans rich and poor alike suffering from nonservice diseases and injuries grew up hospitalization was absolutely and unqualifiedly

discretionary with the administrator of veterans' affairs, except so far as related to certain named chronic diseases.

The World War Veterans' Act, 1924, section 202, subsection 10, provided:

The Director is further authorized so far as he shall find that existing Government facilities permit to furnish hospitalization and necessary traveling expenses to veterans of any war military occupation or military expedition since 1897 not dishonorably discharged without regard to the nature or origin of their disability. Provided that preference to admission to any Government hospital for hospitalization under the provisions of this subdivision shall be given to those veterans who are financially unable to pay for hospitalization and their necessary traveling expenses.

If under the proviso set forth above, any effort was ever made to classify applicants for hospitalization at the expense of the taxpayers generally, in the order of the ability of the applicants to pay for medical, nursing and hospital services, it was never apparent. As a matter of fact, veterans themselves resented the inquiry into their financial resources and any implication that hospitalization at the expense of the taxpayers generally was given them because of their need and not as a matter of absolute right. It was under this strictly permissive clause in the act of 1924 that the hospital building program of the Veterans Administration costing tens of millions of dollars, developed and was carried into effect.

From our experience in the past we hope that the Veterans' Bureau will be able to resist prescribing a form which would liberalize the amended law beyond interpreting the oath to mean that the veteran is in actual need.

We certainly must see that the regulations will make it extremely difficult for a veteran to accept charity when he is able to pay something to his home doctor and community hospital for services required. We should oppose a loose construction of law which would enable a veteran to escape his civic responsibility.

Can we not assume that the majority of veterans will agree with the citizenship generally that this law should be interpreted for the needy and that an oath to the contrary should not be lightly regarded?

Our attention has been called to the plan now in effect in Illinois. Dr Fredrickson in collaboration with Dr T B Williamson has organized a medical commission composed of district county and post surgeons of the Illinois Department, American Legion. This commission acts as advisers to the Rehabilitation Committee in the interests of the ex-service men. Its great success has been in improving this service while preserving the worth while ideals of the medical profession. Since all problems involving compensation are medical problems, it is to the best interest of the ex-service men and the medical profession that this service be rendered by doctors who have a broad understanding of all the interests involved. An adoption of this Illinois plan by other legion departments would promise much for a closer cooperation between these two great organizations.

If we perform our full duty, and as individuals work faithfully we shall develop a strong sentiment in favor of rendering governmental aid where it is actually needed. No one will be better able to bring about cooperation than the post surgeon.

For the present there has been no effort to bring about increased hospital facilities, and without an increase of such facilities the evil effect on the profession will lessen, because many of these hospitals will be diverted into domiciliary homes.

On the other hand if the oath required by the law, wherein the veteran swears his inability to defray necessary expenses, is treated lightly we shall then be confronted with a serious situation. We should now help to create a sentiment of merited scorn for the veteran who is willing to cheat and accept gratuities from his government which is already burdened with indigence rampant in every direction. This sentiment must be widespread or a new program of hospital building will be launched to meet the demand from sources able to pay for medical care.

We should encourage those fine leaders in the American Legion who do not desire to further a program which is morally and financially destructive to the American people and disastrous to the voluntary hospitals and to the medical profession.

In closing we would like to commend the medical leaders of the states who have influenced rather definitely their represen-

tatives in Washington. At the head of this list comes Virginia, whose representatives, we are glad to report, supported the veto of the President 100 per cent.

We are convinced that if medical men throughout the country would become interested in the candidacy of those who, regardless of party, hold views in harmony with our profession it would not be long until we would have in Congress a very positive influence.

Such influence cannot be created over night. It can be greatly developed at this season and definitely crystallized in the November elections if the members of the medical profession will rally to their duty.

No legislative committee can be stronger than the will of the profession and this professional will to stand together and fight the battles for the future of medicine. This sentiment must be inculcated into the minds of every doctor in this land.

We firmly believe that it requires persistent effort on the part of the leaders of every state in presenting this problem to each and every unit of the national organization.

If our profession is to be effective in state legislation and in the halls of Congress, politicians must learn of our solidarity, of our deep interest in the progress of the science of medicine and of our determination to preserve the integrity of its application in the interest of human beings, all of which makes it essential that we protect the welfare of the profession as a whole so that its dignity and its rights and privileges shall be preserved.

Respectfully submitted

E. H. CARY, Chairman
F. S. CROCKETT
C. B. WRIGHT

NEW BUSINESS

Resolution Authorizing Section on Radiology to Invite Fifth International Congress of Radiology to be Held in America

Dr. Albert Soland, Section on Radiology, presented the following resolution, which was referred to the Reference Committee on Sections and Section Work.

WHEREAS The International Congress of Radiology which convenes every three years has already had three such meetings abroad in London in 1925 in Stockholm in 1928 in Paris in 1931 and now in Zurich in 1934 and

WHEREAS The radiologists of the United States desire to invite the European radiologists to America for the 1937 International Congress and

WHEREAS In the opinion of members of the Section on Radiology of the American Medical Association such an international meeting would at this time engender a national good feeling and would be of high value to scientific radiology be it therefore

Resolved That the House of Delegates of the American Medical Association authorize the Section of Radiology to cordially invite the fifth International Congress to be held in America at such time and place as may be decided on by the International Committee of the Fifth Congress of Radiology.

Resolutions on Exploitation of Roentgenologists in Hospitals

Dr. Albert Soland, Section on Radiology, presented the following resolutions, which were referred to the Reference Committee on Medical Economics.

WHEREAS It has been reported to the officers and members of the Section of Radiology of the American Medical Association that an intolerable condition exists between certain otherwise acceptable hospitals and their departments of radiology and

WHEREAS It is known that in several such hospitals the business management does the collective bargaining for x-ray business with staff members and outsiders to the detriment and professional and financial loss of their staff roentgenologists and

WHEREAS Such practice is not only unethical but places such hospitals on a direct competitive medical practice basis with their respective roentgenologists which practice has been declared illegal in several states and

WHEREAS The practice of roentgenology or radiology is *ipso facto* the practice of medicine and cannot be separated therefrom be it therefore

Resolved That the House of Delegates of the American Medical Association go on record as opposing the exploitation of members of their own body in the manner outlined and be it further

Resolved That the House of Delegates of the American Medical Association in session duly assembled orders this resolution to be referred to the Council on Medical Education and Hospitals for the study and formulation of plans tending to the abatement of these highly unprofessional and obnoxious evils.

Resolutions on State and Federal Relief Committees

Dr. Ralph A. Fenton, Oregon, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations.

1. *Resolved* That each state and federal relief committee engaged in the apportionment of federal relief funds shall include a physician among its members.

2. *Resolved* That no schedule of fees for medical services to indigent beneficiaries of federal relief funds shall be approved by state relief committees without the approval of the state medical society concerned.

The governor of the state of Oregon has appointed Dr. R. L. Benson at the request of the Oregon State Medical Society, to the state emergency relief committee.

Resolution Approving Aims and Purposes of the Society for the Prevention of Asphyxial Death

Dr. George W. Kosmak, New York, presented the following resolution, which was referred to the Reference Committee on Hygiene and Public Health.

WHEREAS It is now accepted that asphyxia plays a wider role than was formerly understood in death from other causes than mechanical suffocation, and

WHEREAS The total toll of all asphyxial deaths is large and

WHEREAS It is known that many such deaths could be averted by prompt and proper use of modern measures and equipment for the relief of the element of asphyxia and

WHEREAS The Society for the Prevention of Asphyxial Death has been organized for the purpose of saving lives that would without up-to-date management be lost because of failure to relieve asphyxia and

WHEREAS That society has the approval of leaders in medical thought and administration therefore be it

Resolved That the Medical Society of the State of New York approves the aims and purposes of the Society for the Prevention of Asphyxial Death and instructs the delegates to the House of Delegates of the American Medical Association to sponsor a similar resolution at the next meeting of the American Medical Association.

Nomination for Honorary Fellowship

Dr. Arthur H. Curtis, Section on Obstetrics, Gynecology and Abdominal Surgery, presented the following nomination, which was referred to the Council on Scientific Assembly.

The Section on Obstetrics, Gynecology and Abdominal Surgery instructs me to place in nomination for Honorary Fellowship the name of Howard Atwood Kelly, Baltimore. I take pleasure in nominating Dr. Kelly for Honorary Fellowship.

Resolutions Opposing the Exploitation of Drugs, Remedies, etc., Over the Radio

Dr. C. S. Skaggs, Illinois, introduced the following resolutions which were referred to the Reference Committee on Hygiene and Public Health.

WHEREAS The health of the citizens of the United States constitutes the greatest asset of the nation and the responsibility of conserving the health of the citizens and restoring them to health in times of illness reposes in the medical profession and

WHEREAS This responsibility is very great as is evidenced by the high educational and professional standards which physicians are required to meet in the various states of the Union before being permitted to diagnose disease and treat the sick and

WHEREAS Satisfactory and safe service of this type can only be rendered after a long and careful study of the causes and symptoms of disease and that these causes and symptoms can only be determined after an interview with and physical examination of the patient and,

WHEREAS No rational or safe treatment can be decided on and carried out under circumstances other than those above set forth without danger to the life or health of the patient and

WHEREAS For many months past the radio broadcasting companies of the United States have through their various broadcasting stations permitted the exploitation of many drugs, preparations, patent medicines and so called cures to the radio audiences of America and

WHEREAS It has been well established that some of the drugs, preparations and patent medicines so exploited are dangerous in the hands of the layman, others are of doubtful value and in practically all instances their value for the relief of the symptoms and conditions for which recommended have been overstated and are misleading to the public and

WHEREAS The symptoms and conditions for which these drugs, preparations and patent medicines are recommended may be and frequently are indications of serious conditions calling for careful study on the part of a well qualified physician in order that a correct diagnosis may be made and the proper treatment instituted before the disease reaches an advanced stage and

WHEREAS Radio broadcasting is under the control of the Federal Radio Commission and the radio is being used to broadcast non-supportable claims and statements regarding a large number of drugs and preparations for the treatment of human ailments therefore be it

Resolved That the American Medical Association is opposed to the advertising, recommending or in any way exploiting over the radio

any preparations, remedies medicines or appliances for the treatment of human ailments, and that a copy of these resolutions be forwarded to the Federal Radio Commission with a request that in the interest of the health of the citizens of the United States they exercise their authority to discontinue such advertising over the radio. Be it further

Resolved That physicians use such influence with their cooperation in sending protests to the Federal Radio Commission and to broadcasting stations against misleading and unwarranted medical advertising

Resolution Requesting Appointment of Committee to Contact Leaders of Organized Labor

Dr R. L. Sensenich, Indiana, presented the following resolution, which was referred to the Reference Committee on Medical Economics

WHEREAS The legislative program for consideration of the next congress will no doubt include prospective measures of social insurance and

WHEREAS, There are those who strongly favor the including in this program the enactment of legislation creating some form of sickness insurance, and

WHEREAS Ill advised legislation would harmfully affect the group of individuals to whom sickness insurance would be offered as well as the medical profession who would be required to provide the service and

WHEREAS, A review of the history of the creation of sickness insurance as recently reported by the Bureau of Medical Economics of the American Medical Association indicates that the establishment of sickness insurance in Europe has frequently been actuated by political motives or economic purposes not giving full consideration of the best interests or wishes of the groups involved, and in no country have the labor unions led a demand for sickness insurance, and

WHEREAS, In the present period of readjustment of relationship of employer and employee, under guidance of the state the demands of those who will speak for the body of millions of organized labor will be an all important factor in determining the shape any such legislation will take be it therefore

Resolved, That the Board of Trustees be requested to appoint a committee whose duty it shall be, at the proper time to contact the leaders of organized labor, to learn the attitude of the group they represent and in conference with them to present the medical factors involved

R. L. SENSENICH
F. S. CROCKETT
D. F. CAMERON
H. G. HAMER

Resolutions on Advising Broadcasting Systems Concerning Advertising of Proprietary and Household Remedies

Dr Orrin S. Wightman, New York presented the following resolutions, which were referred to the Reference Committee on Hygiene and Public Health

WHEREAS The various broadcasting stations are being used by some drug and patent medicine manufacturers to exploit and make exaggerated and false claims for their products to the serious danger of public health be it

Resolved That the Medical Society of the State of New York go on record as favoring a central national clearing bureau of the medical profession which shall act as a reference committee to confer and advise the broadcasting systems as to the propriety of accepting commercial programs advertising various proprietary and household remedies. Be it also

Resolved That the delegates of the Medical Society of the State of New York to the American Medical Association be instructed to submit this resolution and urge its adoption by that body

Resolutions on Inspection of Hospitals

Dr Burt R. Shurly, Section on Laryngology, Otolaryngology and Rhinology, presented the following resolutions, which were referred to the Reference Committee on Medical Education

WHEREAS, Hospitals have been inspected by laymen without authority who represent in some instances the lower order of government official who make these inspections with reporters to fill the papers with untrue misstatements of fact

WHEREAS Hospitals should be inspected only by duly qualified and authorized persons representing government engineering sanitary and health departments and standardized committees of the American College of Surgeons and those otherwise qualified for this duty

WHEREAS Incompetent and unqualified medical men who are not members of the county societies are often appointed as city and county physicians and as such take on themselves the duty of hospital inspection and the publication of their findings which are often misleading if not in direct contravention of facts and do this from personal and political motives not in accord with public interest and welfare and as the Council on Medical Education and Hospitals has a trained staff of competent and experienced men therefore be it

Resolved That the Council on Medical Education and Hospitals be requested to furnish government officials with a list of properly qualified persons on request with the understanding that expenses are to be met by departments of government requesting such service. Be it further

Resolved That the American Medical Association make every effort to see that city and county physicians and executives of the health depart-

ments are members of the local medical societies and therefore of the American Medical Association. Therefore be it

Resolved That the Council on Medical Education and Hospitals be requested to formulate and promulgate the qualifications and standards for hospital inspection and that such qualifications be supplied to all state county and city governments

Resolutions on Construction of New Building to House the Army Medical Library and the Army Medical Museum

Dr Holman Taylor, Texas, presented the following resolutions, which were referred to the Reference Committee on Medical Education

WHEREAS The greatest medical library in the world one with unrivaled collections of ancient and modern medical literature is maintained in Washington and has served the medical profession of the country efficiently for more than a century, having been called America's greatest contribution to medicine and

WHEREAS In the same building is located the largest medical museum in the United States, and one of the most extensive in the world, an institution which also serves the entire medical profession of the country, and

WHEREAS The building housing these two magnificent scientific institutions is no longer of sufficient size, not fire proof and wholly inadequate to permit the present activities of the Army Medical Library and Army Medical Museum to be carried on to the fullest extent and

WHEREAS, the building in which the two institutions are located has been condemned as a fire hazard and cannot with safety support the weight of the collections of books and museum specimens and because the present building must be removed in order that the approved program of the Congress for the beautification of the city of Washington may be carried out and

WHEREAS The Secretary of the Interior, who is also the Administrator of Public Works notified the Secretary of War on Feb. 14, 1934 that the present building housing the Army Medical Library and Army Medical Museum interfered with these plans and should be removed, and

WHEREAS The appropriation of a large sum of money for public works is now being considered by the Congress and

WHEREAS The medical profession of America is vitally interested in this medical library and museum both of which are serving the medical profession efficiently and at a minimum of expense, and

WHEREAS At the meeting of the American Medical Association held at Milwaukee on June 13, 1933 resolutions were adopted urging that the funds necessary for the construction of a suitable building for the Army Medical Library and Museum be provided and that the building be constructed on the site adjacent to the Walter Reed General Hospital specifically provided by Congress for this purpose more than twelve years ago, Now therefore, be it

Resolved That the American Medical Association in annual meeting assembled respectfully requests that there be set aside for the construction of a new building for these two institutions at the Army Medical Center the sum of \$2,086,000 and be it further

Resolved That copies of this resolution be sent to the President of the United States the Secretary of War and the Administrator of Public Works with the earnest request that the construction of his project of national importance be expedited

Resolutions Urging Congress to Provide Funds for Acquisition of Books, Journals and Other Publications for the Army Medical Library

Dr Holman Taylor, Texas, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations

WHEREAS, The Army Medical Library in Washington is the largest medical library in the world and for many years has acquired every book pamphlet and journal of value in any of the medical sciences (including dental and veterinary science) thereby building up a priceless collection of material available to the entire medical profession of the nation either by personal consultation at the library, or through its interlibrary loan system and

WHEREAS Through the publication of the *Index Catalogue* since 1880 this enormous mass of material more than a million items in number has been completely indexed so that readers without difficulty may find material on any medical subject or by any author and

WHEREAS This *Index Catalogue* now in its forty-eighth volume is the world's standard of medical bibliography being used as a reference in every civilized land and being on deposit in all of the medical schools' medical libraries and the larger general libraries of the United States and

WHEREAS During recent years the funds available to the Army Medical Library have been so reduced as to render it necessary to reduce the purchases of medical books and journals, and likewise the binding of journals and books which require it and

WHEREAS In addition to reductions in appropriations the fall of the dollar in terms of European and other foreign currencies has in effect still further reduced the funds available for foreign purchases by approximately half such foreign purchases being the bulk of the expenditures of the Army Medical Library and

WHEREAS The reduction in the funds appropriated by the Congress to defray the cost of binding books and journals has made it impossible to

bind more than a fraction of the material which requires binding in order to preserve it the remaining material therefore being unavailable for loans outside the library to the great inconvenience and loss to the medical profession of the United States, and

WHEREAS, A number of scientific journals have patriotically agreed to continue to send their publications to the Army Medical Library for the present year without cost in the hope that additional funds may later be made available to continue subscriptions for journals as in the past thus preventing gaps among the splendid files of scientific journals in the Library's collection but that such free subscriptions will probably not be extended beyond the present year, and

WHEREAS Through no fault of the Army Medical Library but under the operations of the Economy Act of 1933 funds for the printing of the first two volumes of the fourth series of the *Index Catalogue* reverted to the Treasury of the United States amounting in all to \$43 000 because the printing had not been completed by June 30 1933 and

WHEREAS The failure to make available funds for the printing of the *Index Catalogue* the material for several volumes of which is now ready to be printed has made it impossible to continue the publication of a volume of this great work each year as has been the practice without interruption even in time of war, since its first volume appeared in 1880 now therefore be it

Resolved That the American Medical Association in annual meeting assembled respectfully urge Congress hereafter annually to include in the appropriation for the support of the military establishment adequate funds for the acquisition of the important books journals and other publications in the medical sciences for the Army Medical Library and for the binding thereof and the publication of the *Index Catalogue* at the rate of approximately one volume per year hereafter and in immediate appropriation of \$50 000 to be used for the publication of the first two volumes of the fourth series of the *Index Catalogue* to cover the gap created by the failure to print these two volumes in 1933 and 1934 and be it further

Resolved That copies of this resolution be sent to the President of the United States the Vice President of the United States the Speaker of the House of Representatives the Secretary of War the chairmen of the Military Affairs Committees of the Senate and House of Representatives and the Chairman of the Appropriations Committees of the Senate and House of Representatives urging them to do all in their power to bring about the legislation necessary to accomplish the purpose of this resolution which has the support of more than a hundred thousand American physicians

Resolution on Establishment of Standards, Ratings and Inspection of Training Schools in Physical Therapy

Dr C B Reed, Illinois, presented the following resolution, which was referred to the Reference Committee on Medical Education

WHEREAS There is a recognized demand for qualified professionally trained physical therapy technicians in the hospitals clinics physicians offices and schools for crippled children of this country and

WHEREAS The work of these technicians is under the direction of members of the medical profession and

WHEREAS The medical profession and the American Physiotherapy Association recognize the vital importance of establishing minimum standards of training and the inspection of training schools in physical therapy by a qualified and authoritative organization therefore be it

Resolved That the entire subject be left to the Board of Trustees of the American Medical Association with the request that it be given careful study and consideration and if practical and feasible some plan for the establishment of standards ratings and inspections of training schools in physical therapy be effected providing that the expense of such inspection be borne by the school requesting the same

Resolution on Standing of Certified Raw Milk

Dr A J Scott Jr, California, presented the following resolution, which was referred to the Reference Committee on Hygiene and Public Health

WHEREAS The California Medical Association is informed that the American Medical Association through one of its departments favors the pasteurization of milk including certified raw milk and

WHEREAS Certified raw milk only is safe therefore be it

Resolved That the delegates to the American Medical Association be instructed to enlist the aid of the Section on Pediatrics or other interested groups and take such action as may be necessary in their discretion to restore the standing of certified raw milk.

Resolutions on the Necessity of Institutions Being on Approved Lists of Component Societies

Dr Emmett P North, Missouri, presented the following resolutions, which were referred to the Reference Committee on Medical Education

At the seventy-seventh annual meeting of the Missouri State Medical Association, held in St Joseph May 7-10 1934, the following resolutions were introduced by Dr R B H Gradwohl, St Louis, and on motion duly seconded the resolutions were adopted

WHEREAS Definite policies are now in operation and in the process of development in various parts of the country with the object of attaining the cooperation of hospitals clinics medical colleges and like

institutions in observing the economic and ethical principles enunciated by component local societies in affiliation with the Missouri State Medical Association and

WHEREAS As a result of the promulgation of these policies by component units of the Missouri State Medical Association definite 'approved lists of hospitals, clinics medical colleges and like institutions are properly being compiled therefore be it

Resolved That the Missouri State Medical Association memorialize the American Medical Association and instruct its delegates thereto to request the American Medical Association to adopt policies by which the American Medical Association shall not approve any institution for any purpose unless and until such institution shall be officially in the approved list of the component medical society or societies in the jurisdiction of which such hospital or institution is located or operates be it further

Resolved That any institution failing of approval of the society or societies concerned shall have the right of appeal to and hearing before the proper committee of the American Medical Association

Resolution Limiting Physicians on Staffs of Hospitals Approved for Intern Training to Members of Component County Medical Societies

Dr G Henry Mundt, Illinois, presented the following resolution, which was referred to the Reference Committee on Medical Education

Resolved That it is the opinion of the House of Delegates of the American Medical Association that physicians on the staffs of hospitals approved for intern training by the Council on Medical Education and Hospitals should be limited to members in good standing of their local county medical societies and that the House of Delegates requests the Council on Medical Education and Hospitals to take this under advisement

Resolution Requesting Federal Authorities to Undertake Studies of Chemical Content and Value of Foods in Collaboration with Selected Medical Colleges and Research Laboratories

Dr Edgar A Hines, South Carolina, presented the following resolution, which was referred to the Reference Committee on Hygiene and Public Health

WHEREAS Food is of fundamental importance in the preservation of health and well being and

WHEREAS Relatively little scientific information exists and is available in regard to the chemical constituents of foods including their mineral and vitamin content and

WHEREAS Further scientific information is essential in order to determine the relationship of foods to health and disease and

WHEREAS Federal funds have already been appropriated for relief purposes that might properly be allocated for measures directed toward the improvement of the food supplies of the people of the United States therefore be it

Resolved That the federal authorities be urged by the American Medical Association to undertake studies of the chemical content and value of foods and that these studies be conducted in collaboration with selected medical colleges and research laboratories in different sections of the country

Resolutions Opposing the Administration of Anesthetics by Any One Except a Licensed Physician or Dentist

Dr James N Vander Veer, New York presented the following resolutions, which were referred to the Reference Committee on Miscellaneous Business

WHEREAS At the time of the passage of the medical practice act and for many years thereafter it was the accepted interpretation that the administering of an anesthetic by any one except a licensed physician or dentist was illegal and this also was evidenced by the ban on the administering of anesthetics by duly licensed osteopaths and

WHEREAS During the past ten years or so there has been an insidious usurping of the duties and rights of duly licensed physicians by lay technicians and nurses who administer anesthesia despite the fact that there has been no change in the medical practice act and

WHEREAS During this same period there have been marked advances in the physiologic chemical mechanical and therapeutic problems involved in anesthesia to none of which nonmedical technicians have made any contribution and

WHEREAS These advances have reached a stage where they require a medical education for their proper interpretation and safe utilization and

WHEREAS The present custom in many hospitals of having nonmedical technicians administer anesthetics deprives the residents or interns of opportunities for instruction in this important branch of medicine yet these same doctors untrained in anesthesia will subsequently be the ones the law assumes to be qualified to give supervise and accept full responsibility for the administration of the anesthesia and

WHEREAS The inroads of these technicians have tended to discourage medical graduates from entering this field of medicine and have decreased

the likelihood of qualified medical successors to those who have been so instrumental in advancing the art and science of anesthesia and

WHEREAS, The giving of an anesthetic involves on the part of the operator the exercise of judgment discretion and skill and is not merely a mechanical performance which can be routinely performed by any untrained individual without jeopardy to the patient and

WHEREAS The successful administration of anesthesia requires the exercise of proper medical care during the procedure and involves an examination of a patient to determine his physical ability to undergo the process and a careful watching of the patient during the administration of the anesthesia to determine its effects and the quantity administered and

WHEREAS The prevalent custom of evasion of the spirit of the law by the technical assumption of responsibility by the operating surgeon is a mere subterfuge as the surgeon in most hospitals rarely selects or inquires into the technician's qualifications, does not usually supervise the administration of the anesthetic at its most critical period namely the induction and even though present during its maintenance the surgeon because of his interest in the operative procedure cannot always promptly detect the necessity for therapeutic intervention which determination must be left to the judgment of the anesthetist and

WHEREAS Many hospitals and private sanatoriums advertise to the public and the profession that an anesthetist will be available this being a misrepresentation when such anesthetist is only a technician while the general assumption is that the term anesthetist implies a physician and

WHEREAS Since the surgeon is by law responsible for the act of an agent if in fact the lay anesthetist is the doctor's agent when administering an anesthetic the surgeon assumes a responsibility and liability which under certain circumstances may nullify the effect of his malpractice coverage if it can be proved that such lay anesthetist is performing an unlawful or illegal act, and

WHEREAS Our acquiescence to the encroachment by nonmedical technicians in the field of anesthesia on the prerogatives of the physicians will make it increasingly difficult to exclude the osteopaths and others from these same privileges for if any division of medicine desires to nullify any section of the medical practice act it can do so by the subterfuge or assuming the responsibility then other divisions of medicine must in justice be accorded the same privilege and the whole act be thus weakened therefore be it

Resolved That the Medical Society of the State of New York affirm that the giving of an anesthetic constitutes the practice of medicine and insist on the strict observance of the provisions of the medical practice act without subterfuge or evasion and be it further

Resolved That the delegates of the Medical Society of the State of New York to the American Medical Association be instructed to present a similar resolution to the House of Delegates of the American Medical Association at the impending session in Cleveland

Resolutions on Preparation of Extensive Photographs and Other Data and Information of Exhibits at Chicago International Exposition

Dr Clarence G Toland, California, presented the following resolutions, which were referred to the Board of Trustees

WHEREAS Several of the constituent state medical units of the American Medical Association maintain yearly public health exhibits at their state and county fairs and

WHEREAS At the Century of Progress International Exposition at Chicago comprehensive exhibits of the scientific and other progress of medicine are being displayed which exhibits have great suggestive value for constituent state and component county medical societies interested in producing and maintaining such exhibits in their respective districts, and

WHEREAS The amount of definite informative data on these matters in the files of the American Medical Association has not been overgreat now therefore be it

Resolved That the matter be called to the attention of the House of Delegates of the American Medical Association at the forthcoming Cleveland Session in the hope of securing the endorsement of that House to the plan of having the Board of Trustees of the American Medical Association order the preparation of extensive photographs and other data and information of those exhibits at the Chicago International Exposition which if duplicated or modified could be advantageously and economically reproduced or used as exhibits of constituent state and county medical associations and be it further

Resolved That the California Medical Association delegates be instructed to present this resolution to the House of Delegates of the American Medical Association for its consideration

Resolutions Barring from the Practice of Radiology All Persons Not Licensed to Practice Medicine

Dr George M Fisher New York, presented the following resolutions which were referred to the Reference Committee on Medical Education

WHEREAS The making of a diagnosis by means of the x rays and for the administration of x rays or other radiant energy for treatment are methods of diagnostic or therapeutic medical practice and

WHEREAS The medical practice act makes the diagnosing and/or treatment of disease unlawful for any one not duly licensed to practice medicine and

WHEREAS During the past ten years or more lay persons and lay organizations have established and are conducting x ray laboratories in

which lay persons are examining and/or treating patients by means of x rays and

WHEREAS Such lay persons are not properly qualified and are not subject to effective supervision or control and

WHEREAS, The x rays in the hands of inexperienced and/or irresponsible persons are in themselves a potential source of injury to the patient and

WHEREAS In addition to these dangers x ray diagnosis frequently requires the administration of potent drugs or chemicals which may be legally administered only by licensed physicians and

WHEREAS Under these conditions the lay x ray operator and the commercial x ray laboratories constitute a menace to the public and in addition are strictly commercial enterprises conducted by business getters who are actuated by the profit motive and who consequently do not feel themselves bound by the rules of medical ethics but who resort to all sorts of questionable methods to attract a compliant clientele and

WHEREAS By the employment of solicitors runners and/or other business agents and by the promise of rebates or of favorable or dishonest diagnoses obtain the patronage of unscrupulous physicians or of business and industrial organizations to the detriment of the patient and

WHEREAS Because of their illegal activities and the desire for profit they have been unable to attract competent physicians adequately trained in radiology and as a result employ the services of individuals whose education, training and character are unacceptable to right thinking members of the medical profession or to the American Medical Association and

WHEREAS The technical diagnostic and therapeutic advances being made in radiology are due to and dependent on properly trained physicians to whom science must look for further progress in the field of radiology and

WHEREAS The lay x ray technicians and laboratories have so encroached on the practice of radiology that competent and ethical medical practitioners find it more and more unattractive as a field of endeavor thus endangering the progress and advancement of the science of radiology and the welfare of the public be it therefore

Resolved That the House of Delegates in convention assembled believes that the practice of radiology whether for diagnostic or therapeutic purposes constitutes in fact the practice of medicine and be it further

Resolved That the properly constituted authorities be called on to take the requisite steps to bar all persons not licensed to practice medicine in the state of New York from the practice of radiology and be it further

Resolved That if it is the opinion of the Attorney General that non medical technicians practicing radiology are not violating the law under present conditions such steps be taken to institute legislation which will include radiology in the practice of medicine and to limit diagnostic or therapeutic x ray work to the direct and active supervision and control of duly licensed physicians or dentists, and be it further

Resolved That our delegates from New York to the American Medical Association be instructed to bring this matter to the attention of the House of Delegates of the American Medical Association at the impending session

Resolutions on Discrimination Against Certain Members of the Medical Profession

Dr Edward R Cuniffe, New York, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations

WHEREAS Civilized peoples have never discriminated against any one who contributes to medical science or against one who is qualified to engage in the healing of the sick because of his race or religious belief, or economic views

WHEREAS Under the Nazi regime by governmental decrees and other wise persons engaged in research or the practice of medicine have been either harried or expelled from their laboratories and clinics without justice or reason other than that they differed in racial origin or religion from that of their colleagues, and

WHEREAS Our brother physicians are not permitted to participate in the health insurance service and are permitted to consult only with physicians designated by the German government and expelled from medical societies and clubs in spite of their previous noteworthy contribution to science and medicine and

WHEREAS Such discrimination tends to hamper the efforts of the profession in its chosen task of combating disease and alleviating suffering and

WHEREAS German medicine previous to the past year has made outstanding contributions in the field of human progress and

WHEREAS The measures instituted by the present Nazi government are doing incalculable harm to the progress of medicine throughout the world therefore be it

Resolved That the New York Medical Society record its abhorrence and voices its resentment against such practices as being unfair inhuman and inimical to progress of medicine generally and a violation of those humane ideals which are among the cherished traditions of the medical profession and be it further

Resolved That the delegates of this house to the American Medical Association be instructed to register the protest of this body

Resolution on Publicity by Clinics, Hospitals, Sanatoriums and Other Semipublic Medical Institutions

Dr Ben R McClellan, Ohio presented the following resolution, which was referred to the Judicial Council

WHEREAS There are occasional evidences of advertising, publicity and propaganda by certain large clinics in violation of the proper ethical

and professional restrictions placed on individual physicians therefore be it

Resolved By the House of Delegates of the American Medical Association at the Eighty-Fifth Annual Session in Cleveland June 11 to 15 1934 that attention of the county medical societies be called and emphasis again placed on the following declaration of policy and principle incorporated in resolutions adopted by this body in 1924

1 Publicity by clinics hospitals sanatoriums and other semipublic medical institutions as to quality of work done implies unusual and exceptional ability and efficiency on the part of their professional staffs and therefore is advertising of the medical men concerned This type of advertising distinctly savors of quackery and is unethical

2 Publicity by any such institution stating or implying that, by reason of its exceptionally fine equipment and material resources it is able to or does give the public better medical service than similar institutions are able or willing to render is advertising for purposes of self aggrandisement Statements of this type are frequently exaggerated and misleading and are detrimental to the best interests of the public of the institution concerned and of true medical progress Publicity of this kind is unethical

Resolution on Health Insurance from Michigan State Medical Society

Dr Carl F Moll, Michigan, read the resolution on health insurance from the Michigan society Dr J H J Upham, chairman of the Board of Trustees, offered a recommendation from the Committee on Executive Session that this resolution be considered in executive session on Monday afternoon A motion to that effect was made by Dr Moll, seconded by Dr Arthur J Bedell, New York, and carried On motions of Dr Bedell, duly seconded, the House voted to call the executive session for 2 p m, Monday, June 11, and to limit attendance to members of the House of Delegates

Resolution on Free Choice of Physician

Dr Arthur J Bedell, New York, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations

WHEREAS The procedures established by the Federal Compensation Bureau do not allow free choice of physicians and

WHEREAS The physicians as citizens should not be discriminated against in their professional work be it

Resolved That the House of Delegates instruct its delegates to the American Medical Association to present this matter and urge the Association to attempt a change of rules of the Federal Compensation Bureau which will allow the injured person free choice of physician

Resolution on Perfecting of a Plan for the Handling of Liability Insurance

Dr Horace Reed, in behalf of the Oklahoma delegation, presented the following resolution, which was referred to the Board of Trustees

WHEREAS That the House of Delegates of the Oklahoma State Medical Association hereby specifically instruct their Delegates to the American Medical Association to introduce a resolution in the House of Delegates of the American Medical Association favorable to the instituting of liability insurance to members by the American Medical Association

Amended to Read That our delegates to the American Medical Association investigate as to the feasibility of the American Medical Association perfecting a plan for the handling of liability insurance

Resolution Limiting Approval of Institution

Dr Horace Reed, in behalf of the Oklahoma delegation, presented the following resolution, which was referred to the Judicial Council

WHEREAS Definite policies are now in operation and in the process of development in various parts of the country with the object of attaining the cooperation of hospitals clinics medical colleges and like institutions in observing the economic and ethical principles enunciated by component local societies in affiliation with the Oklahoma State Medical Association and

WHEREAS As a result of the promulgation of these policies by component units of the Oklahoma State Medical Association definite approved lists of hospitals clinics medical colleges and like institutions are properly being compiled therefore be it

Resolved That the Oklahoma State Medical Association memorialize the American Medical Association and instruct its delegates thereto to request the American Medical Association to adopt policies by which the American Medical Association shall not approve any institution for any purpose unless and until such institution shall be officially in the approved list of the component medical society or societies in the jurisdiction of which such hospital or institution is located or operates Any institution failing of approval of the society or societies concerned shall have the right of appeal to and hearing before the proper committee of the American Medical Association

Amendments to Principles of Medical Ethics

Dr George Edward Follansbee, Chairman of the Judicial Council, presented the following three amendments to the Principles of Medical Ethics, which were referred to the Reference Committee on Amendments to the Constitution and By-Laws

1 WHEREAS The Judicial Council in its report to the House of Delegates at the Milwaukee session in 1933 recommended the simplification of the section in the Principles of Ethics relating to contract practice by the addition of the wording appearing later in this resolution and

WHEREAS The recommendation of the Judicial Council was approved by the reference committee to which it was referred and was adopted by the House of Delegates therefore be it

Resolved That the Principles of Ethics chapter II article V, section 2 be amended by adding to the present wording the following

By the term contract practice as applied to medicine is meant the carrying out of an agreement between a physician or a group of physicians as principals or agents and a corporation organization or individual to furnish partial or full medical services to a group or class of individuals for a definite sum or a fixed rate per capita

Contract practice per se is not unethical However, certain features or conditions if present make a contract unethical among which are 1 When there is solicitation of patients directly or indirectly 2 When there is underbidding to secure the contract 3 When the compensation is inadequate to assure good medical service 4 When there is interference with reasonable competition in a community 5 When free choice of a physician is prevented 6 When the conditions of employment make it impossible to render adequate service to the patients 7 When the contract because of any of its provisions or practical results is contrary to sound public policy

Each contract should be considered on its own merits and in the light of surrounding conditions Judgement should not be obscured by immediate temporary or local results The decision as to its ethical or unethical nature must be based on the ultimate effect for good or ill on the people as a whole

2 WHEREAS The growth of groups and clinics has intensified the economic competition between them and individual practitioners and

WHEREAS The common custom of employment of 'business managers' by the clinics and groups has had a tendency to submerge the ethical principles governing competition among doctors and

WHEREAS Clinics and groups were little known were not serious competition and were not mentioned when the present general revision of the Principles of Ethics were adopted in 1912 be it

Resolved That the Principles of Ethics be revised as follows

Chapter 1 shall read (heading) In General

Section 1 to remain as it is

Section 2 to be added as follows (heading) Groups and Clinics

Section 2 The ethical principles actuating and governing a group or clinic are exactly the same as those applicable to the individual As a group or clinic is composed of individual doctors each of whom whether employer employee or partner is subject to the principles of ethics herein elaborated the uniting into a business or professional organization does not relieve them either individually or as a group from the obligation they assume when entering the profession

The remainder of chapter I becomes chapter II with its present heading

Present section 2 of chapter I becomes section 1 of chapter II

Present section 3 of chapter I becomes section 2 of chapter II

Present section 4 of chapter I becomes section 3 of chapter II

Chapter II becomes chapter III

Chapter III becomes chapter IV

3 *Resolved* That the Principles of Ethics be amended by inserting as section 4 of article VI chapter II It is unprofessional for a physician to dispose of his professional attainments or services to any lay body, organization group or individual by whatever name called or however organized under terms or conditions which permit a direct profit from the fees salary or compensation received to accrue to the lay body or individual employing him Such a procedure is beneath the dignity of professional practice is unfair competition with the profession at large is harmful alike to the profession of medicine and the welfare of the people and is against sound public policy

Recommendation of Joint Meeting of American Medical Association and Canadian Medical Association in 1935

Dr J H J Upham, Chairman of the Board of Trustees, presented the following recommendation, which was referred to the Council on Scientific Assembly

On several occasions the Canadian Medical Association has suggested a joint meeting of the American Medical Association and the Canadian Medical Association This year an invitation was extended to the Association to meet the Canadian Medical Association in Canada—to have its business meeting in the United States and the scientific meeting in Canada

The Board looks with favor on the holding of a joint scientific meeting of the two organizations and recommends to the House of Delegates that an invitation be extended to the Canadian Medical Association to join with the American Medical Association in its scientific program in 1935

The meeting recessed at 12 55 p m to reconvene at 2 p m

Monday Afternoon, June 11

The House of Delegates was called to order at 2 05 p m by the Speaker, Dr F C Warnshuis

Resolutions on Contraceptive Methods

Dr J D Brook, Michigan, presented the following resolutions, which were referred to the Reference Committee on Hygiene and Public Health

WHEREAS Innumerable devices, chemical substances technics and safe period calendars are being offered to the public for the purposes of contraception, and

WHEREAS Members of the medical profession are constantly asked by the public to advise them relative to the scientific efficacy of such materials and methods and the conditions that justify their employment therefore he it

Resolved 1 That the House of Delegates create a special committee of five on the study of contraception to be appointed by the Speaker with the advice of the Executive Committee of the Board of Trustees

2 That this committee be instructed to study the problem of birth control in all its medical aspects particularly as they relate to methods conditions indicating their employment and the best manner of imparting instruction thereon to physicians and to the lay public,

3 That this committee be provided by the Council on Pharmacy and Chemistry with a statement of the therapeutic value and effectiveness of contraceptive preparations that are or may be offered by manufacturers and that the Board of Trustees be requested to instruct this council and other appropriate committees to render all reasonable assistance and advice to this special committee and

4 That the Board of Trustees provide this special committee with a fund to be determined after conference with the committee chairman for clerical and correspondence expenses and be it further

Resolved That the report of this special committee together with all its findings and recommendations be not dislodged until it has been presented at the 1935 executive session of this House of Delegates for consideration and affirmative action by this House of Delegates, and be it also

Resolved That the appointment of this special committee shall in no way be construed as an endorsement of birth control on the part of the American Medical Association, and that the appointment of this committee is for the purpose of compiling dependable facts for future guidance

Resolution on Apparent Attempt of Board of Regents of the American College of Surgeons to Dominate and Control Medical Practice

Dr Charles J Whalen, Illinois, presented the following resolution, which was referred to the Judicial Council

WHEREAS The American Medical Association including in its membership almost 100 000 physicians is the only body representing all of the organized profession of this country through delegates regularly elected through county and state medical societies, and

WHEREAS Various similar medical organizations and groups, including in their membership selected groups of specialists of various types, have from time to time issued pronouncements of policies in the field of medical economics and medical practice which do not represent the views of organized medicine and

WHEREAS The House of Delegates of the American Medical Association has repeatedly condemned the issuing of such announcements and policies which seriously embarrass the attempts of your organization to secure adequate care for the health of the American people and to protect the ideals of the medical profession and

WHEREAS The Board of Regents of the American College of Surgeons as embodied in Chicago on Sunday June 10 promulgated a policy including a prepayment plan for medical care restricted to the hospitals approved by the American College of Surgeons to members of the staffs of such hospitals and to physicians acceptable to such staffs and

WHEREAS This action of the Board of Regents of the American College of Surgeons has been spread to the people of the United States through the press on the opening day of the annual session of this House of Delegates therefore he it

Resolved That the House of Delegates of the American Medical Association express its condemnation of such tactics and of this attempt of the Board of Regents of the American College of Surgeons to dominate and control the nature of medical practice to the detriment of professional ideals and the welfare of the public.

Resolution on Composition of Council on Physical Therapy

Dr Joseph F Smith Wisconsin, presented the following resolution, which was referred to the Board of Trustees

WHEREAS The Board of Trustees of the American Medical Association, pursuant to a resolution passed by the House of Delegates of the American Medical Association at its 1925 session established a Council on Physical Therapy consisting of two physicians two physiologists two pathologists and two clinicians whose duty it should be to investigate scientifically and report on the value and merits of all nonmedicinal apparatus and contrivances offered for sale to physicians and hospitals and to publish in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION from time to time the results of their investigation and

WHEREAS The Council so appointed has done most excellent work in determining the merits and demerits of the various types of apparatus offered thereby furnishing to the medical profession a means of ascertaining the reliability and accuracy of various type of physical therapy apparatus and

WHEREAS It seems at this time desirable to continue the Council so constituted as to be equipped for high grade scientific investigation as well as clinical research and

WHEREAS The personnel of the Council as at present constituted does not conform to request of the original resolution as passed by this House of Delegates in 1925 be it

Resolved By this House of Delegates, that the Board of Trustees in making appointments to the Council be requested to conform to the personnel designated in the original resolution and that two physical therapists practicing in reputable institutions or hospitals be added to the Council

The House voted to permit the editor of THE JOURNAL, the director of the Bureau of Legal Medicine and Legislation and the director of the Bureau of Medical Economics to sit in the executive session

Executive Session, Monday Afternoon, June 11

The House of Delegates convened in executive session at 2 15 p m, the Speaker, Dr F C Warnshuis, in the Chair

Dr J H J Upham, Chairman, submitted for consideration by the House of Delegates an official statement of the Board of Trustees

On motion of Dr E H Cary, Texas, seconded by Dr H A Luce, Michigan and carried, after a motion for the House to resolve itself into a Committee of the Whole had lost, the matter was referred to a special committee for report at an executive session on Tuesday afternoon, June 12 The Speaker appointed the special committee as follows N B Van Etten, New York, chairman, J Norman Henry, Pennsylvania, George Blumer, Connecticut C A Dukes, California, McLain Rogers, Oklahoma, E H Cary, Texas, and F S Crockett, Indiana

A motion offered by Dr William D Chapman, Illinois, seconded by Dr R L Green, Illinois, to permit the executive secretaries of state societies to attend the executive session was defeated

The meeting recessed at 2 40 p m, to reconvene on Tuesday morning, June 12, at 9 30

REGISTRATION AT CLEVELAND

The total registration at the Cleveland session was 6,293 Below are given two summaries—one by sections and one by states

Registration by Sections

Practice of Medicine	1 963
Surgery General and Abdominal	1 009
Obstetrics Gynecology and Abdominal Surgery	500
Ophthalmology	374
Laryngology Otology and Rhinology	264
Pediatrics	348
Pharmacology and Therapeutics	40
Pathology and Physiology	174
Nervous and Mental Diseases	167
Dermatology and Syphilology	190
Preventive and Industrial Medicine and Public Health	168
Urology	219
Orthopedic Surgery	176
Gastro Enterology, and Proctology	206
Radiology	329
Miscellaneous Topics Sessions on Forensic Medicine and on Nutrition two or more sections or no section marked	166
Total	6 293

Registration by States

Alabama	24	New Hampshire	3
Arizona	6	New Jersey	55
Arkansas	22	New Mexico	1
California	92	New York	591
Canal Zone	2	North Carolina	33
Colorado	37	North Dakota	11
Connecticut	37	Ohio	2 122
Delaware	6	Oklahoma	43
Dist of Columbia	79	Oregon	13
Florida	46	Pennsylvania	721
Georgia	42	Porto Rico	2
Idaho	2	Rhode Island	10
Illinois	433	South Carolina	24
Indiana	187	South Dakota	8
Iowa	78	Tennessee	61
Kansas	47	Texas	78
Kentucky	67	Utah	8
Louisiana	29	Vermont	7
Maine	8	Virginia	66
Maryland	73	Washington	26
Massachusetts	145	West Virginia	84
Michigan	378	Wisconsin	92
Minnesota	101	Wyoming	2
Mississippi	6	Miscellaneous	73
Missouri	144		
Montana	9	Total	6 293
Nebraska	54		

(To be continued)

Association News

MEDICAL BROADCASTS

Columbia Broadcasting System

The American Medical Association broadcasts on a Western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4 30 to 4 45, Central daylight saving time. The next three broadcasts will be as follows:

June 28 Motor Touring and Camping W W Bauer M D
July 5 Death Angel W W Bauer M D
July 12 A Healthful Vacation, Morris Fishbein M D

National Broadcasting Company

The National Broadcasting Company talks have been discontinued for the summer.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CONNECTICUT

Pediatric Meeting—The New England Pediatric Society convened in annual session, May 19, in New Haven. The program included the following subjects:

Mottled Enamel Arthur H. Smith, Ph.D., and Bert G. Auderson, D.D.S.
Recent Advances in Nutrition of Interest to Pediatricians Lafayette B. Mendel, L.L.D.
Demonstration of Apparatus for Stimulating Excitable Centers for Remote Control Dr. Richard U. Light
The Developmental Diagnosis of Infant Behavior and Its Relation to Clinical Pediatrics Dr. Arnold Gesell
The American Academy of Pediatrics Dr. Louis C. Schroeder, New York
Clinical Presentation Dr. Grover F. Powers and staff of New Haven Hospital

ILLINOIS

Campaign Against Typhoid—The state health department has instituted a vaccination campaign against typhoid in eleven counties in southern Illinois. The work is being carried out in Jefferson and Fayette counties and was scheduled to begin early in June in Saline, Williamson, Jackson, Union, Randolph and Madison counties. It will be extended into the remaining counties as soon as facilities permit.

Chicago

Dr. Evans Retires from the Chicago Tribune—Dr. William A. Evans, professor emeritus of public health, Northwestern University School of Medicine, has retired as health editor of the *Chicago Tribune*, after twenty-three years' service. He will be succeeded by Dr. Irving S. Cutter, dean of Northwestern University School of Medicine.

Society News—Drs. Ralph A. Reis and Robert M. Grier presented "A Comparative Five Year Study of Maternal Mortality at Michael Reese and Evanston Hospitals, 1929-1933" before the fifty-seventh annual meeting of the Chicago Gynecological Society, June 22, and Dr. Edward L. Cornell, "A Preliminary Report on the Maternal Deaths for 1933 in Chicago"—Dr. Ernestine V. Kandel, among others, addressed the Chicago Council of Medical Women, June 1, on "Differential Diagnosis and Therapy in Leukemias."

University Tuberculosis Unit Opened—With the opening of a new tuberculosis unit in the University of Chicago Clinics, June 11, it will be possible to care for these patients for long periods and to treat their tuberculosis as it is treated in tuberculosis sanatoriums, according to the *News Bulletin* of the Division of Biological Sciences. Heretofore tuberculous patients have been admitted to the University Clinics only for diagnosis and treatment of complications. The assembling of these patients on one floor and in the same division will be an experiment it was pointed out to show first whether such a unit may be operated successfully from a medical standpoint and to prove whether the unit may be operated at a cost low enough for the typical sanatorium patient to meet.

Changes at University of Chicago—Dr. Henry L. Schmitz has resigned as assistant professor of medicine, Division of Biological Sciences, University of Chicago, to enter private practice. Other changes on the faculty include the appointment of Dr. Arthur K. Koff as instructor in obstetrics and gynecology, effective July 1, and Dr. Francis Keith Bradford, assistant in neurosurgery. Promotions include:

Dr. Morris Edward Davis, associate professor of obstetrics and gynecology, effective July 1.

Dr. Lowell T. Coggeshall, assistant professor of medicine, effective July 1.

Dr. Theodore E. Heinz, assistant professor of medicine, effective July 1.

Dr. Henry Close Hesselstine, assistant professor of obstetrics and gynecology, effective July 1.

Dr. Normand L. Hoerr, assistant professor of anatomy, effective October 1.

Dr. Frank E. Whitacre, assistant professor of obstetrics and gynecology, effective July 1.

GEORGIA

Society News—Dr. George L. Walker, Jr. presented a paper on "The Measurement of the Work of the Heart and Its Relation to Disease" before the Fulton County Medical Society, June 7.—Dr. Joseph Righton Robertson, Augusta, was chosen president-elect of the Georgia Urological Association at its meeting in Augusta, May 10, and Dr. Walter B. Emery, Atlanta, was installed as president.

Honorary Society Lecture—Dr. Claude S. Beck, associate professor of surgery, Western Reserve University School of Medicine, Cleveland, addressed Caduceus, an honorary medical society of Emory University School of Medicine, May 17, on "The Surgical Relief of Adhesive Pericarditis" and Commemorative Wounds of the Heart. The society recently inaugurated the plan of having an annual lecture.

INDIANA

Memorial to Physicians—Three physicians who are identified with the early history of the James Whitcomb Riley Hospital, Indianapolis, were honored May 18, when tablets were dedicated to their memory. The physicians were John H. Oliver, Lafayette Page and Frank A. Morrison, and eulogies were presented, respectively, by Drs. William P. Garshwiler, Louis Burckhardt and John Cunningham. The three tablets are grouped around a brass figure, about 6 feet in diameter, in the form of a cross. In the center of this design there are medical symbols and in each limb of the cross there are four names of persons prominent in medicine: Hippocrates, Avicenna, Galen, Pare, Vesalius, Harvey, Sydenham, van Leeuwenhoek, Jenner, Virchow, Koch, Pasteur, Long, Beaumont, Roentgen and Walter Reed. The tablets are the work of Harry Inge Johnstone and Donald M. Mattison, both of the Herron Art Institute, Indianapolis. About 250 guests attended the dinner following the unveiling. The guests included the governor of Indiana, the president and board of trustees of the University of Indiana School of Medicine, the mayor of Indianapolis, and living members of the families of the three physicians to whom the tablets were dedicated.

IOWA

Scarlet Fever in Hampton Traced to Raw Milk—Twenty-five cases of scarlet fever, affecting fifteen homes, were reported in an outbreak in Hampton in March. No deaths occurred. The source of the outbreak was traced to a dairy farm where, the subsequent investigation disclosed, several persons had been ill. No physician had been called. Hemolytic streptococci were found in the majority of the patients. The board of health prohibited the distribution of milk by the farm and control measures were instituted. The first case of the outbreak was reported, March 13, twenty were recorded between March 17 and 20, when the distribution of milk was forbidden and the remaining four occurred between that date and April 1.

MAINE

State Medical Election—Dr. John L. Johnson, Bangor, was chosen president-elect of the Maine Medical Association at its annual meeting in Bangor, May 28-29. Dr. Edwin W. Gehring, Portland, was inducted into the presidency. At a banquet, May 29, medals were presented to members who had completed fifty years of practice. Four of the five physicians to be honored were present: Leon L. Hale, South Portland; Albert P. Heald, Thomaston; Charles A. Moulton, Hartland; James S. Sturtevant, Dixfield. Dr. Roscoe G. Blanchard, Dover, N. H., was unable to be present.

Society News—Dr Theodore S Moise, Bangor, addressed a recent meeting of the Cumberland County Medical Society on "Surgical Treatment of Pulmonary Tuberculosis" — Dr Richard S Hawkes, Portland, presented a paper on "Role of Liver, Iron and Copper in the Treatment of Certain Anemias" before the Portland Medical Club, April 3 — At a meeting of the Hancock County Medical Society in Ellsworth, April 25, Drs John G Towne, Waterville, and Carl J Hedim, Bangor, presented papers on "Medicolegal Problems as Applied to the General Medical Man" and "Psychiatric Problems, Border-Line in Nature and the Neuroses," respectively, Dr John L Johnson, Bangor, spoke on insurance and malpractice and Dr Warren E Kershner, Bath discussed the subject — Dr Frederick T Hill addressed the Kennebec County Medical Association in Waterville April 19, on "Treatment of Chronic Deafness, Not an Otological Problem Alone," and Dr Charles Harold Jameson, Rockland "The Prostate Gland" A clinical program was also presented — Dr John O Piper, Waterville discussed "Spontaneous Subdural Hemorrhage" before the Knox County Medical Society in Rockland, April 10 — At a meeting of the Oxford County Medical Association in Bethel May 2 Dr Lester Adams, Greenwood Mountain, spoke on "The Childhood Type of Tuberculosis"

MASSACHUSETTS

Changes at Harvard—Dr John Homans, assistant professor of surgery, Harvard Medical School Boston, has been appointed clinical professor of surgery for three years Other changes on the faculty include Dr Charles C Lund instructor in surgery, named assistant professor for three years, Dr William T Salter, assistant professor of medicine for three years, and Dr James Clark White, instructor in surgery, as assistant professor for three years

Society News—Speakers before the annual meeting of the New England Physical Therapy Society in Boston, May 16, were Drs William D McFee and Halsey B Loder both of Boston, on physical medicine with a consideration to electrotherapy and electrosurgery, respectively — Dr Chevalier L Jackson, Philadelphia addressed the New England Roentgen Ray Society in Boston, May 18 on "Value of Roentgenography in the Diagnosis of Laryngeal Disease"

Lectures on the Electrocardiograph—Dr Frank N Wilson, professor of internal medicine, University of Michigan School of Medicine Ann Arbor, delivered two lectures, at the Boston Medical Library, May 24-25, under the auspices of the New England Heart Association The titles of the lectures were "When Is an Electrocardiographic Examination Indicated and What Sort of Help Can It Give?" and "The Electrocardiographic Diagnosis of Myocardial Infarction"

MICHIGAN

New Health Unit—The establishment of the Van Buren County Health Department has been made possible by the W K Kellogg Foundation It is expected to begin operation on a full time basis July 1 The foundation will supply most of the funds the state the usual annual subsidy of \$3,000, and the county office space and equipment

Society News—Dr Andrew B Rivers, Rochester, Minn, addressed a joint meeting of the medical societies of Ingham, Calhoun and Barry counties, May 14 on ulcers of the stomach — Dr Edgar A Kahn Ann Arbor, addressed a recent meeting of the Calhoun County Medical Society on "Section of Splanchnic Nerves for Malignant Hypertension"

Health Officer Honored—Dr Frank A Tinker, health officer of Lapeer, was given a banquet by the Lapeer County Medical Association May 24 in honor of his completion of fifty years in the practice of medicine Dr Tinker graduated from the University of Michigan Medical School Ann Arbor in 1884 and for the last ten years has been city health officer

Hospital News—In commemorating the seventieth year of the ambulatory service of Harper Hospital a photograph of Dr Charles G Jennings Detroit was unveiled in the department May 11 For twenty years the outpatient service has been housed in the Theodore Buhl Memorial Building, it was Dr Jennings who interested the Buhl family to erect this unit to Harper Hospital Scientific exhibits on the specialties were arranged on the various floors by the divisions of the hospital

Personal—Dr Roman J Sadowski was guest of honor at a dinner May 16 in recognition of his completion of thirty years practice in Detroit An engrossed plaque was presented to Dr Sadowski as a token from the Arts Club of which he is a past president while the eighty-five guests at the dinner presented him with a cellorette — A resolution honoring

Dr Frank A Kelly was recently adopted by the Wayne County Medical Society, in appreciation of his fifteen years' service as an officer Dr Kelly recently withdrew his name for reelection as a member of the board of trustees

MINNESOTA

Society News—Speakers before the Minnesota Academy of Medicine in Minneapolis, May 9, were Drs Harold E Hullsiek, St Paul, and Francis F Callahan, Pokegama, on "The Doctor in Fiction" and "Pulmonary Carcinoma," respectively

Convicted of Harboring an Outlaw—Dr Clayton May, Minneapolis, found guilty, May 23, by a federal court jury of conspiracy to harbor an outlaw, was sentenced to serve two years in prison and fined \$1,000 Dr May is alleged to have treated John Dillinger for a gunshot wound without reporting the incident to the police An appeal will be entered, the Chicago Tribune reported Born in 1887, Dr May graduated from Milwaukee Medical College in 1911 He is not a member of the American Medical Association

MONTANA

Personal—Dr Alonzo T Munro, Kalispell, was elected president of the Montana State Board of Medical Examiners, recently, and Dr Sidney A Cooney, Helena, was reelected secretary Dr Cooney was also reappointed a member of the board for another seven year term

State Medical Meeting at Helena, July 11-12—The fifty-sixth annual meeting of the Medical Association of Montana will be held at the Placer Hotel in Helena, July 11-12, under the presidency of Dr Byron L Pampel, Livingston Dr Louis H Fligman, Helena, president of the Lewis and Clark Medical Society, will give the address of welcome, and Dr William E Long Anaconda, vice president of the state association will respond The scientific program will consist of papers by the following physicians

Ernest Sachs St Louis Present Day Diagnosis and Treatment of Brain Tumors
Walter A Fansler Minneapolis Surgical and Nonsurgical Treatment of Hemorrhoids
Dean Lewis Baltimore, Essentials of a Physician
Juhon E Benjamin, Cincinnati Sudden Death and a Consideration of Its Mechanism
Mynie G Peterman Milwaukee Convulsions in Infancy and Childhood

On Thursday morning, Dr Sachs will discuss "Spinal Cord Lesions" Dr Fansler "Cancer of the Colon", Dr Lewis, "Cancer" Dr Benjamin, "Observations on the Effect of Deep X-Ray Treatment of Agranulocytosis, and the Clinical Effect of Amidopyrine," and in the afternoon Dr Peterman will conclude the scientific session with a talk on "Epilepsy in Childhood"

NEBRASKA

State Medical Election—Dr Claude A Selby, North Platte, was chosen president-elect of the Nebraska State Medical Association at its annual meeting in Lincoln May 24, and Dr Joseph Brxby, Geneva, was inducted into the presidency Dr Roy B Adams Lincoln, was reelected secretary The next annual session will be held at Omaha

Conference on Child Health—A general survey of pediatrics was presented at a conference on child health and protection in Lincoln, May 18, by Dr Clyde N Moore, Omaha Other physicians participating in the conference included

Howard B Hamilton Omaha Nutritional Problems
Floyd S Clarke Omaha Preschool Examination
William O Colburn Lincoln the Handicapped Child
Joseph A Henske Omaha Cardiac Clinic
Ernest W Hancock Lincoln, School Health Program
John H Murphy, Omaha Tuberculosis
Herman M Jahr Omaha The Problem Child
Palmer Findley Omaha Maternity Problems
Earl C Sage Omaha Maternal Mortality in Nebraska
Harold S Morgan Lincoln Prenatal Care
Harry E Harvey Lincoln Lowered Birth Rate

Society News—Dr C A Stewart, Minneapolis was guest speaker at the annual meeting of the Nebraska Tuberculosis Association in Lincoln, May 22, on childhood tuberculosis — At the semiannual meeting of the Third Councilor District Medical Society in Tecumseh, April 18, speakers included Drs Harry M Hepperlen Jr Beatrice, on "Pathology of Uterine Bleeding", Edward S Maloney, Omaha "Asthma in Children and Adults," and Hiram Winnett Orr, Lincoln "Fixed Versus Elastic Traction in Fractures" — Three Omaha physicians presented the program of the Sixth Councilor District Medical Society, Shelby, April 11, as follows Drs Maurice C Howard "Medical Management of Biliary Disease", R Russell Best "Surgical Considerations and the Complications in Gallbladder Disease" and John A Borghoff "Eczema—Common

Cause"—Dr J Calvin Davis Jr, among others, addressed the Madison-Six Counties Medical Society, Norfolk, April 17, on "Conservative Treatment of Chronic Discharging Ears"—Dr Jesse L Bollman, Rochester, Minn, gave the semi-annual lectures before the Caducean Society of Creighton University School of Medicine, Omaha, May 3-4. His subjects were "Experimental Studies on Peptic Ulcer" and "Experimental Pathology of the Liver"

NEW YORK

Prize to Dr Ayer—The Merritt H Cash Prize of \$100 has been awarded by the Medical Society of the State of New York to Dr Wardner D Ayer, Syracuse, for his essay on "Spontaneous Subarachnoid Hemorrhage and Its Relation to the Aneurysm of the Circle of Willis" This is the sixth time the prize has been awarded, although it was established in 1863

Laboratory for Research in Physiology—The biological laboratory of the Long Island Biological Association at Cold Spring Harbor, L I, will open a new laboratory for research in general physiology, September 1, under the direction of Dr Eric Ponder, now professor of general physiology, New York University. The physiology laboratory will be in the George Lane Nichols Memorial, erected in 1928

Society News—Drs John C. A Gerster, New York, addressed the Norwalk Medical Society, May 9, on "The American Society for the Control of Cancer", Herbert R Charlton, Bronxville, N Y, on "Organization of a Tumor Clinic in a General Hospital", and George T Pack, New York, "A Plan of Radium Therapy for Small Hospitals"—Dr Henry Sage Fenimore Cooper, New York, addressed the Suffolk County Medical Society, West Islip, April 25, on acute conditions in the abdomen

New York City

Salmon Lecturer Chosen for 1935—Dr William Alanon White, superintendent of St Elizabeth's Hospital, Washington, D C, has been selected to deliver the Thomas W Salmon Memorial Lectures at the New York Academy of Medicine, April 12, 19 and 26, 1935. His subjects will be "Psychiatry as a Medical Specialty," "The Social Significance of Psychiatry" and "The General Implications of Psychiatric Thought"

Fellowship Available—The Women's Medical Association of New York City offers the Mary Putnam Jacoby Fellowship, \$1,000 for one year, available for graduate work in the medical sciences, to any woman graduate of an approved medical school. Applications for 1934-1935 should be filed with the secretary of the committee, Dr Rose Cohen, 36 West Ninetieth Street, by September 1, and accompanied by statements as to health, educational qualifications and proposed problem for investigation

In Memory of Dr Williams—The New York Academy of Medicine held a memorial meeting, April 26, for Dr Linsly R Williams, late director of the academy, who died, January 8. Dr Livingston Farrand, president of Cornell University, reviewed Dr Williams' life, John H Finley, Litt D, editor, the New York Times, and Dr John A Hartwell, present director of the academy, paid tribute to his achievements and influence. Dr Bernard Sachs, president of the academy, presided

Personal—Dr Albert A Berg was honored with a dinner, May 19, in observance of his retirement as attending surgeon at Mount Sinai Hospital after forty years' service.—The trustees of Johns Hopkins University and its medical faculty have selected Dr Simon Flexner, director of the Rockefeller Institute for Medical Research, to write the biography of the late Dr William H Welch.—Dr George W Kosmak has been elected chairman of the medical advisory committee of the Visiting Nurse Service, succeeding the late Dr Linsly R Williams. Two new members of this committee are Drs John Wyckoff, dean, New York University, University and Bellevue Hospital Medical College, and Marjorie Lord Strauss Knauth, who has been elected secretary.—Georgetown University, Washington, D C, conferred the honorary degree of doctor of laws on Dr Raymond P A Sullivan at its one hundred and thirty-fifth annual commencement, June 11

OHIO

Personal—Dr Frank H Lamb, who has been on leave of absence from the University of Cincinnati School of Medicine for several years, has been made professor emeritus.—Dr John H J Upham, Columbus, dean, Ohio State University College of Medicine has been reappointed as a member of the state medical board, to serve until 1941, this is his fourth

consecutive appointment.—Dr Wilbert A Hobbs, East Liverpool, was recently honored at dinner by physicians of Columbiana County, and of Hancock and Beaver counties, Pennsylvania, at Chester, Pa, in recognition of his fifty years in practice.—Dr Edgar J March, president of the staff at Aultman Hospital, Canton, was honored with a dinner, recently, celebrating the completion of fifty years in the practice of medicine

Dr Bruner Honored—The Cleveland Ophthalmological Society gave a banquet in honor of Dr William Evans Bruner, Cleveland, in recognition of his completion of forty years' service as ophthalmologist to the University Hospitals and to Western University School of Medicine. He was also presented with a pair of modeled book ends. Dr George W Crile was toastmaster, and speakers included Dr George E de Schweinitz, Philadelphia, a former teacher of Dr Bruner, Dr Walter R Parker, Detroit, a classmate, Charles F Thwing, LHD, president emeritus of the university, Dr Thorald Sollmann, dean of the medical school, and Frederick C Waite, PhD. A graduate of the University of Pennsylvania School of Medicine, Dr Bruner became affiliated with Western Reserve University School of Medicine as clinical assistant in ophthalmology in 1894. He has been professor since 1915

OKLAHOMA

Society News—At a meeting of the Woodward County Medical Society, Shattuck, April 10, speakers were Drs James Floyd Moorman, Oklahoma City, Roger L Hickman and Ellis Lamb, Clinton, on tuberculosis, Charles R Silverthorne, Wood ward, chest injuries, and Jesse J Davis, Higgins, Texas

State Medical Election—Dr Louis H Ritzhaupt, Guthrie, was chosen president-elect of the Oklahoma State Medical Association at its annual meeting in Tulsa in May. Dr LeRoy Long, Oklahoma City, was installed as president, and Dr Leonard S Willour, McAlester, was reelected secretary. The next annual session will be held at Oklahoma City

PENNSYLVANIA

Hospital News—Three Delaware County hospitals recently received appropriations from the county for care of the indigent. Chester Hospital received \$21,600, Taylor Hospital Ridley Park, \$7,080, and Delaware County Hospital Upper Darby, \$7,560. An additional appropriation of \$20,000 was made for the care of tuberculous patients through the Delaware County Tuberculosis Society

Philadelphia

New Society—The Philadelphia Metabolic Association was recently organized for interchange of modern conceptions of metabolism. At the first meeting, May 2, Dr Edward L Bortz presided and Dr Elliott P Joslin, Boston, gave an address on diabetes

RHODE ISLAND

Society News—The annual banquet of the Pawtucket Medical Society was held in Providence, March 15. Dr Stanley Sprague was toastmaster and the principal speaker, Prof James H Shoemaker, assistant professor of economics, Brown University, who discussed current events in Japan and Russia

Summer Round Up Omitted—The summer round up clinics for the examination of preschool children will not be held this year, in accordance with an agreement of the Providence School Department, the Parent-Teachers Association and the Providence Medical Association. Efforts will be made instead to have the children examined by their own physicians

TENNESSEE

Personal—Dr James C Gardner, Nashville, has been appointed physician to the Tennessee state penitentiary. Dr Theodore Morford will succeed Dr Gardner as physician to the Tennessee Industrial School. Dr Gardner succeeds Dr William Albert Sullivan

Health at Memphis—Telegraphic reports to the U S Department of Commerce from eighty-six cities with a total population of 37 million for the week ended June 9, indicate that the highest mortality rate (20.2) appears for Memphis, and that the rate for the group of cities as a whole was 11.4. The mortality rate for Memphis for the corresponding period last year was 16.5 and for the group of cities, 11.1. The annual rate for eighty-six cities for the twenty-three weeks of 1934 was 12.3 as against a rate of 11.7 for the corresponding period of the previous year. Caution should be used in the interpretation of these weekly figures as they fluctuate widely. The fact that some cities are hospital centers for large areas outside

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the city limits or that they have a large Negro population may tend to increase the death rate.

Society News—Drs Buel L Ashmore and Joel J Hobson addressed the Memphis and Shelby County Medical Society, May 1, on pernicious anemia and vitamins, respectively. Among speakers at the semiannual meeting of the Middle Tennessee Medical Association in Springfield, May 10-11, were Robert William D Haggard, Lebanon, on cancer of the rectum, lymphangitis, and John R Gott, Murfreesboro, on bronchial asthma. Drs Carl W Brabson, Telford, and Edward T West, Johnson City, addressed the Washington County Medical Society, May 3, on "Diagnosis of Acute Indigestion and Appendicitis" and "Operative Results in Hernia," respectively. Speakers at the annual session of the West Tennessee Medical and Surgical Association in Jackson, May 10, included Drs Virgil E Simpson, Louisville, Ky, on diabetes mellitus and Horton R Casparis, Nashville, sequelae of the exanthems, and Richmond McKinney, Memphis, causes of esophageal stricture. Dr George A Brandon, Lexington, was elected president.

WEST VIRGINIA

Society News—Speakers before the Kanawha Medical Society in Charleston, May 8 were Drs Hugh G Thompson and Moritz F Petersen, on "Diabetes in the Adult" and "Diabetes in Children" respectively. At a meeting of the Central West Virginia Medical Society in Summersville, May 2, Drs Martin L Bonar Morgantown spoke on "Skin Troubles of Youth," and George F Grisinger, Charleston, on "Diagnosis and Treatment of Lner and Bile Tract Infections." Dr Richard O Rogers, Bluefield, presented a paper on "Agranulocytic Angina" before the joint meeting of the Mercer and McDowell County medical societies at Welch, May 9. Dr Howard G Weiler, Wheeling, discussed "Orthopedic Surgery for the Practitioner," at a meeting of the Marshall County Medical Society, April 17. Speakers before the Tyler-Wetzel Bi-County Medical Society in New Martinsville, May 11, were Drs Graver C Weil, Pittsburgh, and John P Henry, Pittsburgh on fractures and injection treatment of varicose veins, respectively.

WISCONSIN

Dr Miller Awarded Trudeau Medal—Dr William Snow Miller, emeritus professor of anatomy, University of Wisconsin School of Medicine, Madison, was awarded the Trudeau Medal of the National Tuberculosis Association at its annual meeting in Cincinnati, May 17, in recognition of his research in the anatomy of the lung and chest. Dr Miller graduated from Yale University School of Medicine in 1879. From 1889 to 1892 he served as pathologist to City and Memorial Hospitals in Worcester, Mass, and from 1882 until 1924 he was affiliated with the University of Wisconsin in various teaching capacities. He is the author of numerous papers on the anatomy of the organs of respiration, anatomic relations of pulmonary tuberculosis, anomalies of the pancreas and medical biography. Dr Henry Kennon Dunham Cincinnati, was elected president of the National Tuberculosis Association at this meeting.

GENERAL

Institute for Hospital Administrators—Lectures, round table discussions, seminars and conferences will make up the two weeks institute for hospital administrators in Chicago, September 10-22. Sessions will be held at Judson and Burton Courts dormitories of the University of Chicago. Information may be had from the executive secretary of the American Hospital Association, 18 East Division Street, Chicago.

Medical Bills in Congress—Changes in Status S 433 has passed the Senate directing the retirement of acting assistant surgeons of the United States Navy at the age of 64 years to permit the transmission in the mails of poisonous drugs and medicines to cosmetologists and barbers. H R 1766 has passed the Senate providing for retired employees of the United States disabled by injuries sustained in the performance of their duties such medical service as may be necessary on account of their injuries.

Dana Medal Awarded to French Ophthalmologist—The Leshe Dana Gold Medal awarded annually by the National Society for the Prevention of Blindness in cooperation with the St Louis Society for the Blind was presented to Dr Felix Joseph de Lapersonne, Paris at the meeting of the International Association for Prevention of Blindness in Paris May 14. Dr Lapersonne is president of the association of both the International Park Lewis Buffalo vice president of the national society and a former winner of the association and the national society.

the medal, made the presentation. Dr Lapersonne is the second European to receive the award, Dr Ernst Fuchs, Vienna, received it in 1929.

Society News—Dr George Gilbert Smith, Boston, was chosen president-elect of the American Urological Association at its annual meeting, June 1, and Dr Miley B Wesson, San Francisco, was inducted into the presidency. Dr Gilbert J Thomas, Minneapolis, was reelected secretary. At the annual session of the American Gynecological Society in May, Dr Brooke M Anspach, Philadelphia, was chosen president and Dr Otto H Schwarz, St Louis, reelected secretary. The next annual session will be held at Princeton, N J, Oct 21-23, 1935.

Association of Private Psychiatric Hospitals—The National Association of Private Psychiatric Hospitals was organized in New York, June 1, with Dr Hubert Work, formerly Secretary of the Interior of the United States, as honorary president of the American Psychiatric Association, and Dr John J Kindred, New York, as president. Other members are Drs Thomas P Prout, Summit, N J, vice president, Frank H Barnes, Stamford, Conn, assistant secretary, Dr James Percy Hickling and Walter Freeman, Washington, D C, the original incorporators, were elected honorary vice presidents. The purposes of the association, which has been incorporated under a federal charter in the District of Columbia, are:

The mutual protection of privately owned psychiatric hospitals and unity of action in all policies affecting the interests of private psychiatric hospitals to engage in the study of subjects pertaining to mental diseases and defects including the care treatment and promotion of the best interests of the insane epileptic and feeble-minded and allied cases to engage in foster and develop research for the advancement and furtherance of the knowledge of such subjects for the publication and to do any and all things necessary or desirable and in general to the association.

Homicides in 1933—A study of the death rates for homicide in 178 American cities for 1933 shows an average rate of 10.4 per hundred thousand of population, the same as in 1932. Lexington, Ky, had the highest rate 59.5 per hundred thousand, followed by Little Rock, Ark, with 52.5 per hundred thousand, with 50.8. Of the five largest cities, Chicago had the highest rate, 14.2, and the other cities were Detroit, 7.4, Los Angeles, 7.6, New York, 7.4, and Philadelphia, 6.7. All except Chicago showed decreases from 1932. Frederick L Hoffman, LL.D., consulting statistician, who prepared the report, found that in thirty-one cities for which figures since 1900 were available, the homicide rate has risen from 5.1 per hundred thousand in that year to 10.7 in 1933. Comparison with rates in other countries shows that the United States has the highest murder rate of any great civilized country. Other rates cited by Dr Hoffman are as follows: Germany, 2 per hundred thousand, Estonia, 6, France, 1, Greece, 5, England, Austria, 3, Portugal, 2, Sweden, 1, Switzerland, 2, Norway, 1, and Czechoslovakia, 3. Three factors contribute to this situation, in Dr Hoffman's opinion. They are possession of deadly concealable weapons on the part of the population distribution of crime literature and long drawn out criminal trials in which conviction takes place months after the crime or the criminal goes entirely free.

Government Services

Death of Dr Houck

Ulysses G Houck DVM, for thirty-eight years a member of the staff of the Bureau of Animal Industry, Department of Agriculture, and associate chief since 1928 died of Hodgkin's disease April 24 aged 68. For the past sixteen years Dr Houck had directed the division of foot-and-mouth disease control. During the 1924 outbreak of foot-and-mouth disease he was in charge of the federal and state forces that eradicated the disease. He is said to have been a pioneer in the organization of government meat inspection service. He was the author of a historical sketch of the accomplishments of the bureau.

Miss Abbott Resigns from Children's Bureau
Miss Grace Abbott for thirteen years chief of the children's bureau Washington D C has announced her resignation effective July 1. Miss Abbott will go to the University of Chicago to become professor of public welfare administration.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 26, 1934

The Medical Service in the Army and Navy

As stated in previous letters, the pay of medical officers in the army and navy compared badly with the prospects of civilian practice, producing difficulty of recruitment. A committee was therefore set up by the government to investigate the causes of shortage of officers and nurses to make recommendations, which have now been adopted. The position of medical officers has been considerably improved, not by increasing the pay of the various ranks but by accelerating promotion and also lengthening the period of permanent commissions, so that men can retire at a higher rank than formerly and so qualify for a higher pension. This change is brought about by a short service system. In the army, all entrants will receive short service commissions and after five years will have the choice of retiring with a gratuity of \$5,000 or applying for a permanent commission. The result will be that officers in the permanent service will spend a greater part of their career in the higher ranks than formerly. An officer who joins at 25 and is granted a permanent commission is guaranteed that he will be a captain at 26 and a major at 35, instead of at 28½ and 37 as at present. Further, the career of a medical officer will be lengthened and will normally extend to the age of 57. The new rates of pay for the various ranks do not differ much from the old ones, being less in some cases and greater in others. They are lieutenant, \$1,780, captain, \$2,190, major, \$3,040, lieutenant colonel, \$4,670 (at the age of 42) and \$5,080 (at the age of 48), colonel, \$5,690. The number of specialist posts, which carry increased pay, has been increased.

In the navy, all entries will also be on a short service basis, preferably at the ages of 24 to 28, for three years, to be extended to five at the discretion of the admiralty. After three years, officers on leaving will be eligible for a gratuity of \$2,000 and, after five years for one of \$5,000. Transfer to the permanent list will be at the admiralty's discretion on completion of five years short service. A gratuity of \$5,000 will then be paid, but the officer will be required to render a minimum of twenty-five years' service in order to qualify for full pension. Officers retiring with less service will be entitled only to gratuities or retired pay reduced pro rata. The number of specialist posts carrying increased pay has been increased from sixty to eighty-three, and increased facilities are provided for postgraduate study. The age of retirement has been increased for surgeon commanders from 50 to 55 and for surgeon captains from 55 to 57. The number of surgeon captains has been increased from twenty to thirty-three.

Secret Drug Factories in the Near East

At a meeting of the League advisory committee on the traffic in opium and other narcotics, Russell Pasha, chief of the department of the Egyptian police for the control of drug traffic, said that in the last five years there had been improvement in Egypt in the control of narcotics. There was not so much smuggling of morphine, diacetylmorphine and cocaine from western Europe. These drugs now came principally from Greece, Turkey, Palestine, Syria and the Far East. There were also certain mysterious illicit centers in Turkey, some Bulgarian factories and a factory in the Far East. There were in Syria stocks of more than 8 tons of hashish. But it was Turkish and Bulgarian hashish that was most sought after. There was a strong demand for opium in Egypt but a law was about to be promulgated with regard to it. Russell Pasha

particularly drew attention to the situation in Bulgaria, where there are ten secret factories and the cultivation of opium has considerably developed. He was thanked for his voluminous report, which indicated the great and effective efforts made in Egypt to combat the scourge of drugs. Extraordinary revelations were made as to Bulgaria's activities. It was estimated that the illicit output of ten heretofore secret Bulgarian factories is not less than 3,000 Kg of diacetylmorphine, an amount twice that necessary for the medical requirements of the world and sufficient to poison 3 million persons. The United States delegate, Mr. Stuart Fuller, gave the result of recent investigations into the uses of acetic anhydride, which is used in the manufacture of certain dyestuffs, acetylsalicylic acid, rayon and diacetylmorphine. In a country that did not produce the first three substances it could be concluded that acetic anhydride was imported for the manufacture of diacetylmorphine. Investigations showed that in the last four years Bulgaria imported about 21,200 pounds of acetic anhydride, mostly from Germany, from which at least 10,600 pounds of diacetylmorphine could be manufactured. Russell Pasha stated that drug addiction did not exist in Bulgaria, but that the country was the one source in Europe of the wholesale manufacture of diacetylmorphine.

The Controversy About Pasteurized Milk

The controversy on the pasteurization of milk, described in previous letters, has been continued in the *Times*. A Bradford Hill, W. W. Jameson and W. W. C. Topley of the London School of Hygiene and Tropical Medicine reply to the argument that in a population of 9,000,000 children in this country under the age of 15 only about 4,000 cases of bovine tuberculosis occur annually, or one case in 2,200 children per annum. The proportion of children who eventually suffer must be much higher. It can be estimated that between one in 100 and one in 200 children develop the disease before the age of 15. Milk-borne diseases other than tuberculosis are by no means as negligible as the opponents of pasteurization state. Between 1912 and 1931 there were reported at least eighty-one outbreaks of various diseases due to milk. In 1929 there occurred a severe epidemic of septic sore throat involving more than 1,000 families, with sixty-five deaths, and in 1931 an outbreak of 312 cases of paratyphoid fever, with six deaths. Another sporadic infection due to milk is undulant fever.

Dr. L. H. D. Thornton, consulting pathologist, Wilts County Council, has found in his examination of children who have died from extraneous causes that at least 30 per cent show definite enlargement of the mesenteric glands. He has investigated these glands and found that their enlargement is due to living tubercle bacilli, though during life no ill effects are evident and many of these children are well nourished. These evidences of tuberculosis are present intermittently during childhood, the battle swaying to and fro, the glands sometimes enlarged and sometimes quiescent until eventually immunity is developed. Thus the great majority of infants are susceptible to bovine tuberculosis, while the great majority of adolescents are not. This development of immunity appears to be due to casual intermittent ingestion of tubercle bacilli. It may therefore be asked, Why sterilize milk? The answer is that in this rendering immune of the community a needless number will die. The susceptibility of certain children is due to several factors. But an additional factor is the massiveness of the dose. Thornton has found that the number of tubercle bacilli in infected milk varies enormously. The danger to the individual arises when a single cow happens to be excreting bacilli in enormous numbers. In the present state of knowledge, the only safe policy is to insist that milk shall not contain an undue proportion of tubercle bacilli. This can be done only by veterinary supervision or pasteurization. Thornton thinks

that it may be ultimately possible to supply a milk first sterilized by heating and then reinforced by vitamins and with some lowly strain of tubercle bacilli added, such as that used by Calmette, to produce immunity

Leprosy in Great Britain

Presiding at the annual meeting of the Home of St Giles for British lepers, the dermatologist Dr J M H MacLeod said that it was realized by few that cases of leprosy still occurred in this country. It was not possible to obtain exact figures, but estimates ranged from 50 to 100. The majority were persons who came from abroad with definite symptoms of leprosy or developed them later. There were also a few contact cases in which infection had occurred in this country, but none of these had been among those attending the patients. The Homes were dependent on voluntary contributions and received nothing from the government.

The Planning of Hospitals

An expert regional survey of the necessities of the country with regard to hospital accommodations has been made by a special committee of the Royal Institute of British Architects. The committee was appointed to submit evidence on the cost of hospital buildings to the Ministry of Health. It considers that by proper correlation of general and special hospitals, combined with an expert survey of town and country districts, much unnecessary expenditure might be saved and standardization in construction, equipment, and administrative services should result. The desultory rebuilding of hospitals on existing or adjacent sites is not always a practical proposition, and expert guidance should be readily available for hospital boards before large additional expenditure is incurred. Hospitals near one another should be asked to consider amalgamation, or at least the joint use of special departments.

The report endorses a recommendation of the British Subcommittee on Hospital Costing, presented to the International Hospital Association last June, that the hospital theater unit should be placed in one suite on the top floor of the building, and also the opinion that the sights and sounds of operations are not encouraging to other patients. Other points are as follows. No ward should contain more than sixteen beds. A day room with a sun balcony is essential. The psychologic effect of an open fire is urged by many physicians as of value in wards and day rooms. The matron should not have her suite of rooms in the nurses' home, for it is not part of her duty to police the nurses.

Tests for Automobile Drivers

The Committee of the House of Commons that is considering the road traffic bill discussed clauses dealing with disqualification of offending drivers. Sir Ernest Graham-Little (dermatologist) moved an amendment that an applicant for a driving license must pass a prescribed examination for fitness and subsequently a test of competence to drive. He described the results of researches by experts on accidents in factories that showed the importance of the human factor. This factor was as important on the road. The tests were to determine capacity to respond to an emergency, ability to judge distances and speeds accurately and rapidly, and vision. The technic of the application of the tests could be learned in two weeks and the tests could be applied by those experienced in driving.

Mr Stanley, minister of transport, said he was not in the least detracting from the value of the experiments already made or the possibility of better results in the future when he asked the committee not to accept the amendment. The experiments showed clearly the possibility of selecting the better drivers but the suggested tests would not enable one to determine whether a man who had not been in a car would be a safe driver. The Medical Research Council, after making

extensive experiments, informed him that the tests to distinguish between the good driver and the less good driver had proved useful, but that they did not determine whether a man was to be allowed to go on the road. He would continue to watch the future of the experiments. The amendment was negatived.

A University Department of Industrial Medicine

The specialization and increase of departments of medicine seem to have no end. The latest is the opening of a department of industrial hygiene and medicine in the University of Birmingham, which will take place October 1. The need has been felt for a university department that would undertake research in the application of medicine to industry and train physicians who are officers in industrial organizations or desire to qualify for these posts. The extraordinary variety of industries carried on in Birmingham render its university particularly suitable for this purpose. The injurious effects that may be produced on the workers by dust and emanations and by other causes, and their prevention, will be investigated. Physicians will be trained to advise employers as to the methods by which certain types of accident can be reduced, the best way of treating them and the selection of employees for the kind of work for which they are physically suited, and as to the improvement of the hygiene of factories. The university will probably institute a diploma in industrial hygiene.

The Robert Jones Memorial

A national memorial to Sir Robert Jones is being promoted by leading men in the medical profession and in public life. The president is Lord Derby, under whom, as minister of war, Jones rendered his services to the wounded. The memorial is designed to commemorate the life and example of one who became a national figure, one who, after centuries of ignorance, brought knowledge and devotion to the crippled child. It is also intended to sustain his tradition and to ensure, by research and adherence to his principles and ideals, the ultimate victory over the preventable and curable diseases, which should cease to add to the suffering of mankind. It is pointed out that to Jones is due the development of orthopedic surgery from a limited branch to one which during the war covered no less than 70 per cent of the surgical cases. The war gave him his great opportunity. He was in charge of no less than 33,000 beds and was the means of saving the empire a vast number of lives and preventing an enormous amount of crippling. After the war he organized the treatment of civilian cripples, both children and adults. The national memorial is to take the form of a Robert Jones professorship in the Royal College of Surgeons, a Robert Jones traveling fellowship, to be awarded alternately by the Royal College of Surgeons and by the University of Liverpool (the city where Jones practiced) and the Liverpool Medical Institute, a Robert Jones national trust, to ensure financial aid for orthopedic centers or institutions.

Tax on Insulin Removed

The protest aroused by the imposition of a 33 per cent tax on imported insulin was reported in *THE JOURNAL* April 7, page 1168. The scandal of this tax proved too much for it and the duty was removed almost as soon as it was passed. In the house of commons the minister concerned argued that duties did not mean an increase of price and pointed out that the price of British insulin had fallen since the imposition of the tax to 44 and 34 cents per hundred units in the case of two firms. It is now announced in the house of commons that the price of British insulin and of one brand of imported insulin has been reduced still further to 32 cents. The abolition of the duty has been done quietly, almost by stealth. *The Star*, which vigorously denounced the duty, emphasized the scandal that poor persons already handicapped by diabetes, should be compelled to pay more than is necessary for insulin.

PARIS

(From Our Regular Correspondent)

May 2, 1934

Research on Various Metallic Bone Sutures

The variable results of suturing bones with metal devices have given rise to diverse interpretations. Rarefying osteitis often develops at the points of contact of wire and renders coaptation defective. Pseudarthroses may develop. That the toxic action of metals hinders the regeneration of the bone tissue cannot be doubted, for if the wire is removed in time the symptoms of necrosis cease. P. Menegaux, P. Moysé and D. Odiette have studied the effects of different metals on cultures of bone tissue and connective tissue *in vitro*, in accordance with the Carrel method. Menegaux and his co-workers used an 8-day-old chicken embryo; fibroblasts were obtained from a fragment of the heart, and osteoblasts from the leg bone. These were cultivated in chicken blood coagulated by a drop of extract of chicken embryo and containing the trephones indispensable for the maintenance of the culture. The tissue is cultivated at first for fifteen days, with successive transfers, in the incubator at a temperature of 38.5 C. At this time one secures pure cultures of both tissues. Later the cultures are placed in glass cupules with a metal disk on the bottom, and the experiments are continued. By measuring the rate of growth it is easy to follow the variations in the culture according to the metal employed, the examination being made with the microscope. Menegaux extended his experiments to twelve metals (iron, gold, copper, zinc, silver, aluminum, magnesium, lead, tin, nickel, tantalum and tungsten) and to twenty-one alloys, eight with an aluminum base, and thirteen varieties of steel. The metal disks were $10\frac{1}{16}$ mm in diameter and 0.25 mm in thickness and were obtained from a punching press. The results of these experiments were the following. The effects of a metal were exactly the same for the cultures of fibroblasts and of osteoblasts. The metals were divided, according to the results, into (1) very toxic, (2) slightly toxic and (3) indifferent. The very toxic metals arranged in descending order were copper, magnesium, iron, aluminum bronze and soft steel. The first two produce an immediate cessation of growth and cellular migration. After twenty-four hours, all transfers of cultures remain sterile. Magnesium dissolves gradually, with liberation of bubbles of hydrogen and the production of hydroxyl and magnesium carbonate. These salts, moreover, when employed alone, have the same inhibitive action on the cultures. In the rat, a disk of magnesium placed under the periosteum of a long bone creates a focus of necrosis. The other metals of this group (iron, aluminum bronze and soft steel) do not check growth entirely, although it is greatly retarded. The rate of growth is 150 times less than in the control cultures having no metal. It is evident, therefore, that soft steel wire and aluminum bronze wire are not suitable materials for bone sutures. In the second group (zinc, silver, tantalum, tin, nickel and tungsten) the toxicity follows in decreasing order as named. The rate of growth is about one-third that observed in the controls. In the third group are the harmless metals (gold, aluminum and lead) and the metal alloys. Duralumin appears to be the best adapted for bone sutures, as it has no action on the regeneration of the fibrous tissues, likewise the three moxidizable steels V2A extra, Nicral D and Platinostainless D are good. They do not inhibit the growth and the migration of osteoblasts and fibroblasts *in vitro*.

Deaths

Dr. Cazeneuve of Lyons has died at the age of 82. He had been professor at the Faculté de médecine de Lyon and was known for his research in organic chemistry and industrial hygiene. He was an associate member of the Académie of

Medicine. He was prominent also in politics. He became deputy and later senator for the district of Lyons and took an important part in the enactment of laws pertaining to hygiene. During the war he was called on to give advice in regard to explosives. His last researches dealt with the danger of using compounds with a lead or arsenic base as parasitocidal products in agriculture.

The death of Dr. Retterer, associate professor of histology at the Faculté de médecine de Paris, at the age of 88, is announced. He was the last surviving pupil of Mathias Duval and was the author of numerous histologic studies on hematopoiesis, odontogenesis, connective tissues, grafts of tissues and organs. He was a highly conscientious laboratory worker.

Dr. Octave Monod, surgeon to the Curie Radium Institute in Paris, has died suddenly at the age of 57.

BERLIN

(From Our Regular Correspondent)

April 30, 1934

Revision of Regulations Pertaining to Vaccination

The federal vaccination law of 1874 is to be revised. But as the revision cannot be completed before the beginning of the next vaccination period, the federal minister of the interior has requested the governments of the various *länder* to accept and apply in advance the new points of view of the vaccination problem concerning which there is essentially common accord. The main point is that in every case before vaccination is ordered an inquiry must be instituted to discover whether the person concerned can be vaccinated without endangering his health. In this revision of the vaccination law no provision is made for postponing vaccination for conscientious scruples. The new regulations provide that public vaccination shall be carried out in special vaccination centers. In place of four incisions, as formerly, now only two are made. Like wise the length of the vaccinal incisions has been changed. The former regulations established the length of the incision as up to 1 cm., but the new regulations provide for an incision only 3 mm. in length. The parents, foster parents or guardian of the vaccinated children may at any time consult the vaccinating physician and secure gratuitous advice in case, after the observation period, they note special manifestations in the persons vaccinated.

Health Insurance Associations (Krankenkassen)

For years there have been complaints that some members of the health insurance associations (*Krankenkassen*) unjustifiably use their insurance to make immoderate demands on the time of physicians. Various measures have been introduced to establish norms for the economical use of medicines. However, since the political upheaval, the chairman of the Allgemeine Ortskrankenkasse in Stuttgart has reported that an improvement in the morale of members of the *Krankenkassen* has been generally observed. The administrations of the *Krankenkassen* should show their appreciation of the improved attitude of the members. He pointed out that the insured members who still make unjustified demands on the *Krankenkassen* might be dealt with in a different way than in the manner heretofore in vogue. The Stuttgart local *Krankenkasse* has entered into an agreement with the larger industries to establish a closer relation between the local *Krankenkasse* and the various industries. According to this agreement, the head of the welfare service in each industry must constantly advise with the local *Krankenkasse* concerning the conditions affecting the members. He must inform the *Krankenkasse* when an industrial worker is in need of a rest cure or other prophylactic treatment, and he must report to the local *Krankenkasse* the names of persons who require special treatment.

ITALY

(From Our Regular Correspondent)

April 30, 1934

The Piedmont Surgical Society

The Società Piemontese de chirurgia met recently in Turin under the chairmanship of Professor Uffreduzzi. Manca and Biolato spoke on postoperative thrombosis. On the basis of research on cadavers, the speakers hold that the frequency of venous thrombosis is due to retardation of the blood stream and particularly to the crossing of the left iliac vein by the right iliac artery and of the homolateral external iliac vein by the left hypogastric artery. The compression is favored by the projection formed by the fifth lumbar vertebra.

Gregoire, clinical surgeon of Paris, described the remote results of splenectomy in hemogenia. He stated that splenectomy is applied as a therapeutic intervention in accordance with the theory of Kaznelson, who regarded the diathesis as due to thrombopenia resulting from an exaggerated destruction of elements in the spleen. The observations of the speaker and of others have evidenced a rapid increase of the blood platelets within a few minutes of the intervention. Professor Gregoire emphasized the fact that the operation does not permanently cure the hemorrhagic diathesis, for while the platelets are temporarily increased they drop again to low figures, even below normal.

During the discussion, Professor Ceconi reported the history of a boy on whom splenectomy was performed by Professor Uffreduzzi more than eight years ago. He cast doubts on the belief of many others that the disease is of a constitutional nature. Because thrombopenia exists after the intervention, Professor Ceconi thinks that in these cases there is a peculiar fragility of the vessel walls.

Dr Griva obtained in a man, aged 26, no improvement from splenectomy. The case resulted fatally, and at necropsy an accessory spleen was found.

Professor Fasiano reported a cure of hemogenia, which had continued for more than six years.

Professor Morpurgo reported on 109 tumors of the thyroid examined histologically at the Centro tumori in Turin. According to the classification of Quervain and Wegelin, tumors were divided into colloid and cystic goiters, sixty, juvenile adenomas, eleven, colloid goiter (metastasis), one, proliferative langerhansian goiter, four, papillomatous adenoma, twelve, carcinoma, sixteen, and sarcoma, five. The small number of proliferative goiters was due to the fact that the plains and many valleys of Piedmont are immune to endemic goiter.

NETHERLANDS

(From Our Regular Correspondent)

April 26, 1934

The Menace of Tuberculosis in Teachers

For years, a regulation has been in force allowing teachers affected with pulmonary tuberculosis to undergo treatment not exceeding two years in a sanatorium. In some instances teachers have resumed their positions before being cured, and in other cases teachers who were actually cured have not been allowed to return to their work.

Recently two new examples of bacillary infection among pupils have been traced to teachers. The children were subjected to a clinical and radiologic examination, and the results were startling. Sixty per cent of the children had evolutionary pulmonary tuberculosis, the incidence being particularly high in the lower classes. The teacher was in the habit of coughing and in the sputum were numerous tubercle bacilli. It might be alleged that this high percentage of tuberculous children was due to chance and not to contagion. However, the examinations showed in this instance that all the children were

affected with grave evolutionary tuberculosis. It was moreover, the gravity of the symptoms that attracted the attention of the attending physician and caused him to make an inquiry. Although all the circumstances seem to point to infection through direct contact with the teachers, the results of other inquiries must be awaited before any definitive conclusions can be drawn. The government has under consideration regulations requiring teachers to be examined from time to time. Those who are found to be ill will be admitted to a sanatorium for a period of from two to three years, for treatment. The detection of cases will be left to the school physician or to the consultation center of the district, where the teachers would be subjected to a radiologic examination. The teachers would be reexamined every year. Another prophylactic measure is needed, which consists in examining the children and the teachers before admission to a school.

Weil's Disease

Eijkel, the head of the public health service, has sent to physicians a circular letter dealing with the detection and treatment of Weil's disease. In 1932, 207 cases were diagnosed, sixteen of which proved fatal. On the appearance of the disease, one should use every endeavor to prevent toilet waters from being contaminated by the urine of rats. The minister of the interior has sent to the mayors of communes an official leaflet describing the measures to be taken. An early diagnosis is desirable, owing to the great chances of the success of serotherapeutic treatment instituted during the first few days. One should not await the results of the blood examination before giving an injection of serum. The serum, derived from the rabbit or the horse, may be secured in sufficient quantities from the Royal Institute of Serology in Utrecht. Horse serum is considered preferable, rabbit serum being reserved for patients who have already had injection of horse serum for other disorders. From 40 to 60 cc. is injected subcutaneously, the same dose may be repeated the following days. Afterward the treatment will consist in improving the diuresis by means of the dextrose-insulin method.

The Meat of Tuberculous Cattle

A supplementary memorandum concerning slaughtered tuberculous cattle has recently gone into effect. The whole carcass is destroyed if the animal had become much emaciated before being slaughtered. The meat is regarded as good after sterilization, when there appears to have been a recent infection or a localized focus. The glands and other localized areas of infection are excised and destroyed. The association of the directors of the communal abattoirs of the Netherlands adds that the animal will be discarded if there is disseminated tuberculosis in the muscles, which is found particularly after miliary tuberculosis or meningitis. According to Hoefnagel, one may regard tuberculosis as generalized when the organs that can be reached only by the greater circulation are involved.

The Medical Convention

At the Scientific and Medical Convention of the Netherlands, which opened under the chairmanship of Professor Van Uven, Prof. L. Bouman, the first speaker, discussed in a general way the subjects "biology" and "psychopathology." W. E. Hess described the sequels of epidemic encephalitis. Encephalitis causes disorders in the structure of the brain, and one can establish a connection between the structure and the psychic symptoms observed. The subjective symptoms should be established simply from the psychopathologic point of view. Dr. G. A. Kreuzwendedich von dem Borne gave the results of his research on Addison's disease. Using an extract of the suprarenal cortex, he secured good results. The dosage of the extract and the renal deficiency in Addison's disease were considered in detail.

Marriages

CLARENCE GEORGE OCHSNER, Wabasha, Minn., to Miss Anita Josephine Bouquet of Caledonia, June 9

STERRETT ERNEST DIETRICH, Ingram, Pa., to Miss Eleanor Elizabeth Carter of Allison Park, June 9

ROBERT B KARN JR., Clayton, Mo., to Miss Helen Marie Brueggeman of St Louis, April 21

EDWARD EISENBERG to Miss Charlotte Adland, both of Milwaukee, March 25

JAMES R DES PORTES to Miss Lila Parker, both of Fort Mills, S C, April 28

JOE THORNE GILBERT, Austin, Texas, to Miss Ailine Burch of Houston, April 12

JOHN EWING DUNN, Smithland, Ky., to Miss Louise Rouse in Paducah, April 20

CALVIN BASIL FAUSSET to Miss Helen Brooks, both of Indianapolis, May 20

JOHN K BULLOCK, Jackson, Miss., to Miss Mary Lewis Mayer, April 28

GEORGE W BEELER to Mrs Emma Graham, both of Seattle, April 28

Deaths

James Edwin Houghton ♂ Surg Lieut Commander, U S Navy, Washington, D C, George Washington University Medical School, Washington, 1917, entered the navy in 1917, fellow of the American College of Physicians, professor of hygienic and preventive medicine at his alma mater, 1924-1927, lecturer on tropical medicine, Jefferson and Hahnemann Medical schools, Philadelphia, 1931-1932 director of laboratories, department of sanitation and beneficence and medical director, National Leprosarium, Dominican Republic, 1921-1923, chief of the division of laboratories and instructor in tropical medicine and parasitology, U S Naval Medical School, aged 42, died, May 3

Seymour D Van Meter ♂ Denver, University of Pennsylvania School of Medicine, Philadelphia, 1889, formerly secretary of the state board of medical examiners, past president of the American Association for the Study of Gout and the Denver City and County Medical Society, aged 68 consulting surgeon to the Children's Hospital, Beth Israel Hospital and St Luke's Hospital where he died, February 27, of a malignant condition affecting the lumbar region of the spinal column

Edward Frederic Glaser ♂ San Francisco, Cooper Medical College, San Francisco, 1895, member of the Pacific Coast Oto-Ophthalmological Society for nearly eighteen years member of the state board of health for many years member of the board of directors of the National Association for the Prevention of Blindness, aged 68, died, May 9, in the Stanford Hospital, of lymphosarcoma

Elizabeth Delia Dixon Carroll, Raleigh, N C Woman's Medical College of the New York Infirmary for Women and Children, New York, 1895, member of the Medical Society of the State of North Carolina, professor of physiology and college physician to the Meredith College, aged 62, died, May 16, in a local hospital, of injuries received in an automobile accident

George Wood Harrison, Ashland, Wis., College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1911, past president of the Ashland-Mayfield Iron Counties Medical Society, on the staff of the Ashland General Hospital and St Joseph's Hospital, aged 48, died, April 29, of cardiorenal disease

John Marsham Ropp ♂ Roanoke Va., Vanderbilt University School of Medicine, Nashville, Tenn 1891 University of Nashville (Tenn) Medical Department, 1891, aged 66 on the staff of the Roanoke Hospital, where he died, April 29, of spinal meningitis following injuries received in an automobile accident

Victor Mravlag, Elizabeth N J, University of Vienna Faculty of Medicine, Vienna Austria, 1872 member of the Medical Society of New Jersey formerly mayor of Elizabeth for many years head of the board of police commissioners at one time member of the board of health, aged 85, died May 15

Lewis Morgan Powell, Topeka, Kan University of Pennsylvania School of Medicine, Philadelphia, 1891, member of

the Kansas Medical Society, formerly professor of obstetrics at the Kansas Medical College, Medical Department of Washburn College, Topeka, aged 75, died, April 28, in Eustis, Fla

Solomon Metz Miller, Norristown, Pa., Jefferson Medical College of Philadelphia, 1902, member of the Medical Society of the State of Pennsylvania and the American Psychiatric Association, superintendent of the Norristown State Hospital, aged 68, died, May 24, of coronary thrombosis

Charles Lee Quaintance ♂ Queens Village, N Y, University of Virginia Department of Medicine, Charlottesville, 1921, on the staff of the Jamaica (N Y) Hospital, aged 39, died, April 10, in the New York Post Graduate Hospital, of pneumonia, following an operation for appendicitis

Abner Post ♂ Cambridge, Mass., Harvard University Medical School, Boston, 1870, professor of syphilology emeritus at his alma mater and the graduate school, for many years on the staffs of the Boston City and Children's hospitals and the Boston Dispensary, aged 89, died, April 20

Edward Hyatt Hutton ♂ Corning, N Y, Columbia University College of Physicians and Surgeons, New York, 1900, fellow of the American College of Surgeons, served during the World War, attending surgeon to the Corning Hospital, aged 61, died, May 7, of influenza

John C Doolittle ♂ Lancaster, Wis., Wisconsin College of Physicians and Surgeons, Milwaukee, 1907, past president of the Grant County Medical Society, member of the school board, medical director and owner of a hospital bearing his name aged 50, died, May 20

Gilmer H Moore ♂ Opelika, Ala., Maryland Medical College, Baltimore, 1904, past president and secretary of the Lee County Medical Society, served during the World War on the staff of the East Alabama Hospital, aged 54, died, April 13, of peptic ulcer

Oleander Howton, Luxora, Ark., Hospital College of Medicine, Louisville, Ky., 1903, member of the Arkansas Medical Society, served during the World War, aged 56, died, May 7, in the Methodist Hospital, Memphis, Tenn., of pneumonia

E S H McCauley ♂ Beaver, Pa., Cleveland Medical College, 1897 past president of the Beaver County Medical Society, on the staff of the Beaver Valley General Hospital, New Brighton, aged 61, died, April 30, of pulmonary embolism

Richard Russell, Arvada Colo., Gross Medical College, Denver, 1900 county health officer, formerly mayor of Arvada, for many years president of the board of education, aged 69, died, April 12, in St Luke's Hospital, Denver, of pneumonia

Eli Crawford Boyette, Charlotte, N C, Baltimore Medical College, 1893, veteran of the Spanish-American War, aged 66, died, May 13, in the Veterans' Administration Facility, Oteen, of chronic pulmonary tuberculosis

Alice Gertrude Symonds Churchill, Darling Lake, N S, Canada Tufts College Medical School, Boston, 1899, formerly on the staff of the Hale Hospital Haverhill, Mass., aged 73, died, May 14, in a hospital at Yarmouth

William Albert Kirksey, Hope Mills, N C, Washington University School of Medicine, St Louis, 1921, member of the Medical Society of the State of North Carolina, aged 44, died suddenly, May 1, of heart disease

Edward Roswell Newton ♂ Boston, Harvard University Medical School, Boston, 1898, member of the New England Otological and Laryngological Society, served during the World War, aged 59, died, May 18

William Johnson, London, Ky Tennessee Medical College Knoxville 1896, member of the Kentucky State Medical Association member of the county board of education aged 65 died, April 23, of heart disease

Emil Ernst Hartman ♂ Anthony, Kan., Washington University School of Medicine, St Louis 1925, formerly secretary of the Harper County Medical Society, aged 35, died, April 21, of heart disease and influenza

William Ambrose Cahill ♂ Huntington Park, Calif., Dartmouth Medical School, Hanover N H, 1894, member of the Medical Society of the State of New York, aged 73, died, May 28, of arteriosclerosis

Prince Albert Melick ♂ Williams, Ariz Beaumont Hospital Medical College, St Louis 1892 physician and owner of the Williams Hospital aged 64, died, April 16 in the Santa Fe Hospital, Los Angeles

Richard C Burton, Savanna, Ill., Bennett College of Eclectic Medicine and Surgery Chicago 1878 for many years health officer aged 84, died, May 4 of abdominal carcinoma and arteriosclerosis

Hubert Rogers Kannenberg, Dallas, Texas, Baylor University College of Medicine, Dallas, 1930, member of the State Medical Association of Texas, aged 29, died suddenly, May 7, of angina pectoris

Charles Sumner Webber @ Weymouth, Mass., Boston University School of Medicine, 1926, instructor in clinical pediatrics at his alma mater, aged 36, died suddenly, May 16, of heart disease

Charles Clyde Tellesen @ Wynot, Neb., Rush Medical College Chicago, 1909, veteran of the Spanish-American War, aged 58, was killed, May 5, of injuries received in an automobile accident

Howard Fitzgerald Clark, Syracuse, N. Y., Syracuse University College of Medicine, 1899, member of the Medical Society of the State of New York, aged 59, died May 4, of heart disease

George Lee Eaton @ San Francisco, Vanderbilt University School of Medicine, Nashville, Tenn., 1894, member of the American Urological Association, aged 61, died, April 25, of heart disease

Hanson Slaven Ogilvie, Asheville, N. C., Medical College of Virginia, Richmond, 1909, member of the Medical Society of the State of North Carolina, aged 50, was found dead, March 22

William McK Housman, Sioux Falls, S. D., Cincinnati College of Medicine and Surgery, 1877, member of the South Dakota State Medical Association, aged 80, died, May 17, of angina pectoris

George Hill Christy @ Vernal, Utah, Denver College of Medicine 1900, past president and secretary of the Uinta County Medical Society, aged 57, died, May 16, of coronary thrombosis

Dudley Henry Morris, University, Va., Columbia University College of Physicians and Surgeons, New York, 1909, aged 49, died, March 29, in a local hospital, of bronchopneumonia

Elmer Le Roy Biggs @ Los Angeles, Dunham Medical College, Chicago, 1901, aged 59, died, May 6, in the Good Samaritan Hospital, of bronchopneumonia and cirrhosis of the liver

Curtis B. Pendleton, Markleville, Ind., Physio-Medical College of Indiana, Indianapolis, 1892, aged 80, died, April 17, of purpura hemorrhagica and acute dilatation of the heart

Elisha William Lister, Elizabeth City, N. C., Medical College of Virginia, Richmond, 1896, member of the Medical Society of the State of North Carolina, aged 62, died, May 1

Harold York Masfield, Columbus, Ohio, Ohio Medical University, Columbus, 1900, member of the Ohio State Medical Association, aged 54, died, May 3, of chronic myocarditis

Granville A. Richart, Blackburn, Mo., University of Louisville (Ky.) School of Medicine, 1886, member of the Missouri State Medical Association, aged 73, died, May 3

Henry William Albers, Terrace Park, Ohio, Cincinnati College of Medicine and Surgery, 1882, formerly member of the board of education of Cincinnati, aged 76, died, May 6

Julia Ross Low, Detroit, Chicago Homeopathic Medical College, 1880, Harvey Medical College, Chicago, 1895, aged 78, died, May 24, of arteriosclerosis and chronic myocarditis

La Fayette Seal, New Tazewell, Tenn., University of Tennessee Medical Department, Nashville, 1891, aged 70, died suddenly, May 11, of heart disease, in a theater at Knoxville

Theodore F. Johnson, National City, Calif., Chicago Medical College, 1877, formerly county coroner, for many years school trustee, aged 82, died May 2, of heart disease

Arnold Paige @ Erie, Pa., University of Buffalo School of Medicine, 1927, aged 32, died March 8 at the Jefferson Hospital, Philadelphia of adenocarcinoma of the stomach

Michael Horatius Couture, Lynn, Mass., School of Medicine and Surgery of Montreal, Que., Canada, 1893, aged 69, died May 16, of cerebral hemorrhage and arteriosclerosis

Charles E. Menard, Pacific Kan., Kansas Medical College Medical Department of Washburn College, Topeka, 1898, aged 65, died, May 1, of chronic valvular heart disease

Harry Izner, Chicago, Chicago College of Medicine and Surgery, 1912, member of the Illinois State Medical Society, aged 48, died, May 24, of carcinoma of the esophagus

William Littlefield Ripley, Boston, Tufts College Medical School, Boston, 1903, member of the Massachusetts Medical Society, aged 62, died May 1 of heart disease

Francis Jewell Crane, Tonopah, Nev., Chicago Medical College, 1879, member of the Nevada State Medical Association, aged 79, died May 4 in a local hospital

Ralph Whitney Reynolds, Pasadena, Calif., Cleveland Homeopathic Medical College, 1902, member of the California Medical Association, aged 64, died, April 19

James Caldwell Price, Toledo, Ohio, Cleveland Homeopathic Medical College, 1903, aged 64, died, April 22, in the East Side Hospital, of cerebral hemorrhage

Charles William Espy, Chicago, Rush Medical College, Chicago, 1892, member of the Illinois State Medical Society, aged 70, died, May 22, of lobar pneumonia

Charles Henry Hall, Monroe, N. Y., College of Physicians and Surgeons, Baltimore, 1891, aged 72, died, April 19, of chronic myocarditis and arteriosclerosis

Clarence Howard Waite, Pittsfield, Mass., Bellevue Hospital Medical College, New York, 1885, also a druggist, aged 75, died, April 20, of chronic myocarditis

George Alvin Cassidy, Fremont, Neb., McGill University Faculty of Medicine, Montreal, Que., Canada, 1885, aged 76, died, May 18, of coronary thrombosis

William David O'Byrne @ Chicago, Rush Medical College, Chicago, 1899, veteran of the Spanish-American War, aged 72, died, May 25, of pneumonia

Conway Bates, Ironton, Mo., St. Louis Medical College, 1883, member of the Missouri State Medical Association, aged 77, died, May 2, of pneumonia

Henry Mercer Richards, Lakeland, Fla., Atlanta (Ga.) School of Medicine, 1909, member of the Florida Medical Association, aged 54, died, April 6

Anna J. Fronk-Srom, Chicago, College of Medicine and Surgery, Chicago, 1903, aged 73, died May 11, of pneumonia, diabetes mellitus and hypertension

William Addison Smith, Ithaca, N. Y., Long Island College Hospital, Brooklyn, 1889, health officer of Newfield, aged 67, died, March 31, of carcinoma

Homer John Hall, Franklin, Ind., University of Louisville (Ky.) School of Medicine, 1877, aged 82, died, April 29, of acute nephritis and influenza

William R. Terry, Shellman, Ga., Atlanta Medical College, 1890, member of the Medical Association of Georgia, aged 71, died, February 14

William Prentice Knox @ Alcoa, Tenn., Vanderbilt University School of Medicine, Nashville, 1931, aged 29, died, May 6, of acute uremia

Anthony Domenick Tarditi, New York, Columbia University College of Physicians and Surgeons, New York, 1903, aged 54, died, April 5

Wilmot Charles Willits @ Kansas City, Mo., University Medical College of Kansas City, 1901, aged 68, died, May 1, of coronary occlusion

Artemas Brown, Berwyn, Ill., College of Physicians and Surgeons, Keokuk, Iowa, 1887, aged 74, died, April 28, of chronic myocarditis

Anna Albers, Chicago, Illinois Medical College, Chicago, 1908, aged 70, died, May 29, of septicemia, otitis media and diabetes mellitus

Arthur C. Hutchins, Des Moines, Iowa, Drake University Medical Department, Des Moines, 1905, aged 70, died, April 24, in Van Meter

William Howard Ensworth @ Boston, Harvard University Medical School, Boston, 1888, aged 68, died, May 3, of pulmonary embolus

Percy Vernon Ellis, Ghent, Ky., University of Louisville School of Medicine, 1886, aged 69, died, May 1, of cerebral hemorrhage

Ada Carr, Paterson, N. J., New York Medical College and Hospital for Women, 1882, aged 81, died, May 17, of bronchopneumonia

Francis M. Gage @ Shelton, Wash., Atlanta (Ga.) Medical College, 1895, aged 60, died, April 29, of carcinoma of the prostate

Willis H. Davis, Peoria, Ill., College of Physicians and Surgeons, Keokuk, Iowa, 1879, aged 81, died, May 9, of heart disease

John Willis Baldwin, Arthur, Tenn. (licensed in Tennessee in 1889), aged 77, died, May 10, of disease of the prostate gland

Gioacchino Stabili, Morrisville, Pa. (licensed in Pennsylvania in 1911), aged 71, died, February 7, of arteriosclerosis

Will W. Tyson, Perry, Fla., Atlanta Medical College, 1889, aged 68, died April 1 of pneumonia

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

RAGWEED SEASON IN THE WEST

To the Editor—I am seeking information and wonder if you could help me. I have a patient who suffers from ragweed hay fever. The season begins here about August 15. She is planning a trip to California, starting the first of June. She has not been immunized. Is there a ragweed season starting earlier in the West? What difficulties would she be likely to encounter in this regard?

ALBERT B. HONGMAN, M.D., Kalamazoo, Mich.

ANSWER—The North Pacific Coast (Portland and Seattle) is entirely free from ragweed pollen at all seasons. Western ragweed and certain species of false ragweed begin to pollinate in the Southwest as early as May 15, but in most places in the West not before July 1 or later. Exposure to ragweed pollen is therefore possible in the West and Southwest many weeks before the usual ragweed season in Michigan, but the probability of exposure for one engaged in ordinary pursuits is slight. Present records indicate that the total amount of ragweed pollen encountered in central and southern California and Arizona during the whole summer and fall is much less than that encountered on an average day during the ragweed season

Ragweed Season 1933

	Date of Onset of Ragweed Season	Maximum Ragweed Concentration Pollen per Cubic Yard of Air	Date of Maximum Concentration	Total Seasonal Fall of Ragweed Pollen on Area of 18 Sq. Cm.
Detroit	Aug. 12	1,932	Sept. 6	8,011
Chicago	Aug. 12	840	Sept. 1	7,249
Denver	Aug. 10	363	Aug. 26	3,804
Salt Lake City	Aug. 14	91	Sept. 2	252
Bolse Idaho	Aug. 15	36	Sept. 29	209
Spokane Wash		2	Aug. 18	8
Seattle (1929)		0		0
Portland Ore		0		0
Reno Nev		4	Sept. 5	12
Sacramento Calif		7	Sept. 17	34
Los Angeles		14	Sept. 8	144
Phoenix Ariz	May 15	12	Oct. 21	145
Roswell N. M.	Aug. 15	44	Sept. 25	350

in Michigan. On May 15 the average ragweed pollen content of the air in southern Michigan is at least 15 granules per cubic yard of air. If a concentration as high as this has ever been found in California, it has not been reported. The statistics for 1933 in the accompanying table may be useful in deciding the patient's itinerary.

TRAUMA AND ALLERGY

To the Editor—A man, aged 45, was struck on the head with a black jack in a holdup May 30, 1933, sustaining a concussion of the brain. Headaches lasted for about two months and then abated. August 25 he developed typical but severe symptoms of hay fever for the first time in his life. Skin testing revealed that he was sensitive to ragweed. The symptoms of vasomotor rhinitis continued with their initial severity into the fall and winter and further skin testing then showed that he was sensitive to feathers and dust. The amount of relief obtained so far from injections of ragweed feathers and dust has been unsatisfactory, as he still suffers from constant nasal congestion. Any suggestions you can offer as to further treatment will be appreciated. Is there anything in the literature indicating that trauma of the type described can bring out a latent allergic state? I have not been able to find this out in my own reading. Please omit name.

M.D. New York

ANSWER—A search of the literature reveals no instance wherein trauma can be blamed for the onset of allergic symptoms, e.g., hay fever or asthma. An excessive exposure to pollen as in going to camp during a pollinating season can and often does exceed the threshold of the potential allergic with resultant symptoms. But trauma is not a cause except that it might act by lowering the general resistance.

Complete skin tests, if not already done, should be carried out for pollens, epidermals, foods and miscellaneous substances, e.g., cottonseed and orris root. Desensitization should be attempted by injecting against ragweeds and house dust. Feathers should be eliminated and the premises kept as free from dust as possible.

The constant nasal discharge calls for a thorough nose and sinus examination, perhaps with x-rays. The nasal discharge should be examined for eosinophilia by fixing on a slide and staining with Wright or other similar stain. Allergy would be definitely indicated if the proportion of eosinophils exceeded 10 per cent, such smears frequently show over 50 per cent.

Finally, if specific treatment by ragweed and dust extracts is unsuccessful, nonspecific measures should be tried, in succession, if necessary. Among such methods may be mentioned the use of vaccine, stock or autogenous, ultraviolet radiation, x-rays, injections of foreign protein, e.g., sterile milk, also autohemotherapy.

VACCINATION AGAINST CANINE RABIES

To the Editor—In *Queries and Minor Notes* (THE JOURNAL, April 7, p. 1180) you state that there are no available data as to the efficacy of the prophylactic vaccination of dogs against rabies under field conditions. This is a very vital matter, as such vaccination has been required by the state of Washington since 1932 in certain counties where rabies in dogs has been endemic. Two dogs in Seattle have become rabid within a year after a single required vaccination (from 3 to 10 cc of phenol-treated virus); the last case having occurred five months after vaccination. The immunity afforded by this single vaccination is supposedly one year as you note. Since from fourteen to twenty-eight injections of rabies vaccine are required to produce immunity against rabies in man and this protection lasts only a year, the single injection used for canine immunity would seem a priori to be absurd. Even if the protection afforded by a single injection of vaccine against rabies in the dog were efficient, this method in practice would be most unsatisfactory. It is impossible to get dog owners to vaccinate more than a fraction of their animals. The careless and irresponsible ignorant owners of dogs are the very ones who neglect vaccination and when the period of supposed immunity has elapsed few owners have their dogs revaccinated. It is also often uncertain whether dogs have been vaccinated or not, as the animals often lose their tags. Cases of rabies in dogs have continued hereabouts during the period of vaccination. Some 132 cases of ascertained rabies in dogs have occurred in Seattle and vicinity since 1932 and about 5,000 dogs have been vaccinated in the same area during this period. Recently the health authorities have gone back to the old method requiring dogs to be muzzled or leashed and ordering dogs not so cared for to be picked up by the police. You would indeed render a valuable service if you could supply some experimental evidence concerning the single prophylactic vaccination of dogs against rabies. If there is no such evidence available as you say, this method appears to be a very dangerous and unscientific mode of protection for dogs or man against this invariably fatal and horrible disease to be officially adopted by government authority. Would you kindly express your opinion freely on this important matter?

KENELM WINSLOW, M.D., Seattle

ANSWER—From the statements in this communication there does not seem to be any question about the inadequacy of the preventive measures against canine rabies as practiced in the state of Washington at present. The experimental work on vaccines against canine rabies is reported by Schoenning, H. W. Experimental Studies with Killed Rabies Vaccines, *J. Am. Vet. A.* 76:25 (Jan.) 1930. Prophylactic Vaccination of Dogs Against Rabies, *ibid.* 78:703 (May) 1931. These articles contain the reports on work carried out in the Pathological Division, Bureau of Animal Industry, U. S. Department of Agriculture. As vaccination against rabies still is in the experimental stage, there must be no relaxation but rather increasingly effective enforcement of the essential, standard control methods of licensing, quarantining, and the impounding and destruction of stray dogs. The experience in England and the Scandinavian countries shows that canine rabies can be controlled and eradicated by such methods.

TREATMENT OF SNAKE BITE

To the Editor—Would you kindly inform me if the following procedure is still advocated in a case of snake bite (quotation from handbook for boys Boy Scouts of America). Quickly make the wounds bleed by opening each fang hole with an x-shaped cut made by a sharp knife. Please omit name and address.

M.D. Iowa

ANSWER—The first thing to do is to apply a tourniquet above the snake bite if it is on the extremity so that this is possible.

The wound should be cut open at once with a crucial incision, some of the tissue may even be cut out if done by a physician, and suction applied.

The tourniquet should be loosened for a few seconds every five minutes so as not to interfere too much with the circulation, and this also permits the venom to pass slowly into the system. This procedure should be kept up for an hour or more.

Alcohol is injurious after snake bites.

The venom has little effect when swallowed.

The injection of a solution of chlorinated soda into and around the site of the bite will diminish the toxicity of the venom. Also the injection of the salts of gold, mercury and zinc around the wound have given better results than permanganate or other oxidizing agents. They must be injected

before a lethal dose has entered the system, but if given in too large doses they may do harm by increasing tissue necrosis. A polyvalent serum against the rattlesnake, copperhead and water moccasin has been accepted by the Council on Pharmacy and Chemistry. It should be injected at once or within twelve to twenty-four hours if possible. Part of the serum should be injected around the bite and the remainder higher up under the skin and in the muscle. If the patient is not better within four hours, the injection should be repeated. Ammonia water given subcutaneously is of value in doses of from 1 to 2 cc to control shock, but other stimulants also may be given.

DECAY OF TEETH AND CALCIUM METABOLISM

To the Editor—A girl aged 15 years apparently has been on a perfectly well balanced diet all her life and the blood calcium at this time is 11.1. In the last six months several of her teeth have become decayed and the enamel on her teeth is thinning out and losing its lustre. Her dentist thought that she probably had some calcium deficiency, but her diet is adequate and a check up on the blood calcium proves that it is within normal limits. This is the second patient that I have had in this territory in the last two or three years with this complaint and I am wondering whether you can give me any light on the question.

E. M. KERSTEN M.D. Fort Dodge Iowa

ANSWER—The age of the patient is that of one of the periods of greatest susceptibility to dental decay coincident with rapid growth and general readjustment of metabolism. A blood calcium of 11.1 mg per hundred cubic centimeters of blood plasma is within the normal range, though toward the high side. This may be deceiving, as it is no assurance of a positive calcium balance, since the level of the blood calcium is presumably controlled by the parathyroid secretion and this favorable blood picture may be preserved by an active parathyroid depletion of the calcium reserves in the bones rather than by ingestion from the gastro-intestinal tract. The high calcium level of the blood is rather suggestive under these circumstances of just such a condition. It is possible even with a "perfectly well balanced diet" that mineral metabolism is faulty and that absorption of calcium from the food is not proceeding rapidly enough to balance the demand for calcium for growth and that lost through elimination. In spite of many assurances to the contrary it is debatable as to just how much this and similar cases may be benefited immediately by treatment, since the etiology of dental caries is not wholly clear. Because of great susceptibility to decay extraordinary precautions should be taken, frequent visits to the dentist and prompt filling of each cavity in such a way as to inhibit local recurrence, vigorous use of the mouth in chewing careful attention to brushing the teeth each time after eating and a diet well fortified with minerals and vitamins are recommended. Carbohydrates should be reduced to a level barely sufficient for energy requirements.

NONSURGICAL TREATMENT OF SENILE HYPERTROPHY OF PROSTATE

To the Editor—Is there any nonsurgical treatment that would be of benefit in cases of senile hypertrophy of the prostate or of its prominent symptoms of increased frequency of urination and especially nocturia? In other words is there anything that might be of benefit in some cases of hypertrophied prostate in the use of drugs heat or cold diathermy massage, ultraviolet or electricity? Please omit name.

M.D. Virginia

ANSWER—The use of heat, drugs and massage has a definite place in the treatment of senile hypertrophy of the prostate. These forms of treatment are only palliative. They are never curative. Many times they relieve frequency of urination, burning and pain. The massage treatments should be carried out about once or twice a week, depending on the amount of pus present in the strippings and also on the amount of relief the patient obtains from the massage. The massage should be done carefully and gently, the production of pain being avoided, with avoidance also of blood at the external urethral orifice after massage. Heat may be used through one of the various instruments designed for that purpose either through a prostatic tube or by means of an electrical prostatic heater. Patients are generally more comfortable and obtain more relief from heat than they do from applications of cold. Diathermy has not proved very satisfactory. Many patients obtain relief from this program. On the other hand the patient with senile hypertrophy of the prostate who has symptoms is headed for surgical relief and this may be obtained in a relatively simple way by means of a transurethral electrical resection. This new method carries with it an exceedingly low mortality rate and the period of hospitalization is short, varying from five to eight days.

One might be justified in advising the patient to use heat and massage for a period of three months, or perhaps six months, and if the desired relief is not obtained he should have a transurethral electrical resection of the prostate.

DIAGNOSIS OF SYPHILIS AND SYPHILOPHOBIA

To the Editor—A dentist gives a history of an innocent infection of his finger with a two plus Wassermann reaction about eighteen years ago. He received four or five injections of arsphenamine (or neo arsphenamine) and four or five gluteal injections of corrosive mercuric chloride. He also took some mixed treatment orally for a while. Blood Wassermann tests made annually since that time have remained negative. He lives in fear of tertiaris developing although so far he has apparently been in good health. He refuses a spinal test. Kindly let me know whether he can be considered cured or what the chances are of his developing tertiary symptoms. He is about 43 years of age. Please omit name.

M.D. New York

ANSWER—The diagnosis in this case is open to criticism for one two plus Wassermann reaction is an entirely inadequate basis for a diagnosis of syphilis. Even a strong positive result would require repetition if the diagnosis had to rest on the Wassermann reaction. If repeated tests show weak or doubtful reactions, the case should have been observed for a time in expectation of further clinical evidence. At the present time, however, it would be a great injustice to the patient to admit any doubt of the diagnosis. He must be considered to have had syphilis and suspected of still having it. It is imperative that a thorough clinical examination of the central nervous system be made, with a careful study of the spinal fluid, to rule out the possibility of hidden infection. In spite of the repeatedly negative blood tests, a general physical examination with particular attention to the possibility of syphilis, should also be made. If no evidence of syphilis is found, he may be considered cured.

This may not satisfy his fears, for a man of medical education who fears tertiary involvement and yet refuses a spinal fluid test cannot be considered normal mentally but must be classed as having syphilophobia. Mental treatment is needed. These cases are hard to handle. If nothing else succeeds it may be permissible in some cases to give a mild course of iodides with mercury or bismuth preparations with the understanding that this treatment is given solely for its mental effect.

TREATMENT OF DEMENTIA PARALYTICA

To the Editor—A man aged 39 married but separated from his wife and in excellent physical condition has had syphilis for at least ten years. Four years ago mental symptoms appeared. Antisyphilitic treatment was begun in the summer of 1930. During this treatment the patient had to be institutionalized for his mental condition. At that time the blood Wassermann reaction was 4 plus and the spinal fluid showed marked traces of globulin 12 cells and a trace of dextrose. The Wassermann reaction with 0.2 0.4 0.6 and 0.8 cc was negative. The colloidal gold test was 4444322000. The gum mastic test was positive. The Takata-Ara test was positive. Malaria was given and the patient had eight chills. He improved both mentally and physically during his stay at the institution. In November 1930 a tryparsamide course was begun in May 1931 the blood Wassermann reaction was 3 plus with noncholesterolized antigen and 4 plus with cholesterolized antigen. The same month a second course of tryparsamide was begun. The blood Wassermann reaction in October 1932 was 1 plus with noncholesterolized antigen and 3 plus with cholesterolized antigen. The patient was given in January 1934 a third course of tryparsamide. The treatment was discontinued after 10 Gm was given because ophthalmoscopy which the patient allowed for the first time revealed a pale left eyeground with a somewhat paler optic disk. The patient cannot discern the number of fingers held before his left eye. The right eye is still fairly good. I should like to know what in your opinion is the proper course of treatment to follow. His condition at present is very good physically. Mentally he has been improving at a rate and somewhat weakened. The left arm and leg are very ataxic and somewhat paralyzed. The right arm and leg are very ataxic and somewhat paralyzed. In view of the fact that the alaxia seems to be getting worse. It is possible that the completion of the third course of tryparsamide may cause a loss of vision in the right eye. The patient will not allow proper examination so that the optic disk in the right side cannot be seen. The patient is still institutionalized and can be kept in bed as long as is necessary. What treatment do you advise? Kindly omit name.

M.D. New York

ANSWER—Obviously the outlook for the patient is not good, as he has had considerable treatment without complete recovery. One would suppose that the probabilities are that he has reached the maximum of improvement possible. At any rate one is certainly not able to use any of the arsenicals with any degree of safety. Possibly some further indication as to the outcome could be obtained from examination of the cerebrospinal fluid at the present time. Should this be negative one

would have good evidence to assume that treatment could accomplish but little. If, on the other hand, it should be strongly positive, one would feel that fever therapy was the only available therapy that could be given, either in the form of another course of malaria or by diathermy.

URTICARIA HIEMALIS

To the Editor—About two months ago while riding on a railroad velocipede in the open I noticed a rather marked symmetrical swelling of all the fingers. This subsided after three or four hours in a warm room. The swelling appeared like the wheals in urticaria being red at first and then blanching. There is some burning and itching of the parts exposed to the cold wind. When I take a piece of ice in my hand an urticarial-like lesion appears promptly. Now the swelling appears in the ears, the face or any part that is exposed. At present there is slight tingling in the fingers. My general health is excellent and no other symptoms are noted. Exposure to cold has been less this winter than ever before. By wearing warm gloves and rubbing my hands often I can prevent the condition in my hands. I am guessing that this is a case of cold allergy. Will permanent enlargement of the parts be likely if the lesions are caused to appear two or three times each day? Is there any cause for cold allergy besides exposure to cold? What is the treatment if any other than change to a warm climate? In my work I travel on an open railroad velocipede each day and prevention of exposure of some parts to cold wind is almost impossible. Would a focus of infection in the appendix or prostate be likely to influence the condition?

WILLIAM S. HARGAN, M.D., Worley, Ky.

ANSWER—The case here described is a typical case of contact allergy caused by cold, described by Duke as urticaria hiemalis (Urticaria Caused Specifically by the Action of Physical Agents, *THE JOURNAL*, July 5, 1924, p. 3).

Repeated reaction in the hands and face, caused by exposure to cold, will cause in the course of time organic changes in the skin. Exposure of a large part of the body to low temperatures, especially between 5 and 15 C., can cause a dangerous or even fatal reaction. Such a reaction could be encountered on a motorcycle trip when the outside air is at the temperatures mentioned or by swimming in cold water. The dangers to cold-sensitive individuals caused by swimming has been described in an editorial (Cold Allergy and Drowning, *THE JOURNAL*, Nov. 18, 1933, p. 1644). Shock symptoms such as these can be relieved with epinephrine. Local symptoms can be prevented by rubbing the hands briskly together, as mentioned. This serves to dilate the skin vessels and prevents abnormal cooling of the surface tissues. A slower reaction of this sort can cause what is known as chilblains. A certain degree of tolerance can be obtained for cases of this sort by ice rubs given by a person who understands this work.

Removal to a warmer climate and a change in occupation may be helpful.

ASTRINGENT SENSATION IN MOUTH

To the Editor—A woman aged 62, unmarried, of keen intellect and a high degree of culture (university professor) was exceedingly well and vigorous until sixteen years ago when she undoubtedly contracted amebiasis while on a visit to Mexico. Since that time she has had vigorous and prolonged treatment and is free from that infestation as I am convinced by microscopic sigmoidoscopic and therapeutic tests. Although there has persisted an intermittent looseness of the bowels. The patient complains bitterly of an astringent sensation of the mouth which has been very persistent since February of last year. She describes this as if she had eaten persimmons. It sometimes sets in suddenly after eating and in a very aggravated way. There is no apparent relation to foodstuffs except that she cannot tolerate milk. There is a noticeable accumulation of tartar and the teeth require frequent cleaning. Correction of dental defects has had no effect in relief. Sometimes there is a noticeable dryness of the mouth. During this period of eleven months there has been a noticeable increased nervous exhaustion, loss of appetite and loss of weight (15 pounds or 7 Kg.). Stimulation with insulin, ultraviolet radiation, halibut liver oil and thyroid extract by turn have been of no avail. It is to be remarked that thyroid extract in a dosage varying from 1/2 to 1 grain (0.03 to 0.065 Gm.) daily over a prolonged period has not increased the pulse rate of approximately 64. A stasis in the ileum twice demonstrated by roentgen examination could possibly be attributed to adhesions following appendectomy several years ago but there is no pain or tenderness. I am particularly concerned about the explanation of this very troublesome sensation of the mouth and inquiry is directed to that.

CARY A. POINDEYTER, M.D., Crystal City, Texas.

ANSWER—The clinical picture presented in this case suggests several possibilities in diagnosis and the further suggestion that treatment should be the usual treatment for the diagnosis finally arrived at. Except indirectly the former amebic infection would have no relation to the present condition. The residual damage from the amebic infection in the large intestine might be a factor as noted below. There must be considered (1) the possibility of food allergy, which should be worked out by the use of elimination diets. (2) the possi-

bility of xerostomia in a modified form, (3) the possibility of the entire condition being due or partly due to a pure neurosis, and (4) a condition occasionally seen clinically in which there is a more or less indefinite relation to disturbances of physiologic function in the large intestine. Attention to avoidance of any type of irritation of the large intestine, possibly with the attempt to change the bacterial flora, often gives improvement. This suggestion deserves especial attention in this case because of the ileac stasis and probable adhesions.

SYPHILIS

To the Editor—A man aged 26 with a chancre (positive dark field) and four plus Wassermann reaction was given twelve injections of neoarsphenamine. He weighs 150 pounds (68 Kg.) and his physical examination other than the chancre and inguinal adenopathy is negative. He was given 0.3 Gm. of neoarsphenamine two days later 0.45 Gm. two days later 0.6 Gm. and then 0.6 Gm. every seven days until a total of twelve injections had been given. The chancre started to heal at once and was completely healed after the fourth injection. Following the last injection he developed itching of the feet but no rash and a sense of heaviness in his legs especially after moderate exercise. The Wassermann reaction was still four plus. He was immediately started on mercury rubs six times a week. To date he has had eighteen rubs. The itching has somewhat diminished but the sense of weakness of the legs persists. Is this due to the injection or treatment? Careful examinations of the urine show no signs of kidney irritation. It is my plan to give between forty and sixty rubs and then return to neoarsphenamine or bismuth arsphenamine sulphurate. Is this treatment to date in accord with the latest conception of therapy? Is there any way of speeding up the treatment? The patient read somewhere that the use of mercury increases the incidence of tabes dorsalis and is reluctant to take mercury on this account. Is there any foundation to this belief? If so what would you suggest I use in place of mercury? Please omit name.

M.D., New York.

ANSWER—Itching of the feet is one of the danger signals occurring in the course of arsphenamine treatment and may be the forerunner of an impending arsphenamine dermatitis. A sense of heaviness or weakness in the legs may indicate nothing more than a mild degree of intolerance to arsphenamine. On the other hand, it may be an early symptom of an arsenical neuritis. If associated with a high cell count and a positive Wassermann reaction in the spinal fluid it might be interpreted as evidence of an early syphilitic cerebrospinal involvement or a neurorecurrence. The treatment of early syphilis with a combined therapy consisting of alternating courses of one of the arsphenamines with a heavy metal is in accord with the latest conception of therapy. Many syphilologists prefer bismuth to mercury and a course of eight or ten intramuscular injections of bismuth salicylate once weekly is frequently given. However there are many clinicians who still use mercurialunctions. There is no way of speeding up the treatment unless one wishes to use the method advocated by Schamberg of giving neoarsphenamines intravenously in doses up to 0.3 or 0.45 Gm. and a bismuth compound in doses of 0.2 Gm. intramuscularly on the same day. There is no foundation for the belief that mercury increases the incidence of tabes dorsalis. From three to five in every hundred syphilitic patients get the disease. Tabes may have been more frequent before the arsphenamine era when mercury and the iodides were used exclusively in the treatment of syphilis. Comparative statistics are difficult to obtain.

INDUSTRIAL HAZARD OF SPOT WELDING

To the Editor—I have under my care a man aged 23 who presents all the signs and symptoms of chronic arsenic (arsine gas) poisoning—pallor, nausea and vomiting, headaches and anemia—and gives a history of working at spot welding until he became too ill to work. The urine is heavily loaded with albumin. White blood cells number 10,000, red blood cells 2,500,000. Examination of the urine is negative for tubercle bacilli. The blood Wassermann reaction is negative. He also has a systolic murmur. The blood pressure is 160 systolic, 100 diastolic. Treatment has consisted of heavy doses of nephritin tablets and the intravenous use of sodium thiosulphate (10 cc.) weekly of which he has had three. About twice a week he develops headaches that are so severe that he requires hypodermic medication. None of the other sedatives that I have tried seem to help. I have alternated pantopon, morphine and codeine (in heavy doses) but would like to find something else to use or do to relieve them if possible. He has nausea and vomiting spells with the headaches. Is there any other management necessary or that you could suggest (other than diet) to aid him? Please omit name.

M.D., Ohio.

ANSWER—Spot welding with electrical apparatus is an unlikely source of arsenic poisoning unless there are special qualities about the metals employed or unless the welding is done with acetylene torch methods rather than electric currents. Acetylene gas occasionally contains arsenic as an impurity that originated in the materials from which the acetylene was produced. It would seem to be necessary that real exposure to arsenic at work or other places be established before a diag-

nosis of arsenic poisoning can be made. It is suggested that the hair obtained from a hair cutting of the head be analyzed for its content of arsenic. Something may be gained by an analysis of the urine for its quantity of arsenic content. Both the hair and the urine may normally contain arsenic, for which reason significance is to be attached only to amounts above the normal limits. Although the manifestations listed in the query are compatible with the diagnosis of arsenic poisoning, it appears that certain other striking features should be present such as inflammation of the upper respiratory tract, difficulty in breathing, neuritis, skin disorders and paresthesia. Instead of specifying precise medicaments, emphasis in this reply is placed on a more thorough quest as to arsenic exposure and for other etiologic factors that possibly may be the cause of the condition.

USE OF MORPHINE AND ATROPINE

To the Editor—May I ask the physiologic basis for the use of morphine and atropine in combined dosage? Apart from their being physiologic antidotes is there any reason why atropine should be combined with morphine when one is seeking the effects of morphine in pneumonia or other acute phenomena? Where can I find authoritative opinion or work bearing on the combined use of these two drugs? Certain textbooks in pharmacology such as Cushny state that morphine is a respiratory depressant. Does he refer to therapeutic doses? Is this depressant effect a contraindication to its therapeutic use in pneumonia and is it modified by the combined use with atropine? Authorities seem to differ regarding the therapeutic use of morphine in lobar pneumonia. Thannhauser of Germany for example states that morphine should be used only with venesection in pulmonary edema—in small doses—and holds that otherwise it is contraindicated. I have used morphine when indicated in pneumonia for many years with very satisfactory results. I can find little or no comment advising its use in textbooks or the literature and want to know what the best informed clinical opinion is in its bearing on this subject. In the consolidation of pneumonia during the hepatized stage when resolution and absorption are to be desired to what extent is the use of atropine indicated or contraindicated? Kindly omit name. MD New York

ANSWER—Morphine depresses respiratory functions especially the cough reflex, in all doses. Doses as low as 2 mg of morphine sulphate have a quieting effect, and 6 mg has a decided effect. This is explained by a direct effect on the respiratory center.

Small doses of morphine salts that quiet respiration would not be contraindicated in pneumonia and might be of benefit especially if there is an embarrassing cough which always adds a great strain on the heart. If given mainly for the cough, codeine may be preferable since its main effect is to lessen coughing usually without the constipation, itching or drowsiness that occur with the use of morphine.

When to use morphine or its derivatives in pneumonia is a debatable question. One finds that equally eminent physicians have different opinions. The following statement by Cohen and Githens (*Pharmacotherapeutics* New York D Appleton & Co, 1928 p 1693) is as conservative and as authoritative as the conditions permit. At one time morphine was held to have a restraining or even jugulating effect in lobar pneumonia if injected at or shortly after, the time of chill and many physicians still employ it from time to time during the course of the malady to assuage pain, check cough or induce sleep. The better plan however is to avoid its routine use at any stage in the evolution of the pneumonias. If the sedative influence of opium should seem imperative to afford needed rest in an individual instance codeine by mouth in a sufficient dose is commonly to be preferred and injection of morphine to be restricted to cases in which nought else will avail. Bastedo (*Materia Medica and Therapeutics* 1932 p 442) says that morphine in pneumonia has frequently precipitated edema of the lungs.

Since morphine is used not as a cure but to relieve pain and to give rest, there is no necessity for the use of atropine. Austrian (in *Tice's Practice of Medicine* 1925) says that atropine is valuable in the treatment of pulmonary edema.

Many physicians of large experience give morphine as soon as the patient is restless both to protect the heart and to improve respiration. The quieting effect rests the heart and while respiration is slowed they believe that the slower deeper respirations give better ventilation than the quicker and shallower ones. When restlessness, pain and cough endanger cardiac reserve Austrian advises from one-fourth to one-half grain (0.016 to 0.032 Gm) of ethylmorphine hydrochloride with each dose of digitalis enough to keep the patient digitalized. In any case when simple sedative measures fail to give rest opium and its derivatives powder of ipecac and opium from 0.3 to 0.65 Gm or codeine from 0.016 to 0.03 Gm is of great value not only in relieving pain but in promoting relaxation and sleep (Austrian).

Morphine and atropine are synergistic in producing narcosis. The synergism is greater with scopolamine than with atropine. Scopolamine is closely related to atropine but is less exciting and has a greater tendency to produce drowsiness. The combination of scopolamine with morphine has had considerable vogue in the production of twilight sleep. Some of the unpleasant effects of morphine are said to be minimized by atropine. The two are combined in the proportions of from 0.4 to 0.6 mg of atropine sulphate with from 8 to 16 mg of morphine sulphate. Each drug apparently exerts its own action, as given in any textbook of pharmacology.

To give atropine as an antidote for morphine, so far as man is concerned, would seem absurd. The experimental work on animals is contradictory, varying with the animal used and with the dose. Antidotal effects are obtained only with small doses, which need no antidote. The idea that morphine and atropine are antidotal in man probably arises from the contradictory animal experiments and from the custom of giving atropine with morphine preparatory to surgical anesthesia. It is given in such cases not as an antidote but to lessen mucous secretion during the anesthetic. At the same time, by paralyzing the vagus endings, the likelihood of arrest of the heart by reflex shock is decreased. Atropine is to some extent a respiratory stimulant but this is weak and would have little effect on the depression caused by morphine. In fact it would add to the depression. Authoritative opinion on the effect of the two drugs on respiration is given by Cushny in *Heffter's Handbuch der experimentellen Pathologie* 1924 page 605 and by Solimann (*Pharmacology* 1932 p 382).

We know of no indication for the use of atropine in any stage of pneumonia. However if conditions arise indicating its use we know no reason why it should be withheld. It should be remembered however that it causes dryness of the mouth and throat, thirst, difficulty of swallowing, dryness of the skin, rapid heart and often nausea, headache and giddiness, thus aggravating the discomfort already present. Since many physicians give digitalis in pneumonia atropine by paralyzing the vagus endings would tend to antagonize the effect of the digitalis. The two should not be given jointly.

In cases in which renal or gallbladder colic develops, atropine would be a distinct addition to morphine therapy. In such cases it acts by paralyzing the parasympathetic nerve endings to smooth muscle thus lessening the painful spasm.

CASTRATION VASECTOMY AND PROSTATIC HYPERTROPHY

To the Editor—I should like to have your opinion on the following points. An old method of treating prostatic hypertrophy was castration. Of course this never met with the favor of the patient although the results were often good. Now before prostatic work a vasectomy is done to forestall an epididymitis. How much does a simple vasectomy influence the prostatic condition? Should all the vessels both arterial and venous of the cord plexus be cut? Why would this not be equivalent to an orchidectomy? What effect would this have on the testicle? Would gangrene ensue or would it be a simple atrophy? What is our friend Brinkley doing? He is doing something of this sort. I did this operation once on a senile patient unknown to him to calm a violent sexual mania. The operation was entirely successful. How safe is this operation?

F T BRENNER MD Quincy Ill

ANSWER—The older method of treating prostatic hypertrophy by castration was abandoned not alone because it did not meet with favor by the patient but because it failed to give relief of the obstruction in too many cases to warrant so mutilating a procedure.

If a method of treatment that is intended to shrink the entire gland could be employed its exposure to high voltage roentgen or radium irradiation should be successful, not to mention suprapubic drainage of the bladder which is sometimes followed by the most marked diminution in the total size of the gland. Unfortunately, it is not the diffuse hypertrophy of the gland that causes the obstruction but only that small part of it which impinges on the urethra.

At times this portion is comparatively small, consisting of but 2 or 3 Gm of tissue but if properly located may cause complete retention while in another case a huge diffuse enlargement if it does not encroach on the urethra will result in little if any urinary obstruction.

Any rational therapy therefore must be directed against the removal of the portion of the gland causing the obstruction instead of against the entire gland. For this reason the new methods of transurethral resection of the obstructing tissue are meeting with much success.

A simple vasectomy in no way influences the portions of the prostate that are causing the urinary obstruction and hence is useless as a therapeutic measure for its relief. When it is performed the arterial and venous vessels should not be cut

but simply the vas deferentia. Cutting of the vessels of the spermatic cord will usually lead to atrophy rather than gangrene of the testis. Such atrophy should be avoided, as few men, even of advanced years, care to be emasculated even indirectly. When employed for the treatment of a sexual mania, it may be justified. Vasectomy under sterile precautions is without risk and by many is considered an office procedure. Brinkley is said to employ it as a method of treatment for urinary obstruction the result of prostatic hypertrophy.

TREATMENT OF AMEBIASIS

To the Editor—Will you please tell me what you consider the most effective treatment to date for amebiasis? We frequently see it down here. I have used emetine hydrochloride by needle Anayodin. There is Lilly's preparation on the market also another new chemical. Please give me your opinion. What do you think of Plasmochin (Merck) and Atabrine (Winthrop Chemical Company)? I have always used the standard quinine treatment with success but there are a great many objections to it.

B O LeBLANC MD St Gabriel La

ANSWER—According to a group of investigators in California and another group in India, both widely experienced in the treatment of amebiasis, Carbarsone (Lilly) is one of the most efficient remedies in this disease so far tested. However, many cases prove refractory to this as well as to the other remedies. Vioform-Ciba is claimed by the California group also to be high in efficiency, but this drug is said to be less effective than Carbarsone. Alternating courses of Vioform and Carbarsone are claimed to have given good results.

The present consensus is that emetine should be used only to control the symptoms of severe acute amebic dysentery and in liver abscess (or amebic abscess of other organs). Even small therapeutic doses of emetine have occasionally caused severe damage to the heart and other organs. Acetarsone-N N R is reported to be more toxic and less effective than Carbarsone. Patients must be watched carefully for signs of arsenic toxicity when using either of these compounds. Good results have been obtained with Chimofof-N N R ("Yatren" "Anayodin") in sufficient dosage, this drug has been said to be less effective than Vioform, a closely related compound. Vioform has the advantage over Chimofof that it does not cause diarrhea. However, clinical experience with Vioform has not yet been sufficiently extensive to determine its actual relative merit as an amebicide. Fairly good results have been reported by Indian workers with kurchi alkaloids, but Leake and his collaborators were unable to confirm this work. THE JOURNAL knows of no evidence for the usefulness of Plasmochin or Atabrine in amebiasis.

"Anayodin" is a proprietary name for a Chimofof-N N R, marketed by Ernst Bischoff Company, Inc. The Council on Pharmacy and Chemistry was obliged to declare Anayodin inadmissible for New and Nonofficial Remedies because it is an unoriginal preparation marketed under a noninformative name without an adequate statement of composition, because no evidence is available to show that its identity and uniformity are adequately controlled, and because it is marketed with therapeutic claims that are unwarranted. Two brands of Chimofof stand accepted for inclusion in New and Nonofficial Remedies, namely, that of G D Searle & Co and that of the Winthrop Chemical Company. These have been examined in the A M A Chemical Laboratory and found acceptable. The Winthrop brand was formerly known as Yatren but the firm has agreed to discontinue the use of this name.

Whichever drug or combination of drugs is used it must be employed in sufficient dosage over a sufficient length of time with due regard to necessary rest periods to avoid toxic manifestations. The result should always be checked by careful and repeated examinations of the stool for *Endamoeba histolytica*.

Chimofof, Vioform, Acetarsone and Carbarsone stand accepted for New and Nonofficial Remedies.

NO NERVE CELL DEVELOPMENT AFTER BIRTH

To the Editor—Is there any evidence to show that additional nerve cells are produced after birth?

L A CROWELL JR MD Lincoln N C

ANSWER—In the white rat, Allen (*J Comp Neurol* 22 547, 1912) found that mitosis continued after birth in the spinal cord for twelve days and in the cerebrum for twenty-five days. But the white rat is born in an immature state and these observations cannot be taken as evidence that the same would hold true for the child. We have been unable to find any record of similar observations on human material but judging

from the more mature state of the child at birth it would seem probable that in the human central nervous system mitosis ceases about the time of birth.

COMPRESSION FRACTURE OF LUMBAR VERTEBRAE

To the Editor—Please outline for me the best recognized and used methods of treating compression fracture of the lumbar vertebrae in an adult. There are many methods outlined in textbooks and journals and I am at a loss to know which method is best to follow.

P T KILMAN MD, Malakoff Texas

ANSWER—Much progress has been made during the last decade in the treatment of fractures of the spine. This is due chiefly to the contributions of J O Wallace (*J Bone & Joint Surg* 5 28 [Jan] 1923), A G Davis (*J Bone & Joint Surg* 11 133 [Jan] 1929, *Am J Surg* 15 325 [Feb] 1932), W A Rogers (*Surg, Gynec & Obst* 50 101 [Jan] 1930), R Watson Jones (*Brit M J* 1 300 [Feb 21] 1931), Dunlop and Parker (*THE JOURNAL*, Jan 11, 1930, p 89, *Radiology* 17 228 [Aug] 1931) and Bohler.

A comprehensive, simple outline to follow, is to transport the patient with his face downward, transfer him to a Rogers hyperextension frame, administer an anesthetic, accomplish gradual hyperextension, apply a plaster-of-paris cast, and if necessary perform a fusion operation through a window in the cast.

No one method can be used for all types of spinal fractures. Each case demands individual treatment.

Davis stated that the procedure of reduction and the making of his plaster shell requires an hour and a half. There was an average period of seven weeks of shell treatment, followed by an average of six more weeks of convalescent ambulatory treatment with a hyperextended Taylor brace or jacket.

Complete reduction of fresh crush fractures is possible when adequate hyperextension and fixation have been accomplished. Several adequate methods of hyperextension are now available. R Watson Jones advocates a method of reducing crush fractures of the spine that appears safe and simple.

Dunlop and Parker described a method of forcible extension during traction producing decompression and reduction. The patient is given a general anesthetic, strong traction and countertraction arc obtained by having two assistants pull downward on the ankles, while two others pull strongly upward on sheets crossed beneath the shoulders and over the chest. A sheet is folded to a width of 8 inches and is passed beneath the injured segments as the patient lies on his back. Then by means of this sheet the operator and his assistant toss the patient straight upward and catch his weight while he is still in hyperextension. Strong traction is maintained through this maneuver. After decompression has been accomplished the reduction is maintained by placing the patient in marked hyperextension on a Goldthwait frame while he is still completely relaxed. A cast is then applied.

In his most recent contribution, R Watson Jones reports the results of treatment of eighty cases of crush fractures of the spine by his own method, which requires no special apparatus, no skilled assistants, no manipulation of the spine and no anesthetic. The treatment is ambulatory throughout. The only contraindication to his hyperextension treatment is the very rare comminuted hyperextension fracture of the vertebral body.

No mention was made in the query of spinal cord symptoms.

GLANDULAR CONTROL OF SIZE OF BREAST

To the Editor—I have a patient a Jewess aged 17 who began menstruating at 13 years of age. She is 5 feet 1 inch (155 cm) tall weighs 117 pounds (53 kg) and is well proportioned. The menstrual periods are regular and apparently normal. The basal metabolism is plus 5. A roentgenogram of the pituitary shows a very small sella turcica the anterior and posterior clinoid processes closely approximating each other. She has never been ill except when the tonsils were removed. The trouble is bilateral hyperplasia of the breasts. The breasts began to enlarge at 14 years of age and enlarged rapidly for about one year. Since then the enlargement has been slow. Each breast will easily fill the hat of a man. There is no glandular enlargement in the axilla or the neck. There is no evidence of circumscribed tumor in either, no pain nor tenderness no retraction of the nipple no adherence to the skin. Could this be due to the predominance of the sex stimulating hormone over the growth promoting hormone of the anterior pituitary? Is there any effective treatment other than amputation?

M D, Texas.

ANSWER—Excess production of the gonad and mammary stimulating hormone from the hypophysis will increase the size of the mammary glands even in the mammalian male, but the absence of indications of other disturbed anterior lobe functions and the absence of indications of disturbed ovarian functions seems to render this explanation improbable. There may be unusual sensitiveness of the mammary glands on a hereditary

basis, so that the normal hypophyseal and ovarian factors produce excess response in this particular patient

As to experimental therapy, the following might be tried

1 Without reference to the cause of the unusual breast enlargement, reduction of the breast size might be attempted by continued pressure (taping or strapping) on the basis of pressure atrophy. Such measures should be as continuous as possible and sufficient to reduce circulation markedly through the breasts

2 If a thorough trial of the pressure atrophy principle should prove unsatisfactory, high voltage roentgen therapy of the hypophyseal region might be instituted experimentally with great care, with the possibility that an overactive group of gland cells may be more sensitive to the x-rays than the normally acting gland cells. It is obviously important for so young a patient that injury to the parts of the normally functioning hypophysis be avoided

POLYURIA IN TACHYCARDIA

To the Editor—A woman aged 55 has had recurrent attacks of paroxysmal tachycardia at about weekly intervals. The attacks generally wake her from sound sleep. About ten minutes after the onset she passes tremendous quantities of very pale urine (as much as 3 quarts). After about an hour the heart slows down and the urination ceases abruptly. Following these attacks she feels excessively thirsty and drinks a comparable amount of water. This thirst persists for a day or more. I have been unable to find any explanation for this sudden transient polyuria. Have you any information as to the mechanism of this strange symptom? Please omit name. MD New York

ANSWER—Polyuria during an attack of paroxysmal tachycardia is apparently of infrequent occurrence. Lambert quotes Hart's description of a case in which both diarrhea and polyuria were present during the paroxysm. No explanation is offered. Price comments on the fact that polyuria not infrequently follows a prolonged attack in which there has been impairment of the circulation with congestion, and, on restoration of normal cardiac function diuresis follows.

Lewis says "The patient's symptoms are much influenced by the reaction of the nervous system. Nervous subjects especially women awaken undue anxiety." That apprehension exists with the attack in spite of reassurance and repetition of a favorable outcome is a common observation. That there is a definite neurogenic factor in renal excretion is generally accepted (MacLeod) although the burden of proof has been that the kidneys do not possess secretory nerves. It is frequently noted, however, that under stress of excitement or anxiety diuresis is initiated.

This mechanism then must be a vasomotor effect resulting in an increase of blood flow through the kidney with or without a general increase of blood pressure.

When the heart is anatomically unimpaired, paroxysmal tachycardia, unless extremely prolonged does not alter its efficiency, and circulation is well maintained (Lewis). Reflex phenomena affecting the sympathetic nervous system such as sweating and dilatation of the superficial vessels of the skin commonly occur. It is possible that similar reflex vasodilatation might occur in the kidneys.

While the general blood pressure is usually lowered during an attack of paroxysmal tachycardia, exceptional cases may occur presenting an increased blood pressure.

CODEINE PHOSPHATE IN SOLUTIONS—COLORING OILY SOLUTIONS

To the Editor—1 In the following prescription is there any way to mix the ingredients to avoid precipitation of the codeine present?

℞ Ammonium chloride	Per Ounce
Codein phosphate	8 grains
Chloroform	2 grains
Syrup of prunus virginiana	2 minims
	ad 1 ounce

2 What will color oily solutions red and yellow readily? Please omit name and address. MD Conn

ANSWER—The syrup of wild cherry is responsible for the precipitation which is obviously due to the tannic acid it contains and the formation of a codeine tannate. This can be avoided by using some other syrupy vehicle, such as the syrup of raspberry. Even with such a syrup a temporary precipitation—salting out—of the alkaloid occurs if an attempt is made to dissolve each of the solid ingredients in the smallest amount of water required for solution and then mix these. Although this precipitate dissolves on standing after the addition of the syrup it is probably better to dissolve each of the solids in half of the syrup and then mix the two.

2 For red coloring of oils, alkanet is used, for yellow one might use the ordinary "butter yellow," which is dimethyl-amido azo-benzene

DINITROPHENOL CONTRAINDICATED IN DIABETES

To the Editor—Several diabetic patients are requesting me to prescribe dinitrophenol for reducing. I have not seen an article on the use of this drug when it was advised or not advised to be used in such cases. Have you any opinion on the subject?

S L WEISBROD MD Milford Mich

ANSWER—In the light of the fatal poisoning that has occurred with dinitrophenol, there is little to be said in favor of using the drug for reducing anybody. There are even stronger reasons to oppose the use of dinitrophenol when the patient has diabetes. The tolerance in diabetes is depressed by measures of all kinds that elevate the basal metabolic rate, and this is the action of dinitrophenol. Furthermore, the liver is less able to withstand toxic substances when its glycogen reserves are diminished, as they always are in diabetic acidosis. For these reasons dinitrophenol is distinctly contraindicated in diabetes.

PARAFFINIZATION OF LENIN

To the Editor—I should like to know whether the process whereby Lenin of the Soviet government has been embalmed has been revealed. What probabilities are there if any to your knowledge? Please omit name. MD New York

ANSWER—No record has been found of the process of embalming the body of Lenin. There are many indications, however, that the body was embalmed by infiltration, most likely with paraffin or some similar preparation. Successful paraffinization of large anatomic specimens, including the adult human bust has been accomplished. See Ara, Pedro. The Process of Embalming, *J Technical Methods and Bull of the International Association of Medical Museums* 1934, No 13, page 36.

AMEBIASIS WITH CONSTIPATION

To the Editor—I have a patient who says that amebas have been found in his stools and that he has never had diarrhea. On the contrary he is constipated. Please advise whether this is possible. Is any special dietary restriction necessary in the treatment of such a condition? If so please outline. Please omit name. MD Kentucky

ANSWER—The history given is entirely within the realm of clinical possibilities. If the amebas are positively identified as *Endamoeba histolytica*, suitable treatment with emetine, vioform, chiniofon or carbarsone, or other amebicidal drugs should be instituted. The diet during the course of treatment should be bland.

PROPER CARE OF ORBIT WITH GLASS EYE

To the Editor—I have a patient troubled with a mucopurulent secretion around his glass eye. Will you please send me a prescription for a solution that will inhibit or stop this? He has used the glass eye for several years. Please omit name. MD California

ANSWER—The patient may use saturated boric acid solutions to irrigate the conjunctiva, after removing the prosthesis, two or three times a day, drying the conjunctival sac with a cotton applicator and instilling powdered boric crystals afterward. In addition, 0.5 to 0.75 per cent zinc acetate made up in saturated boric solution should be used four times a day. It is well to have the patient discontinue using the prosthesis for two or three days at a time after which one gets better results with this treatment.

LIVER GROWN

To the Editor—As you probably recall there have been several references in THE JOURNAL in the past few months to the condition called "liver grown." In reading Haggard's *Devils, Drugs and Doctors* page 186 I note a list of causes of death for the week Aug 15 to 22 1665. This seems to be a report of the city of London, England. "Liver grown" appears as the cause of one death column two down five. It is interesting to note the name being used almost three hundred years ago even if we do not know the disease.

RONERICK L HUNTRESS MD South Portland Me

ARSPHENAMINE REACTIONS

To the Editor—Referring to your discussion on Reactions After Arphenamine in *Queries and Minor Notes* in THE JOURNAL May 12 page 1633 may I suggest also that the needles be boiled separate from the syringes and that there be no metal on the syringes. I have found better results from this technique.

HARRY H RICH MD Newark N J

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALABAMA	Montgomery, July 10 13	Sec Dr J N Baker	519
Dexter Ave	Montgomery		
AMERICAN BOARD OF OPHTHALMOLOGY	Butte Mont July 17	Sec	
Dr William H Wilder	122 S Michigan Bldg Chicago		
ARIZONA	Phoenix July 3	Sec Dr J H Patterson	320 Security Bldg Phoenix
CALIFORNIA	San Francisco July 9 12 and Los Angeles July 23 26		
Sec Dr Charles B Pinkham	420 State Office Bldg Sacramento		
COLORADO	Denver July 3 6	Sec Dr Wm Whitridge Williams,	422 State Office Bldg Denver
CONNECTICUT	Regular Hartford July 10 11	Endorsement Hart	ford July 24
Sec Dr Thomas P Murdock	147 W Main St Meriden		
Homoeopathic	New Haven July 10	Sec Dr Edwin C M Hall	82 Grand Ave New Haven
DISTRICT OF COLUMBIA	Basic Science Washington June 25 26		
Medical	Washington July 9 10	Sec Commission on Licensure	
Dr W C Fowler	203 District Bldg Washington		
ILLINOIS	Chicago June 26 29	Supt of Regis Dept of Regis	
and Edu Mr Eugene R Schwartz,	Springfield		
MAINE	Augusta July 5 6	Sec Board of Regis of Medicine	Dr Adam P Leighton Jr 192 State St Portland
MASSACHUSETTS	Boston July 10 12	Sec Board of Regis in Medi	cine Dr Stephen Rushmore 144 State House Boston
MISSISSIPPI	Jackson June 26 27	Sec State Board of Health	Dr Felix J Underwood Jackson
NATIONAL BOARD OF MEDICAL EXAMINERS	The examinations in		
Parts I and II will be held at centers in the United States where there	are five or more candidates June 25 27 and Sept 12 14	Ex Sec Mr	Everett S Elwood 225 S 15th St Philadelphia
NEVADA	Reciprocity Carson City Aug 6	Sec Dr Edward E	Hamer Carson City
NEW YORK	Albany Buffalo New York and Syracuse June 25 28		
Chief Professional Examinations Bureau	Mr Herbert J Hamilton		
Room 315 Education Bldg Albany			
NORTH DAKOTA	Grand Forks July 3 6	Sec Dr G M Williamson	4 1/2 S 3d St Grand Forks
OREGON	Portland July 3 6	Sec Dr Joseph F Wood	509 Selling Building Portland
PENNSYLVANIA	Philadelphia and Pittsburgh July 10 14	Sec Board	of Medical Education and Licensure Mr W M Denison 400 Education Bldg Harrisburg
RHODE ISLAND	Providence July 5 6	Dir Public Health Com	mission Dr Lester A Round 319 State Office Bldg Providence
SOUTH CAROLINA	Columbia June 26	Sec Dr A Earle Boozer	505 Saluda Ave Columbia
SOUTH DAKOTA	Rapid City July 17 18	Dir Division of Medical	Licensure Dr Park B Jenkins Pierre
UTAH	Salt Lake City June 27 29	Dir Department of Registration	Mr S W Golding 326 State Capitol Bldg Salt Lake City
WASHINGTON	Basic Science Seattle July 16 17	Medical Seattle	July 19 21 Dir Department of Licenses Mr Harry C Huse Olympia
WEST VIRGINIA	Wheeling July 9	State Health Commissioner	Dr Arthur F McClue Charleston
WISCONSIN	Milwaukee June 26 29	Sec Dr Robert E Flynn	401 Main St LaCrosse

West Virginia March Report

Dr Arthur E McClue, state health commissioner, reports the oral and written examination held in Charleston March 12-14, 1934. The examination covered 11 subjects and included 110 questions. An average of 80 per cent was required to pass. Four candidates were examined, all of whom passed. Six physicians were licensed by reciprocity and 1 physician was licensed by endorsement. The following schools were represented:

School	PASSED	Year Grad	Per Cent
Northwestern University Medical School		(1933)	89.4
Rush Medical College		(1930)	85
Medical College of Virginia		(1932)	86
Medizinische Fakultät der Universität Wien		(1929)*	83.5
School	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Columbian University Medical Department D C		(1892)	Penna
Johns Hopkins Univ School of Medicine (1924) Md		(1930)	Penna
Medical College of Virginia		(1928 2)	Virginia
School	LICENSED BY ENDORSEMENT	Year Grad	Endorsement of
University of Pennsylvania School of Medicine		(1932)N B M Ex	

* Verification of graduation in process

Minnesota January Report

Dr E J Engberg, secretary Minnesota State Board of Medical Examiners, reports the oral written and practical examination held in Minneapolis, Jan 16-18 1934. The examination covered 12 subjects and included 60 written questions. An average of 75 per cent was required to pass. Twenty-seven

candidates were examined, all of whom passed. Three physicians were licensed by reciprocity. The following schools were represented:

School	PASSED	Year Grad	Per Cent
Northwestern University Medical School		(1933)	87.1
University of Illinois College of Medicine		(1932)	89.3
92 3 (1933) 92			
Indiana University School of Medicine		(1933)	86.2
University of Michigan Medical School		(1931)	89.5
University of Minnesota Medical School		(1930)	86.3
(1932) 88.6 (1933) 85.1 * 86.2 * 86.5 * 86.6 * 87 *			
87.4 * 88.4, 88.5 89.1 * 89.2 90.4 92.5			
Washington University School of Medicine		(1932)	88.1
University of Oregon Medical School		(1932)	92.2
University of Manitoba Faculty of Medicine		(1929)	85.2
Queen's University Faculty of Medicine		(1927)	89.1
(1930) 93.5			
McGill University Faculty of Medicine		(1932)	84.6

School	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Loyola University School of Medicine		(1921)	Illinois
University of Michigan Medical School		(1925)	Wisconsin
Marquette University School of Medicine		(1932)	Wisconsin

* This applicant has received an M B degree and will receive an M D degree on completion of an internship

Book Notices

Diet and Dental Health By Milton T Hanke Cloth Price \$1 after February 1 1934 \$4 Pp 236 with illustrations Chicago University of Chicago Press 1933

The author states that the primary object of the book is to present detailed information concerning studies on dental problems carried out in the laboratories of the Otho S A Sprague Memorial Institute at the University of Chicago by the Chicago Dental Research Club, other collaborators and himself during four years. No attempt is made to give detailed descriptions of studies and theories of other investigators. The subject is approached from the view that disease is a disturbance in metabolism, a reaction of body tissues to and against some unfavorable circumstance, and that dental diseases do not differ fundamentally from other diseases in this respect. Chapters II and III discuss dental structures and the simpler dental diseases. Chapters IV and V deal with the histopathology of scurvy in the guinea-pig. The remainder of the book is devoted to experiences with dental diseases in people. Chapter VI summarizes investigations of the relation of dietary deficiencies to gingival irritation, pyorrhea and dental caries from observations on 191 patients of members of the Chicago Dental Research Club. Chapter VII notes benefits derived from ingestion of an adequate diet. It is postulated that the American diet is deficient in vitamin C and that this may be a factor in dental diseases.

Part II outlines observations on 440 children at "Mooseheart," the City of Childhood of the Loyal Order of Moose at Mooseheart, Ill. This part of the work was financed by the California Fruit Growers Exchange. Chapter IX outlines the plan of study. A group of 341 children were under observation for three and one-half years, which time was divided into three periods: a one year control period in which the children received the standard Mooseheart diet, a one year test period in which one pint of orange juice and the juice of one lemon were given each individual daily in addition to the standard diet, and a recheck period of one and one-half years in which 3 ounces of orange juice was served daily. A control group of ninety-nine children receiving the standard diet but no citrus fruit juice was introduced during the test period to serve as an additional check. The experimental procedures followed during the control period and the results obtained are described. Chapter X gives the observations of the test period, including those on the control group. Chapter XI outlines the observations of the recheck period. The bibliography provides some important published reports on the subject. The appendix presents tabulated data from the observations on the children. A number of plates illustrate the dental and oral conditions discussed.

The general conclusions of the book follow:

1. The average American diet is adequate in calories but appears to be deficient in certain substances requisite to dental health which may be the ultimate cause of much gingivitis pyorrhea and dental caries.

2 Gingivitis and dental caries can occur in the majority of a large group of children receiving a quart of milk, 1½ ounces of butter a pound of vegetables half a pound of fruit and nearly one egg a day. These foods do not therefore contain substances specifically antagonistic to gingivitis or dental caries.

3 The addition of a pint of orange juice and the juice of one lemon to a diet that is nearly adequate in all other respects supplies something that leads to a disappearance of most of the gingivitis and an arrest of about 50 per cent of the dental caries.

4 Dental caries again becomes rampant and gingivitis redevelops in most of the cases when the citrus fruit intake is reduced to 3 ounces a day for one year. This quantity is not enough.

5 Children display a definite tendency toward the development of carious lesions which is nil or low in some cases and high in others. The administration of an adequate amount of citrus fruit juice to a diet that is nearly adequate in other respects reduces the intensity of the caries process but does not completely remove the effects of the inherent tendency in all cases.

6 Orange and lemon juice contain something that acts as a growth stimulus to children.

It is difficult to evaluate this book in a thoroughly objective manner. To the untutored layman, its easy style and satisfying comments bring ready conviction. This is particularly true as its contributions seem to be vigorously fortified by the use of the names of distinguished research laboratories and academic institutions. On the other hand a critical reader will discover not only much that is evasive and frankly debatable but also much that can scarcely claim to be more than possible, if indeed it is within the realm of scientific probability.

The main theses of the book are included in the somewhat surprising statements of paragraphs 2 and 3 of the conclusions quoted.

It is understood that the term gingivitis is loosely used by many writers. Some degree of superficial gingivitis will be detectable in almost any mouth and is readily relieved or managed by routine dental hygienic measures. This is a problem quite different from that presented by true scorbutic gingivitis. There is an implication throughout the book that despite the absence of diagnosed scurvy in the children studied they are subject to a sort of latent or subacute scurvy which makes itself evident in the gingivitis conditions. This is at best an unproved assumption which the author attempts to support by analogy with guinea-pig and monkey scurvy. There is no real scientific evidence anywhere in the book to show that the children examined exhibited comparable scorbutic lesions or that they had any gingivitis of the type associated with human scurvy.

A few surprising features of the book may be briefly referred to. A comparison of plates VI and VII shows the feature D to be reversed in the form of the "curve" in one picture as compared with the other. What can this signify? Regarding plate XIII, all children have such plaques. What of it? The conception of dental diseases as evidenced by Hanke's descriptions is utterly inadequate. Some children are admittedly far more susceptible to caries than are others. The author has not been able to control this. Age is an important factor in the incidence of caries. It decreases as children grow older. This fact the author has ignored. The references to authorities on dental pathology largely overlook some of the best, such as Gottlieb, Orban and Chase.

The author's own uncertainties are exhibited in statements such as the following:

Either the living processes in the dentine of the immature permanent teeth remove the decalcifying agents as rapidly as they seep into the enamel or some change occurs in the oral cavity so that decalcifying agents are either not produced or are rapidly rendered ineffective. It is possible to alter some people's susceptibility to dental caries and this can apparently be accomplished in a number of ways.

The case studies such as the one on page 60 are very inadequate if they are to serve as real evidence.

Judging by the prefatory statement of the members of the Chicago Dental Research Club at the outset, there was conviction as to the outcome even before the tests were made. Apparently all the examinations were made by only two dentists. They could not fail to know when the children were on the test periods. It is difficult to remain objective under such conditions.

The key to the results with caries may be found in table XLII. It is quite as likely that the results recorded if actually dependable, are due to some change within the mouth cavity.

It is an interesting circumstance that all the recent students of caries in children, for instance Bunting, Boyd and Drann

and Agnew, also secured an arrest of caries after they began to work with their patients, although they used quite unlike procedures!

At the opening of chapter II, the author writes:

Dental diseases are not fundamentally different from other diseases but they are comparatively easy to diagnose because the affected tissues are open to observation. Conditions in the mouth are certainly no more complicated than elsewhere in the body; they may indeed be simpler. We need to deal with only a few structures. Treatments local and otherwise may be given and the response if any observed by direct inspection. Inasmuch as systemic disturbances frequently produce changes in the oral tissues it is possible that conditions easily observable in the mouth may be an index of systemic disturbances of which we are only vaguely or not at all conscious. The oral cavity constitutes an excellent region for study.

Although the last sentence is fundamentally correct, the rest of the paragraph is contrary to the opinion of the best students of the subject.

An illustration of the author's dogmatism follows:

Fully formed enamel consists of hexagonal prisms or rods held together by a very narrow band of cementing material. The body of the prisms appears to consist entirely of inorganic salts. The small amount of organic matter to be found in enamel appears to be contained exclusively in a narrow band that makes the dividing line between the prisms.

This is by no means a universally accepted doctrine.

The limitations of Hanke's argument are indicated in the following statement:

The conclusion can probably be drawn that prescurvy in man can lead to changes in the pulp tissue and dentine of human teeth similar to those determined for the guinea pig. The nature of the repair process will also probably be similar. Administration of vitamin C to mildly scorbutic animals leads to a complete repair of the dentine. Diets rich in vitamin C are conducive to an arrest of dental caries in man and the arrest of caries may be due to an increased vitality of the dentine. Howe has shown that monkeys that have been partially deprived of vitamin C develop dental diseases identical with those encountered in man. Frank scurvy in man is grossly similar if not identical to frank scurvy in the guinea pig. The facts presented in this chapter can with a few intelligent reservations probably be applied to man.

This is at best a theory of probabilities. As for the work of Howe, it is believed by many that his monkeys suffered from multiple dietary deficiencies, and nothing is contributed thereby to the caries problem.

The principal criticism of the dietary program is that there are no records for the intakes of individual children. The food supplies are reported in terms of the entire group. There is no assurance regarding the eating habits of the individual child. How can the use of the products in table V, page 79, be evaluated? Certainly this does not represent a daily intake, it represents purchases over a period of time. What assurance is there that 'all of these children were ingesting the same food and they were living under identical conditions. The food and the living conditions cannot, by themselves, then, be the determining factor'.

The author correctly states (p 103) that:

The changes observed during this test period may just as correctly be attributed to the increased adequacy of the diet as to a specific characteristic of the citrus fruit juice.

This is quite different from the impression that is promulgated throughout the book.

The author makes the debatable statements:

The inflammation can hardly therefore be said to have been due to the materia alba or plaque deposits. It is rather more logical to assume that the inflammation is initiated by an impairment in the circulation due in turn to a deficiency in the diet. The results obtained with five children in this group strengthens our belief that vitamin C is an important factor in maintaining the health of the gingivae (p 105).

The addition to the diet of one constituent in which this diet was deficient has produced a change such that about half of the children who had previously been afflicted with dental caries did not develop carious lesions during a one year period (p 109).

Mixtures of orange and lemon juice add several factors to the diet.

What is one to conclude from the statement (p 118):

These children were receiving the standard Mooseheart diet but they were not supposed to (and most of them did not) receive additional orange or lemon juice.

The author states (p 120) that:

The addition of a pint of orange juice and the juice of one lemon to the daily diet leads to an almost complete disappearance of the gingivitis, a 50 per cent reduction in the incidence of dental caries and a marked increase in the rate of growth.

These diets were probably inferior at the start!

On page 121, the author writes

It is immediately apparent that the only major fluctuation in this diet, during a three and one-half year period is in its citrus fruit content. This increases from 0.062 lb in the control period to more than 1.0 lb during the test period and then decreases to 0.28 lb during the recheck period. The amount of citrus fruit ingested during the recheck period is equal to approximately three ounces of orange juice a day which is the amount that is usually considered to be adequate.

To what extent did the citrus fruit juices supply added energy (280 calories a day?) and their vitamin B promote greater intake of other foods?

The author comments on page 137

Whether or not foods other than citrus fruit juices would be equally or more effective in overcoming the inherent tendency toward dental caries is a question that is not answered by our studies.

Apparently the possible variations in sugar, for instance, have not been considered in drawing conclusions. One cannot tell what the effect of 1 pint of orange juice a day was on the food habits of the children.

The theorizing of the author regarding the role of vitamin C in these studies is, like so much else, quite problematic and debatable. There is too much inference that vitamin C is the effective factor. Little recognition is given to other factors.

The book does not furnish cogent evidence for the thesis that orange and lemon juices are specifics for the cure or prevention of gingivitis and caries.

Chronic Nephritis and Lead Poisoning By L. J. Jarvis Nye M.B. Ch.M. Cloth Price 12/6 Pp 145 with illustrations Sydney Australia Angus & Robertson Ltd 1933

For many years there has been much more chronic nephritis among young people in Queensland than in any other area of Australia. The author develops the thesis that lead poisoning among infants and children is the cause of this increased incidence. To prove his contention he examined and here reviews considerable relevant statistical material concerning, for example, the relative incidence of chronic nephritis and of lead poisoning in the various Australian states, the remarkable prevalence of infantile lead poisoning in Queensland, the incidence of chronic nephritis as a sequel to plumbism, the criteria necessary for a diagnosis of plumbism, and other data. In discussing the diagnosis of lead poisoning, he states that occasionally in severe, typical cases, there is no lead in the urine. In particular, Nye studied, over a period of six years, 186 cases of chronic interstitial nephritis among persons less than 40 years of age. Evidence is presented that the sclerosing agent responsible for Queensland's excess of juvenile nephritis was not directly related to scarlet fever, respiratory infections, syphilis or other infectious diseases, or to climatic factors. A large number of the nephritic children studied by the author and by others had sometime previously been treated for lead poisoning. Lead was found in the urine of the majority of these nephritic children, most of whom were addicted to nail biting and finger sucking. If one of several children in a family escaped nephritis, that one was generally found not to be addicted to these habits. Data are given to indicate that the lead absorbed was not from the water supply, home reservoir tanks, sprayed vegetables, utensils or toys but from the lead carbonate available in house paint on veranda railings of Queensland's characteristic frame houses. The paint became readily desiccated as a result of the tropical climate. The author contends that the finger-sucking children introduce this powdered paint into their systems. The chemical and pathologic features of the resultant nephritis are described: chronic interstitial nephritis (arteriosclerotic contracted kidneys of the diffuse sclerotic type) associated with anemia, hypertension, retinal changes and azotemia. While Nye admits, of course, that lead poisoning is not the only cause of chronic interstitial nephritis, and that many victims of moderate lead poisoning probably escape significant renal injury, he concludes that in chronic nephritis among young adults lead is the first etiologic factor to be excluded and that every child suffering from lead poisoning is potentially a victim of chronic nephritis in later life. Recommendations concerning prevention by the use of an improved formula for paint are given. Although the author's researches suggest that the subject is a problem particularly of his own locality, the book should be of considerably more

than local interest, and it may stimulate significant inquiries in other places. If persons with nephritis individually or collectively can be shown by others to be suffering in an appreciable number of instances from related plumbism, the publisher's contentions may be fully justified that as a contribution to medical science this work is "the most important to come out of Queensland since Bancroft discovered the adult filarial worm fifty-seven years ago."

Practical Methods in Biochemistry By Frederick C. Koch Professor of Physiological Chemistry University of Chicago. Cloth Price \$2.25 Pp 282 with 17 illustrations Baltimore William Wood & Company 1934

This is a laboratory manual intended primarily for the use of medical students, for which purpose it appears to be admirably adapted. It is sufficiently complete and so organized that it will be found an excellent book of reference for those interested in the details of biochemical methods. The work is divided into three parts: the chemistry of cell constituents, which includes chapters on carbohydrates, lipins, proteins, nucleoproteins and nucleic acids, and hydrogen ion concentration; the chemistry of the digestive tract, containing sections on salivary, gastric and intestinal digestion and on the bile, the blood and urine, under which heading the author considers blood and hemoglobin, quantitative analysis of blood, quantitative analysis of urine, and chemical examination of urine for pathologic constituents. An unusually detailed appendix contains instructions for the use and care of apparatus and reagents and for the preparation of solutions. This volume is unusually well written, instructions are clear and meticulously accurate, explanatory notes of considerable assistance to students are liberally interspersed throughout the text, the scope of the subject matter is exceptionally broad. These and other features all contribute to making the work easily one of the most valuable textbooks in practical biochemistry now available.

Undersøgelser over de serologiske Blodtype Egenskaber M og N (Landsteiner & Levine) Af Jørgen Clausen (Mit deutscher Zusammenfassung) Paper Pp 104 Copenhagen Levin & Munksgaard 1934

This is a thesis for the doctor's degree. In 1927 Landsteiner and Levine described certain new receptors in human red blood cells which they designated M, N and P. The receptors M and N are well defined and hereditary factors which are present as M, N or M, N consequently can be used to differentiate blood for practical purposes. In his thesis Clausen discusses completely the technique of demonstrating receptors by immunization and purification of the immune serum by means of specific absorption, their heredity, their chief characteristics, their absence outside the red blood cells, their medicolegal significance, and the lack of any evidence that they are of any harm in blood transfusion. The thesis is in Danish, there is a German summary, which is not quite adequate because it tells too much what was done and too little of the actual results obtained.

Review of Legal Education in the United States and Canada for the Year 1933 By Alfred Z. Reed Staff Member in Charge of the Study of Legal Education Paper Pp 67 New York Carnegie Foundation for the Advancement of Teaching 1934

In this review Mr Alfred Z. Reed presents a discussion of the broad topic, "Learned Professions and Their Organization." He specifies three groups that are especially interested in finding their way through the educational labyrinth: the university authorities, the legislatures, foundations and individual benefactors, from whom financial support is derived, and the students who must choose from among the educational opportunities confronting them. "The solution," Mr Reed declares, cannot be delegated to practitioners' associations or coordinating associations. After paying his compliments to the American tendencies toward organization and specialization, the author describes three methods of state regulation of professions. In England, quite generally, specially privileged corporations have been created, livery companies, royal colleges, societies, inns, institutions and institutes, which exercise the function of admitting to practice. At the other extreme a state may provide a professional service directly through the agency of its own officials. Intermediate between these two is the system of issuing individual licenses under governmental authority. A

procedure widely prevalent in the United States. Included is a list of law schools in the United States and Canada segregated into two groups, those requiring full time attendance, of which there are eighty-three, and those which demand only a part of the student's time, numbering 107. Copies of this review and of other publications dealing with legal education may be had without charge at the office of the foundation 522 Fifth Avenue, New York.

La lutte internationale contre le cancer. Par le Docteur Jacques Banda, Directeur de l'Institut de Physiothérapie de Binritz. Avant-propos des Professeurs Ferdinand Blumenthal, A. H. Roffo, C. O. Jensen, C. C. Little, W. V. de Vries, Pietro Gallenga et V. Rubesca. Préfaces du Sénateur Justin Godart, ministre de la Santé Publique et du Professeur Gustave Roussy, directeur de l'Institut du Cancer de Paris. Paper. Price 145 francs. Pp. 947 with 46 illustrations. Paris: Norbert Maloine 1933.

In this volume the author has attempted to review cancer control activities in about fifty countries. The development of the cancer problem in France is given in chronological order and is of considerable historical interest. The author presents a variety of details, including the organization of cancer hospitals, the formation of local, national and international anti-cancer societies, the researches and publications of different authors, the personnel and equipment of cancer institutes and some of their published results. The sources of income and budgets are given and the names and addresses of officials of various cancer societies and organizations are listed. The author has attempted to accomplish a unique and difficult task. He has succeeded in evolving a publication that contains much useful information that is scattered in the literature. Apparently he has not had the opportunity to visit many of the institutions he describes so that the compilation lacks a critical point of view. The volume contains much interesting information and affords a useful guide to any one interested in the problem of cancer control as it is practiced in the various countries of the world. There is probably no other treatise that has attempted to present the same type of material from a similar point of view. The author is to be congratulated on his industry in gathering such an extensive mass of data from widely scattered sources. Those interested in these phases of the cancer problem will find the book a valuable source of information.

The Study of Anatomy Written for the Medical Student. By S. E. Whittall, M.A., M.D., B.Ch., Robert Reford, Professor of Anatomy, McGill University, Montreal. Second edition. Cloth. Price \$1.50. Pp. 93. Baltimore: William Wood & Company 1933.

This little book might have had another title, to wit 'Guiding Principles for the Study of Anatomy and the Mental Life of Medical Students'. The guides for the study of anatomy are in brief the following: 1. The student should know the body rather than the book. 2. Main structures are more important than details. 3. Anatomy must be absorbed slowly and repeatedly. For technique, the author advises (1) careful dissection with a sharp knife and (2) study of the dissection by drawing it, describing it and comparing it with cross sections. Among the suggestions for healthy mental life are to (1) make a lifelong friend of the first textbook of anatomy, (2) study some popular and foreign books on anatomy for collateral reading, (3) seek mental recreation in some side interest, (4) learn the value of humor and laughter as therapeutic agents, (5) have a bedside library such as Osler's ten books, and through it develop the mind of a scholar and a gentleman, and (6) remember that one third of your work will be entered on other books than yours, work as counselor and friend. The book is well written in a wise and kindly way. It will commend itself. The students who read it will be influenced through it to be happier and sounder doctors, wiser friends and better gentlemen.

Szpitały ogólne w Polsce i Polskie Towarzystwo Szpitalnicze. Les Hôpitaux généraux en Pologne. Association Polonaise des Hôpitaux. Paper. Pp. 83 with illustrations. Warsaw: Polish Medical Press Propaganda Office 1933.

This is the first number of a series to be published as follows: Contagious Diseases and Tuberculosis in 1935, Psychopathic Institutions in 1937, Maternity and Children's Hospitals in 1939, Clinical Hospitals in 1941. The treatise on General Hospitals for the ensuing ten years will be published in 1943.

General hospitals are operated chiefly by municipalities or counties. Those operated by the government are of recent date and few and they are managed by the health insurance office (a government institution). In 1932 Poland had one hospital bed to each 453 inhabitants and only 47 hospitals of 250 beds or over in the total number of 726 hospitals with 70,937 beds. The population of Poland according to the census of 1932 is 32,132,936. A questionnaire disclosed an urgent necessity of at least two beds per thousand inhabitants as well as a general desire of the removal of hospitals from the influence of health insurance and advisability of conducting a course for hospital directors.

The Management of Fractures, Dislocations and Sprains. By John Albert Key, B.S., M.D., Clinical Professor of Orthopedic Surgery, Washington University School of Medicine and H. Earle Conwell, M.D., F.A.C.S., Orthopedic Surgeon for the Tennessee Coal, Iron and Railroad Company, Birmingham, Alabama. Cloth. Price \$15. Pp. 1164 with 1165 illustrations. St. Louis: C. V. Mosby Company 1934.

Written by two authors geographically separated yet representing the best of present-day practice and academic influence, a new volume on the treatment of fractures, dislocations and sprains appears. It is a complete review of accepted methods and cannot fail to be helpful on any controversial point to the reader who seeks real information because it contains the advice of two men qualified to speak on the subject given without reserve. The print is plain, easy to read and indexed with subject headings. The size of the volume is quite overpowering, but the range of its contents may make this necessary. As an expression of the advance in the South of accepted methods of treatment, this book is excellent and its influence will do much to help the rising generation of practitioners.

Anatomie des Menschen. Ein Lehrbuch für Studierende und Ärzte. Band II. Eingeweide (einschliesslich periphere Leitungsbahnen I). Von Hermann Braus, weil. o. o. Professor an der Universität Würzburg. Bearbeitet von Kurt Elze, o. b. Professor an der Universität Rostock. Second edition. Cloth. Price 45 marks. Pp. 710 with 332 illustrations. Berlin: Julius Springer 1934.

This is well known as the textbook of anatomy that deals especially with the living working human body. It is also characterized by the way in which cognate sciences, such as embryology and comparative anatomy, are made to add to insight into human anatomy. The book consists of three volumes. Braus published the first two (Bewagungs-Apparat and Eingeweide) but died in 1924 before the third volume (Central Nervensystem) was fully prepared. Professor Kurt Elze of Rostock has succeeded Braus as editor. A second edition of volume I was published in 1929, the first part of the third volume appeared in 1932 and now the second edition of the second volume (Eingeweide) appears. It is welcomed by all students of anatomy. Professor Elze has included in this edition the results of recent research and has rewritten some parts because of new points of view. He has replaced about thirty of the original 329 illustrations with others now available and added a dozen or more new ones. These changes affect especially the sections dealing with fields in which investigation has been most active, e.g., the endocrine glands and the gonads. The publisher has produced a book which is a delight to the student. An index covering both text and illustrations has been added to this edition, and it contributes greatly to the value and usefulness of the book.

Rôle du système nerveux et des facteurs biologiques et psychiques dans l'immunité. Par S. Métalikoff. Monographies de l'Institut Pasteur. Paper. Price 28 francs. Pp. 166 with 26 illustrations. Paris: Masson & Cie 1934.

This monograph gives a clear description of defense reactions in certain unicellular organisms, invertebrates and insects. Experiments are described to show that in some cases the nervous system plays an important part in immune phenomena, which may be stimulated through the nerves without the intervention of the blood. The role of conditioned reflexes in immune reactions is considered. Following the methods of Pavlov, Metalikoff claims that he himself as well as others have shown that reactions of immunity may be produced not only by the injection of antigens in rabbits and guinea-pigs but also by the excitation of conditioned reflexes in such animals previously injected with antigens that is through the imme-

date intervention of the nervous system. The experiments described are highly interesting and while the results in antibody production from the excitation of conditioned reflexes do not seem fully convincing, the monograph will be of much interest to students of immunity.

Medicolegal

Malpractice Release of Tort Feasor as Release of Physician from Liability—The plaintiff's infant son, injured by a truck belonging to the Nassif Candy Company, was treated by the defendants, physicians employed by the father. Later the father, as guardian for his child, effected a compromise settlement with the candy company and released it from further liability. In this action, as guardian for the injured child, he sued the physicians for alleged damages attributed by him to their negligent and unskilful treatment of the child. In the trial court, the defendants contended that the release executed to the candy company released and discharged them from all liability for negligence charged against them. The trial court certified the case to the Supreme Court of Appeals of West Virginia.

The specific question for determination, said the Supreme Court of Appeals, is whether or not the release of one whose negligence causes physical injury to a person releases from liability a physician, chosen with due care by the injured person or by one acting for him, whose negligent treatment aggravates the original injury. The almost universal rule, said the court, is as follows:

It is a general rule that if an injured person uses ordinary care in selecting a physician, the law regards an injury resulting from mistakes of the physician or his want of skill or a failure of the means employed to effect a cure as a part of the immediate and direct damages which naturally flow from the original injury.—8 *Ruling Case Law* p. 449.

The law holds the person who caused the original injury liable for such damages as flow from the negligence of the attending physician, since but for that injury there would have been no such negligence. The original injury is the proximate cause of the damages due to malpractice. The original tortfeasor being liable for the full consequences of the injury, it follows that a settlement with him which releases him from all further liability operates as an acquittance of the whole matter.

The plaintiff contended however, that the candy company and the defendants were joint tortfeasors and that therefore, under section 55-7-12, Code of 1931, a release of the candy company does not inure to the benefit of the defendants, the section reading:

A release to another tortfeasor shall not inure to the benefit of another tortfeasor and shall be no bar to an action or suit against such other tortfeasor for the same cause of action to which the release relates.

While the section referred to does not use the term joint tortfeasor, said the court, the section was intended to apply to all joint wrongdoers. But, said the Supreme Court of Appeals, the authorities make it clear that under the circumstances existing in this case the relationship of joint tortfeasors does not exist—*Stachlin v Hochdoerfer* (Mo Sup), 235 S W 1060, *Fisher v Milwaukee Electric Ry & Light Co*, 173 Wis 57, 180 N W 269, *Phillips v Werndorff* (Iowa), 243 N W 525. The judgment of the trial court against the plaintiff was affirmed—*Mier v Yoho et al* (IV Va) 171 S E 535.

Insurance, Health "Necessarily Confined to Bed" Construed—The defendant company issued to the plaintiff an insurance policy providing certain benefits if the insured by reason of illness was "necessarily confined to bed." The plaintiff had a severe case of chronic bronchial asthma. The company paid him the agreed benefits for the first week but refused to make further payments contending that his illness did not necessarily confine him to bed. The plaintiff brought suit but at the close of his testimony the trial court dismissed the case, holding that the evidence showed that the plaintiff was not actually confined to his bed during the time for which he

sought to recover benefits. The plaintiff thereupon appealed to the Supreme Court of South Carolina.

The evidence showed that the plaintiff had been a "bed patient" practically all of the time for which benefits were sought. The plaintiff testified, however, that he had not been in bed all the time, as he felt easier when he was up, that he had walked some—short distances—and that he had gone to the office of his physician at times to see him. In the numerous cases, said the Supreme Court, in which the words "confined to the house" and "confined within the house" have been construed, it has been generally held that such clauses should be given reasonable construction and that recovery may be had where there is a "substantial confinement to the house," although the insured may have gone out of the house to get air or sunshine or to see his physician, or for some other necessary purpose. With respect to the clause "confined to bed," in *Bradshaw v Association*, 112 Mo App 435, 87 S W 46, the court said:

We would not of course hold that this clause meant that a patient must stay every minute in bed for his right to indemnity to accrue but the manifest purpose of the policy was not to indemnify for loss of time due to sickness unless the patient was bedridden in a substantial sense.

Again, in *Hays v Association*, 127 Mo App 195, 104 S W 1141, the court held that the insured was "entirely and continuously confined to bed," within the terms of a health policy, when he was confined to bed the greater portion of the time every day during his sickness, although at times he sat outside the house, was once driven a few blocks, and was in and out of bed many times. In *North v Insurance Company* (Mo App) 231 S W 665, the policy provided that the weekly benefits would be payable if the insured by reason of illness was necessarily confined to bed. The evidence in that case showed that the insured suffered from heart trouble and that at times she was unable to lie in bed, her ailment being such that she could not get her breath while in a reclining position. The court in that case observed:

Under the facts in this case it would be rank nonsense to hold that because the insured could not lie in bed owing to the bad condition of her heart she was not entitled to such benefits. That provision of the contract heretofore set out does not mean that the insured should be confined to bed all the time but means that the insured must be bedridden in a substantial sense.

And again in *Home Protective Association v Williams*, 151 Ky 146, 151 S W 361, Ann Cas 1915A, 260, the Kentucky court approved the following instruction:

The insured was necessarily and continuously confined to bed if his sickness was such as would reasonably confine a person continuously to bed or substantially so confine him though he may have been up at times to get fresh air or for other purposes.

In the present case, said the Supreme Court, the trial court took the view that although the insured was seriously afflicted with asthma his testimony that he was not regularly in bed would defeat as a matter of law, his claim for sick benefits under the policy. In the opinion of the Supreme Court, however, it was for the jury to say, under all of the evidence in the case, whether the plaintiff was bedridden in a substantial sense and the trial court committed error in not submitting that question to the jury under proper instructions. The judgment of the trial court was therefore reversed and the case remanded for a new trial—*Peace v Southern Life & Trust Co* (S C) 171 S E 475.

Society Proceedings

COMING MEETINGS

American Ophthalmological Society, Lucerne in Quebec, Canada, July 9-11.
Dr J. Milton Griscom, 2213 Walnut Street, Philadelphia, Secretary.
Minnesota State Medical Association, Duluth, July 16-18. Dr E. A. Meyerding, 11 West Summit Avenue, St. Paul, Secretary.
Montana Medical Association of Helena, July 11-12. Dr E. G. Balsam, Box 88, Billings, Secretary.
National Medical Association, Nashville, Tenn., August 13-18. Dr C. A. Lanon, 431 Green Street, South Brownsville, Pennsylvania, General Secretary.
New Mexico Medical Society, Las Vegas, July 19-21. Dr L. B. Cohenour, 219 West Central Avenue, Albuquerque, Secretary.
Pacific Coast Ophthalmological Society, Butte, Mont., July 16-18.
Dr F. C. Cordes, Fitzhugh Building, San Francisco, Secretary.
Wyoming State Medical Society, Casper, July 16-17. Dr Earl Whedon, 50 North Main Street, Sheridan, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to *THE JOURNAL* in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below

American Heart Journal, St Louis

- 9 421 556 (April) 1934
- Syphilitic Disease of the Coronary Arteries H G Bruenn New York —p 421
 - *Study of Glucose Therapy in Heart Failure in Advanced Cardiac Disease Abigail Eliot Smith and D Luten St Louis —p 437
 - Electrocardiograms That Represent Potential Variations of a Single Electrode F N Wilson and D Johnston A G Macleod and P S Barker Ann Arbor Mich —p 447
 - The Significance of Electrocardiograms Characterized by an Abnormally Long QRS Interval and by Broad S Deflections in Lead I F N Wilson F D Johnston I G Hill A G Macleod and P S Barker Ann Arbor Mich —p 459
 - Electrocardiograms of an Unusual Type in Right Bundle Branch Block F N Wilson F D Johnston and P S Barker Ann Arbor Mich —p 472
 - Primary Sarcoma of the Heart Report of Case with Electrocardiographic and Pathologic Studies A R Barnes D C Beaver and A M Snell Rochester Minn —p 480
 - Rupture of Normal Chordae Tendinae of the Mitral Valve C Frothingham and G M Hass Boston —p 492
 - *Observations on the Duration of the Phases of Diastole in Man Bohning and J Plant Chicago —p 500
 - The Precordial Lead in One Hundred and Four Normal Adults A M Master New York —p 511
 - The Effect of Condensers in the Electrocardiograph M Schwarzschild and M Kassin New York —p 517
 - A Self Returning Skin Contact Electrode for Chest Leads in Electrocardiography I R Roth New York —p 526
 - An Efficient Apparatus for Simultaneous Electrocardiographic and Arterial Pulse Records J E Wood Jr and R J Gentile University Va —p 530

Dextrose Therapy in Cardiac Disease—Smith and Luten report sixteen cases of heart failure in advanced heart disease in which an opportunity was afforded for the comparison of the effects of dextrose and digitalis. In nine cases dyspnea was relieved to some extent by dextrose. The effect, however, was of short duration (from three to twelve hours) as compared with the more lasting effect of digitalis. Dextrose failed to restore compensation in any case. Digitalis restored compensation in three cases. The first injection of dextrose seemed to have a more beneficial effect than subsequent ones. Accordingly, dextrose therapy appears to be indicated as an emergency measure in cases of acute or urgent heart failure and in cases of advanced chronic heart failure in which digitalis in adequate amounts has not restored compensation.

Duration of the Phases of Diastole—Bohning and Plaut measured the duration of each of the separate phases in approximately 1750 cardiac cycles in fifty subjects fifteen of whom had normal hearts the remaining thirty-five having some type of cardiac lesion. In auricular fibrillation total systole was found to be definitely shorter and total diastole definitely longer than in normal subjects. In all the other types of cardiac derangement total systole was longer and total diastole shorter than in normal subjects. In digitalized cases of auricular fibrillation the isometric relaxation and the phases of rapid inflow tended to be prolonged. In aortic regurgitation protodiastole tended to be prolonged isometric relaxation to be shortened and auricular systole to be slightly prolonged in comparison to the duration of these phases in normal hearts.

American Journal of Cancer, New York

- 20 791 1040 (April) 1934
- Effect of Radiation from Filtered Radium Implants on Growth of Carcinoma and Sarcoma in Animals K Sugiyama and S R Benedict New York —p 813
 - Dibenzanthracene 1 2 5 6 as a Carcinogenic Agent M G Seelig St Louis —p 827
 - Effect of Radiation in Young Patients E L Bishop Atlanta Ga. New York —p 791
 - Cancer of the Stomach Treatment with Roentgen Rays B M Friedman New York —p 807

American J Digestive Diseases and Nutrition, Chicago

- 1 91 160 (April) 1934
- Obstruction of Upper Portion of the Small Intestine Clinical Study A B Rivers and N W Thiessen Rochester Minn —p 92
 - Broadening Conception of Regional Ileitis B B Crohn New York —p 97
 - Food Allergy in Its Relation to Gastro Intestinal Disorders J Friedwald and S Morrison Baltimore —p 100
 - Report of an Instance of Suppurative Cholangiohepatitis with Obstructive Jaundice Value of Duodenal Tube Drainage of the Biliary Tract in Diagnosis and in the Alteration of Symptoms and Signs B B V Lyon D B Pfeiffer and J Euman Philadelphia —p 104
 - Observations on Amebiasis Report of Seven Unusual Instances of Colon Disease Seen Between Sept 23 1933 and Feb 4 1934 V E Simpson Louisville Ky —p 109
 - Jaundice with Ascites Clinical Study in Differential Diagnosis W F Cheney San Francisco —p 113
 - Relation of Gastroenteritis to Anemia on the Presence of the Substances Effective in Pernicious Anemia in Canine Stomach and Liver A C Ixy O Richter A F Meyer and H Greengard Chicago —p 116
 - Castro Intestinal Studies IV Relation of the Pepsin and Rennin Content of the Gastric Juice O M Helmer P J Fouts and L G Zerfas Indianapolis —p 120
 - Lower Fat Diet in Diabetes J H Barach Pittsburgh —p 124
 - Estimation of the State of Hydration of the Body by the Amount of Water Available for the Solution of Sodium Thiocyanate I A Crandall Jr and M A Anderson Chicago —p 126
 - Dietary Phases of Pernicious Anemia B S Cornell Fort Wayne Ind —p 131
 - *Cholecystocolic Fistula with X Ray Demonstration M G Vorhaus and A E T Rogers New York —p 133
 - Two Specimens of Gastric and Duodenal Ulcers Anatomically Cured by Surgery L Blagdon and L C Simard Montreal —p 137
 - Diagnostic Criteria of Rectal Cancer C Rosser Dallas Texas —p 141
 - Anal Fissure and Its Management C I Martin Chicago —p 144

Insulin in Treatment of Peptic Ulcer—Jones administered from 10 to 15 sometimes 20 units of insulin subcutaneously fifteen minutes before eating to twelve patients having recent peptic gastric ulcers six patients with recurring ulcers and eight patients presenting complicated ulcers in the sense of Treitzky's theory. The action was not immediate but usually in from four to five days of insulin treatment there was a decrease of the pain improvement in the subjective condition and an increase in weight which was coincident with a decrease of the vagotonus. In seven of the twelve patients of the first group pain disappeared after five days and the blood from the contents of the gastro intestinal tract after seven days in spite of the distinct increase of the gastric secretion. In four persons the symptoms disappeared in from six to ten days in one patient the feeling of complete well being appeared only after two weeks. The weight of all patients increased from 3 to 8 pounds (13 to 36 Kg). In the second group of six patients insulin treatment (from 20 to 30 units daily) carried

Genetic Studies on Transplantation of Tumors VIII The Genetic Explanation of Rhythms of Growth J J Bittner Bar Harbor Maine —p 834

The Campaign of Society Against Cancer Opening Address of the Third International Congress of Radiology Paris July 26 1931 G Forsell Stockholm Sweden —p 848

Sweden's Anticancer Campaign G Forsell Stockholm Sweden —p 866

Effect of Radiation on Growth of Carcinoma and Sarcoma—In order to determine the minimal lethal doses for Flexner-Jobling carcinoma and Sugiura sarcoma Sugiyama and Benedict studied the effect of radiation from filtered radon implants on the growth of the carcinoma and sarcoma in rats. In the case of Flexner-Jobling rat carcinoma, tumors 2 cm or less in diameter showed complete regression in about 50 per cent of the cases with from 2 to 3 skin erythema doses. With more than 3 skin erythema doses, tumor regression occurred in 90 per cent of cases in which the masses were not more than 2 cm in diameter. Larger tumors, from 24 to 33 cm in diameter, were seldom destroyed even by relatively large doses of radiation (about 6 skin erythema doses). For early stages of Sugiura rat sarcomas measuring from 0.7 to 1.5 cm in diameter, less than 3 skin erythema doses would not produce regression in as many as 50 per cent of the cases. On the other hand slightly higher doses, from 3 to 4 skin erythema doses produced regression in about 80 per cent of all tests. In destruction of the sarcoma was insufficient for the complete destruction of the sarcoma. With a much larger dose (about 6 skin erythema doses) similar large tumors could sometimes be destroyed completely.

out for two to three weeks, gave good results, so that roentgen examination revealed no signs of the previously existing ulcer. Four of the patients were observed for nine, eleven, thirteen and fifteen months, respectively. No recurrences were observed. In one patient there was a recurrence after five and one-half months, the ulcer symptoms disappeared again after ten days of insulin treatment. The last group of patients experienced undoubted relief under the influence of from fourteen to sixteen days of insulin treatment the pains, although considerably lessened, continued to recur from time to time, especially in the periods of nondigestion, apparently correlating to movements of the stomach. Nevertheless, the patients stated that their well being was improved greatly. They gained in weight and had good appetites, two of them, after leaving the hospital, could do physical work of which they had been incapable before.

American Journal of Ophthalmology, St Louis

17 291 386 (April) 1934

- The Optic Angle in Relation to Strabismus E L Armstrong Duluth, Minn.—p 291
The Use of the Superior Oblique as an Internal Rotator in Third Nerve Paralysis L C Peter Philadelphia—p 297
Concerning Iridodialysis as a Clinical Entity Its Surgical Treatment Report of Cases B W Key New York—p 301
Tables for Accurate Retinal Localization G H Sune Colorado Springs Colo.—p 314
Improvement in Reading Following the Correction of the Eye Defects of Nonreaders T H Eames West Somerville Mass.—p 324
Comparative End Results in the Intracapsular and Extracapsular Operations for the Removal of Senile Cataracts D K Pischel San Francisco—p 326
Ocular Complications in Paget's Disease Report of Case J I Gouterman Philadelphia—p 334
Modified Electrodiathermic Technique for Retinal Detachment Report of Its Use in Six Cases and Presentation of Modified Instruments E B Gresser New York—p 340

Am J Roentgenol & Rad Therapy, Springfield, Ill

31 433 580 (April) 1934

- Ununited Intracapsular Fractures of the Femoral Neck Roentgenographically Considered A W George and R D Leonard Boston—p 433
*Hematogenous (Nonmiliary) Pulmonary Tuberculosis M Pinner Tucson Ariz.—p 442
Roentgen Diagnosis of Mediastinal Tumors and Their Differentiation G E Pfahler Philadelphia—p 458
*Congenital Cardiac Disease in Infants with a Discussion of Tracheal Displacement as a Roentgen Sign E P Pendergrass and M L Allen Philadelphia—p 470
Roentgen Examination of the Mastoid Processes F M Law New York—p 482
Bone and Joint Changes in Hemophilia L Solis Cohen and S Levine Philadelphia—p 487
Os Acetabuli E Freedman Cleveland—p 492
Roentgenographic Studies of Parathyroid Deossification J J Moore and A de Lorimer Washington D C—p 496
Histologic Studies of the Liver Spleen and Bone Marrow in Rabbits Following the Intravenous Injection of Thorium Dioxide E A Pohle and G Ritchie Madison Wis.—p 512
*Data Concerning Three Years Experience with 600 Kilovolt (Peak) Roentgen Therapy S G Mudd C K Emery Pasadena Calif O M Meland and W E Costolow Los Angeles—p 520
Alterations in the pH of the Blood in Cancer Following Roentgen and Gamma Irradiation Janetia Wright Schoonover Ethel Hall Shiels and B P Widmann Philadelphia—p 532
Variations in Dosage Dependent on Wavelength M C Reinhard Buffalo—p 538
Echinococcus Cyst Attached to Kidney Case Report M J Geyman and D M Clark Santa Barbara Calif—p 541

Hematogenous (Nonmiliary) Pulmonary Tuberculosis

—Pinner draws attention to a type of pulmonary tuberculosis that is most likely caused by hematogenous seeding and does not take the course of miliary tuberculosis. The roentgenologic characteristics are fairly evenly and symmetrically scattered shadows of slight density and of blurred outlines, which undergo one of the following changes disappearance (resorption), increase in density (fibrosis or calcification) or coalescence, terminating in the usual manifestations of bronchogenic phthisis. Clinically these cases are frequently, but not always characterized by an astounding paucity of symptoms and sometimes of physical signs as well in spite of massive anatomic involvement and by the difficulty of demonstrating tubercle bacilli in the sputum. The anatomic and histologic characteristics include the more or less even seeding throughout both lungs (and frequently in extrapulmonary organs) the frequent absence of larger cavities, the absence of apparently old upper lobe lesions, the frequent evidence of repeated seedings and the type of healing. Histologic studies would indicate that the major part of the pathologic processes occurs in the interstitial tissue.

Congenital Cardiac Disease in Infants—Pendergrass and Allen observed tracheal displacement in the inspiratory phase in nine cases of congenital heart disease. Necropsy showed complete transposition of the great vessels in two cases, partial transposition of the great vessels in two cases, dextroposition of the aorta in one case, complete transposition of the heart and the great vessels in one case and multiple intrinsic defects in the heart in three cases. In 150 normal infants, tracheal displacement did not occur in the inspiratory phase. Displacement of the trachea due to an enlarged thymus often gives an appearance similar to that seen in these cases. Anatomic and postmortem evidence suggests that transposition of the great vessels may have been responsible for the tracheal displacement in most of the authors' cases. The possibility of some other mechanism causing tracheal displacement in these cases should be borne in mind, since several of their cases did not present transposition of the vessels. The average patient with tracheal displacement has a congenital lesion of sufficient magnitude to be diagnosed clinically. The authors have no conclusive data as yet which would suggest that tracheal deviation is pathognomonic of congenital heart disease in the absence of clinical signs.

Treatment of Cancer with 600 Kilovolt Roentgen Therapy—During the past three years, Mudd and his associates treated 285 cancer patients with 600 kilovolt roentgen therapy. They describe the technique of moderately heavy protracted irradiation used in the treatment of malignant lesions of the bladder, prostate, rectum, esophagus, larynx and pharynx. They have made comparisons of the cutaneous reaction subsequent to treatment with 200 kilovolts with 0.5 mm of copper filter and 600 kilovolts with 5 mm of steel filter, as well as with 1 mm of lead additional filtration. They discuss time factors involved in the production of erythema as well as roentgen doses that have led to serious roentgen dermatitis. They noted that persons in good general physical condition withstand short wavelength roentgen therapy with little discomfort. The results of gross and microscopic pathologic examinations are briefly discussed. There have been many instances of palliation in patients able to withstand full cycles of high voltage roentgen therapy. In the authors' opinion, heavily filtered radiation at 600 kilovolts or higher seems to offer better possibilities in the treatment of certain types of deep seated cancer than radiation at substantially lower voltage. The results achieved by its use may be favorably compared to the effects produced by a 4 gram radium pack.

Annals of Surgery, Philadelphia

99 721 880 (May) 1934

- Ligation of the Great Vessels of the Neck G M Dorrance Philadelphia—p 721
Asymmetrical Breast Deformities J W Malinak New York—p 743
Tuberculosis of the Breast W E Lee and W R Floyd Philadelphia—p 753
Value of Nephrolysis Ureterolysis and Nephropexy in Selected Cases A Randall and E Campbell Philadelphia—p 760
*Primary Tumors of the Ureter with Especial Reference to the Malignant Tumors Report of Three Cases J A Lazarus New York—p 769
Supernumerary Kidney W J Carson Milwaukee—p 796
Treatment of Varicose Veins Study Based on a Series of More Than Thirty Five Thousand Injections of Various Sclerosing Solutions Given in Three Thousand One Hundred and Sixty Four Cases of Extensive and Recurrent Varicose Veins Treated by Preliminary Ambulatory Ligation and Subsequent Injections W M Cooper New York—p 799

Primary Tumors of the Ureter—A search of the literature revealed only sixty-eight cases of primary malignant tumors of the ureter including the three that Lazarus reports. The nonpapillary type of tumor comprised 42 per cent of the series. Malignant tumors of the ureter are most frequently found in the lower part of the ureter and are associated with hydronephrosis in 67 per cent and hydro ureter in 51 per cent of the cases. The disease occurs during the sixth and seventh decades in 50 per cent of the cases. The growth is invasive and metastasizes readily to the regional lymph nodes (48 per cent) lungs (18 per cent) and liver (22 per cent). Although pain, hematuria and enlargement of the kidney constitute the characteristic triad of symptoms, it was found that hematuria alone was the principal symptom in 75 per cent of the cases. The diagnosis can be made only by carefully executed cystoscopic roentgenographic procedures. The presence of a tumor at

the ureteral orifice is a highly suggestive observation, yet it was reported in only 29 per cent. A definitely established filling defect in the ureterogram is the only pathognomonic sign of a tumor of the ureter and was reported in only 8.7 per cent. The infrequency of this finding is probably due to the failure to suspect the lesion and consequently to the failure of carrying out carefully made ureterograms. The encountering of an obstruction in the ureter, as occurred in 38.2 per cent, provocation of bleeding by manipulation of the catheter, and failure to demonstrate a shadow suggestive of calculus at the site of obstruction on the roentgenogram, should suggest the possibility of this condition. The author is of the opinion that repeated attempts at ureterograms in such cases would eventually demonstrate a filling defect in a greater proportion thus confirming the diagnosis of ureteral neoplasm. Owing to the difficulty encountered at times of palpating the tumor within the ureter at the time of the operation, it seems better in those cases in which operation is undertaken for the purpose of exploring the upper urologic tract for hematuria, especially when a tumor of the ureter is not suspected to do a complete ureterectomy with the nephrectomy in the event that the kidney fails to account fully for the bleeding. The procedure of choice in the treatment of this disease is complete nephro-ureterectomy by the extra-peritoneal approach, the resection including a portion of the bladder adjacent to the ureteral meatus. The operation is best done under spinal anesthesia and is concluded by placing an indwelling catheter into the bladder through the urethra. It is retained for a week or ten days.

Archives of Neurology and Psychiatry, Chicago

31 893 1128 (May) 1934

- Head Injury. Neurologic and Psychiatric Aspects. I. Strauss and N. Savitsky. New York—p. 893.
Brain Trauma. Histopathology During the Early Stages. N. W. Winkelmann. Philadelphia and J. L. Eckel. Buffalo—p. 956.
Bulbocapnine. Effect on Animals with Lesions of the Central Nervous System. W. R. Ingram and S. W. Ranson. Chicago—p. 987.
*Basophilic Syndrome of the Pituitary. Pituitary Basophilism (Cushing). I. H. Pardee. New York—p. 1007.
The Third Ventricle. Conformation of the Floor and Its Relation to the Meninges. C. P. Richter and J. A. Benjamin Jr. Baltimore—p. 1026.
Effect of Direct Stimulation of Brain and Spinal Cord on Reflex Time. J. M. Dorsey and L. E. Travis. Iowa City—p. 1038.
Swelling of the Microglia. Reaction to Intoxication. E. Marcovitz and B. J. Alpers. Philadelphia—p. 1045.
*Convulsions of Undetermined Etiology. Studies of the Blood Sugar. J. M. Nielsen. Los Angeles—p. 1055.
Thought in Schizophrenia. L. S. Vigotsky. Moscow. U. S. S. R. translated by J. Kasanin. Howard R. I.—p. 1063.
The Domain of Neuropsychiatry and the Training of the Neuropsychiatrist. J. R. Hunt. New York—p. 1078.

Pituitary Basophilism.—Pardee outlines five syndromes of pituitary basophilism: the Cushing syndrome, a mixed syndrome of intrasellar pituitary disease, a syndrome in which the disturbances appear to point to involvement of the supranuclear cortex, a prepubertal or pubertal basophilic syndrome and the postmenopausal basophilic syndrome. He endeavors to confirm the characteristic syndrome of pituitary basophilism described by Cushing and to demonstrate that not all basophilic syndromes are necessarily progressive and fatal, likewise that pituitary adenomas presenting many features of this syndrome exist, and are either purely pituitary basophilism or combined with acidophilism and disease of the suprarenals; also that transitory or mild degrees of pituitary basophilism (Cushing) do exist not only in adolescents but in premenopausal and postmenopausal states. The author believes that the close relationship of the hypophysis to the gonads is no doubt an important factor in producing a predominant activity of the basophil cells because this syndrome occurs more frequently in women. It has been affirmed that the basophil cells produce the gonad-stimulating hormone of the hypophysis (anterior lobe). This is an assumption that is not yet well founded and will probably be altered on both experimental and practical grounds. Two of the author's cases showed an absence of anterior pituitary-like principle in the urine, as did one of Cushing's cases. These patients present every evidence of underactivity of the sex function rather than a stimulatory effect. One will have to fall back on a theoretical explanation which presumes that a proper balance between the endocrine organs has been disturbed, resulting in a pluriglandular disorder; the principal feature of which is the basophilic syndrome.

Convulsions of Undetermined Etiology.—Nielsen presents fifty-eight consecutive dextrose tolerance curves in cases of idiopathic epilepsy and shows that periodic or constant low blood sugar occurs in about 90 per cent of epileptic persons during a dextrose tolerance test. A series of 182 dextrose tolerance curves in various types of patients is analyzed to determine whether those with epilepsy, as a class, show lower readings. The syndrome of idiopathic epilepsy seems to be for the greater part confined to persons with a tendency to hypoglycemia but except in rare instances hypoglycemia itself is not sufficient to cause an epileptic attack. Other necessary factors probably are hydration, alkalosis, depletion of glycogen, hypoadrenalism or imbalance of the vegetative nervous system. The author agrees with Munch-Petersen and Schou that the hypoglycemia rather serves to indicate the type of person with which one is dealing. However, hyperinsulinism cannot be detected and separated from idiopathic epilepsy by the determination of blood sugar during fasting. It cannot be differentiated even by a dextrose tolerance test. Clinical data of other sorts are necessary.

Arch of Physical Therapy, X-Ray, Radium, Chicago

15 193 256 (April) 1934

- Diathermy in Ambulatory Gynecologic Patients. L. E. Frankenthal Jr. A. J. Kobak and L. Krohn. Chicago—p. 197.
Endocervicitis and Pelvic Infections. J. E. Rueth. Milwaukee—p. 200.
Pathology and Treatment of Endocervicitis. W. E. Ground. Superior, Wis.—p. 202.
Chronic Focal Infection. J. W. Wiltse. Birmingham, N. Y.—p. 210.
The Radium Treatment of Uterine Cervical Malignancy. H. Swanberg. Quincy, Ill.—p. 214.
Fundamentals of Radium Therapy in Cancer of the Rectum. C. J. Drueck. Chicago—p. 220.
Physical Therapy in Nasal Accessory Sinus Disease. F. L. Follweiler. Philadelphia—p. 222.
Chronic Arthritis. Recent Problems of Its Structural Changes with Especial Reference to Physical Therapy. R. Kovacs and J. Kovacs. New York—p. 227.
A Plan for a Registry of Physical Therapy Technicians. J. S. Coulter. Chicago—p. 234.
Emanotherapy by the Vagueous Process. L. Godin. Nogent sur Marne. France—p. 237.

Colorado Medicine, Denver

31 155 184 (May) 1934

- Brain Abscess. H. Darrow. Denver—p. 160.
Brain Tumors. J. R. Jaeger. Denver—p. 165.
Narcoplepsy. L. E. Daniels. Denver—p. 168.

Delaware State Medical Journal, Wilmington

6 45 66 (March) 1934

- Choice of Physician Under Workmen's Compensation Laws. L. A. Shoudy. Bethlehem, Pa.—p. 45.
Rocky Mountain Spotted Fever. R. E. Dyer. Washington, D. C.—p. 52.

6 67 88 (April) 1934

- Treatment of Myoma Uteri. F. E. Keene. Philadelphia—p. 67.
Radium as a Therapeutic Agent. I. Burns. Wilmington—p. 72.
Infant Feeding and Nutrition. R. M. Tyson. Philadelphia—p. 75.
Etiology and Treatment of Acne Vulgaris. A. D. King. Wilmington—p. 77.
Malignant Melanoma. Marion L. H. Freeman. Wilmington—p. 80.

Georgia Medical Association Journal, Atlanta

23 123 162 (April) 1934

- *Carcinoma of the Thyroid. An Early and Unusual Case. F. C. Lee. Augusta—p. 123.
Cancer of the Large Bowel. R. N. Johnson. Rome—p. 127.
Overlooked Fractures. L. Harbin. Rome—p. 128.
Amebiasis. Case Reports. H. M. Tolleson. Hahira—p. 130.
New Treatment for Chorea. Case Report. J. A. Redfearn. Albany—p. 135.
Benign Tumor of the Laryngopharynx. Report of Case. B. M. Cline. Atlanta—p. 136.

Carcinoma of the Thyroid.—Lee reports a case of carcinoma of the thyroid in a child aged 8 years, in whom the diagnosis of Riedel's thyroiditis was made on the basis of a small firm uniformly enlarged gland. A severe attack of gonococcal vaginitis occurred while the child was in the hospital and apparently after the enlargement of the thyroid had been noted. At operation the ribbon muscles of the neck were found adherent to the gland and the disease was considered to be an inflammatory process. Not enough weight was given to the presence of two small masses in the left side of the neck, which were indicative of a malignant process and are not usual in cases of Riedel's thyroiditis. Another curious condition was

the sudden increase in size in the two small masses in the neck following the first operation. In view of the diagnosis of carcinoma it was natural to suspect that this enlargement was a rapidly growing metastasis, but since the original tumor in the thyroid had grown slowly, a growth of metastasis so sudden and rapid was not looked for, even though operative intervention promotes metastatic development. The masses in the neck became smaller following tonsillectomy.

Indiana State Medical Assn Journal, Indianapolis

27 193 238 (May 1) 1934

- Cancer of the Uterus. Etiology, Diagnosis and Treatment. A. H. Curtis. Chicago—p. 193.
Pellagra in Indiana and Its Treatment. P. J. Fouts and I. G. Zerfas. Indianapolis—p. 196.
Peroral Endoscopy. An Indispensable Aid in the Early Diagnosis of Malignant Disease of the Larynx. E. L. Bulson. Fort Wayne—p. 200.
Acute Upper Respiratory Tract Infections. H. C. Ballenger. Chicago—p. 207.
Insulin Results in Mental Patients. W. L. Sharp and M. A. Bahr. Indianapolis—p. 210.
Spinal Anesthesia. M. C. Sexton. Rushville—p. 211.
Nervous Treatment of Chorea. H. F. Call. Indianapolis—p. 216.

Insulin Therapy in Mental Patients—Sharp and Bahr studied the effect of insulin therapy in three cases of dementia praecox (two of the catatonic and one of the simple type), one case of involutional psychosis and one of manic depressive psychosis in the depressed phase. Three of the patients were eating but little and two were on actual hunger strikes. All of them were thin and emaciated. The insulin was given three times daily in 10 unit doses, thirty minutes before meals and no change was made in the routine of the patients. Definite increases in weight and strength were noted after four weeks of insulin therapy, but some of this was lost in the two months following the cessation of the treatment. The authors believe that this was due to the mental states, viz. negativism in the three praecox cases and the depressed melancholic state in the cases of involutional psychosis and manic-depressive psychosis. Gastro-intestinal roentgenograms tended to show some improvement in the emptying time of the stomach and colon. However, the results were not striking. The extremely low stomach acidity in all the cases was striking and seemed to be parallel with the negativism. The mental state improved in only the manic-depressive patient.

Journal of Pediatrics, St. Louis

4 431 572 (April) 1934

- Relationship of Home and Hospital in the Management of Sick Children. A. B. Schwartz. Milwaukee—p. 431.
Erythroderma Desquamativa. I. W. Hill. Boston—p. 436.
Rickets in Rats by Iron Feeding. J. F. Brock and L. K. Diamond. Boston—p. 442.
Comparison of Nutritional and Growth Values of Certain Infant Foods. C. T. Williams and A. O. Kestler. New Orleans—p. 454.
Motion of Growth. XVI. Clinical Aspects of Human Growth and Metabolism with Special Reference to Infancy and Preschool Life. N. C. Wetzel. Cleveland—p. 465.
Simplifying the Problem of Infantile Eczema. Analysis of One Hundred and Fifty Seven Cases. L. Bivings. Atlanta, Ga.—p. 494.
Acrodynia (Erythroderma Polynuritis Vegetative Neurosis Pink or Swift Disease). Histopathologic Study of the Nervous System. I. J. Wolf. Peterson. N. J. and C. Davison. New York—p. 498.
Rice Polishings as a Source of Vitamin B Complex in Infant Feeding. M. F. Gaynor and R. H. Dennett. New York—p. 507.
Acute Meningitis Due to Bacillus Fecalis Alcaligenes. R. J. Mason. Detroit—p. 514.
Neurocytoma of the Adrenal Gland with Metastasis. H. S. Meyer. Houston, Texas—p. 517.

Rickets in Rats by Iron Feeding—Brock and Diamond produced rickets in rats by the addition of ferric chloride to a normal, nonrachitogenic diet. The rickets so produced, as judged by roentgenographic, microscopic and chemical studies, was qualitatively similar to but more severe than that produced by Steenbock's rachitogenic diet 2965. The addition of phosphorus to this ferric chloride diet prevented the occurrence of rickets. The chlorine radical of the ferric chloride has been eliminated as the rachitogenic factor by negative results from the addition of ammonium chloride to the nonrachitogenic diet. Similar rachitic changes have been produced by the addition of other iron compounds to the nonrachitogenic diet.

Acrodynia—Wolf and Davison report a case of acrodynia in a child aged 2 years, who presented the typical trophic changes. Histopathologic study of the nervous system revealed

a marked swelling of the ganglion cells of the third cortical lamina, the large ganglion cells of the neostriatum and the Purkinje cells of the cerebellum, and severe pathologic changes in the nerve cells of the locus ceruleus. In the cervical region of the spinal cord there was some disintegration of the fibers in the ventrolateral tracts and loss of Nissl substance and vacuolization in the motor cells of the nucleus ventralis of the eleventh nerve, and in the ventrolateral and ventromesial anterior horn cells. The peripheral nerve changes were similar to those seen in peripheral neuritis.

Journal of Thoracic Surgery, St. Louis

3 333 440 (April) 1934

- Remission of Atelectatic Lung. Experimental Study. G. E. Lindskog and H. H. Bradshaw. Boston—p. 333.
Effect of Exercise on Acid Base Balance and Oxygen of Blood Following Atelectasis and Pneumonectomy. L. Drastich, W. E. Adams, A. B. Hastings and C. L. Compere. Chicago—p. 341.
Superior Vena Caval Obstruction with a Consideration of the Possible Relief of Symptoms by Mediastinal Decompression. W. Ehrlich, H. C. Ballou and E. A. Graham. St. Louis—p. 352.
Ganglioma of the Chest in Children. Report of Case with Review of Literature. J. V. Bohrer and Edith M. Lincoln. New York—p. 365.
Electrocardiogram in Stab Wounds of the Heart. Case Report. G. L. Davenport and P. Markle. Chicago—p. 374.
Tuberculosis of the Thoracic Wall. Survey of Thirty Two Cases. D. Carr and J. Alexander. Ann Arbor, Mich.—p. 380.
Factors Influencing the Safety and Efficiency of Thoracoplasty. J. W. Gale. Madison, Wis.—p. 393.
Some Aspects of the Gross Surgical Pathology of Chronic Pulmonary Tuberculosis. M. Berck. New York—p. 404.
Empyema in Pulmonary Tuberculosis. E. P. Smart. Olive View, Calif.—p. 413.
Treatment of Tuberculosis Empyema. J. Rosenblatt. Liberty, N. Y.—p. 422.

Effect of Exercise Following Atelectasis and Pneumonectomy—Drastich and his associates draw the following conclusions from their experiments on dogs: 1. Reduction in active pulmonary tissue by 50 per cent does not embarrass the organism when engaged in moderate exercise, such as running on a level. 2. More strenuous exercise such as swimming results in more fixed acid production than normal. This probably is to be interpreted as indicating that the tissues are receiving a less than normal supply of oxygen and incomplete oxidation results. A decreased percentage saturation of the blood with oxygen in some instances would tend to favor such an explanation although these results are too incomplete to provide conclusive proof. 3. The elimination of carbon dioxide appears to proceed with normal efficiency unless as much as 75 per cent of the active pulmonary tissue is removed. Even then severe exercise seems to be well tolerated. 4. When the active pulmonary tissue was reduced by equal amounts, fixed acid increase was more marked in animals with partial collapse than in those with partial pneumonectomy, suggesting that a significant fraction of the blood flows through the atelectatic tissue.

Thoracoplasty—The clinical study of Gale indicates that the prone position possesses definite advantages in the performance of extrapleural paravertebral thoracoplasty. In his experience the most desirable type of anesthetic agent during the operation is the nitrous oxide ethylene sequence. Pericostal sutures employed during the second and third stages of a thoracoplasty are effective by reducing the transverse diameter of the hemithorax as a unit and afford a method of preventing paradoxical breathing in patients with a thin pleura. The author recommends the use of intrapharyngeal oxygen as a routine measure following thoracoplasty. It guards against anoxemia which if not treated will draw heavily on the patient's reserve. The use of blood transfusion before and between operative stages furnishes an effective therapeutic measure. Wound infection should be treated by early adequate drainage, otherwise the purpose of the operation may be defeated.

Treatment of Tuberculous Empyema—Rosenblatt presents the end results in a series of twenty-one cases of toxic tuberculous empyema treated conservatively and followed up for from three and one-half to eleven years. The principles underlying the treatment depend on the number of complicating factors present. The therapeutic measures commonly employed in tuberculous empyema may be classified as conservative and radical. The conservative measures frequently used are aspiration, aspiration and air replacement, aspiration and irrigation

with antiseptic solutions, such as sodium chloride, gentian violet, acriflavine and potassium permanganate, and oleothorax with a 5 to 10 per cent solution of aromatized oil. The treatment in the author's cases consisted of aspiration of as much of the pus as possible, replacing it with air, and the injection of from 2 to 3 cc of a saturated alcoholic solution of methylene blue just before the needle was withdrawn. This treatment was repeated at varying intervals, depending on the rapidity with which the fluid reaccumulated. The amount of air introduced was dependent on the amount of fluid aspirated and the intrapleural pressure. In large effusions with a free pleural cavity, a slightly negative pressure was left at the end of the treatment. If the pleural cavity became limited and further collapse of the lung was desired, enough air was introduced to produce a slightly positive pressure. This procedure was repeated periodically, as long as there was any fluid that could be aspirated, though the intervals between treatments could be gradually increased as the reaccumulation of the pus became slower. The successful cases remained under treatment for from eight months to four years. The average length of treatment was approximately two years. Eleven patients were cured and ten died. Of the cured patients, ten are entirely free of symptoms and are able to work, and one is under treatment with pneumothorax for a newly developed lesion on the opposite side but the empyema has entirely cleared up and the lung re-expanded. Among the patients who recovered two developed empyema as a result of perforation of the lung, and of these two, one had also a fair-sized bronchopleural fistula. One patient with a small draining sinus in the chest wall and a small intermittently patent bronchopleural fistula also recovered. In this case the sinus persisted for about two years and has been healed for the last three years. Of the patients who died, four showed considerable improvement temporarily, and the ultimate fatal outcome was due to the progressive pulmonary disease. Six failed to show improvement. The empyema was probably an important factor in the unfavorable outcome of three cases. In two of these, large bronchopleural fistulas were present.

Kansas Medical Society Journal, Topeka

35 121 160 (April) 1934

- Treatment of Pernicious Anemia P Starr Chicago—p 121
Common Summer Eruptions C O West Kansas City—p 124
X-Ray Dosage and Depth Factors H H Woods Topeka—p 128
Uterine Infections E O Squire Coffeyville—p 130

Kentucky Medical Journal, Bowling Green

32 183 226 (April) 1934

- Clinical Case Presented at Staff Meeting of Children's Free Hospital J T Bates Louisville—p 185
Krukenberg Tumor H M Weeter Louisville—p 186
The Acute Abdomen: Visceral Perforation C A Vance Lexington—p 188
Acute Mechanical Intestinal Obstruction G Y Graves Bowling Green—p 193
Acute Appendicitis: Some Observations on One Hundred Operative Cases G Aud Louisville—p 195
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New Jersey Medical Society Journal, Trenton

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- Prevalent Misconceptions of Allergy J C Weisman Elizabeth—p 110
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Urographic Findings in Toxemias of Pregnancy R B Walker, New Brunswick—p 161
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Unique Operation for Appendicitis—Preoperatively, in appendectomies in adults, Myatt uses one-fourth grain (0.016 Gm) of morphine sulphate and $\frac{1}{160}$ grain (0.0004 Gm) of atropine sulphate. For anesthesia he uses straight nitrous oxide oxygen gas and feels that this is a marked advance over ether or spinal anesthesia. His incision measures from 2 to 5 cm in length and runs almost transversely across the abdomen in the natural skin fold, so that when it is healed there is no pulling apart of fibers. The fascia of the external oblique muscle is nicked with a scalpel, the handle of the scalpel is inserted and the fascia is separated with no cutting across the fibers. A small retractor is inserted under the mesial edge of the fascia and a slight nick is made in the internal oblique muscle. The handle of the scalpel is again inserted and the internal oblique and transversalis muscles are separated, thus exposing the peritoneum. The peritoneum is freed and loosened by sweeping the finger around. A narrow rather long retractor of the Deaver type is inserted after the peritoneum is opened and retracted mesially. This draws the small intestine toward the midline and the blue cecum is often visible. This is brought up with the finger or a clamp until the appendix comes into view. The cecum is then replaced in the abdomen, the meso-appendix is clamped and tied serially, and a linen purse string suture is placed about the appendix with a small cutting-edge straight needle. The appendix is girdled, crushed, clamped,

ligated, cut and treated with phenol alcohol. It is then grasped with mosquito forceps and, after the ligature is cut about the base of the appendix, the stump is inverted and closed with the linen purse string suture. In closing the peritoneum a continuous suture, one or two interrupted sutures for the muscles, fascia and subcutaneous tissues and Michel clips for the skin are used. The tiny incision is usually employed in young adults with no evidence of other pathologic manifestation and in women the uterus, right tube and ovary can be palpated.

Philippine Islands Med. Association Journal, Manila

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- Simplified Technic of Podalic Version H. Acosta Sison, Manila —p 121
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Philippine Journal of Science, Manila

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- Mosquito Net for Use in the Philippine Islands Experimental Studies and Canvass of Materials P. F. Russell and A. M. Nono Manila —p 107
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- Diseases of the Eyes a General Practitioner Should Know V. L. Raia Providence —p 53
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Surgery, Gynecology and Obstetrics, Chicago

58 807 934 (May) 1934

- Tumor of a Subcutaneous Glomus Tumeur Glomique Tumeur du Glomus Neuromyome Artériel Subcutaneous Painful Tubercle Angiomyoneuroma Subcutaneous Glomus Tumor M. L. Mason and A. Weil Chicago —p 807
Experimental Studies of Reparative Costal Chondrogenesis and of Transplanted Bone J. D. Bissard Omaha —p 817
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*Strictures of the Rectum Due to Lymphogranuloma Inguinale D. Bloom New York —p 827
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Supravaginal Hysterectomy Statistical Survey of Nineteen Hundred Cases with Especial Reference to the Later Development of Carcinoma in the Retained Cervix R. L. Pearce Boston —p 845
Spinal Anesthesia Experimental Study K. W. Thompson Boston —p 852
Carcinoma of the Bladder B. S. Barringer New York —p 867
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Pyogenic Sepsis Survey of One Hundred and Fifty Cases H. Neuhof, A. H. Aufses New York and S. Hirschfeld Los Angeles —p 886
*Technic for Complete Laceration of the Perineum J. E. Johnson Memphis Tenn. —p 897
Major Fractures of the Tibia and Fibula Apparatus and Method of Treatment R. A. Griswold Louisville Ky. —p 900
Iliac Carcinoid Case Report with Obstruction Resection and Recovery F. Christopher Winnetka Ill. —p 903
Fenestras and Pouches in the Broad Ligament as an Actual and Potential Cause of Strangulated Intra Abdominal Hernia Report of Two Cases Without Strangulation with Review of Literature A. B. Hunt Chicago —p 906
Carcinoma of the Buccal Mucosa Analysis of Cases Observed at the Massachusetts General Hospital in the Three Year Period 1924-1926 G. W. Taylor Boston —p 914

Strictures of Rectum Due to Lymphogranuloma Inguinale—Bloom points out that a certain group of rectal strictures of obscure etiology is due to a previous infection with the virus of lymphogranuloma inguinale and that lympho-

granuloma inguinale resembles in many respects the conditions described in the literature as "benign" or "inflammatory" strictures of the rectum. The uncertainty about the etiology of these strictures equaled until lately the uncertainty about the etiology of the strictures associated with the syndrome of esthiomene and anorectal syphiloma. The patients usually give a history of anal fistulas, mucopurulent and bloody discharge from the rectum, painful defecation and finally obstinate constipation. In the beginning there is only discharge from the rectum, later, pain and symptoms of stenosis appear which are extremely obstinate to treatment. The patients are frequently admitted to the hospital with the diagnosis of cancer of the rectum. After the pathologic examination eliminates malignant changes the diagnosis of syphilitic stricture frequently is made even in the absence of a history of syphilis. Because of the obstinacy and resistance to treatment, serious operations are carried out. It may be seen how closely the benign rectal strictures resemble the foregoing strictures in association with genito-anorectal elephantiasis and one may readily conclude that these strictures are identical. In the last few years it has been proved that lymphogranuloma inguinale is the etiologic factor in the production of these benign or inflammatory strictures as well as the syndrome of genito-anorectal elephantiasis. It was proved by the frequent history of the characteristic lymphogranuloma inguinale adenitis and particularly by the positive Frei test.

Complete Laceration of the Perineum—Johnson discusses the nature of the construction of the external sphincter and describes a method for its reconstruction in complete laceration. He states that the dimple on the perianal skin represents not only the 'scar tissue envelopment' at the end of the muscle but also the torn fascial and tendinous insertion of the sphincter muscle belly. The first step necessarily, is the use of the tissue in the dimple in the division of the sphincter muscle. This is done by passing a number 4 catgut suture on a heavy full curved cutting needle through the full depth of both dimples, and then tying them securely approximating the dimples. This suture, being large has a great primary tort and it will not tear through the fascia, the muscle or the thin anal skin. Then, with the rectal dilator, the muscles are slowly and carefully stretched and the suture is cut and withdrawn. This dividing procedure paralyzes the muscles for a period of about ten days, and soon the muscle assumes its original tone. By means of the Barrett method of perineal repair, denudation is done. The torn or separated fibers and fasciae of the levator ani, the bulbocavernosus, the transversus perinei and the internal sphincter are then dealt with in the customary manner, and lastly the fascial ends of the sphincter muscles are carefully isolated. Since all voluntary muscles have fasciotendinous terminations, any denudation or baring of the muscle ends may entirely destroy the function and power of the muscles. Hence the fascial and connective tissue cap on the ends of the muscles should be left untouched. The ends of both muscles are then picked up with a hard chromic number 1 catgut suture and the suture is carried through twice on both ends and tied securely. After the excess of vaginal mucosa is cut away, the subcuticular tissues are sutured with interrupted chromic sutures and, finally, the mucosa of the vagina and the skin are likewise approximated.

Virginia Medical Monthly, Richmond

61 65 126 (May) 1934

- Physiology of the Stomach W. R. Bond Richmond —p 65
Differential Diagnosis of Diseases of the Stomach B. P. Seward Roanoke —p 70
Medical Treatment of Diseases of the Stomach A. F. Robertson Jr. Staunton —p 74
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Further Observations on Continuous Intravenous Injection of Dextrose in Ringer's Solution J. S. Horsley Richmond —p 84
Coronary Thrombosis Report of Case with Some Comments on Diagnosis E. G. Scott Lynchburg —p 89
*Ray in the Diagnosis of Perforation of Stomach and Intestine M. H. Todd Norfolk —p 94
Neonatal Shock and Asphyxia W. D. Suggs Richmond —p 97
Priapism A. A. Creevy Newport News —p 103
Birth Control Social and Economic Need R. W. Garnett Danville —p 106
Deaths from Diphtheria Directly Proportional to Percentage of Immunization B. B. Baghy Richmond —p 108

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

57 190 (March) 1934

- *The Great Vein of Galen and the Syndrome of Increased Intracranial Pressure T H B Bedford—p 1
Progressive Paralysis of the Nervus Interosseus Dorsalis H W Woltman and J R Learmonth—p 25
Subdural False Membrane or Hematoma (Pachymeningitis Interna Haemorrhagica) in Carcinomatosis and Sarcomatosis of the Dura Mater Dorothy S Russell and H Cairns—p 32
Hour Glass or Dumb Bell Tumors of the Spine H Cohen—p 49
*Cerebrospinal Fluid in Multiple Sclerosis H H Merritt—p 56
Syndrome of the Premotor Cortex in Man Impairment of Skilled Movements Forced Grasping Spasticity and Vasomotor Disturbance Margaret A Kennard H R Viets and J F Fulton—p 69

The Great Vein of Galen and Increased Intracranial Pressure—Bedford questions the authenticity of the two cases of hydrocephalus that Dandy considers to have been caused by obstruction of the great vein of Galen or of the straight sinus, and advances evidence to prove that no indisputable case of hydrocephalus following thrombosis of these venous channels has been reported. He describes the arrangement and communications of the veins of the velum interpositum in the dog and states that they are not identical with those found in man. Following the occlusion of any portion of the great vein of Galen, collateral circulation is rapidly established. The choroid plexuses remain unchanged in their gross appearance. In the dog, hydrocephalus does not follow experimental occlusion of the great vein of Galen. He suggests that the hydrocephalus found occasionally by Dandy and Blackfan and by Guleke in dogs in which the great vein of Galen had been occluded was not due to the obstruction of the vessel. It is easily explained as originating in a form of meningo-encephalitis that leads to an obstruction of the normal circulation of cerebrospinal fluid at the base of the brain.

Hour-Glass Tumors of the Spine—Cohen encountered three cases of so-called hour-glass or dumb-bell tumors in a series of forty-two cases of compression paraplegia due to tumors of the spine or spinal cord. This type of tumor may arise at any level of the spine. They may arise intraspinally and grow outward through an intervertebral foramen or rarely between the laminae, forming an extraspinal portion, or they may arise extraspinally and extend through an intervertebral foramen, forming an intraspinal prolongation. The tumors may arise from any tissue—the membranes, nerves, ganglions, sympathetic nervous system, ligaments, cartilage, bone or fat, but a large number of them are fibroblastogenic or neurogenic and originate from the meninges, ganglions or nerve roots. The great majority are benign encapsulated growths though a few are definitely malignant. The usual symptomatology of spinal compression accompanied by changes in the pressure and the chemistry of the cerebrospinal fluid may be present, with frequent and severe root pain resulting from the situation of the tumor, a palpable lump may be found in the cervical region and occasionally in the lumbar region and symptoms such as pain on movement or rigidity may be caused by vertebral damage. Acquaintance with the lesion is primarily essential for its recognition. In order to prevent recurrence of the tumor, both intraspinal and extraspinal portions must be removed. Many cases of recurrence are caused by the nonrecognition of the extraspinal portion. The initial attack should be on the intraspinal portion.

Cerebrospinal Fluid in Multiple Sclerosis—Merritt studied the cerebrospinal fluid in 100 cases of multiple sclerosis and summarizes the observations in 968 previously reported cases. He found that the cerebrospinal fluid is normal in less than 20 per cent of cases of multiple sclerosis. The intracranial pressure is usually normal but may occasionally be slightly elevated. A pressure greater than 200 mm of cerebrospinal fluid is practically never found. Pleocytosis of a moderate grade (from 6 to 40 cells per cubic centimeter) occurred in 28 per cent of the recorded cases. A quantitative abnormality of the protein content of the fluid was present in 45 per cent of the cases. A quantitative increase in the protein content above the normal limit was present in 24 per cent. An abnormal colloidal gold curve was present in 71 per cent. The fluid is

usually normal in regard to its chloride, dextrose, nonprotein nitrogen, calcium, phosphorus, sodium, total solid content and freezing point. The cerebrospinal fluid Wassermann reaction is always negative. There is a rough degree of correlation between the clinical course and the observations on the cerebrospinal fluid. A higher proportion of abnormalities is found in the fluids of active cases than in the fluids of stationary cases. A pleocytosis of more than 10 cells per cubic millimeter or coincident abnormalities in cells, protein and colloidal gold occur only in progressive cases. There are no changes in the cerebrospinal fluid that are pathognomonic of multiple sclerosis. The presence of a first or midzone colloidal gold curve with or without a slight pleocytosis and increased protein content, in an otherwise normal fluid is supporting evidence for the diagnosis of multiple sclerosis in a clinically suggestive case provided there is no history of syphilis or of antisyphilitic treatment.

British Journal of Dermatology and Syphilis, London

46 161 206 (April) 1934

- Keratoderma Clamatericum H Haxthausen—p 161
Pili Annulati Occurring as a Family Disorder A Reyn—p 168
Results of the Use of TAB Vaccine in Treatment of Some Diseases of the Skin I S Gold—p 176
Recurrences of Pityriasis Rosea Report of Two Cases A Sayer, New York—p 181

British Journal of Ophthalmology, London

18 193 240 (April) 1934

- Woolhouse (1666 1733 4) R R James—p 193
Local Application of Antigonococcal Serum in Gonoblenorrhoea and Other Eye Diseases W A Wille—p 218
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British Journal of Radiology, London

7 193 256 (April) 1934

- *Review of Ewing's Tumor Case Reports I Lattman—p 194
Tumors of Bone I The American Registry of Bone Sarcoma J M W Morrison—p 208
Id II Schuller's Disease (a Reticulo-Endotheliosis) J M W Morrison—p 213
The Benign Giant Cell Tumor of Bone C T Holland—p 227
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Experiments on the Chorio-Allantoic Membrane of the Chick Egg with Regard to the Action of Homogeneous X-Ray Irradiation E S Duthie—p 238
Alarums and Excursions C Andrews—p 246

Review of Ewing's Tumor—Lattman states that a biopsy of Ewing's tumor should be done only in the cases in which the radiation test fails. A biopsy is of no more practical value than the radiation therapeutic test and it needlessly increases the hazard of early metastasis. The disease is as a rule, confined to persons under 30 years of age. Men are more susceptible. The tumor involves the middle of the bone and a considerable portion of the shaft rather than the end. The epiphysis is never involved. The tumor causes a diffuse destruction of the bone, both cortical and central. It may also cause a limited amount of bone formation. Early in the disease the roentgenogram shows a widened cortex of increased density. Later in the disease the roentgenogram may show the "onion-skin-like" appearance considered by some as pathognomonic. The tumor is highly roentgen sensitive, a fact of prime importance in its diagnosis and treatment. The author gives reports of three cases.

British Medical Journal, London

1 607 652 (April 7) 1934

- *Treatment of Gonorrhea in Women by Mercurochrome with Especial Reference to Complications Further Report R S Statham—p 607
*Ephedrine Sulphate and Barium Chloride in the Prevention of Stokes Adams Seizures A R Gilchrist—p 610
Transient Massive Albuminuria After Chromocystoscopy in a Psychoneurotic Individual F P Weber—p 614
Diabetes and Ultraviolet Irradiation Therapy N Morris and D C Suttie—p 614
Axillobrachial Embolectomy Case G E Larks—p 616
Injuries to Femoral Vessels During Hernia Operations F T Rams—p 618

Treatment of Gonorrhea in Women—Statham treated 158 cases of gonorrhea in women by swabbing with a 1 per cent solution of mercurochrome. The criteria of cure are three consecutive sets of smears from cervix and urethra, taken month after the usual menstrual period, also a negative culture.

from the same regions and a negative complement deviation test for gonorrhea. A final test in which smears, cultures and a complement deviation test are repeated is performed three months later. The reliability of this method is shown by the low incidence (five cases) of recurrence and the fact that a number of these patients were attending the gynecologic outpatient department at varying intervals after treatment, although none have ever given a positive result since treatment was stopped. Complications were noted in thirty-five cases (large erosion of cervix, salpingitis, Bartholinitis, acute cystitis, rheumatism and eye symptoms), the other 123 patients made an uninterrupted recovery.

Ephedrine Sulphate in the Prevention of Stokes-Adams Seizures—Gilchrist observed that ephedrine taken orally increased the ventricular rate in four of six cases of complete heart block. In two cases the test was indecisive. Barium chloride produced no demonstrable effect on the ventricular rate in the four cases responding to ephedrine. It did no harm in doses larger than those originally recommended. In two cases of complete heart block, complicated by occasional Stokes-Adams seizures, ephedrine taken for two and a half and one and a half years, respectively, proved entirely successful in the prevention of syncopal attacks. When the drug was discontinued typical seizures returned. The author recommends that the dose of ephedrine should be the minimal quantity consistent with an acceleration of the resting ventricular rate. Larger doses may cause overstimulation. If the drug is then omitted suddenly profound slowing of the ventricular rate with repeated Stokes-Adams attacks may occur, as a result, presumably of exhaustion of the idioventricular center. A dose of one-half gram (0.032 Gm) by mouth at intervals of eight hours may be sufficient. In the absence of positive observations it is difficult to credit barium chloride with the power of preventing Stokes-Adams seizures.

Indian Medical Gazette, Calcutta

69 121 180 (March) 1934

- Further Clinical Observations on Post Kala Azar Dermal Leishmaniasis L E Napier and C R Das Gupta—p 121
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Spontaneous Pneumothorax R Viswanathan—p 134
The Acid and Sanitol Treatment of the Intestinal Fluxes F J Palmer—p 137
Observations on Normal Dietary of Infants and Children in Vizagapatnam M V R Rao—p 142

Irish Journal of Medical Science, Dublin

No 99 97 144 (March) 1934

- Prenatal Work and Child Welfare in Dublin K Reddin—p 97
Icterus Gravis Neonatorum W R F Collis—p 106
Observations on Pellagra Report of Case R C Cummins—p 113
Importance of Postmortem Examinations D A MacElean—p 121
Musica Mentis Medicina J H T Duggan—p 126

Journal of Laryngology and Otology, London

49 221 296 (April) 1934

- Lymphatic System in Relation to Recurrent Laryngeal Nerve Paralysis Secondary to Cancer of the Breast H W Schwartz—p 221
Simplified Method of Determining Percentage of Actual Hearing Power in Tuning Fork Tests J Dundas Grant—p 233
Hearing Aids and Hearing Tests C S Hallpike—p 240
Use of Audiometer G P Crowden—p 247

Journal Obst and Gynec of Brit Empire, Manchester

41 165 332 (April) 1934

- *Endometriosis Vesicae R B Phillips—p 165
The Biology of the Vagina in the Human Subject R Cruickshank and A Sharman—p 190
Twin Pregnancy (Demographic and Ethnic Study) K Das—p 227
The Inertia Syndrome J R Goodall—p 256
*Ketone Content of the Blood in Labor and Preeclamptic Toxemia Note D F Anderson—p 261

Endometriosis Vesicae—Phillips believes that although endometriosis involving the bladder is one of the rare types of the disease its incidence is far greater than has been assumed. The cystoscope should be used more frequently for diagnosis. The possibility of endometriosis of the bladder should always be considered in a patient presenting frequency of micturition,

dysuria and hematuria. When this triad is cyclic and is exacerbated during the menstrual period and the cystoscopic examination shows blue-black cysts and endometriotic edema the diagnosis of endometriosis of the bladder is verified. The method of choice in the treatment of vesical endometriosis is the roentgenologic induction of an artificial menopause. Surgical intervention, however, is indicated in those few cases in which the patient is considerably under the age of the menopause and desires children.

Ketone Content of Blood in Labor and Preeclamptic Toxemia—Anderson states that while it does not seem necessary to resort to routine estimation of the acetone and diacetic acid in the blood of patients in labor, such an analysis may yield valuable information if labor is unduly prolonged. It is important to recognize that severe muscular effort takes place at this time and to take measures to prevent the development of acidosis by ensuring that the patient receives adequate, although necessarily limited nourishment. Barley sugar sucked regularly throughout the duration of labor is an efficient prophylactic. The information afforded by estimation of the blood acetone and diacetic acid in cases of toxemia of pregnancy does not justify the routine use of this examination. The high values obtained, however, would focus attention on the inadequacy of the diet, often limited to fluids, in many cases of albuminuric toxemia. Even if protein is restricted, a sufficient supply of carbohydrate ought to be ensured. A plea is made for the prevention or amelioration of edema by an adequate intake of easily assimilable protein, such as milk, since an increase of the blood urea or nonprotein nitrogen levels is not noted in cases of preeclamptic toxemia.

Lancet, London

1 719 772 (April 7) 1934

- Blood Brain Barrier in Infectious Diseases Its Permeability to Toxins in Relation to Their Electrical Charges U Friedemann and A Elkeles—p 719
Toxemia of Acute Intestinal Obstruction The Value of Bacillus Welchii Antitoxin in Its Treatment R L Holt—p 724
*Treatment of Tetany I Snapper—p 728
The Mechanism of Homologous Tumor Immunity T Lumsden T Macrie and E Skipper—p 731
The Incidence of Adenoma of the Pituitary Body in Some Types of New Growth H G Close—p 732
Simple Fixtures Adapting a Table for Cranial or Spinal Operations A K Henry—p 734

Treatment of Tetany—Snapper used an isolated portion of viosterol that does not contain vitamin D (A T 10 [Holtz]) in three cases of tetany, one idiopathic and two parathyropenic. The blood calcium did not exceed 6 mg per hundred cubic centimeters in any of them. Treatment was begun by giving 10 cc of A T 10 on the first day and 5 cc on the second and third days. Thereafter from 1 to 2 cc was given daily for a short time. In all the patients the calcium content of the serum increased considerably after three to five days and the symptoms of tetany disappeared. After the first ten days a dose of from 1 to 2 cc three times a week was usually sufficient to keep the calcium content normal. All other therapeutic measures could be stopped a day or two after the beginning of the A T 10 treatment. This oral method of handling tetany can be applied only in cases in which the calcium content of the serum can be watched, as otherwise there is a risk of accumulation.

Medical Journal of Australia, Sydney

1 395 424 (March 24) 1934

- Chronic Indigestion A E Lee—p 395
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1 425 454 (March 31) 1934

- Present Position of Surgery Radium and X Rays in Gynecology H H Schlink—p 425
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Two Simple Precautions to Prevent Accidents in the Use of Local Anesthetics A B K Watkins—p 436
Use of Jackson's Crossed Cylinders Note K O Day—p 437

Practitioner, London

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- Surgical Aspects of Dyspepsia D P D Wilkie—p 417
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 Value of Auscultation of the Acute Abdomen T G I James—p 495
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 Relations S Smith—p 504

South African Medical Journal, Cape Town

8 197 236 (March 24) 1934

- Medicolegal Problems in General Practice C J Albertyn—p 199
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Bulletin of Naval Medical Association, Japan, Tokyo

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- Subjective Symptom Manifesting During the Sojourn in the Spoiled
 Air of High Pressure K Motegi and K Ikemoto—p 1
 Influence of Heat on the Agglutinin and Complement Fixative Antibody
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**Anthelmintic Effect of Thymol and Carbon Tetra-
 chloride**—Nagayama treated fifty eight patients whose stools
 were positive for hookworm eggs with thymol and carbon
 tetrachloride Thymol was toxic to the liver and especially to
 the kidney Carbon tetrachloride was not as toxic to either
 the kidney or the liver as thymol Abnormal elements were
 demonstrated in the urine

Japanese Journal of Obstetrics and Gynecology, Kyoto

16 519 570 (Dec) 1933

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Journal of Oriental Medicine, South Manchuria

20 1 24 (Jan) 1934

- *Conococcal Infection of the Kidney Report of Two Cases K Okada
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 Obstructive Jaundice Y Morikawa—p 16
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 Effects of Various Forms of Gastroenterostomy on Gastric Secretion
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 Quantitative Examination of Pregnancy Reaction in Case of Malignant
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 Diet Nutrition of Chinese in Manchuria Chinese Diet in the Region
 of Mukden T H Lu—p 22
 Complete Hysterectomy in Virgin K Taketomi—p 24

Gonococcal Infection of the Kidney—Okada presents
 two cases of gonococcal infection of the kidney He believes
 that if the urine is distinctly turbid and much albumin
 is present without bladder symptoms in the course of gonor-
 rhea the gonococcal infection of the kidney is doubtful Many

intracellular gonococci were observed in the urine from the
 gonococcal kidney The number of the organisms decreased
 in the period of convalescence and finally disappeared The
 histologic examination of the organs obtained at necropsy in
 one case showed typical glomerulonephritis and formed abscesses
 in the spleen, liver and endocardium and the kidney The
 other patient presented symptoms of gonococcal nephritis and
 recovered in two months

Annales Soc Belge de Médecine Tropicale, Brussels

14 1 150 (March 31) 1934

- New Procedure for Cultivating Trypanosoma Gambiense on Artificial
 Mediums Arnaud—p 3
 Active Antigonococcal Vaccine Against Blennorrhagia Arnaud—p 5
 Treatment of Leprosy by Strong Doses of Ethyl Esters of Chaulmoogra
 Oil Experimental Treatment by Iodine J Bariman—p 7
 Arsenic Resistance of Trypanosomes and Latent Bodies G C Bour-
 guignon—p 19
 *Use of Intracarotid Route in Treatment of Advanced Congo Trypano-
 somiasis Action of Tryparsamide Injected in Carotid on Disturbances
 of Vision in Trypanosomiasis D Mora—p 25
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 Little Known Indigenous Practice Therapeutic Absorption of Rubber
 Latex R Mouchet and L Hoeheke—p 63
 Notes on Epizootic of Contagious Bovine Peripneumonia on Stanleyville
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 Malarial Infection Found Among Indigenous Tribes of Lake Kivu and
 Lake Edward Influence of Altitude J Schwetz H Baumann
 Miles Peel and Belhommet—p 75
 *Visual Disorders in Human Trypanosomiasis F Van Den Braudeu and
 M Appelmans—p 91
 Cyclic Transmission of Resistant Strains of Trypanosoma Gambiense by
 Glossina Palpans L van Hoof and C Henrard—p 109

Intracarotid Treatment of Congo Trypanosomiasis—
 Mora reports thirty-one cases of Congo trypanosomiasis in
 which more than 100 carotid injections were given, most of
 them in the wilds by practitioners who had no other equipment
 than a table, an ordinary syringe and an injection needle The
 technique, which was studied at the hospital of St Paul at Loanda,
 is practicable for all physicians and is painless and without
 danger It is nevertheless advisable to avoid more than three
 or four punctures of the same artery to prevent induration
 of the walls of the vessel The toxicity of certain medicaments
 such as methenamine and tryparsamide, does not seem to be
 greater by the intracarotid than by the intravenous or sub-
 cutaneous route This statement does not apply to the drugs
 having a congestive action on the brain, such as mercurochrome
 and quinine In cases of Congo trypanosomiasis presenting
 predominant cerebral symptoms the intracarotid route should
 be favored for the introduction of trypanocides especially
 tryparsamide The procedure is especially useful in treatment
 of ocular disorders occurring in the course of trypanosomiasis,
 provided the final lesion has not become established The
 author believes that ocular disorders in trypanosomiasis are
 probably caused by irritation produced by the presence of the
 trypanosomes themselves

Visual Disorders in Trypanosomiasis—The statistics of
 Van Den Branden and Appelmans showed that 20 per cent of
 a group of 118 patients suffering from trypanosomiasis who
 reached the second stage of the disease and were treated with
 tryparsamide presented visual disorders during the course of
 treatment This percentage is however, inconstant since in
 another group of sixty-nine patients only 58 per cent showed
 ocular disorders Ocular symptoms are more frequent among
 those in whom the cerebrospinal fluid is the most profoundly
 altered This is a serious sign for it demands cessation of
 arsenical treatment, rendering the prognosis less favorable The
 origin of visual disturbances appears to be complicated First
 there is an alteration of the nervous system and of the visual
 apparatus by the trypanosomes Then follows the toxic action
 of tryparsamide and the endotoxins liberated by the massive
 destruction of trypanosomes Ocular disturbances caused by
 atoxyl in chronic trypanosomiasis progress to blindness in spite
 of the interruption of treatment Those arising during the
 course of treatment with tryparsamide are serious but usually
 cease to progress if the arsenical injections are stopped imme-
 diately The visual apparatus is the touchstone or the nervous
 system from the arsenical standpoint because the least change
 is shown by disorders of visual acuity and of the visual field
 These are easily noted by either the physician or the patient

Presse Medicale, Paris

42 593 616 (April 14) 1934

- Desensitization or Habituation Pasteur Vallery Radot G Maurice and Mme A Hugo—p 593
- *Superiority of Combination of Sodium Nitrite and Sodium Thiosulphate for Treatment of Hydrocyanic Intoxication E Hug—p 594
- *Immediate Treatment of Articular Traumatism Without Fracture by Intraligamentary Injections of Procaine Hydrochloride G Arnulf and P Frich—p 597
- Treatment of Addison's Disease by Cysteine J de Leobardy and A Labesse—p 599

Sodium Nitrite and Sodium Thiosulphate for Hydrocyanic Intoxication—The normal animal has some ability to detoxify in the presence of cyanide poisoning. The toxic effect is the result, therefore, of the quantity of poison absorbed per kilogram weight and per minute and the coefficient of detoxification. Since the first can be modified only under experimental conditions, Hug proposes a classification of antidotes that may modify the course of the intoxication. The first group is the reducing sugars, such as diacetyone, the second, the methemoglobin forming substances, such as methylene blue and sodium nitrite, and finally the substances containing sulphur, such as sodium thiosulphate, colloidal sulphur and cystine. Each of these groups has some advantages and some disadvantages as detoxifying agents. Thus, sodium thiosulphate is a salt of practically no toxicity, but its action is rather slow and hence of lesser efficiency in advanced intoxication. Sodium nitrite, on the other hand, has a greater toxicity but a more rapid action. By injecting sodium nitrite first and sodium thiosulphate subsequently the author obtained better results experimentally as judged by the number of animals saved than by injecting these substances separately. The effect of these antidotes was not a simple summation but a true potentiality. He proposes therefore, that ampules of amyl nitrite, a solution of 2 per cent sodium nitrite and another of 30 per cent sodium thiosulphate be kept in the satchel for emergency treatment. One patient who ingested potassium cyanide has already been treated by preliminary inhalation of amyl nitrite followed by intravenous injections of sodium nitrite and sodium thiosulphate. The result in this case was successful.

Treatment of Articular Traumatism with Procaine Hydrochloride—The treatment of sprains by intraligamentous injection of procaine hydrochloride as originally described by Leriche is extended and discussed in this report by Arnulf and Frich. The technique is simple and involves the usual skin disinfection and the injection into the painful periarticular ligamentous tissue of from 0.5 to 1 per cent solution of procaine hydrochloride, repeated if necessary, but not exceeding a total quantity of 25 or 30 cc. The rationale of the procedure lies, according to the authors, in blocking the sensory nerve endings and thus stopping abnormal excitation, obstructing the reflex and interrupting the vicious cycle in which the phenomena resulting from vasodilatation continuously renew the excitability of the periarticular sensory elements. In both recent and late traumatism examples of each of which are cited, the results of injection are more favorable and more rapid, they believe, than by the customary immobilization.

Revue Med-Chr des Maladies du Foie, Paris

9 180 (Jan Feb) 1934

- *Takata Ara Reaction Test of Hepatic Insufficiency G Hugonot and R Sohler—p 5
- Action of Slavic Moldavia Waters on Hepatomegaly in Biliary Lithiasis L Rodescu—p 39
- *Ernst Forster Method for Measuring Blood Bilirubin A Gaydos—p 45
- Mucorrhea of Cholecystostomy R Bonneau—p 49
- Hepatohypophyseal Syndromes G Parturier and R Becquet—p 52

Takata-Ara Reaction—The Takata Ara reaction, according to Hugonot and Sohler, is a flocculation reaction obtained by placing the serum to be studied, diluted in convenient proportions with a freshly prepared reagent consisting of a 0.5 per cent mercuric chloride and 0.02 per cent fuchsin solution. This reaction is simple and may be practically employed in the clinical laboratory. It seems to reflect constantly any disorder of proteinemia characterized by an inversion of the serum albumin-globulin ratio and may supply or even replace the chemical tests of these albumins, which involve a complicated technique possible only in specialized laboratories. In

applying the test to a large number of cases of different types it was apparent that it was always positive in the course of disturbances accompanying profound involvement of the hepatic parenchyma or serious functional insufficiency accompanying discoverable clinical disorders of proteinemia, such as one finds in the cirrhoses. It was negative in all other diseases or dysfunctions of the liver, such as cancer, infectious hepatitis and syphilitic hepatitis. Aside from diseases of the liver, it was found positive in severe infections and in protozoal infestation of the blood (kala-azar) in which a derangement of the blood albumins is found. It does not appear that a positive reaction alone can specifically point out a hepatic lesion, but a positive reaction added to the determination of a diminution of total protein in the serum seems to be an excellent test of a severe and predominant, if not exclusive, involvement of the liver. A positive reaction in a serum having a normal elevated ratio of total proteins only translates the intensity of the humoral disorder without reference to the hepatic involvement, and often gives useful information on the course and prognosis of the disease.

Method for Measuring Blood Bilirubin—Gaydos, in attempting to prove the value of the Ernst-Forster technique of blood bilirubin estimation, made parallel tests using this method and the classic one of van den Bergh. The Ernst-Forster reaction is made in the following manner: To 1 cc of serum or plasma, 2 cc of acetone is added; this is filtered, centrifuged and the supernatant fluid compared with a standard of potassium bichromate. To prepare this standard a mother solution in the proportion of 1:6,000 in distilled water is used. This solution corresponds to a bilirubin content of 0.329 mg per hundred cubic centimeters. The comparison is made with the aid of a Duboscq apparatus or with a series of standards of graded dilutions. The figure found must be multiplied by 3 because of the dilution. If the concentration of bilirubin is low, only 1.5 cc of acetone is added to 1 cc of serum. Thus the yellow color of the filtrate becomes darker. The factor of correction in this case is 2.5. The new element in this reaction is the use of acetone for the precipitation, allowing a lower dilution. The results of the comparative studies affirmed the fact that for measuring weak bilirubinemias this reaction is superior to that of van den Bergh.

Schweizerische medizinische Wochenschrift, Basel

64 389 408 (May 5) 1934

- *Bacteriologic Virulence During Pregnancy, Delivery and Puerperium T Koller—p 389
- Pellagra and Progressive Bulbar Paralysis R Flinker—p 394
- Intratracheal Injections of Iodized Poppy Seed Oil J Feuz—p 395
- Therapy of Tuberculous Sweats F Marcus and K Weiss—p 397

Bacteriologic Virulence During Pregnancy, Delivery and Puerperium—Koller points out that the usual bacteriologic studies during pregnancy, delivery and the puerperium have given no satisfactory explanation for the pathogenesis of puerperal infections. The frequent demonstration of streptococci and staphylococci in the genital secretions gave rise to the assumption that merely the presence of these organisms was not sufficient. The virulence of the bacteria of the genital secretion was determined, and it was found that after spontaneous deliveries the incidence of temperature increases was not higher in the cases in which the virulence of the bacteria was positive than in those in which it was negative. However, in the incidence of inflammatory, genital complications during the puerperium a difference was noted, for such complications developing in only three out of 174 spontaneous deliveries in the presence of bacteria of negative virulence, while in the presence of bacteria of positive virulence they developed in four out of thirty-six cases. In deliveries terminated by operative interventions (cesarean sections or vaginal operations), the average of the temperature increases during the puerperium is much higher in the cases in which the organisms of the genital secretions are virulent than in those with nonvirulent organisms. The incidence and severity of inflammatory, genital complications after operative interventions likewise is influenced by the virulence of the organisms of the genital secretions, for mild disturbances developed in seven out of twenty-four cases in which there were nonvirulent organisms, while thirteen out of twenty-one in which virulent organisms were

present developed inflammatory complications. Some cases in the latter group were serious and one woman died as the result of the infection. The comparison of the course of the puerperium shows that after spontaneous deliveries, even in the presence of virulent vaginal bacteria, inflammatory complications are rare and generally heal rapidly, while after operative terminations of birth in the presence of virulent vaginal bacteria such disturbances are frequent and prolonged. This is a new proof that operative interventions should be undertaken only after careful deliberation.

Clinica Medica Italiana, Milan

65 197 300 (March) 1934

Electrocardiographic Observations in Arterial Hypertension E. Buciantini —p 199

Histiocytomatosis Case L. Cipani —p 225

*Porphyrin in Pathogenesis of Pellagra U. Bassi —p 241

*Disappearance of Pulmonary Cavities After Exudative Pleurisy in Course of Artificial Pneumothorax M. Belli —p 263

Porphyrin in Pathogenesis of Pellagra—Bassi maintains that a faulty diet producing symptoms of the nervous and digestive systems is the essential etiologic factor in pellagra. The characteristic cutaneous manifestations make such an etiologic factor an essential but it is not a sufficient explanation. The action of the sun's rays or of other mechanical and thermal stimuli becomes an external physiochemical agent in the etiology of the disease. The typical pellagrous skin is pathologically sensitive to the rays of the sun. Photosensitive properties of the skin are of endogenous origin and may be identified with porphyrin. Cutaneous manifestations appear late in the development of the disease. Several patients on a faulty diet examined during the winter presented disturbances of the digestive and nervous systems but did not show any hypersensitivity to natural and artificial light. Thus the alterations of metabolism leading to an abnormal formation of photosensitive endogenous substances occur late in the pathogenesis. In patients examined during the winter, neither an increased formation nor a pathologic elimination of porphyrin was demonstrable, even after irradiations with ultraviolet rays. The function of the liver and of the kidneys was in all instances normal. These observations demonstrate the importance of the liver in pigment metabolism. A hepatic dysfunction leads to porphyrinemia together with porphyrinuria. When the disease is associated with cutaneous manifestations, the presence of porphyrin in the serum and in the urine is not always demonstrable. The absence of porphyrinuria in subjects presenting blood in the feces from small intestinal hemorrhages is new evidence against the theory of the intestinal origin of porphyrin. The increase in the porphyrin in the circulation and in the tissues might be due to increased synthesis of the porphyrins induced and maintained by the absence of vitamins in a faulty diet.

Disappearance of Pulmonary Cavities After Exudative Pleurisy in Course of Artificial Pneumothorax—Belli observed the beneficial influence of a pneumothorax pleurisy on tuberculous pulmonary cavities in seven patients in whom pneumothorax was not effective and after exudative pleurisy occurred. In considering the duration of the pneumothorax of the same type at the time in which the parenchymal alterations took place he maintains that there is a relation of cause and effect between the exudative pleurisy and the facts observed. Roentgenologic, clinical and bacteriologic studies impel the author to advance the hypothesis there had been a true and actual cure of the tuberculous cavities corresponding to the disappearance indicated by roentgenologic means. He emphasizes how difficult it is to confirm such a cure with certainty during a lifetime. These difficulties are increased in the described cases by the absence of observations on re-expanded lungs. In all cases a subjective and objective improvement was demonstrated in addition to the disappearance of the tubercle bacilli from the sputum. The author discusses the various theories regarding the mechanism of the beneficial influence of exudative pleurisy on parenchymal lesions. Following the ideas expressed by Tendeloo concerning the mechanism of pneumothorax he is inclined to attribute to exudative pleurisy a complex of mechanical and immunizing factors

favoring histogenous immunity. The author states in conclusion that the therapeutic utilization of these effusions may offer marked benefits that the pneumothorax alone could not produce.

Dia Medico, Buenos Aires

6 749 768 (April 9) 1934

Hydral Cyst of Lung Case A. F. Landivar —p 749

Initial Treatment of Dementia Paralytica G. Bosch, E. D. Andia and C. R. Pereira —p 755

*Painful Abdominal Aorta in Abdominal Sympathosis R. Gonzalez Bosch —p 756

Diagnosis of Psoriasis H. Gougerot —p 758

Painful Abdominal Aorta in Abdominal Sympathosis—Gonzalez Bosch says that the coexistence of an extreme, painful sensitiveness of the abdominal aorta and the iliac arteries, when these structures are pressed against the vertebral plane, with an abdominal syndrome characterized by painful crises, generally with epigastric localization and with the characteristics of celiac neuralgia, serves as the basis of the diagnosis of abdominal sympathosis (Taddei's abdominal sympathosis). This syndrome is caused by a defective function of the abdominal sympathetic, caused by various local and general factors of constitutional, toxic, mechanical and inflammatory nature.

Archiv fur klinische Chirurgie, Berlin

179 327 484 (April 21) 1934

Etiology and Histogenesis of Meningitis Serosa Cerebralis R. Beneke —p 327

Contribution to Knowledge of Malformations of Sacrococcygeal Area A. Gridnev —p 355

Research into Arterial Blood Supply of Nipple G. H. Marcus —p 361

Sterilization of Surgical Silk Sutures Konrich —p 370

*Injuries of Crucial Ligaments of Knee F. Felsenreich —p 375

Role of Pain in Recognition of Disease Fenkner —p 409

Influence of Suprarenals on Healing of Wounds A. S. Kostoba —p 435

Origin of Cryptorchism L. Moszkowicz —p 445

*Demonstration of Traumatic Fat Embolism in Blood and Fatal Amounts of Fat O. Susani —p 463

Injuries of Crucial Ligaments of Knee—Felsenreich states that, as the result of the enormous increase in sporting activities, injuries to the crucial ligaments of the knee joint became a frequent and typical lesion. These lesions are rather frequently overlooked in the course of arthrotomies. Immediate examination after the injury, examination after aspiration of hemarthrosis and of the anesthetized joint are of value in the diagnosis of acute cases. "Locking action" of the joint, abnormal adduction with the limb at 160 degrees and a positive roentgenogram constitute the cardinal symptoms. The "locking action sign" (forward or backward dislocation of the tibial head) is not present if the tibial spine is completely torn off or if a torn meniscus is interposed between the condyles. It is likewise absent in the presence of a large effusion in the knee or swelling of the capsule. A positive diagnosis can be made immediately after the accident before the swelling of the joint takes place and before the lesions pass into a chronic state. In the interim the diagnosis can be arrived at through repeated examinations, especially after aspiration of the knee or with the aid of local anesthesia of the knee. Inconstancy of the symptom of locking of the knee, an active "locking" sign and occasionally a snapping knee are suggestive of a chronic lesion of the crucial ligaments. The roentgenographic observations are positive in a higher percentage of such cases than in the recent ones. The aim of treatment is the restoration of the active and passive stability of the joint. In the recent cases the treatment is preeminently conservative except when the tibial spine is completely torn off or in the presence of a locked meniscus that cannot be reduced. In the after-treatment, active exercises are important. Recurrence of the locking of the knee is an indication for an operation of the conservative type, such as the removal of a fractured meniscus (loose body) or smoothing out of the interior of the joint. If the conservative procedure fails and there is loss of working capacity or capacity for sports, and if the patient requests it, the surgeon should resort to the operation of forming new ligaments from pedicled fascial transplants. The results of this procedure as gleaned from the literature and personal experience are quite good.

Fat Embolism—Susani states that fat embolism is caused by neutral fat, principally triolein. For this reason, determinations of the total lipids or of partial lipids are of no diagnostic value. The normal neutral fat values as given in the literature are frequently grossly erroneous. The author presents exact methods for the determination of the presence and the amount of neutral fat and proposes a definite procedure. Increase in the neutral fat in the peripheral blood may be demonstrated in severe fractures complicated by shock. The author considers this increase a manifestation of latent fat embolism. There exists an alimentary hyperlipennia which is several times that of a normal starving state. The fatal amount of fat is dependent on the state of division of the fat. In a moderately coarse state of division portions of the amount, which in the undivided state causes death, may have a fatal effect. Unbroken fat leads to cardiac death, while emulsified fat leads to death by suffocation. Conclusions as to the value of drugs in fat embolism caused by neutral fat, based on determination of lipids, are not reliable. Estimation of neutral fat in patients with possible fat embolism assists in the diagnosis and suggests the correct therapeutic procedure.

Beitrage zur Klinik der Tuberkulose, Berlin

S4 447 558 (April 20) 1934 Partial Index

Clinical and Chemical Investigations on Anoxemia H. W. Knipping, A. Koch and G. Matthiessen—p. 447

*Action of Influenza on Clinical and Hematologic Aspects of Pulmonary Tuberculosis L. Mandel—p. 473

Pleuritic Marginal Zones as Residues of Costal Pleuritic Processes in Roentgenogram of Intrathoracic Tuberculosis of Childhood K. Nussel—p. 487

*New Method of Anterolateral Thoracoplasty W. Leimer—p. 505

Influenza and Pulmonary Tuberculosis—Mandel relates his observations in the course of an influenza epidemic in a sanatorium for tuberculous patients. The epidemic was comparatively mild, since of the 104 patients none developed complications. He is convinced that in different influenza epidemics the course of the infection as well as the complications show a certain variability. He thinks that this may explain the difference in opinions about the effect of influenza on tuberculosis. In his own material, 11.25 per cent of the tuberculous patients developed considerable exacerbations, aside from mild impairments detectable only by laboratory methods. He therefore concludes that patients with tuberculosis should be protected against influenza as much as possible. If in spite of all precautions a tuberculous patient develops influenza he should be carefully watched during and after the attack, so that an exacerbation will be discovered immediately and proper therapeutic measures may be taken. The influenza-like disturbances developing after epidemics should be given particular attention, since they frequently mask a tuberculous relapse or an early infiltrate. Hematologic studies are helpful for the differential diagnosis, because the quantitative and qualitative hemogram as well as the sedimentation speed of influenza differ from those of tuberculosis.

Method of Anterolateral Thoracoplasty—Leimer describes a new method of thoracoplasty, which was developed by Monaldi. The operation differs from other plastic operations on the thorax in that its aim is not bony fixation of the collapse but rather exclusion of the respiratory movements that injure the lung. For this reason union of the bones is intentionally prevented. By thoracographic studies, Monaldi found the line of greatest movement of the thorax, which is practically the same in all persons. If it is the aim of the operation to exclude all forces the changes of which disturb the resting position of the lung, it has to accomplish paralysis of the diaphragm, exclusion of the traction of the scaleni muscles with resection of the first rib, and resection of the upper ribs along the line of greatest movement. Then the lung can collapse and rest against the posterior thoracic wall and the mediastinum, which do not participate to a great extent in the respiratory movements. The newly produced physiologic condition is characterized by the paradoxical respiratory movement and since this condition is supposed to be permanent, a reunion of the ribs is prevented by destruction of the periosteum. The operation is performed under local anesthesia and in two stages. During the first session the ribs from the fourth

to the eighth are resected, the incision being slightly curved or horizontal. During the second session the first four ribs are resected, the incision is made underneath the clavicle, then parasternal and in a curve downward. The resection is made along the line of greatest movement. The first rib is almost completely resected. The second, third and fourth ribs are resected from the cartilage to the median axillary line. Beginning with the fifth rib, the length of the resected portions decreases, it being from 5 to 10 cm. The periosteum is destroyed by solution of formaldehyde. In order to reduce the operative shock, especial attention is given to the preservation of the muscles. Paralysis of the phrenic nerve is obtained by crushing rather than by avulsion.

Deutsche medizinische Wochenschrift, Leipzig

60 665 702 (May 4) 1934 Partial Index

Rupture of Uterus Resulting from Intravenous or Intramuscular Injection of Solution of Pituitary During Birth of Child F. von Mikulicz—p. 665

*Aspects of Neuritis Developing in Persons Transplanting Beets I. W. Kroll—p. 669

Structural Type of Patients with Rheumatism L. von Buday and L. von Pauliczky—p. 671

Schilling's Curve of Biologic Blood Picture in Course of Thermal Baths in Rheumatic Patients J. Horn and M. Schiering—p. 674

Modification of Capillary Picture by Embrocations H. Eckardt—p. 677

Neuritis in Persons Transplanting Beets—Kroll calls attention to a paralysis of the muscles of the leg which develops in persons who transplant beets. The work requires a squatting position and observers agree that the disorder is the result of pressure and dragging on the nerves of the leg to which is added overexertion and, according to the author, also a rheumatic factor, namely the dampness of the ground. The patients complain of formication and of the member going to sleep. Paralysis and severe pains follow. In the seven patients observed by the author the right leg was always more severely affected and he thinks that in persons working with the right hand an involvement of the right leg is more likely. In most cases the peroneal and tibial nerves were impaired and this resulted in a paralysis of all the muscles of the lower part of the leg, in manifestations of partial or total degeneration and in atrophies of moderate severity. The sensitivity disturbances were only partial in extent and intensity. The femoral nerve was involved in two instances and there was an increase or a decrease of the right or of both patellar reflexes in all except one of the patients. The achilles tendon reflexes likewise were changed. The prognosis of this form of neuritis seems to be favorable at least as far as recovery is concerned, but the course of the healing process is rather slow. The author recommends heat therapy in the form of light cabinets, ultrashort waves or galvanization. Protein therapy seems to be helpful. In order to prevent paralysis the workers should be instructed to quit this type of work as soon as formication sets in.

Klinische Wochenschrift, Berlin

13 609 648 (April 28) 1934 Partial Index

*Paroxysmal Hypertension Blood Pressure Crises and Tumor of Suprarenal Medulla H. Kalk—p. 613

Specific Tumors of Suprarenal Medulla with Hypertension F. Buchner—p. 617

Angina Pectoris and Allergy K. P. von Eiselsberg—p. 619

Urea Content of Brain in the New Born C. Braendli—p. 622

*New Circulatory Phenomenon in Disturbances of Arterial Blood Supply L. Feil and P. Wermer—p. 624

Quinine Calcium Therapy of Pneumonia W. Schondube—p. 626

*Hoof and Mouth Disease in Human Subjects L. von Scheitz—p. 630

Blood Pressure Crises and Tumor of Suprarenal Medulla—Kalk gives the history of a patient with a tumor of the suprarenal medulla which was successfully removed. In this case the blood pressure was not constantly increased. The hypertension occurred in attacks and the symptoms were limited to those traceable to the suprarenal medulla, the other excretory functions, with the exception of those of the parathyroids, being normal. The counter regulation with sudden decrease in blood pressure, redness of the face, contraction of the pupils, profuse sweating and salivation which occurred at the height of the attacks, seemed to indicate the sudden elimination of a hormone antagonist of epinephrine. The author points out that cases of this nature may be more frequent than

is generally thought and he thinks that perhaps cases of proxymal hypertension are due to tumors of this type. Moreover, it is possible that the so-called blood pressure crises (Pal) are often due to tumors, or at least to a hyperfunction of the suprarenal medulla.

New Phenomenon in Disturbance of Arterial Blood Supply—Feil and Wermer point out that in patients with endarteritis obliterans or arteriosclerosis of the vessels of the lower extremities with intermittent claudication the following phenomenon may be observed. When the patient bends the leg at the knee joint while lying face down or lifts the leg while lying on his back, the sole of the foot becomes pale within from thirty to ninety seconds and frequently paresthesias develop. The authors found this phenomenon of no particular value in the generally doubtful prognosis of endarteritis obliterans and beginning arteriosclerotic gangrene. However they made a further observation which they consider significant. In a patient with thrombo angitis obliterans and intermittent claudication in the left leg the lifting of the diseased member produced the pallor within thirty seconds but after another thirty or 120 seconds the pallor was followed by a light red coloration which first appeared in an area the size of a small coin and by the development of further spots gradually spread over the entire sole of the foot. The color was light red, not at all cyanotic, it differed noticeably from the color of the foot before it became pale. The authors watched for this phenomenon in other cases and observed that it appeared in eight out of ten cases of intermittent claudication in which the pallor was noted. The authors express the opinion that the presence of still dilatable vessels is a prerequisite for its development. On the basis of this phenomenon the cases of intermittent claudication can be divided into three groups: 1. The mild cases in which lifting of the member causes no changes. 2. The cases of medium severity in which pallor and subsequent hyperemia develop. 3. The severe cases in which pallor only develops.

Hoof and Mouth Disease—Von Scheitz states that human subjects are most readily infected by raw milk. Another mode of infection is contact with a diseased animal. Transmission from man to man is still somewhat doubtful. The incubation period is fairly short in human subjects, lasting as a rule two or three days. This is followed by the primary blisters and high fever with general debility. In the second phase the secondary blisters and aphthae develop. This phase may assume widely different aspects. In typical cases grayish white aphthae about the size of a pinhead or blisters of the same size appear on the buccal mucous membrane, tongue and gums. The mucous membrane is swollen and painful and salivation occurs. The food intake is difficult. The vesicles may appear on the fingers and toes, aphthae may develop on the nostrils and lips and the conjunctiva may become inflamed. The vesicles and aphthae burst after one or two days and the temperature decreases. The secondary symptoms may take the form of an inflammation of the nails and cutaneous eruptions may appear on any part of the body producing a generalized maculopapulous exanthem which may become hemorrhagic. In many instances the secondary symptoms are rather mild and hardly noticeable. For this reason the diagnosis must be based mainly on the primary blisters and the typical fever curve. The most frequent complication of hoof and mouth disease is an involvement of the cardiac muscle. The disorder has been mistaken for milkers' nodules, erythema exudativum, multiforme and herpes. The author gives a history of one case which showed the typical double phase and the beneficial effect of intravenous injection of neosphenamine. Electrocardiography revealed a temporary involvement of the cardiac muscle. Vaccination of guinea pigs with extract of the aphthae gave positive results and passage likewise was accomplished. One investigator vaccinated himself with a highly virulent strain four months after an infection and he did not contract the disease again. The author stresses the beneficial effects of neosphenamine. He also found that the application of nupercaine ointment counteracts the pain of the mucous membrane for six or seven hours. Irrigations with a 2 per cent boric acid solution or with camomile tea are helpful in the treatment of the oral symptoms.

Medizinische Klinik, Berlin

30 533 564 (April 20) 1934 Partial Index

*Alcohol Injections in Treatment of Suppurating Fetid Disorders of Lungs and Pleura Z. Brüll—p. 538

30 565 596 (April 27) 1934 Partial Index

Treatment of Leukorrhea and of Erosion by Vaginal Application of Insulin E. Klasten—p. 571

Composition of Suppositories and Possibility of Their Improvement H. Bernhardt and K. Schulze—p. 574

Recurrent Increase in Temperature in Several Members of One Family Poelchau—p. 574

*Alcohol Injections in Treatment of Suppurating Fetid Disorders of Lungs and Pleura Z. Brüll—p. 576

Physical Foundations of Treatment with Ultrashort Waves J. Patzold—p. 579

Alcohol Injections in Diseases of Lungs—Intravenous alcohol therapy first introduced in 1928 by Thursz for malignant tumors and puerperal sepsis and later found helpful by Landau and his associates in the treatment of pulmonary complications was employed successfully by Brüll in various pulmonary disorders, such as abscess, gangrene, lobar pneumonia, bronchopneumonia and bronchiectasis. He administered the 15 per cent alcohol solution in distilled water in doses of 20, 25, 30, 35 or 50 cc. The highest dose was 80 cc. In contradistinction to the more concentrated alcohol solutions, the 15 per cent solution proved entirely harmless and was well tolerated by the vein. As the result of this injection treatment eight patients with acute solitary pulmonary abscesses and gangrene recovered without operation. In cases presenting complications in neighboring organs, or severe diabetes, the alcohol therapy was unsuccessful but temporary improvements were noted in some of these patients. The alcohol injections produced a considerable improvement in three out of eight patients with bronchiectasis; in two patients the effects were slight, while in the other three the treatment was entirely ineffective. Six out of eight patients with bronchopneumonia were greatly improved by the alcohol injections. In five cases of lobar pneumonia the alcohol injections exerted a favorable effect but did not shorten the course of the disease. Patients with pleural empyema were treated with intrapleural injections of the 15 per cent alcohol solution. The treatment was well tolerated and the results obtained thus far justify further trials. In pulmonary tuberculosis, the alcohol injections were ineffective.

Munchener medizinische Wochenschrift, Munich

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Significance of Spontaneous Hypoglycemia A. Engelhard—p. 666

*Prevention of Postoperative Tetany M. Grasmann—p. 668

*Studies on Genesis of Mediastinal Emphysema and on Pneumothorax in Goiter Operations J. Keis—p. 669

Physician's Activity and Organizing Measures in Mass Accidents T. Rinecker—p. 670

Toxicologic Demonstration of Hypnotics of Barbituric Acid Group in Physician's Laboratory W. Mohrschütz—p. 672

Practical Experiences with Salyrgan in Tubular Nephritis G. Dörner—p. 673

*Treatment of So Called Congenital Umbilical Hernia H. Friedrich—p. 675

Pathogenesis and Prevention of Pouch Stomach O. Djes—p. 679

Prevention of Postoperative Tetany—Grasmann says that the upper parathyroids are usually found at the level of the cricoid cartilage on the median edge of the thyroid close to the lateral wall of the esophagus. His assumption that especial attention given to the preservation of the upper parathyroids would reduce postoperative tetany has been verified. The necessity of preserving the upper pole of the thyroid which was recommended by de Quervain is not yet commonly known by surgeons. The author considers the preservation of the posterior branch of the superior thyroid artery the most reliable measure against the impairment of the upper parathyroids for when the trunk of the superior thyroid artery is ligated and severed there is great danger that the upper pole of the thyroid is removed too far and that the upper parathyroids are injured. He always preserves the entire posterior wall of the upper pole to a thickness of several millimeters.

Mediastinal Emphysema and Pneumothorax in Goiter Operations—Keis relates the history of a woman aged 32 who died following an operation for recurring goiter. The postmortem examination revealed mediastinal emphysema and bilateral pneumothorax. The author thinks that the position, size and adhesions of a substernal struma play a part in the

pathogenesis of mediastinal emphysema, but, since it develops also in suprasternal strumas, there must be other factors. In young persons, the mediastinal connective tissue is loose and the mediastinal pleurae are delicate and movable. The complete or partial retrogression of the thymus creates spatial differences, which in adults may be constitutionally increased by the presence of a long and narrow or a short and wide thorax. The changes that may be caused by pathologic processes in the organs embedded in the mediastinum should not be overlooked. The reaction sensitivity of the mediastinum is great and it is influenced by the comparatively frequent inflammatory conditions of the trachea and of the lymphatic apparatus. Such inflammatory reactions may lead to a rigidity of the mediastinal connective tissue and of the mediastinal pleurae, which in turn reduces the suction capacity of the mediastinum. In some of the cases of mediastinal emphysema a bilateral pneumothorax develops, although a pleural injury is not demonstrable. To determine the mechanism of the entrance of air into the thorax, mediastinal inflations were made on cadavers. The author points out that on living subjects the requirements for the loosening of the mediastinal pleurae are still more favorable. The respiratory movements have a massage-like effect on the mediastinum and press the air into the connective tissue interstices. The intrathoracic suction during inspiration lifts the pleura that rests loosely on the pericardium and thus facilitates the entrance of air. During expiration the air is pressed further. Since the vesicles permit an escape of air in case of a medium inflation of the mediastinum the assumption is justified that the negative thoracic pressure during inspiration sucks air from them and that during expiration air is forced out. Thus depending on the degree of mediastinal pressure, all degrees of pneumothorax may develop, if the mediastinum is not released in due time. Since the changes in mediastinal emphysema are nearly always bilateral, the fact that the pneumothorax is also generally bilateral is understandable. That mediastinal emphysema does not develop in pneumothorax is due to the fact that the mediastinal pleurae are pressed to their substratum.

Treatment of Congenital Umbilical Hernias—Friedrich emphasizes the necessity of an early radical operation for cases of congenital umbilical hernia (eventration). The operation should be done immediately after birth or at least within the first six hours. The early intervention produces excellent results. Even in cases of extensive eventrations, provided no other serious complications are present, the nurslings usually can be saved. The author advises the use of local anesthesia with an addition of epinephrine. He gives a short description of a simplified surgical method, which he employed successfully in four cases. He considers suturing in three layers difficult and inadvisable and recommends a single suture. Small children tolerate an operation better than adults. He is convinced that the former unfavorable results and high mortality rates in operations for eventration were largely due to the fact that the intervention was made too late.

Geneeskundige Gids, The Hague

12 313 336 (April 6) 1934

*Fat Content of Fecal Matter After Gastro Enterostomy I Snapper
—p 313

12 337 360 (April 13) 1934

*Fat Content of Fecal Matter After Gastro Enterostomy I Snapper
—p 337

12 361 384 (April 20) 1934

*Fat Content of Fecal Matter After Gastro Enterostomy I Snapper
—p 361

Epidemiology of Malaria in Dutch Guiana F M Peter —p 370

Fat Content of Feces After Gastro-Enterostomy—Snapper found that after gastro-enterostomy the fat content of the feces generally increases. He states that this is due to an excessively rapid passage of the chyme through the jejunum as a result of the operation so that there is too little time left for the resorption of the fat. In some patients this chronic loss of fat in the feces seems to be the cause of emaciation and fatigue. Exceptionally it may be necessary in these cases to undo the gastro enterostomy. If however true fatty feces and fatty diarrhea occur after gastro-enterostomy there is always a gastrojejunal fistula. A peptic ulcer which often develops in the jejunum after gastro enterostomy can cause

adhesions to the colon. As a result there is a communication between the jejunum and colon and consequently an open connection between the stomach, jejunum and colon. The characteristic symptomatology of the condition includes fat diarrhea, eructation of fecal matter and roentgenologic filling of jejunum and stomach after administration of a barium enema. The author describes three patients presenting the characteristic symptoms of gastrojejunal fistula, one of whom showed symptoms of tetany. Operation of the gastrojejunal fistula in all cases gave immediate disappearance of fat from the feces, and the general condition of the patients improved rapidly. One patient developed new duodenal ulcers after the fistula had been closed. Several operations took place after this, the last terminating in death.

Hygiea, Stockholm

96 193 224 (March 31) 1934

Quantitative Studies of Bone Marrow N G Nordensson —p 193

Studies of Bone Marrow—Nordensson made about 170 punctures of the sternum employing the technic described by Arinkin. In normal bone marrow he found between 0.25 and 5.5 per cent myeloblasts, the sum of the myelocytes and the promyelocytes varied between 2 and 21.75 per cent, and the sum of the cells with rod-shaped nuclei and with young nuclei between 3 and 47 per cent, as a rule exceeding the sum of the myelocytes and the promyelocytes. In 400 white cells the number of megakaryocytes was never more than one, the number of reticulocytes averaged seventeen and there were from none to four pronormoblasts, with an average of six basophilic normoblasts and seventy normoblasts. In secondary anemia with and without leukocytosis and with leukopenia the number of the myeloblasts was about normal, the sum of the promyelocytes and the myelocytes varied from 16 to 40.25 per cent being usually above normal, and the sum of cells with rod-shaped nuclei and with young nuclei varied from 11.75 to 41.25. There were thirty-five basophilic normoblasts for 400 white cells, as against six normally. The relation between basophilic normoblasts and those containing hemoglobin was 1:2, while in normal bone marrow it is 1:12. In leukocytosis and leukopenia without secondary anemia the percentage of increase of myelocytes and promyelocytes was in most cases more marked than in secondary anemia. Pernicious anemia in the "full stage" was characterized by a general activity of the myelopoietic and erythropoietic systems. The myeloblasts were increased, the sum of myelocytes and promyelocytes rose to between 20 and 46.25 per cent, and the sum of cells with rod-shaped nuclei and with young nuclei sank to between 0.25 and 10.5 per cent. The cell groups which normally dominate the bone marrow were thus reduced to a minority and the promyelocytes and myelocytes, together with the myeloblasts, dominated the white cell picture of the bone marrow. The change in the other cells was perhaps even more marked. Most of the cells in the bone marrow in pernicious anemia showed signs of degeneration. On treatment with liver the megaloblastosis lasted about twelve days before transition to definite normoblastosis. During remission the bone marrow lost its degenerated appearance and the cells regained their normal configuration. In a case of agranulocytosis the sternal marrow was almost empty, and in two cases of granulopenia the cells were remarkably abundant and showed considerable activity. The erythropoiesis was of the type seen in secondary anemia. In three cases of lymphogranulomatosis the sternal punctate was deficient in cells, especially in the two cases undergoing roentgen treatment, in which the marrow was inactive. In the third case in which the last roentgen treatment occurred two months earlier the marrow was not inactive. Cells of the erythrocyte series were few with relative preponderance of basophilic normoblasts. In one case of acute and one of chronic lymphatic leukemia particularly in the former the punctate was deficient in cells. The myelopoietic and erythropoietic systems were practically destroyed.

CORRECTION

Hemisection of Cochlear Branch of Auditory Nerve—In the abstract in THE JOURNAL of Dr. Walter E. Dandy's article May 26, page 1806, in the third line the words "sensory root of the fifth nerve" should have been "cochlear branch of the auditory nerve."

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EXTENSION POSTGRADUATE MEDICAL INSTRUCTION IN THE UNITED STATES AND CANADA

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BOSTON

The amount of useful information of the medical profession has increased from generation to generation, especially in the last fifty years. The members of the medical profession are guardians of this great fund of knowledge, which should be used to its fullest extent for the good of mankind. The dissemination of this knowledge and its actual application to the relief and prevention of suffering constitute a continuous problem. Improvements in treatment and new discoveries are constantly being made, so that it is necessary for all physicians to continue to study if they hope to fulfil their trust and give the best possible medical service.

The store of professional knowledge is in the medical schools, the health departments, the medical libraries and hospitals, and the minds of highly educated physicians. The agents for disseminating this information so that it may become an actual force in improving the community health are the organized medical schools, undergraduate and graduate, organized medical societies of all types, postgraduate extension schools run by universities, medical societies or departments of public health, medical books, and professional journals. If all these methods of providing instruction were at the highest point of efficiency and interest in them were 100 per cent, the practice of medicine would be materially improved.

The quality of these various agents has improved especially since the beginning of this century. From 1899 to 1905 THE JOURNAL¹ pioneered in classifying medical schools on the basis of each school's own statement of its ability to teach medicine, this haphazard method soon gave way to inspection and classification of schools on the basis of their actual assets, which were often not what they were advertised to be in their well printed catalogues. Also, it was in 1910 that the Carnegie Foundation published its independent survey of medical schools with its candid and sometimes scathing criticism of poor teaching facilities. The combined result of this has been especially to improve teaching in the undergraduate field. The Council on Medical Education of the American Medical Association has annually issued a register of medical schools and classifies them according to definite standards of equipment,

clinical facilities and faculties. The work of this body has been a continuous influence for good in advancing the standards of medical practice.

Postgraduate teaching facilities have not improved as rapidly as in the undergraduate realm. In fact, at the present time postgraduate medicine is essentially a proprietary field, as only one school has any appreciable endowment (Albany Medical College has \$250,000 endowment) for strictly postgraduate teaching. This may be due to two reasons. First, no great effort has been made to improve this situation comparable to that made for undergraduate medicine. Second, the profession itself has not demanded very much teaching—not enough to justify expansion of faculty or facilities. The Final Report of the Commission on Medical Education in the United States (1932, p 128) states that each year approximately 3,500 doctors take resident postgraduate courses in this country and about 1,000 go abroad for similar work, besides this there are 2,144 doctors in residence in 372 hospitals. This makes a grand total of 6,644, or 4.2 per cent, out of the 156,440 MD's in the United States who consider it desirable and feasible to continue their studies in a systematic manner away from their practice.

There is no doubt that some physicians keep abreast of advances in medicine by observation and home study, but for the majority some outside stimulus is useful and often necessary. The bookmaking art has reached a high plane and medical journals are legion, however, the interested and interesting teacher is still the mainstay of the educational system. In all ages teachers have exercised a leavening influence in their communities, and often a very large portion of the world might be called their field. Information and inspiration have greater effect when given by personal contact, the convincing voice of an experienced clinician carries more conviction and conditions medical reflexes for good more effectively than any printed page.

The outstanding phenomenon in the graduate field of medical education is the rapid growth of extension teaching in both the United States and Canada since 1916 at which time it was first initiated by the state of North Carolina at the suggestion of Dr W S Rankin, public health officer of that state.² The idea of bringing medical knowledge to the community so that every doctor can know the latest and best in his profession by contact with teachers has been put into effect in twenty-two states and all of the provinces of Canada. This is a partial answer to the question of why more doctors do not go away to postgraduate schools. In this area there are approximately 120,332³ MD's who, one might say, have been exposed to organized postgraduate study opportunities. Often, and particu-

¹ Simmons G H. Some Fragments of History of the American Medical Association. 111. Medical Education Pioneer Work of The Journal American Medical Association Bulletin 28 138 148 (Dec) 1913.

² Adams F D. The North Carolina Extension Plan. J A M A 80 1714 1717 (June 9) 1923.

³ American Medical Directory ed 12 Chicago American Medical Association 1931.

larly in these times, a doctor cannot afford to leave his practice to go to postgraduate teaching centers. In some smaller villages there is only one physician, and he may hesitate to leave the community without medical care in time of unexpected emergency. The important fact is that the profession as a whole has expressed interest in and a desire for continued organized study. This great need presents an opportunity to medical school faculties and all leaders of the profession. Teachers are needed to "carry the message to Garcia."

In all these fields of medical education there is no competition and there are no cross purposes. The undergraduate days are a period of probation. Following this the doctor enters the postgraduate era of his career—a lifelong session, if he is to achieve his best and have the highest satisfaction in his work. Society has become interested in postgraduate careers and has made laws that require a year of internship service before granting a license to practice in the following states and territory: Delaware, District of Columbia, Illinois, Iowa, Michigan, New Jersey, North Dakota, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Utah, Washington, West Virginia, Wisconsin, Wyoming and Alaska. This is essentially continued study while applying one's knowledge. The American Medical Association and the American College of Surgeons grade the hospitals, thus the hospital staff members are approved teachers. The Massachusetts General Hospital calls its interns "house pupils," which is an old term but it reflects the true situation of the young doctor. It is the duty of the profession to observe and study unceasingly by means of books, medical journals and active participation in organized study or teaching. Education in a democracy means a sharing of knowledge as well as a sharing of the benefits of material civilization.

All these modes of continued medical education mean an enlightened profession and consequently better medical service. This has great significance in private practice as well as in the field of public health, where success depends to a great extent on the intelligent cooperation of the practicing physician. Increasing the fund of useful knowledge and applying it should improve the economic status of the profession, and, what is more important, it should enable physicians more nearly to fill their proper place as leaders in the art of healing. No longer should any remote geographic region suffer from neglect, the fruit of ignorance. Transportation has transformed distance, and study will banish the frontiers of ignorance.

The ability of doctors varies in different communities. As physicians we know this, and that laymen recognize it too is shown when they travel across a state or beyond its borders to seek relief by some physician in a well known clinic. It is interesting to speculate what is the essential difference between the doctors in a community and those in a well recognized clinic. Is it not largely in their attitude toward study and the actual use of new knowledge in giving intelligent service to patients? The personal equation of 1,000 doctors anywhere in the land will compare favorably with a like number of professional brothers elsewhere. Material things, such as laboratories, x-ray machines and instruments of precision are of secondary importance, they are mobile paraphernalia which can be moved anywhere and are only adjuncts to the use of knowledge. The well educated physician makes proper use of all knowledge related to the welfare of the patient and his community.

While assisting the Massachusetts Medical Society to organize a system of extension teaching during the past year, I have had occasion to investigate similar work elsewhere. A summary of this study is presented as evidence of the widespread interest in postgraduate education among the profession. No body of professional workers will devote more thought and energy to accomplishing ends when a worthy goal is set. It is reasonable to believe that this growth of extension teaching marks the dawn of a new era in postgraduate medical education. This interest is reflected in changes and new ideas in intramural teaching as well. This expansion of interest in acquiring new knowledge is part of a world-wide renaissance in adult education which is permeating all phases of life.

MEDICAL EXTENSION TEACHING

The following summary of medical extension teaching in the United States and Canada gives data that may be of interest to states in which such work is not done, also, it provides a means of comparing the costs of such work. The best method of organization has not been worked out as yet, but in these states there is an active interest which augurs well for the future training of the profession.

Canada—Extramural postgraduate medical education in Canada has been in progress since 1926. The lectures are open to every doctor whether or not he is a member of the Canadian Medical Association. It is estimated that a majority of the 10,000 doctors in Canada have at some time enjoyed these meetings. There is no charge for lectures. The instructors for the most part have been university teachers. Expenses have been paid as well as an honorarium of \$10 a day for the time the instructor is away from home. This work was made possible during the years 1926 to 1932, inclusive by an annual grant of \$30,000 from the Sun Life Assurance Company of Canada. All details of organization have been handled by the central office of the Canadian Medical Association. Speakers are sent to meetings of organized medical societies which are responsible for local arrangements, the instructors go out in teams of two, if sent to distant provinces, a series of meetings is arranged en route in order to save expenses. Figures for 1926-1932: number of speakers, 2,156; number of addresses, 4,889; average attendance 329; total attendance 161,210; total cost \$212,847.52; cost per lecture, \$132 per doctor. Members have been enthusiastic about the lectures and have traveled from 50 to 150 miles to attend. Canada is the only country in which postgraduate medical education has been handled on a national scale. The grant from the Sun Life Assurance Company has been temporarily withdrawn, owing to the business depression.⁴

Colorado—During 1924 clinics were given by ten teams of four doctors each, who visited a locality once each month for six months. No team visited the same locality a second time and all teams represented, as far as possible the same four specialties. The faculty paid their own expenses.

For several years previous to 1927, Colorado held an annual state clinic. This was given at the University of Colorado Medical School and consisted of four days of intensive work covering all phases of medical study. The average attendance was about 300. A traveling clinic of four days' duration was held at irregular intervals in which the extension division of the University of Colorado the medical school the Colorado Agricultural College the state tuberculosis association and the child welfare bureau participated. For these traveling clinics the teams were made up of a pediatrician, a psychiatrist and an obstetrician chosen either from the faculty of the medical school or from among the leading practitioners of the state. Expenses were met by the participating organizations.⁵

In January 1933 the state medical society sponsored for the first time a three-day postgraduate clinic series (diagnostic and

⁴ Dr. T. C. Routley, general secretary, Canadian Medical Association, personal communication to the author, March 3, 1933.

⁵ American Medical Association Bulletin 22, June 1927.

therapeutic only), which was given independently but with the cooperation of the medical school. No salaries were paid instructors. More than 200 physicians registered out of a state society membership of 1,114.⁶

Connecticut—The state medical society, with the cooperation of the Yale University School of Medicine, initiated a clinical congress of three days' duration in 1924. Until 1929 the registration fee was \$10, at which time there was a surplus of approximately \$3,000, the average attendance having numbered 325 doctors out of a state society membership of 1,396.⁷ In 1929 the fee was reduced to \$5, a charge sufficient to cover all expenses provided the enrolment totaled 275 doctors. This three-day congress includes morning sessions devoted to the didactic presentation of subjects, afternoon sessions devoted to round table discussions, and two evening meetings devoted to the social and economic problems of medicine. The fee for the congress includes the cost of circularizing with preliminary programs, luncheons and the expenses of visiting speakers (which are defrayed). This is considered a successful venture. This is not the extension method of instruction but represents the organized effort of this medical society to provide postgraduate instruction for its membership.

Florida—Postgraduate courses were inaugurated June 19, 1933, by the Florida Medical Association in connection with the Extension Department of the University of Florida. Instructors receive traveling expenses and maintenance while in Gainesville.⁸

Georgia—Extension courses were first started in 1918, special emphasis was centered on the diagnosis and treatment of syphilis in seventy-two health unit clinics of rural counties, also a clinic week was held in Atlanta which was attended by 142 physicians from eighty-four counties. In 1931 the total registration for the clinic week was 3,062 and attendance was counted as postgraduate work. As a direct result a reduction of 40 per cent of brain syphilis in the state hospitals has been noted since 1919. The University of Georgia Medical Department organized an extension course through the county medical societies holding one-day sessions. Later five-day courses were established.⁹

Extension courses are now given with the cooperation of the state medical association, the medical society of the county in which the course is held, the state department of public health, the University of Georgia Medical Department and Emory University School of Medicine. The faculty is drawn half and half from the two medical schools and the professors are paid only expenses. No charge is made to the doctors attending the course, local expenses are borne by the county medical society, correspondence and other expenses are borne by the state department of public health.¹⁰

Illinois—A scientific service committee was established by the state medical society in 1923 to carry postgraduate extension teaching service to the county medical societies. One of its most popular methods of doing this has been by means of teams of from four to six members of the faculty of one of the medical schools. The society frequently sponsors a clinicopathologic conference (internist, surgeon, pathologist). In September 1933 a series of pediatric meetings was held throughout the state by teams of six, one member of each team being outstanding in this specialty. County societies are privileged to select a subject and request an all-day meeting, to meet these requests nearly 400 physicians are listed in the state medical society's speakers bureau with the subjects they prefer to present to any county medical society. In 1932 speakers were sent to more than 150 medical society meetings in Illinois.¹¹

Indiana—Indiana University School of Medicine has given, for a number of years, occasional postgraduate work for the various county medical societies. Feeling that this did not fill

the need, the state medical association held a successful two-day meeting in Indianapolis in the summer of 1932. The registration fee was \$2.50, speakers from within the state received no remuneration, speakers from without received their traveling expenses. The association held a one-day program at Richmond in the summer of 1933. The Indiana University School of Medicine gave a two-week postgraduate course in Indianapolis in 1933.¹²

Iowa—The speaker's bureau committee of the state medical society inaugurated postgraduate work in 1929. The State University of Iowa College of Medicine outlines the courses and furnishes the lecturers, the bureau manages them. In 1929 two courses, obstetrics and pediatrics, were given at Waterloo (forty-three registered) and Mason City (forty registered). Meetings were held from 5 to 10 p. m., one day a week for a period of ten weeks, the fee was \$10. Only the expenses of the lecturers were paid. In 1930, courses were given in five centers, a course in cardiovascular diseases was added and the fee was increased to \$20. In 1931, courses were given in five more centers, a course in surgery was added and the fee remained unchanged. The demand for these extension courses was too great for the college of medicine to handle so the state medical society began to run them independently. In 1933 the association conducted three such courses, the fee was \$10. Instructors were drawn from the State University of Iowa College of Medicine and from other prominent doctors in the state as well as doctors from outside the state.¹³

Kentucky—For several years a two-week course of graduate instruction has been given at the University of Louisville School of Medicine, for which there is a registration fee of \$2. Weekly postgraduate extension courses in obstetrics, in cooperation with the state board of health, have been given since 1931. No registration fee is charged, and the expenses of instructors are paid by the state board of health. Dr. P. F. Barbour, president of the state medical association, arranged for a series of courses for county medical societies in 1933. Societies were to be supplied with two men each day for one week, the entire day to be spent in demonstrations and dry clinics, the association was paying the expenses of the teams so that there would be no local charge.¹⁴

Massachusetts—Postgraduate instruction was begun by the Massachusetts Medical Society in September 1933. There are eighteen district societies that are 100 per cent organized, and instruction is now given in twenty-four centers. The program is supervised by a committee of eighteen representative doctors chosen to correlate all the medical teaching interests of the state, this committee appoints an executive committee of three and a secretary to handle the details of organization. A registration fee of \$5, plus an appropriation of \$1,000 by the society, will meet the expenses of this first year. A faculty of 174 doctors will give 240 sessions of two hours each this year, instructors go to the districts in teams of two or three members. The course is now (February 1934) in progress, 1,002 doctors are enrolled out of the society membership of 4,797. A more detailed report of methods and results will be published later.

Michigan—For about ten years (1927 statement) organized teams have gone to the county societies for an afternoon and evening program. Also they have held district conferences similar to the Ohio plan (thirty in fourteen districts during 1926) and postgraduate clinics at the leading hospitals of the state. November 1926, 300 attended the University of Michigan Hospital.¹⁵

The state medical society, under the direction of the University of Michigan Medical School, gives in Detroit postgraduate extension teaching of a formal and continuous character. Instruction is given almost entirely by men from the local profession; payment to instructors is made at the rate of \$10 per teaching hour. These men receive \$20 per teaching hour if lecturing at the university.

6 American Medical Directory, 3. Harvey T. Sethman, Executive Secretary, Colorado State Medical Society, personal communication to the author, March 30, 1933.

7 Dr. W. A. LaField, Personal communication to the author, Oct 20, 1933.

8 Dr. T. Z. Cason, chairman of educational committee, Florida Medical Association, personal communication to the author, April 4, 1933.

9 American Medical Association Bulletin 26, 1628 (May 9), 1931.

10 Dr. J. P. Bowdoin, assistant director, Georgia Department of Public Health, personal communication to the author, March 28, 1933.

11 Dr. Harold M. Camp, Illinois State Medical Society, personal communication to the author, Sept 29, 1933.

12 Thomas A. Hendricks, executive secretary, Indiana State Medical Association, personal communication to the author, March 23, 1933.

13 D. M. Nelson, secretary, Speaker's Bureau Committee, Iowa State Medical Society, personal communication to the author, April 5, 1933.

14 A. T. McCormack, secretary, Kentucky State Medical Association, personal communication to the author, March 25, 1933.

The medical school and state society, in conjunction with the Children's Fund of Michigan, have set up an auxiliary to the University Hospital at Marquette, where a year-round program in the teaching of pediatrics is conducted. About six subcenters have been established where teaching clinics are held at more or less regular intervals by the director of the central unit. (In the first fifteen months this unit cared for some 2 500 children)

Since about 1923, postgraduate clinical conferences of from one to three days have been given in the fifteen congressional districts of the state from one to three times a year. If within 100 miles only expenses of instructors are paid, if a greater distance is traveled \$25 is added for each day or part of a day occupied. Attendance has averaged about 3,000 in the course of a year.¹⁵

Minnesota—A committee appointed by the state medical society (known as the State Committee on Medical Education and Hospitals), cooperating with one appointed by the medical school, determines who shall be in charge of lectures and demonstrations in the various fields and specialties of medicine. In conjunction with the extension division of the university, this committee publishes and distributes to all county societies a booklet containing information relative to the courses and lectures that are available. No salaries are paid. The local county societies guarantee expenses for lecturers together with a nominal fee to cover the cost of printing, postage and the like.¹⁶

Missouri—The state medical association has a committee on postgraduate courses which provides the various county medical societies with speakers. Expenses of the speakers are paid by the association.¹⁷

New Hampshire—In 1932 extension teaching in the form of an obstetric institute was conducted in each of the several counties by a full time instructor. This institute was sponsored by the state board of health, with the cooperation of the county medical societies. Tuition was free, the expenses being met by the state board of health and the Federal Bureau of Maternal and Child Welfare. To date only a course in obstetrics has been given. County societies have cooperated in organizing this program.¹⁸

New Jersey—Postgraduate extension courses are given under the auspices of Rutgers University which has had charge of the paper work, advertising, canvassing in county medical societies and the like. The regents of the state advanced \$10,000 for this work permitting lectures to be given for \$15 a course and \$25 for two or more courses (\$30 was charged before this appropriation was made). In 1932, instructors were paid \$50 per lecture regardless of the number in attendance. In 1932 820 physicians (almost one third of the total membership) enrolled in twenty-five classes at thirteen centers, courses were given by seventy-seven different instructors—thirty-three from New York one from Newark one from Boston, forty-two from Philadelphia. Courses consisted of fractures, applied neurology, newer drug therapy, traumatic surgery, gynecology, medicine recent advances in medicine, recent advances in surgery, pediatrics, gastro-enterology and obstetrics. In 1933 the same number of courses were given in the same centers, the registration shrank to 600 and since no appropriation was made by the state, the lecturers received \$35 per lecture in order that the lectures might be given to the doctors at the same rate.¹⁹

New York—The "Brooklyn idea" was originated in 1922 by the Medical Society of the County of Kings in cooperation with the Long Island College Hospital. Two extension courses in sections of ten each were given in the spring and fall, on Fridays at 5 p. m. From 400 to 500 physicians usually attended these courses. They also developed a seminar course limited to from four to eight students covering a weekly session of half a day or a full day each week for six weeks.

The extension courses comprised from eight to twelve hours of work, from one to three hours being spent at a hospital in the late afternoon one day each week. Attendance was limited to ten students. Similar work has been carried on by other county societies in New York State.

The state medical society, through its committee on public health and medical education, has conducted one or more six weeks courses in nearly every county of the state. Provision has been made for single lectures or for courses of any length (lectures or lecture and clinic) desired. Their aim is to raise local standards of practice.²⁰ Instructors are paid \$25 per session, plus traveling expenses.

The Medical Society of the State of New York through its committee on public health, has also conducted annual extension courses since 1927. Instruction has been given in from twenty-two to thirty-one counties during this period. That these courses have real value is evidenced by the repeated requests for courses in counties from year to year. The accompanying statistical table taken from the report of the committee for 1931-1932 gives an interesting summary of this work.

This is a major project in medical education, the committee has increased its usefulness to practicing physicians by arranging special one and two day postgraduate courses at various medical schools in New York State. The expense is met by an appropriation from the state society.

Comparative Summary of Work in Graduate Education Under the Auspices of the Committee on Public Health and Medical Education for the Past Four Years

	1927-28	1928-29	1929-30	1930-31	1931-32
Total number of courses	214½	214½	16	21	20
Total number of lectures	116	10½	91	110	115
Number of county medical societies before which courses were given	22	21	19	2	2½
Total attendance of all courses	3 268	4 809	3 296	3 520	
Largest attendance for one course	401	836	841	566	
Smallest attendance for one course	42	66	57	59	
Total cost of all courses	\$4 24 82	\$4 777 07	\$3 70½ 42	\$4 898 33	
Average cost per course	215 47	217 96	231 9	233 2½	
Average cost per county	20½ 67	154 10	19½ 02	15½ 03	
Average cost per attendance	1 8	0 08	1 12	1 39	

North Carolina—Extension courses first started in 1916 through the cooperation of the state medical society, the state board of health and the state university, but they were discontinued during the World War. In 1922 extension teaching was resumed by the University Extension Division and the University of North Carolina School of Medicine and was given every summer until 1929. Classes were organized on the circuit plan, each class meeting once a week for from six to twelve weeks. One instructor taught the entire course or three gave instruction for one month each. These doctors were always chosen from outside the state. In eight years there was a total enrolment of 1,341 doctors, whose average attendance was 72.2 per cent. The director of the extension division feels that they lacked funds to provide the best possible teaching service also, they were unable to reach physicians in remote rural sections because of the necessity of locating classes where the largest enrolment could be secured (in order to finance the work). Tuition ranged from \$25 to \$40 depending on the length of the course.²⁰

Ohio—The state medical society has, for several years, cooperated with the medical schools of the three universities in Ohio in creating interest among its members in a series of postgraduate lectures arranged by those schools each year. A committee from each of the schools assists the county medical societies in arranging programs.²¹

Oklahoma—Extension courses have been given by the extension division of the state university in various centers usually grouped conveniently for instructors' travel fees ranged from \$10 to \$35, courses have been given in cooperation with the

15 Dr James D Bruce University of Michigan Department of Postgraduate Medicine personal communication to the author March 23 1933

16 S B Solhaug chairman State Committee on Medical Education and Hospitals personal communication to the author March 31 1933

17 Dr E J Goodwin secretary-editor Missouri State Medical Association personal communication to the author March 28 1933

18 New Hampshire State Board of Health Bulletin July 1932

19 Dr J B Morrison secretary Medical Society of New Jersey personal communication to the author March 18 1933

20 Dr R M Cruman director Extension Division University of North Carolina School of Medicine personal communication to the author May 8 1931

21 Don K Martin executive secretary Ohio State Medical Society personal communication to the author March 20 1933

state medical association, although some were given entirely under the supervision of the school of medicine and the extension division of the state university. Members of the faculty have been paid only expenses in the form of honorariums except that when an instructor has been employed on full time for from one to two months he has been paid from \$750 to \$1,000 per month, plus expenses. These courses have been discontinued because the governor of the state withdrew financial support from this division of the state university, also, the entrance of the osteopathic profession to these state-controlled courses caused the immediate cessation of the courses in October 1933.²²

Pennsylvania—The state society does not conduct postgraduate courses as such. An annual councilor district meeting is held by each of the eleven councilor districts, at which one or two out-of-state doctors speak. All expenses are paid by the state society. A number of the sixty component county societies conduct graduate courses.²³

Virginia—The Medical Society of Virginia began extension teaching in 1929 with the appointment of a committee known as the Department of Clinical Education, whose purpose it was to stimulate educational programs on the part of local medical societies and to furnish competent clinicians. They have had an annual appropriation for three years of \$500 from society funds (used for traveling expenses of speakers and for publicity). Later the Department of Clinical Education formed a joint committee on prenatal and postnatal instruction with the Medical College of Virginia and the University of Virginia, with the University Extension Division as the administrative agent. The program of the joint committee was underwritten by a grant of \$2,500 from the medical society and a grant of \$10,000 from the Commonwealth Fund of New York for the first year, with \$5,500 available for the second year. The tuition fee for the course of ten lectures was set at \$5.²⁴

Washington—The state medical society endorses an annual course given by the University of Washington. The usual charge is \$15 for four or five lectures given within a period of one week. The average annual expense is \$2,500, the average attendance is 230.²⁵

Wisconsin—Postgraduate extension teaching was begun on the North Carolina plan in 1917 but was soon changed to the holding of lectures and clinics at any point in which a group organized and asked for them. The Wisconsin Medical Society, the extension division of the University of Wisconsin and the University of Wisconsin Medical School cooperated to give medical extension courses. The tuition fee for the courses offered has been \$30 for a series of twelve weekly meetings of two hours each. An advisory committee met twice a year and worked out general plans for courses, the details and budget responsibilities were carried by the extension division, \$3,000 per circuit of twelve weeks was collected which covered the salaries and expenses of the instructors. It was not planned to give the extension courses in 1933 owing to the financial condition of the area.²⁶

This information makes no effort to include stated meetings, symposiums, conventions, local medical clubs and the like, all of which are worth while and often educational organizations of high merit. It is necessary to broaden the base of education if the general level of medical service is to be raised. Extension courses help to do this and at the same time present a sound method of helping the individual, they should also educate the profession to the need of systematic resident study at some school. When the profession demands better postgraduate facilities I feel sure that the public will assist in providing the means even as they have for the undergraduate courses.

SERIOUS ARSPHENAMINE REACTIONS WITH REFERENCE TO THEIR PREVENTION

REPORT OF SIX CASES

MAXWELL SCARF, M.D.

PHILADELPHIA

In the past five years I have observed six severe accidents following neoarsphenamine therapy. With the exception of case 4 (service of Dr S. S. Greenbaum), all were in the service of Dr Henry B. Shmookler. They constitute a unique assortment of cases, representing as they do every type of serious reaction except exfoliative dermatitis, which may, and frequently does, prove rapidly fatal. The literature on the subject is not so opulent as to make the report of these cases merely supernumerary. Especially is this true of complications such as aplastic anemia (case 1) and transverse myelitis (case 5). Indeed, the universal use of the potent arsphenamines invests this subject with a ubiquitous timeliness. The purport of this report is not, however, to augment the literature with additional case records. It is, rather, to review these cases from the standpoint of prevention and to dissipate the fatalistic notion, held by many, that most if not all disastrous reactions are inevitable. An attempt will be made to show that in four of the six cases cited here the sinister event might have been obviated by the cognizance of apparently innocuous symptoms and signs as the harbingers of impending danger. It may be said briefly that in the therapy of syphilis it is imperative to be conversant with and alive to the significance of minutiae.

APLASTIC ANEMIA

CASE 1—Mrs. S. L., aged 30, admitted to the hospital, Dec. 29, 1931, for severe headaches of ten weeks' duration, had a strongly positive Wassermann reaction. A roentgenogram showed six circular areas of bone absorption, about 1 cm. in diameter each, in the frontal bones of the skull. Treatment with iodides and with compounds of mercury and bismuth relieved the headaches. After discharge she received twelve injections, at weekly intervals, of 0.6 Gm. of neoarsphenamine. Two weeks prior to her last injection she noted a blue mark on the thigh. An injection was given. One week later a crop of these appeared. This finding was blissfully disregarded and another injection given. Following this, severe purpura occurred. Concomitant with the purpura generalized mucous membrane bleeding appeared as epistaxis, hemoptysis, menorrhagia, melena and retinal hemorrhage. On readmission, May 13, 1932, pallor was extreme. The blood count showed hemoglobin, 36 per cent, red blood cells, 1,690,000, white blood cells 4,700, polymorphonuclears, 44 per cent, small lymphocytes, 55 per cent, platelets, 70,000. No abnormal cells were seen. Reticulocytes were 1 per cent. The icterus index was 6. The bleeding time was forty-seven minutes and the coagulation time, four and one-half minutes. The urine was positive for arsenic. The Wassermann test was now negative. A diagnosis of postarsphenamine aplastic anemia was apparent. During her three months hospital sojourn she received eleven transfusions, about 500 cc. each, the blood count rising to hemoglobin 76 per cent, red blood cells, 3,700,000, white blood cells, 5,700, polymorphonuclears 51 per cent, lymphocytes, 49 per cent, platelets 80,000. Follow up six months later showed complete restoration of the blood to normal.

An anemia in which the hematopoietic system is so suppressed and paralyzed that it causes a marked reduction in all blood elements is aplastic. Of the cases that occur, those that are secondary to roentgen, radium, benzene, trinitrotoluene and arsphenamine poi-

²² L. W. Kuhler Postgraduate Medical Study, University of Oklahoma personal communication to the author Oct. 17, 1933.

²³ Walter F. Donaldson, secretary, the Medical Society of the State of Pennsylvania, personal communication to the author March 18, 1933.

²⁴ G. W. Euler, secretary, Extension Division, University of Virginia, personal communication to the author July 18, 1932.

²⁵ Dr. Curtis H. Thomson, secretary-treasurer, Washington State Medical Association, personal communication to the author April 6, 1933.

²⁶ Chester D. Snell, dean, University of Wisconsin, University Extension Division, personal communication to the author July 7, 1932.

soning outnumber the idiopathic form. In 1919, Labbe and Langlois¹ first described postarsphenamine aplastic anemia as an entity. The condition is rare. McCarthy and Wilson² recently reviewed seventy-nine cases of blood dyscrasias following the arsphenamines, thirty-four of which were aplastic anemia. Phelps had two cases out of 272,354 doses. Stephens reported this complication twice in a series of 14,000 injections given to 1,200 patients. Combes³ had one in 4,000 patients. Farley⁴ in seven years, saw six cases.

Of the various arsphenamines used, neoarsphenamine is responsible for about 65 per cent of the cases, not because of its more peculiar toxicity but probably because of its more frequent use. Sulpharsphenamine is the arch offender. Indeed, Stokes⁵ has said "I have never seen a case of aplastic anemia in an experience numbering more than 100,000 injections until I began to use sulpharsphenamine. Then, like a thunder-clap, within a short period of several months, I saw five cases in rapid succession, all due to this drug." Bickford and Tilgham⁶ also think that relative to the total use of sulpharsphenamine, blood dyscrasias follow in its wake with surprising frequency.

The exact pathogenesis of the blood dyscrasias following the arsphenamines is still a mystery. The prevailing opinion incriminates the double benzene ring of the organic arsenicals as the injurious agent. This is predicated on the well known marrow-depressing effect of the benzenes. It is also pointed out that Whelan's case of granulopenia in a child is the only one on record due to inorganic arsenic. Opposition to this theory is based on the uncertain knowledge that benzene actually splits off and that, if it is so liberated, its quantity is less than studies have shown necessary to produce such toxic effects. Some believe it occurs only in patients with a congenitally weak hematopoietic apparatus, since, in comparison with the wide use of the arsphenamines, aplastic anemia is rare. Bronfin and Singerman⁷ postulate an idiosyncrasy. This idiosyncrasy may be reflected in the entire hematopoietic system as an aplastic anemia or, by selectivity, in any of its component parts, producing granulopenia or thrombocytopenic purpura as the case may be.

There is no way of predicting the onset of this disease in a syphilitic patient receiving the arsphenamines. It may follow the initial dose, exceptionally, or any one of the subsequent doses. It may follow within twelve to twenty-four hours after an injection, or it may be delayed for several months.

The death rate is exceedingly high. Loveman⁸ cites it as 60 per cent. In the thirty-four cases collected by McCarthy and Wilson,² the mortality was 83 per cent. Death is not immediate and is due either to repeated hemorrhages or to intercurrent infection consequent on the granulopenia. Recovery, when it does occur, is prolonged and tedious and averages about six months.

The sheet anchor of treatment is repeated transfusions with the objective of tiding over the patient until his own bone marrow begins to regenerate. Duke⁹ says that the bone marrow is architecturally simple and can regenerate readily, even if there is marked destruction, provided it gets rid of the primary cause. Farley⁴ believes that in many cases there is no actual aplasia but a physiologic paralysis.

In view of the high mortality rate, it is obvious that prophylaxis, when possible is of paramount importance. In case 1 the purpuric spots were ignored and not regarded as the danger signals, which they truly were. Misinterpreting their significance resulted in two additional injections, which converted into a severe and potentially fatal aplastic anemia what might have otherwise remained a benign and transient purpura simplex. Semenza¹⁰ recognized the gravity of such neglect and urged the systematic examination of the blood even in the absence of untoward clinical manifestations, an opinion concurred in by Bronfin and Singerman.⁷ Probably this is not practical. But it is essential, if one wants to avoid an occasional critical issue, to be vigilant and to assess any apparently trivial symptom or sign carefully and scrupulously.

HEMORRHAGIC ENCEPHALITIS

CASE 2—H. F., a man, aged 30, presented a swollen and painful left ankle joint on admission to the hospital. He had contracted gonorrhea three years before and had had a recurrent urethral discharge since. The ankle joint had been incised before admission and there was still considerable drainage of pus. A gonococcus complement fixation test was positive. The temperature and pulse were only slightly elevated. After conservative treatment for four weeks the ankle joint improved greatly but the left wrist became inflamed. Because of this metastasis a therapy sterilisans magna in the form of neoarsphenamine was thought worthy of trial, despite the negative Wassermann test. Accordingly, neoarsphenamine 0.3 Gm was given, March 2, 1928. A macular rash appeared on the face and neck a few hours afterward but was transient. March 9, 0.45 Gm of neoarsphenamine was administered. Twelve hours afterward the temperature rose to 104 F and vomiting occurred. The temperature fluctuated at this level and then abruptly rose to 106. The patient became irrational, had generalized convulsions and remained stuporous until his death, March 17. Several lumbar taps were performed, the fluid at first remaining clear and later containing many white cells. No arsenic was obtained in the spinal fluid. Necropsy showed an acute edema of the brain, congestion over the choroid plexus and petechiae in the left basal ganglions.

The distinctive destructive effects of the arsphenamines on the nervous system is expressed by a hemorrhagic encephalitis. In 1911, just a few years after the introduction of the arsphenamines into general use, the first case was reported by Fisher.¹¹ Of all the arsphenamine reactions, it is the chief cause of death, exceeding exfoliative dermatitis and acute yellow atrophy combined. According to Meierowsky and Kretzner, who reviewed 109 arsphenamine fatalities, 60 per cent were due to encephalitis. Of the twelve deaths reported by Cole, DeWolf and their associates,¹² six were due to this relentless complication. Of thirteen arsphenamine deaths reported in New York State¹³ from 1926 to 1931 inclusive, two were due to encephalitis. It is,

1 Labbe M and Langlois S. Acute Purpura Hemorrhagica from Arsenical Poisoning. *Bull et mem Soc med d hop de Paris* 43: 786 (July 25) 1919.

2 McCarthy F P and Wilson, Robert Jr. The Blood Dyscrasias Following the Arsphenamines. *J A M A* 99: 1557 (Nov 25) 1932.

3 Combes F C Jr. Purpura Hemorrhagica Following Sulpharsphenamine. *Arch Dermat & Syph* 15: 194 (Feb) 1927.

4 Farley D L. Depressed Bone Marrow Function from the Arsphenamines. *Am J M Sc* 179: 214 (Feb) 1930.

5 Reports of the Council. *J A M A* 99: 1689 (Nov 12) 1932.

6 Bickford J V and Tilgham R C. Purpura Haemorrhagica in Congenital Syphilis Following Arsphenamine. *J A M A* 100: 1984 (June 24) 1933.

7 Bronfin I D and Singerman Isidor. Acute Aplastic Anemia Complicating Arsphenamine Therapy. *J A M A* 98: 1725 (May 14) 1932.

8 Loveman A B. Toxic Granulocytopenia Purpura Haemorrhagica and Aplastic Anemia Following the Arsphenamines. *Ann Int Med* 5: 1238 (April) 1932.

9 Duke W W. Aplastic Anemia. *J A M A* 91: 720 (Sept 8) 1928.

10 Semenza Carlo. Aplastic Anemia and Arsphenamine Intoxication. *Clin med ital* 62: 527 (June) 1931.

11 Fisher B. Ueber einen Todesfall durch Encephalitis baemorrhagica. *Munchen med Wehnschr* 58: 1803 1911.

12 Cole H N, DeWolf Henry, McCuskey J M, Mickyan H G, Williamson G S, Rauschkolb J R, Ruch R O and Clark Taliaferro. Toxic Effects Following Use of the Arsphenamines. *J A M A* 97: 897 (Sept 26) 1931.

13 Reports of the Council. *J A M A* 99: 1689 (Nov 12) 1932.

however, by no means of frequent occurrence Stokes¹⁴ had only one case in 63 000 injections Moore quoted by Brittingham and Phinzy,¹⁵ did not see a single case in 200,000 injections given to 15,000 patients

Hemorrhagic encephalitis is a grave complication Death ensues within several hours of the onset or may be delayed for a few days It has been reported as early as one hour after injection Only occasionally does a patient survive Sheppe¹⁶ tells of a patient who, three hours after injection, became drowsy, convulsive and unconscious but recovered Beeson¹⁷ also cites a case of hemorrhagic encephalitis with recovery Neoarsphenamine is responsible for more cases than arsphenamine, and sulpharsphenamine is the most culpable, comparative to its use It occurs in young adults early in the course of treatment, usually before the fourth injection Its onset is sudden and is characterized by headache, apathy, convulsions and coma The picture is similar to that of alcoholic wet brain¹⁸ Pathologically, the brain presents marked edema with extreme diffuse capillary hemorrhages, especially in the regions of the fourth ventricle, pons and corpus callosum Ehrlich¹⁹ thought that the dilatory and destructive effects of the arsphenamines on the brain were due to insufficient epinephrine as a result of simultaneous arsenical destruction of the suprarenals Since then, frequent doses of epinephrine have constituted the accepted treatment

Case 2 may be viewed in two antithetical ways Since hemorrhagic encephalitis is a sudden, unforeseen and unpredictable catastrophe, it may be maintained that the death was doubtless unavoidable On the other hand, it should be remembered that the Wassermann test was negative and that neoarsphenamine was given solely to combat a clinical gonococcemia The question is whether the efficacy of the arsphenamines in septicemias is so established as to warrant their use in these conditions Those who doubt this may well contend that no drug capable of creating such havoc should be used in disease states in which its beneficence has not been proved From this angle, the death may with some justification be considered avoidable Furthermore, it should be recalled that the initial injection of 0.3 Gm. was followed by a maculopapular rash which may have signified some intolerance to the drug and, at the very least, contraindicated an increase in dosage to 0.45 Gm. for the following injection

ARSPHENAMINE HEPATITIS

CASE 3—Mrs R. R., aged 25 had a history of two miscarriages and a positive Wassermann test She had received, in another institution, four injections of neoarsphenamine at weekly intervals, the last dose being given two weeks prior to her admission Her presenting symptoms were intense pruritus and jaundice It is important to note that the itching antedated the final injection Examination revealed diminution of liver dulness The icterus index was 72 The van den Bergh test gave an immediate direct and biphasic reaction Urobilinogen was positive in the urine in 1:160 dilution There was bile in the urine The latter was positive also for arsenic With liberal daily dextrose injections intravenously including a 50 per cent dextrose venoclysis for twenty-four hours she made a complete recovery within a month after admission

CASE 4—C. W., a man, aged 28, after exposure to a known syphilitic person developed a generalized papulosquamous syphilis, especially affecting the palms and soles The Kolmer and Kahn tests were strongly positive, Jan. 4, 1932 On that day 0.3 Gm. of neoarsphenamine was given January 7, 1 cc. of bismo-cymol was administered January 11, 0.45 Gm. of neoarsphenamine was injected Two days afterward, nausea, vomiting, headache, malaise and generalized erythema appeared The liver became palpable and a deep jaundice followed The icterus index was 63 Therapy consisted of injections of a bismuth compound and sodium thiosulphate The jaundice completely disappeared within two months

Syphilis, untreated, may be complicated by liver damage In the secondary stage, when the organisms are widely disseminated, the liver is the depot of a great horde of spirochetes This manifests itself in a mild, transient icterus and rarely, when the spirochetemia is massive, in an acute yellow atrophy with fatal outcome²⁰ Latent syphilis may also cause liver destruction either as a diffuse hepatitis, gummatous formation or cirrhosis Jaundice was a prominent symptom in the 140 cases of syphilis of the liver reported by O'Leary²¹ It must be remembered that many cases of syphilis of the liver remain unrecognized because, as Mann²² has shown, 90 per cent of the organ may be destroyed before the symptoms of hepatic insufficiency intervene It is always necessary to differentiate the cause of jaundice in any syphilitic patient treated with the arsphenamines as to whether it is syphilitic in origin or due to the drug Scott²³ contends that jaundice in early syphilis is of two types (1) syphilitic, in which the jaundice occurs as the result of liver cell degeneration before treatment begins, and (2) combined syphilitic and arsenical, in which the causative factor is principally the syphilitic infection, on which is superimposed the toxic action of the arsphenamines

It is interesting to note that experimentally marked hepatitis by the arsphenamines can be produced only in syphilitic and not in normal animals There is indubitable proof, however, that the arsphenamines do have an especially hepatotoxic factor

That the arsphenamines and not the arsenic is the probable cause of hepatic insufficiency is deduced from the comparatively few cases of jaundice reported before the extensive use of the former Filhol,²⁴ in reviewing this subject, ascertained the fact that icterus in syphilis was uncommon before the introduction of the organic arsenicals According to the Salvarsan Committee,²⁵ evidence is accumulating that arsphenamine therapy is followed in practically every instance by a certain degree of hepatic insufficiency susceptible of recognition by special tests, such as the icterus index, although clinical signs of disorder may be absent Cole, DeWolf and their associates²⁶ noted icterus in twenty cases in a series of 1,212 patients, with one fatal outcome In a recent report on a series of 10,021 patients, Wile and Sams²⁶ showed the incidence of postarsphenamine jaundice to be seven times as great as pretherapeutic jaundice

All writers agree that the occurrence of jaundice contraindicates the use of the arsenicals Even in the

14 Stokes Modern Clinical Syphilology p. 348
15 Brittingham J. W. and Phinzy Thomas Hemorrhagic Encephalitis After Neoarsphenamine J. A. M. A. 96: 2021 (June 13) 1931
16 Sheppe W. Arsphenamine Encephalitis West Virginia M. J. 26: 705 (Dec.) 1930
17 Beeson B. B. Arsphenamine and Neoarsphenamine Plus Adrenalin Am. J. Syph. 3: 129 (Jan.) 1919
18 Wechsler I. A. Textbook of Clinical Neurology Philadelphia W. B. Saunders Company 1932 p. 400
19 Ehrlich Paul Deaths After Salvarsan Brit. M. J. 1: 1044 (May 9) 1914

20 Wile U. J. Syphilis of the Liver Arch. Dermat. & Syph. 1: 139 (Feb.) 1920
21 O'Leary P. A. Observations on the Treatment of Syphilis of the Liver J. A. M. A. 96: 183 (Jan. 31) 1931
22 Mann F. C. Effects of Complete and Partial Removal of the Liver Medicine 4: 419 (Dec.) 1927
23 Scott G. O. Syphilitic and Arsenical Jaundice Am. J. Syph. 3: 628 (Oct.) 1919
24 Filhol L. Arch. dermato-syphilo-graphiques 2: 597 1930
25 Toxic Effects of Arsenolenzol Preparations Brit. M. J. 2: 14 (July 29) 1922
26 Wile U. J. and Sams N. W. A Study of Jaundice in Syphilis Am. J. M. Sc. 187: 297 (March) 1934

absence of jaundice, if any liver damage is suspected the use of the arsphenamines should be interdicted as a dangerous drug. That itching often precedes the onset of jaundice is a point of singular relevancy. It will be remembered that patient 3 was given one dose of neoarsphenamine after itching had already insinuated itself into the clinical picture. That this additional dose might have precipitated the hepatitis, certainly aggravated it, is beyond doubt. Here again emphasis must be placed on the formidable significance of an innocent symptom, disregard of which may render one injection of a useful drug into a powerful weapon of destruction.

TRANSVERSE MYELITIS

CASE 5—Mrs. E. K., while hospitalized for a disorder in the upper part of the abdomen, was found to have a positive Wassermann reaction on two occasions. Two doses of 0.45 Gm. of neoarsphenamine were administered, one week apart. On the afternoon following the second dose the temperature rose to 103 F., the pulse became rapid, and pain in the upper part of the abdomen associated with vomiting occurred. The fever continued and two days later a diffuse macular rash appeared over the entire body. The following day she complained of pain in both legs and moved them with difficulty. This soon developed into a complete flaccid paralysis of both lower limbs. There was also sphincteric involvement with complete retention of urine. The spinal fluid showed 25 white blood cells and the Wassermann reaction was strongly positive. The paralysis was due to a transverse lesion localized around the mid-dorsal region and was considered as a focal reaction or therapeutic shock. Antisyphilitic treatment in the form of iodides and compounds of bismuth and mercury was intensively applied and, in spite of the gloomy prognosis, gradual recovery fortunately ensued. Nine weeks after admission the patient was able to walk, and sphincteric control was completely regained.

This case of transverse myelitis represents the rarest variety of the arsphenamine complications. Its symptoms can hardly elude recognition. Curiously, cases presenting the symptoms of encephalitis occasionally show neuroscopic changes in the cervical cord alone. Spiethof and Frank, quoted by Soein,²⁷ have both reported such cases. Recovery is rare. Some cases become chronic but most terminate fatally as a result of bedsores, bronchopneumonia or an ascending paralysis. According to Rabut,²⁸ arsphenamine myelitis can be divided into three groups. Group 1 consists of those cases in which the symptoms appear almost immediately after an injection and may be accompanied by transitory pains in the legs or paraplegias, which disappear quickly, often in twenty-four hours. These cases must be considered as a radiculomedullary form of a nitritoid crisis. Four such cases are reported by Pinard.²⁹ Group 2 consists of those cases in which the symptoms are due to medullary syphilis, which is reactivated, precipitated or energized by the drug, i. e., a Herxheimer reaction or therapeutic shock. This appears in patients with acute secondary syphilis or in old syphilitic persons who have not been treated for a long time. Group 3 is composed of those cases in which the symptoms are due to the toxic action of the drug alone. Schmorl³⁰ reported several cases with numerous foci of softening in the spinal cord due to arsenical intoxication. Chiari³¹ described a case of

dorsal myelitis in which at autopsy he ruled out syphilis by the lack of inflammatory or exudative changes, embolism and thrombosis, by the absence of vascular changes and because of the purely necrotic appearance of the lesion concluded that it was due solely to arsenical intoxication. The existence of this group is doubted by many. Myelitis following the arsenicals is ascribed by Stokes,³² Newmark,³³ and Mingazzini³⁴ to therapeutic shock.

The question as to whether myelitis is due to an intoxication or to a Herxheimer flare up is not merely academic because it has an important bearing on treatment. If toxic further arsenical treatment must be omitted, if a Herxheimer flare up, permissible and indicated. Devic reported a case in which continued arsphenamine treatment ultimately yielded a cure. Pinard's²⁹ cases improved with arsphenamine therapy. Greenbaum advised further treatment with arsenicals in case 5 which, however, showed complete disappearance of symptoms under preparations of bismuth and mercury and the iodides alone.

ANEURYSM OF THE AORTA WITH RUPTURE

CASE 6—S. N., a man, referred to the medical clinic, March 29, 1932, complained of a burning sensation in the region of the upper sternum. He had received, in the skin department, two injections of 0.45 Gm. of neoarsphenamine March 21 and 28. He gave a history of a penile lesion in 1922. The Kolmer and Kahn tests were strongly positive. Examination disclosed increased supracardiac dulness and a systolic murmur at the base transmitted to the carotids. Aneurysm of the arch of the aorta was suspected. An order for a roentgenogram of the chest was not consummated. Nevertheless, April 4 he received another dose of 0.45 Gm. of neoarsphenamine. That day severe precordial pain developed. April 6 he walked five blocks to the hospital, where, on his arrival, he was seized with an agonizing stenocardia, after which symptoms of profound shock supervened. Orthopnea was extreme. The following day he died during another attack of precordial pain. Necropsy showed a large saccular aneurysm of the arch of the aorta which had ruptured into the mediastinum. The coronary arteries were normal.

That aneurysms may rupture spontaneously is, of course, indisputable. It may be argued, then, that the rupture of the aneurysm was merely coincidental with the arsphenamine therapy, thus denying the apparent relationship of cause and effect. The occurrence of rupture following quickly on the heels of vigorous antisyphilitic remedies has so often been noted, however, that it inveighs heavily against such an assertion and makes it well-nigh untenable. Stokes³² had two deaths from ruptured aneurysm within twenty-four hours after injection. It is because of such notoriously appalling effects, which some practitioners experience while others do not, that the literature on the subject of treatment of cardiovascular syphilis is so chaotic and confusing. After careful scrutiny, two main currents of thought can be distinguished. One consists of the belief that by the use of arsphenamines better results can be achieved than without them. Moore and Dangle³⁵ state that the duration of life in their patients so treated was sixty-nine months as compared with nine months in untreated patients. Similar results

27 Soein, C. Ueber Salvarsan Myelitis. Cor. Bl. f. Schweiz. Aerzte. 46: 1570 (Nov. 18) 1916.

28 Rabut, R. Paraplegia During Course of Treatment with Arsphenamine. Rev. gen. de clin. et de therap. 46: 789 (Nov. 26) 1932.

29 Pinard, M. Paraplegia Following Arsenical Treatment. Bull. Soc. franç. de dermat. et syph. 26: 253 (July 10) 1919.

30 Schmorl, G. Encephalitis Haemorrhagica nach Salvarsan Injektionen. Gesellsch. f. Natur u. Heilkunde. 27. April 1913.

31 Chiari, A. Myelitis After Salvarsan Injection. Verhandl. d. deutsch. path. Gesellsch. 1913. pp. 155-161.

32 Stokes. Modern Clinical Syphilology. p. 342.

33 Newmark, L. Softening of the Spinal Cord in a Syphilitic After an Injection of Salvarsan. Am. J. M. Sc. 144: 848 (Dec.) 1912.

34 Mingazzini, G. Clinical and Pathologic and Anatomic Aspects of Hemorrhagic Encephalitis Following Arsphenamine Injections. Deutsch. Ztschr. f. Nervenh. 104: 1 1928.

35 Stokes. Modern Clinical Syphilology. p. 844.

36 Moore, J. E. Dangle, J. H. and Reisinger, J. C. Treatment of Cardiovascular Syphilis. Results Obtained in 53 Patients with Aortic Aneurysm and in 112 with Aortic Regurgitation. Arch. Int. Med. 49: 879 (June) 1932.

were obtained by Pinaud³⁷ and by Conybeare³⁸. Notable success has also been reported by Cotton³⁹ and by Hazen⁴⁰. Keidel and Kemp⁴¹ do not deem the poor prognosis in aneurysmal dilatation a deterrent to the use of the synthetic arsenicals. Vaquez⁴² says "In severe cases of cardio-aortic syphilis there should be no hesitation in resorting to neoarsphenamine. I have used it frequently without harm." Sir Thomas Lewis⁴³ is not averse to its use. None of these men fail to stress that very small doses should be given. It is especially noteworthy that practically none had the temerity to administer the arsphenamines without an adequate preliminary treatment with iodides and mercury or bismuth compounds. Smith⁴⁴ emphasizes the particular importance of precluding the possibilities of therapeutic shock by using the milder antisyphilitic treatments before arsphenaminizing the patient. East and Bain⁴⁵ recommend the prolonged use of iodides and mercury compounds as a wise precaution and necessary procedure.

The men who hold the second opinion believe that the use of arsphenamines in cardiovascular syphilis is positively dangerous and sedulously avoid them. That more harm than good can result from intensive measures is asserted by Warfield⁴⁶. Meyer⁴⁷ describes examples of fatalities from the rapidly acting arsphenamines. That arsphenamine makes aneurysmal cases worse is contended by Bullrich⁴⁸. Donzelot⁴⁹ concurs with him fully. Coombs⁵⁰ voices a definite objection to the use of the arsphenamines in advanced aortitis. All these, and others, invoke to their aid the deaths reported from therapeutic shock and the therapeutic paradox.

When such decided difference of opinion exists it is perhaps wise to adopt a course between the two extremes. The keynote should be summed up in one word—conservatism. A sane middle course is charted by Paul White,⁵¹ who advises from six to eight weeks of mercury compounds and iodides to be followed by small doses of neoarsphenamine, beginning with a dosage of 0.1 Gm, cautiously increased to 0.4 Gm.

Was the death of patient 6 avoidable? The large initial dosage of 0.45 Gm of neoarsphenamine and the failure to prepare the patient for the reception of this drug by the use of milder antisyphilitic treatment compel an affirmative answer. This procedure violated the two important tenets on which there is virtual unanimity of opinion by those who advocate the use of the arsphenamines, namely small dosage and preparatory administration of the iodides and compounds of bis-

muth or mercury. The disastrous complication of ruptured aorta can be forestalled only by a discriminating use of the potent arsenicals in syphilis of such vital structures as the heart and aorta.

SUMMARY

1 One case of aplastic anemia developed under neoarsphenamine therapy when two injections were given after purpura appeared.

2 In one of the two cases of hepatitis, one injection of neoarsphenamine was given after the patient complained of itching.

3 Hemorrhagic encephalitis occurred as a complication in a case of gonorrheal arthritis with a negative Wassermann reaction in which two doses of neoarsphenamine were given in increasing doses, although an eruption followed the first dose.

4 In a case of aneurysm of the aorta, rupture followed neoarsphenamine therapy, which was too vigorous and not preceded by a preparatory course of the milder antisyphilitic drugs.

5 A case of transverse myelitis, due to a rare and usually fatal form of Herxheimer reaction, terminated in complete recovery.

6 A large proportion of fatal or disabling reactions may be prevented by a careful evaluation of symptoms and signs as they appear in syphilitic patients under treatment with the arsphenamines.

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THE USE OF DIPHTHERIA TOXOID IN IMMUNIZATION OF MEDICAL STUDENTS AND NURSES

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The occurrence of diphtheria in medical students and nurses is a significant problem. While the susceptibility rate in this age period is not as high as in children under 10 years of age, the number of susceptibles among individuals 20 years of age and older is sufficiently high to warrant an attempt at immunization, especially since they are exposed frequently to this disease. Toxin-antitoxin has been usually employed in the United States for immunization of students and nurses against diphtheria. The experience with toxin-antitoxin in the immunization of nurses in the Vanderbilt University Hospital has not been satisfactory in that nine out of twenty-four Schick positive nurses receiving from three to four doses of toxin-antitoxin gave a positive reaction approximately six months after receiving the injections, and one of the group developed nasal diphtheria following three doses of toxin-antitoxin.

The effectiveness of this agent has varied in producing immunity. From 50 to 75 per cent of children given three injections have been reported by Park and Schroder¹ as showing a negative Schick test following immunization. Volk² has reported that 65 per cent of 8,000 children given three injections of 1 cc each of

- 37 Pinaud M. Bull et mem Soc med d hop de Paris 51 1711 (Jan 5) 1928.
38 Conybeare J J. Guy's Hosp Rep 74 163 (April) 1924.
39 Cotton T F. Cardio Aortic Syphilis Treatment Brit M J 1 855 (May 22) 1926.
40 Hazen H H. Treatment of Cardiovascular Syphilis Am J Syph 16 289 (July) 1932.
41 Keidel Albert and Kemp J E. Treatment of Visceral Syphilis J A M A 82 299 (Jan 26) 1924.
42 Vaquez Henri. Diseases of the Heart Philadelphia W B Saunders Company 1924 p 313.
43 Lewis Thomas. Diseases of the Heart New York Macmillan Company 1933 p 221.
44 Smith C M. The Treatment of Syphilitic Cardiovascular Disease New England M J 208 185 (Jan 26) 1933.
45 East C F T and Bain C W C. Recent Advances in Cardiology Philadelphia P Blakiston's Son & Co 1929 p 221.
46 Warfield L M. in Tice Frederick. Practice of Medicine Hagerstown Md W F Prior Company Inc 6 26 1921.
47 Meyer A. Die Behandlung der Aorten und Herzsyphilis Munchen med Wchnschr 77 928 (May 30) 1930.
48 Bullrich R A. Treatment of Cardiovascular Syphilis Rev med latino-am 13 939 (March) 1928.
49 Donzelot E. L'abus des medicaments antisyphilitiques dans le traitement des affection cardio-vasculaires Bull et mem Soc med d hop de Paris 51 1530 (Dec 1) 1927.
50 Coombs C F. Diagnosis and Treatment of Syphilis of Aorta and Heart Quart J 1 179 (Jan) 1932.
51 White P D. Heart Disease New York Macmillan Company 1931.

From the Department of Preventive Medicine and Public Health and the Department of Medicine of Vanderbilt University School of Medicine.
1 Park W H and Schroder M C. Diphtheria Toxin Antitoxin and Toxoid Comparison Am J Pub Health 22 716 (Jan) 1932.
2 Volk V K. Diphtheria Immunization by Three and Four Injections of Toxin Antitoxin in Comparative Trend of the Immunizing Process Am J Pub Health 21 884 889 (Aug) 1931.

toxin-antitoxin mixture were immune at the end of one year. He advocated giving four doses of toxin-antitoxin, and by this procedure a higher percentage of children were Schick negative at the end of one year as compared with a similar group given three injections of toxin-antitoxin. In his investigations, 64.4 per cent of children given three doses of toxin-antitoxin were Schick negative at the end of one year and 85 per cent were negative at the end of two years. Following four doses of toxin-antitoxin, 74 per cent were Schick negative at the end of one year and 92 per cent were negative at the end of two years.

Rhoads³ has reported that fourteen of twenty-nine cases of diphtheria in nurses occurred in those who had received from three to six injections of toxin-antitoxin from three months to two years prior to the onset of the disease. He emphasized the variation in potency of the different brands of toxin-antitoxin in use at that time. Lintz⁴ has reported a reversal of the Schick reaction in 55.4 per cent of a group of nurses who had received five injections.

Harrison,⁵ in a carefully controlled investigation, has shown that following three injections of 1 cc each of toxin-antitoxin mixture, standard strength, 65 per

cent of children became Schick negative, while under similar conditions in another comparable group of children 95 per cent became Schick negative following two injections of diphtheria toxoid. The Dicks⁶ in 1929 emphasized the advantages of toxoid in the immunization of adults against diphtheria. They reported that diphtheria toxoid as prepared by Ramon and given in three doses was a better immunizing agent than 0.1 L + diphtheria toxin-antitoxin mixture even when five doses of the latter were given.

The advantage of diphtheria toxoid as compared with toxin-antitoxin mixtures as an immunizing agent are well known. Its use, however, has been confined mainly to children under 8 years of age, owing to the severe local and general reactions that have been reported in older persons. For immunization of older children and adults, toxin-antitoxin is still advocated. Owing to the relatively low percentage of individuals immunized and the variation in potency of toxin-antitoxin, its effectiveness in the immunization of young adults is probably not as great as in children. It is also likely that young adults are more refractory

to immunization, since the susceptibles in that age period represent those who have failed to become immunized through natural processes. For the past few years an average of 28.8 per cent of medical students at the Vanderbilt University School of Medicine and 24.2 per cent of nurses at the Vanderbilt University School of Nursing have been found to be susceptible to diphtheria as determined by the Schick test. A control test with heated diphtheria toxin was done on each individual tested as we were dealing with an age group in which pseudopositive reactions were more likely to be found than in children. It was decided to immunize the positive reactors with diphtheria toxoid by the method advocated by the Connaught Laboratory in Canada. The toxoid (anatoxin-Ramon) and dilute toxoid were obtained from the Connaught Laboratories of the University of Toronto.

In order to avoid severe local and general reactions, the toxoid skin reaction test was given to each positive individual before any immunizing substance was injected. This test consists of an intradermal injection of 0.1 cc of a 1:10 dilution of toxoid. If no reaction consisting of an area of redness more than one-half inch (13 mm) in diameter developed within three days, the individual was given undiluted toxoid in the usual dosage. If a skin reaction did occur, increasing doses of diluted toxoid were given.

The results reported in this study were obtained over a period of one year. Only those persons who had a positive Schick test were immunized, the control test with heated toxin being negative in each instance. Before immunization was begun, each individual was given a test dose of 0.1 cc of a 1:10 dilution of toxoid. The results in each group were the same, so that the analysis for the combined group will be given. Those who reacted to the toxoid skin test were given diluted toxoid and those who showed no reaction were given undiluted toxoid.

During this period, forty-six medical students and twenty-six nurses were given from two to four injections of toxoid. Those receiving undiluted toxoid were given three injections at intervals of three weeks, beginning with 0.3 cc for the first dose, 0.5 cc for the second and 1 cc for the third dose. This was the usual procedure with respect to undiluted toxoid except when there was any complaint as to the severity of the previous reaction, under which circumstances the dose was reduced. The first dose of diluted toxoid given to the "reactors" was 0.2 cc. Each successive dose was usually double the previous one unless the reaction was severe enough to be of significance. The entire group was retested with the Schick and control tests from three to six months following the last injection.

Of the seventy-two individuals immunized, fifty-nine received undiluted toxoid and thirteen received diluted toxoid. The results obtained with these agents are shown in the accompanying table. The actual amount of toxoid given to each individual is reported in order to show the response to small doses of this agent. Of the seventy-two individuals immunized fifty-nine, or 83 per cent, received toxoid in amounts varying from 0.8 to 1.8 cc in two or three doses and in all of them a reversal of the Schick test occurred in from three to six months from the date of last injection. Of the thirteen persons receiving toxoid in small amounts, twelve were given from 0.1 to 0.24 cc in three or four doses and a reversal of the Schick test occurred in each one within the same time limits. One nurse received

Results Following the Use of Diphtheria Toxoid in Medical Students and Nurses

Number of Individuals Injected	Amount Injected, Cc	Number of Doses	Number Positive to Schick Test Before Immunization	Number Negative to Schick Test After Immunization
43	1.8	3	4	4
9	1.3	3	9	9
3	1.1	3	3	3
2	0.8	2	2	2
8	0.24	4	8	8
4	0.10	3	4	4
1	0.07	3	1	1
72			72	72

cent of children became Schick negative, while under similar conditions in another comparable group of children 95 per cent became Schick negative following two injections of diphtheria toxoid. The Dicks⁶ in 1929 emphasized the advantages of toxoid in the immunization of adults against diphtheria. They reported that diphtheria toxoid as prepared by Ramon and given in three doses was a better immunizing agent than 0.1 L + diphtheria toxin-antitoxin mixture even when five doses of the latter were given.

The advantage of diphtheria toxoid as compared with toxin-antitoxin mixtures as an immunizing agent are well known. Its use, however, has been confined mainly to children under 8 years of age, owing to the severe local and general reactions that have been reported in older persons. For immunization of older children and adults, toxin-antitoxin is still advocated. Owing to the relatively low percentage of individuals immunized and the variation in potency of toxin-antitoxin, its effectiveness in the immunization of young adults is probably not as great as in children. It is also likely that young adults are more refractory

3 Rhoads, P. S. Commercial Preparations of Diphtheria Toxin Antitoxin. Protecting Value in the Nurses of Cook County Hospital. J. A. M. A. 90:254 (Jan. 28) 1928.

4 Lintz, Joseph. Toxin Antitoxin in Immunization in Adults. Internat. Clin. 4:160-170 (Dec.) 1930.

5 Harrison, W. T. Advantages of Toxoid in Diphtheria Prophylaxis. Am. J. Pub. Health 22:17-24 (Jan.) 1932. The Immunizing Value of Diphtheria Toxin Antitoxin Mixture and of Diphtheria Toxoid. Pub. Health Rep. 45:1883-1888 (Aug. 15 part 2) 1930.

6 Dick, G. G. and Dick, Gladys H. Immunization Against Diphtheria. Comparative Value of Toxoid and Toxin Antitoxin Mixtures. J. A. M. A. 92:1901-1903 (June 8) 1929.

0.07 cc of toxoid in three doses and a negative Schick test was obtained following these injections. She had a positive Schick test two years prior to the present immunization and had received one injection of 1 cc of toxin-antitoxin at that time. She was not given any further injections of toxin-antitoxin because of the severe reaction.

The experience in this series in those individuals receiving small doses of toxoid is in agreement with that of Fraser,¹ who has reported a marked increase in the antitoxin response in certain persons who are skin sensitive to toxoid and who probably had prior to immunization, some antitoxin in the blood resulting from a previous primary stimulus. In one of Fraser's groups there were twenty-three persons whose diphtheria antitoxin titer was less than one-fiftieth unit per cubic centimeter of blood. Following the injection of from two to five small doses of toxoid, the antitoxin in titer was increased in all but one to the accepted level necessary to produce a negative Schick test. The total amount of toxoid injected in the present series of reactors was comparable to that injected in Fraser's series.

The reactions following these injections were on the whole mild. No student or nurse developed local or general reactions of sufficient severity to be absent from routine duties. Those in whom symptoms occurred complained of tenderness and pain at the site of injection, headache, slight to moderate rise in temperature, general malaise, and occasional abdominal discomfort. It was unusual for these complaints to incapacitate the individual and they cleared up as a rule within twenty-four to thirty-six hours, leaving only slight evidence of local reaction. The symptoms usually occurred after either the first or the second injection. It was not necessary to discontinue the injections in any one on account of undesirable reactions.

COMMENT

It is interesting that in every adult individual in this series a reversal of the Schick test from positive to negative occurred following injections of small to relatively large amounts of diphtheria toxoid in from two to four doses. The materials used were obtained from reliable sources and the toxoid and Schick testing material used was from the same lot and the testing and injections were done by the same persons. That the Schick test material used was potent is evident by the fact that positive tests were obtained in a group of children with the same material a few days before the present group was tested. Susceptible students were also tested with the same material and positive Schick tests were obtained. A majority of those who received the injections of toxoid were given another Schick test and each person was Schick negative on retest. The results obtained are in all probability due to the injections of toxoid, but one cannot altogether rule out the possibility that some degree of immunization resulted from contact with persons carrying diphtheria bacilli or with cases of the disease since the injections of toxoid were begun. While the latter is a possibility, most of the students and nurses in this series were either in the first or second year of their courses and the possibility of contact with cases of diphtheria was not as great as in students and nurses in the third and fourth years.

In the older age groups a control skin test should be done at the same time as the Schick test. Dilute toxoid may be used as control skin test material instead of heated diphtheria toxin, making it possible to determine susceptibility to diphtheria and at the same time to detect those persons who would develop undesirable reactions following an injection of toxoid.

CONCLUSIONS

1 The results reported show that it is possible to immunize students and nurses against diphtheria with diphtheria toxoid without producing any undesirable general or local reactions. The same procedure can be applied to the civil population under conditions in which immunization against diphtheria is indicated.

2 By testing intradermally with a skin test dose of dilute toxoid each person in the older age groups who has a positive Schick test, those individuals in whom a severe reaction would occur following a subcutaneous injection of toxoid can be detected.

3 Those who have a negative toxoid skin test can be given the usual dosage of diphtheria toxoid, while the dilute toxoid should be given to those who have a positive toxoid skin test or "toxoid reaction test."

4 These observations emphasize the desirability of using diphtheria toxoid to replace diphtheria toxin-antitoxin mixture as an immunizing agent.

THE PRESCRIBING OF DEXTROSE PHLEBOCLYSIS

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Dextrose phleboclysis¹ is, in certain conditions, a life-saving measure. It would be a shocking revelation could statistics be collected as to the number of people who annually die from hypohydration of the system, when their lives might have been spared by the parenteral administration of 5 per cent dextrose solution, of the number of patients lost from hypochloridation when dextrose-saline phleboclysis might have prevented their death, the number of ketosis deaths that might not have occurred had dextrose been given, and the occasional life that might have been saved by osmotherapy. What is no less pathetic is that, in instances lives are lost in the conditions mentioned even though dextrose solution was administered, simply because the patient was not given enough, or because the remedy was not employed early enough, or because the solution administered was not of the proper composition.

The reasons are not far to seek. Dextrose infusion has been but recently introduced into the practice of medicine, and there may be some physicians who still consider it a passing new fangled notion. Then there is the conviction that this is essentially a hospital procedure entirely unsuited to medical practice in the home. Likewise, the idea exists that it is impossible to secure properly prepared solutions in convenient containers for emergency administration in the home and that there are inherent difficulties in the procedure itself requiring meticulous technique difficult to master. That all these reasons are fallacious can be easily

¹ The term phleboclysis has been proposed by Reginald A. Cutting (The Place of Dextrose Phleboclysis in Surgery, New Orleans M. & S. J. July 1933 p. 239) instead of venoclysis which is a hybrid word, *vena* being of Latin and *clysis* of Greek derivation. It is also such time that at least in medical literature the word glucose which the U. S. Pharmacopeia applies to an impure product unsuitable for the purpose be abandoned for the pharmacopeial term dextrose.

¹ Fraser, D. T. The Response to the Injection of Small Doses of Diphtheria Toxoid in Man. *Tr. Roy. Soc. Canada* section V 1931 1: 191-195.

demonstrated As an abundant and ever increasing literature shows, the procedure is not only eminently rational but also supported by a mass of clinical experience, and the indications as well as contraindications are becoming well recognized Manufacturing technic has simplified the administration to such an extent that dextrose phleboclysis is not much more difficult or troublesome than the intravenous injection of an antiserum and is less dangerous Just as antitoxins are nowadays universally sold in syringe packages, so are these solutions available in containers ready for convenient administration, in practically every hospital, and they could be kept in drug stores, would the demand justify it

As the matter of the preparation and administration of the solutions is now well standardized,² space need not here be sacrificed in its discussion Suffice it to say that it is not so much "triple distillation"³ which is needed as that the water must be properly and freshly distilled just before final sterilization in order to avoid contamination with fever producing substances ("pyrogens") that may be produced in distilled water within a few hours by the growth of certain bacteria that it seems almost impossible to prevent getting into the fluid during the necessary manipulations This pyrogen readily passes over with the distillate in the ordinary still unless a water spray trap is employed during the distillation A single proper distillation will render water nonpyrogenic, while even after repeated ordinary distillation it may still be pyrogenic The rubber tubing should be rinsed with pyrogen-free water and properly sterilized shortly thereafter The ingredients employed in the preparation of the solutions must be chemically pure and free from contamination and caramelization The glassware should be "Pyrex" or Jena glass It has also been quite definitely shown that the rate of injection has a great deal to do with untoward reactions, and that the best way to prevent "speed shock" is by the drip method of administration, i e, that the individual drops be counted by means of a rectal drip bulb Hypertonic solutions should be given more slowly than isotonic solutions The solution in the container should, as a rule, be at 120 F and the container surrounded by a hot water bottle or similar device to maintain this temperature It will lose from 15 to 30 degrees F before it is delivered into the vein It must be assumed that all these matters are taken care of, so that attention may be directed here most especially to the prescribing of the proper composition of solutions to meet, with the smallest possible number of different stock solutions, the various individual indications of patients in need of this procedure

HYPOTHYDRATION⁴

As with other remedies, the dose of dextrose phleboclysis is "dose enough" and in this case quite a bulk, generally a liter The daily water turnover has been estimated at more than 16 liters This includes, of course, the secretions that are reabsorbed as well as the lymph that returns the water it drains from the blood When the ingestion of water becomes impossible, e g, after operations, it is difficult to supply water fast enough by rectal administration, subcutane-

ously or intramuscularly, and, if any degree of emergency exists, it must be given intravenously In this connection, the danger of delay and of dallying with methods inadequate to meet the situation must be pointed out Irreversible changes and vicious circles may become established When capillaries are insufficiently supplied with blood for some time, the increased vascular tone produced by vasomotor nerve excitation gives way to vasodilatation, probably from the local production of histamine-like bodies, and, in consequence of the action of these, the capillaries also become leaky, thus still further aggravating the deficiency of circulating fluid, still more depressing the low blood pressure and increasing the evil results of the general hypohydration An infusion given twenty-four hours too late may be incapable of relieving this vicious circle on account of irreversibility of the change It is necessary for the physician to be ever conscious of his patients' need of water For the maintenance of life, water is only second in importance to oxygen, and it is much more vitally important than food The responsibility rests with physicians and nurses of assuring the sick person a sufficient intake of fluid Just as the development of an "aseptic conscience" is a medical and surgical requisite, so medical people and surgical as well must be made "water-need conscious," whenever normal ingestion of fluid is interfered with

Normally, water enters the system only through the mouth, and, as soon as the patient cannot get all the water he asks for and still more especially if he cannot ask for it, care must be taken that he receives a sufficiency of it in some way or another In the conscious individual, thirst is a fairly delicate indication of hypohydration Considering the urgency of this sensation, mere humaneness should dictate its gratification Even more important is the fact that relief of thirst may mean the prevention of collapse A patient is therefore not properly cared for if he is permitted to suffer the torments of thirst Particularly serious is the fact that unconscious or semiconscious patients, as a rule, do not get enough water In all cases of serious sickness the best way of assuring an adequate fluid income is not only to prevent thirst but also to aim at an excretion of a quantity of at least 1,000 cc of urine in the twenty-four hours Whenever the quantity of urine falls below this, the nurse should call the physician's attention to this fact, and measures should promptly be instituted to correct the deficit, which should always be possible unless the kidney itself or its circulation is at fault The twenty-four hour quantity of urine should therefore be as regularly recorded in critically sick patients as is the pulse and temperature rate

The water should of course, be given by mouth, if possible, but conditions often arise when peroral administration is required Even if the patient can swallow, water does not quench thirst as long as it stays in the stomach, for the stomach does not absorb water Hence the patient in shock should be merely given sips of hot water frequently enough to minimize the suffering from thirst but not enough to distend the stomach, which may induce vomiting that aggravates the shock At the same time, adequate fluid income by other channels must be taken care of, for so-called secondary shock is often nothing more or less than hypohydration collapse, which might be prevented or lessened by giving, as soon as the primary shock is under control (and not before) retention enemas, or, if these are not successful, hypodermic, intramuscular

² Thompson S A Preparation of Dextrose and Saline Solutions and Apparatus for Intravenous and Subcutaneous Use *Am J Surg* 21 127 (Oct.) 1933

³ Elser W J and Stillman R G The Fetish of Triply Distilled Water *J A M A* 100 1326 (April 29) 1933

⁴ Hypohydration seems a better word to employ here than the more commonly used word dehydration because strictly speaking life would cease long before dehydration could occur

or intravenous injection of dextrose solution, in accordance with the seriousness of the emergency

It must be remembered that the sudden loss of 10 per cent of the water of the body results in serious disorders, and the loss of from 20 to 22 per cent means death. The daily intake probably cannot be reduced much below 600 cc for any length of time. The minimal desirable daily income of water may be estimated at 1.5 liters, but increased loss of water by sweating or purging increases the quantity required—may easily double it. Hence striving to secure the elimination of a sufficient quantity of urine is the most rational method of assuring adequate fluid intake.

Nothing seems more absurd than the thoughtless routine use of so-called physiologic solution of sodium chloride for the relief of thirst, or systemic hypohydration. Shipwrecked sailors have died from thirst with "water, water everywhere, nor any drop to drink." Even though 0.85 per cent salt solution is of much lower osmotic tension than sea water, the very fact that it is isotonic with the blood makes it that much less thirst quenching than plain water. Who would like to quench his thirst on a hot summer day with liberal libations of so-called physiologic salt water?^{4a} And that is what physicians treat their thirst tortured patients to. When, in the early days of its use, this solution was the normal (really decinormal 0.50 per cent) salt solution it was more thirst quenching than after it became known that, to be iso-osmotic with the blood serum, it had to be 0.85 per cent and was made to carry this concentration. Not only is this "physiologic" salt solution a poor thirst quencher, but when from 2,000 to 3,000 cc of it is given in twenty-four hours the kidney must eliminate this 17 or 25.5 Gm of sodium chloride, and, when the kidney is diseased or poorly supplied with blood this is a distinct burden to it and to the system. An isotonic sugar solution, on the other hand, releases the water associated with it the moment the dextrose is oxidized to carbon dioxide and water, which, being eliminated by the lungs, do not burden the kidney. The proper strength of this solution is in round numbers 5 per cent (more accurately, 5.1 per cent anhydrous dextrose). It preserves the shape of red blood corpuscles. In point of fact, the concentration that produces no observable change in the erythrocytes lies between 3.5 and 6 per cent.⁵ Laking occurs with concentrations below 3.5, and crenation appears at 7 per cent. Therefore, whenever it is necessary to combat hypohydration whenever one aims to quench thirst by intravenous injection, a 5 per cent dextrose solution should be infused. The temperature of the solution as delivered into the vein may range between 70 and 120 F. To patients with high temperature a relatively cool solution may be given which tends to lower body temperature. It also lowers blood pressure. Solutions above 98.6 F tend to raise blood pressure. In patients with subnormal temperature and most especially in shock, the higher temperature should be aimed at.

HYPOCHLORIDATION

Only second in importance to water in the medium surrounding the cells are the sodium and the chloride ions. When chloride deficiency in the system is spoken

of, a sodium deficiency is naturally also implied, for in the body the sodium ion occurs in an almost equivalent quantity (or rather in slight excess, in the form of bicarbonate). An elaborate mechanism exists to maintain the chloride percentage in the blood at a remarkably constant level (between 0.349 and 0.387 per cent). Nevertheless, hypochloridation of the system does occur, most especially after obstinate emesis, profuse diarrhea, extreme sweating or copious exudation, as in extensive burns. Haden and Orr⁶ have demonstrated conclusively the great remedial value of sodium chloride in the hypochloridemia of intestinal obstruction.

As in all these conditions a tendency to ketosis also exists, it seems reasonable to administer dextrose as a routine procedure along with the saline solution. On the other hand, it would be a serious error to administer dextrose solutions alone in conditions of hypochloridation, for dextrose phleboclisis tends to reduce the percentage of chloride not only in the blood but also in the lymph.⁷ Whenever salt starvation is present or threatened, dextrose-saline phleboclisis should be practiced, as pure dextrose solution increases the salt deficit. In order not to make the solution excessively hypertonic, its formula should be 5 per cent dextrose in physiologic solution of sodium chloride.

When much salt is lost, the secretory activity of the kidney becomes impaired and the quantity of urine is much diminished, nonprotein nitrogen retention occurring as a concomitant. Maintaining by means of dextrose-saline phleboclisis a liberal output of urine, from 800 to 1,000 cc in the twenty-four hours, enables one to feel secure that hypochloridation will not occur.

KETOSIS

Even more important than isotonicity is the maintenance of a certain hydrogen ion concentration of the blood. Stating it in another way, next to water and sodium chloride, a certain concentration of sodium bicarbonate in the blood is of the greatest importance. As acidosis is an extremely common pathologic state, more common than fever, it should be always looked out for and prevented in every case of serious sickness. The simplest way of recognizing acidosis and at the same time of lessening it, is to administer, at short intervals, just enough sodium bicarbonate or other alkali to make the urine amphoteric. When this is accomplished it is known that acidosis cannot exist and also that the patient has not been harmed by the production of an alkalosis. One should, in other words, as a routine take care of a sufficiency of sodium bicarbonate as one ought to take care of a sufficient supply of water.

It will be found, however, that in all conditions in which dextrose is inadequately catabolized whether this is in starvation or in diabetes, excessively large quantities of sodium bicarbonate would be required to secure this result and that even then the effect is merely temporary. One must in such cases proceed more fundamentally and relieve the cause of the acidosis by supplying dextrose, insulin or both. Indeed, one should not wait for the acidosis to assert itself. Whenever a patient cannot be given enough carbohydrate to prevent ketosis, one should provide it even before the condition asserts

4a. In conditions of extreme sweating as in blast furnace work on a hot summer day when the system loses a good deal of sodium chloride in the perspiration the addition of from 0.1 to 0.25 per cent of sodium chloride to the drinking water is advised but even under these conditions 0.85 per cent salt solution would be excessively salty.

5. Williams J. D. and McNelly R. W. Dextrose Solution: Its Optimum Concentration for Therapeutic Administration. *Northwest Med* 25: 329 (July) 1929.

6. Haden R. L. and Orr T. G. Effect of Inorganic Salts on Chemical Changes in Blood of Dog After Obstruction of Duodenum. *J. Exper. Med.* 39: 321-330 (Feb.) 1924. Sodium Content of Blood of Dog After Experimental Intestinal Obstruction. *ibid.* 41: 119-127 (Jan.) 1925. Experimental Obstruction of Jejunum: Effect of Sodium Chloride Introduced Directly into Lumen of Intestine Below Point of Obstruction. *ibid.* 41: 707-718 (June) 1925.

7. Meyer B. ch. R. and Günther F. Untersuchungen an der Brustganglion des Hundes. *Arch. f. d. ges. Physiol.* 209: 92 1925.

itself, for acidosis creates a vicious circle. Thus it has been shown by Thompson, Mitchell and Kolb⁸ that artificially induced acidosis lessens carbohydrate tolerance, causing hyperglycemia. The younger the subject, the greater also the degree of metabolic activity, e. g., in hyperthyroidism or fever, the greater the tendency to ketosis, for which dextrose is the specific remedy. The quantity that can be given by hypodermoclysis is too small to be of any importance, as can be seen from the following figures. Assuming that 500 cc. of the 5 per cent solution is injected two or even four times daily, the 50 or 100 Gm. of sugar thus introduced would merely yield from 200 to 400 calories, but even this amount usually cannot be administered for more than two or three days, as the patient would then refuse further injections on account of the soreness produced in the tissues used repeatedly for this purpose. By intramuscular or, rather, epifascial injection, a 10 per cent dextrose solution can be injected into the muscles of the lateral and outer lateral surfaces of the thighs without a local untoward effect in quantities of 40 cc. for infants, and of 100 for children⁹ and of 500 cc. for adults. Four such injections a day would yield an adult 200 Gm. of dextrose or 800 calories, which might tide him over an emergency of a few days.

By dextrose phlebotomy, a 10 per cent solution can be introduced at the rate of 500 cc. an hour before the sugar tolerance of the average individual is overcome as evidenced by leakage of sugar into the urine. At this rate, more than 6,000 calories could be introduced in the course of twenty-four hours, which is twice as much as is required by the resting person. Hence it may be asserted that intravenous nutrition by means of dextrose phlebotomy is decidedly possible clinically, as is attested among others by Marriott¹⁰ as well as by Porter, Morris and Meyer¹¹. In view of this it should be inexcusable to permit a patient to develop starvation ketosis.

POISONING

It is of importance to distinguish between poisoning with diffusible and with nondiffusible bodies when "washing the blood" by means of phlebotomy is contemplated. While there is no doubt that in certain conditions of poisoning, brilliant results can be achieved by flushing the system with fluid, there is also no doubt that there are toxemias that give no such response, in which, indeed, heroic attempts in this direction are harmful to the patients. Thus in tetanus, in diphtheria, in pneumonia and in other infectious diseases it is impossible to detoxicate the patient by pushing fluid through the system, because these disease toxins are more or less colloidal nondiffusible principles. In the case of diffusible poisons, on the other hand, phlebotomy should not be spared. Discrimination as to the kind of solution to use is also here in order. In mercuric chloride poisoning, for instance, dextrose phlebotomy is probably of decided value. Whether sodium chloride should be used in the infusion fluid or not depends on the degree to which sodium chloride has been lost by the system in vomiting and purging. In the presence of nephritis, one should certainly be sparing with the use of salt.

Especially important is dextrose phlebotomy as a part of a liberal carbohydrate administration program in conditions associated with a tendency to acidosis and fatty degeneration, particularly of the liver, as in phosphorus, chloroform and cinchophen poisoning. Indeed, on the basis of the evidence of the value of dextrose in experimental poisoning, it is advocated in the treatment of liver disease in general.¹²

Whether isotonic (5 per cent) or hypertonic (25 per cent) dextrose solution shall be used should depend on the following considerations. If there is a probability that unabsorbed poison still exists at the point of its application, hypertonic infusion would be contraindicated, as it increases absorption, and 5 per cent dextrose solution should be used. When, on the other hand, this danger does not exist and one wishes to draw deposited poison back into the circulation, the use of 25 per cent dextrose phlebotomy is advisable, most especially in the presence of heart weakness or of pulmonary edema.

Every drop of fluid that is introduced by phlebotomy must be disposed of by the system in some way. Hence a check on fluid income and output is imperative. Under normal circumstances about 700 cc. of fluid is vaporized daily by lung and skin and about 300 cc. is lost in the feces. Hence approximately 1,000 cc. is taken care of by extrarenal elimination. This means that any quantity of fluid in excess of 1,000 cc. infused into the veins must reappear in the urine or be stored in the tissues in the form of edema, the initial stages of which may be clinically imperceptible even though harmful to the patient. Hence the total bulk of fluid infused daily should not exceed 1,000 cc. plus the quantity of urine. This would mean that if the patient cannot pass more than 1,000 cc. of urine, not more than 2,000 cc. of fluid can safely be injected into the vein during the twenty-four hours unless one of two conditions, or both, exist: 1. If there is profuse sweating, vomiting, diarrhea or exudation, such losses should be estimated and compensated for by increased quantity of fluid introduced. 2. When the system has lost much fluid, this loss is first made good before there is an increase in the quantity of urine. When, after an abundance of fluid has been given the body weight becomes stationary and the urine diluted, it is clear that the tissues of the body are saturated.

When the system has difficulty in ridding itself of fluid and dextrose is desirable for ketolytic or nutritional purposes, this is an indication for the use of concentrated, e. g., 25 per cent, dextrose solution. Otherwise the 10 per cent solution should be preferred, unless the chief indication is for the administration of water, when 5 per cent dextrose solution may be used.

The appearance of sugar in the urine, in the course of dextrose phlebotomy, means either cutting down on the introduction of the dextrose or the administration of insulin excepting in cases of poisoning, in which the diuretic action of the sugar is welcome.

DEXTROSE OSMOTHERAPY

The intravenous injection of greatly hypertonic (25 to 50 per cent) dextrose solutions should not be undertaken without definite demand for osmotherapy, i. e., the osmotic changes produced thereby in the system. One exception to this has just been noted. Another one is in private bedside practice, in which a physician may find it more practical to infuse slowly 20 cc. of

8. Thompson G, Mitchell D M and Kolb L C. The Influence of Variations in Systemic Acid Base Balance upon Carbohydrate Tolerance in Normal Subjects. *Biochem J* 27: 1253 (1933).

9. Glaser Jerome. The Intramuscular Injection of Dextrose. *J A M A* 91: 722 (Sept. 8) 1928.

10. Marriott W M. The Artificial Feeding of Athreptic Infants. *J A M A* 73: 1173 (Oct. 10) 1919.

11. Porter Langley, Morris G B and Meyer K F. Certain Nutritional Disorders Associated with a Putrefactive Intestinal Flora. *Am J Dis Child* 18: 254 (Oct.) 1919.

12. Althausen T L. Dextrose Therapy in Diseases of the Liver. *J A M A* 100: 1166 (April 15) 1933. Elliott C A. The Medical Management of Hepatic Disease. *Illinois M J* 54: 560 (Dec.) 1933.

concentrated (25 per cent) dextrose solution by means of a syringe into a vein than to entrust drip phlebotomy to untrained attendants

In general, hypertonic dextrose phlebotomy is indicated only when one desires to secure from it changes in the salt and water content of the body cells, as in many cases chill and fever, sometimes of considerable degree, with severe headache produced by these injections. Hypertonic injection is also liable to lead to occlusion of the vein used for the infusion.

The "colloidoclastic" crisis due to destruction of a certain percentage of corpuscles and possibly of other tissue elements may be of advantage as a form of non-specific proteotherapy, e g, to stimulate latent powers of antibacterial resistance. It shortens the bleeding time and has been advocated by Opitz¹³ in internal hemorrhage. Lowy¹⁴ found this of value only in some cases of bleeding from the bowel.

The first capillary territory affected by hypertonic infusion is that of the lungs. This is the reason for Stejskal's¹⁵ report of favorable influence in pulmonary edema, whether of inflammatory or transudative nature, which has been confirmed by others. Litchfield,¹⁶ John,¹⁷ and Wells and Blankinship¹⁸ report favorable results from the use of large quantities (from 250 to 500 cc) of hypertonic (from 10 to 25 per cent) dextrose solutions in pneumonias.

Most marked seems to be the effect of osmotherapy in reducing intracranial pressure. Hypertonic salt solution has been used for this purpose, but Haden¹⁹ advocates the use of dextrose rather than of salt solution in cases of meningitis and other conditions of increased intracranial pressure. He infuses 250 cc of 25 per cent solution of dextrose (slowly in the course of one hour) every twelve hours, from the onset of the disease until there is no longer any evidence of excessive tension within the skull. In meningitis, these injections are given in addition to intrathecal injections of antiserum and combined with spinal fluid drainage. Its prompt use may save life in threatened cerebellar herniation into the foramen magnum.²⁰ In head injuries or after brain operations when slow pulse, low blood pressure and stertorous breathing indicate increased intracranial tension, hypertonic dextrose phlebotomy may be indicated, provided the emergency or other conditions preclude the giving of 30 cc of saturated solution of magnesium sulphate by mouth, or twice the quantity by rectum. It may, of course, be employed in addition to these measures. One should not, however, permit the use of these solutions to lead to a false sense of security in acute cranial injuries to the detriment of the prompt use of indicated surgical measures.²¹ It certainly should not be employed in the presence of intracranial hemorrhage.²²

Hypertonic dextrose phlebotomy seems to have a special value in heart weakness with or without edema.²³ In the presence of edema, absorption of intercellular fluid would no doubt account for part of this action. Its alleged value in myocardial weakness without edema, in which it is considered a useful adjuvant to digitalis, may possibly be explained by its demonstrated vasodilator action, which lessens the work the heart must do. In addition to this, the dextrose may furnish nourishment to the exhausted heart.

PHLEBOCLYSIS IN THE ADMINISTRATION OF REMEDIES

One of the most important uses of drip phlebotomy promises to be the administration of other remedies in a slow and continuous manner. Enormous doses of antiserums, e g, pneumococcus, tetanus, may thus be introduced, not only more easily but also more safely, because with extremely gradual administration there is no danger of anaphylactic shock.²⁴

The very slow injection of epinephrine solution directly from the tubing of the apparatus may be of some value as an analeptic. Adding epinephrine directly to the drip reservoir when it is full of fluid produces too great a dilution to be of much value as a vasoconstrictor.

Insulin may be added to the infusion fluid in diabetic coma or if undesired glycosuria occurs. In diabetic coma, it may be employed initially at the ratio of 1 unit of insulin per gram of dextrose. As soon, however, as the extreme emergency is past, it is probably better to administer the insulin subcutaneously, as when it is given intravenously, because of rapid elimination in the urine, its potency is less than when it is injected hypodermically.

In hyperthyroid crises, in the presence of persistent vomiting, sodium iodide (2 Gm) may be introduced in the course of dextrose phlebotomy.²⁵

Phlebotomy furnishes an ideal method of administering for very sick patients, as in these absorption on oral, and even on hypodermic, administration is notoriously uncertain. Morphine relieves pain more promptly, paraldehyde quiets mania more quickly, caffeine may arouse a comatose patient more definitely, and strophanthine stimulate the heart more efficiently than when given in any other way. When speed is essential, the drug may be injected directly into the rubber tubing after disinfection of its surface with tincture of iodine. The dose should, in general, be half the oral dose.

CONCLUSIONS

1 In all very sick patients an adequate income of water, sodium chloride and dextrose should be taken care of as a routine procedure before rather than after a high degree of deficiency has occurred.

2 This in cases in which adequate oral administration is impossible can generally best be accomplished by dextrose phlebotomy, the composition of which should be determined by the individual indications present.

3 For combating hypohydration and for the relief of thirst, 5 per cent dextrose solution in distilled water seems preferable.

4 Whenever salt starvation is threatened or present, dextrose-saline phlebotomy should be practiced.

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21 Jackson Harry with the assistance of Kutsunai Toshio, Leader L O and Joseph L D. Effect of Hypertonic Dextrose Solutions on Intracranial Pressure. *J A M A* 100:731 (March 11) 1933.

22 Wright L T, Greene J G and Smith D H. Diagnosis and Treatment of Fractured Skulls. *Arch Surg* 27:878 (Nov) 1933.

5 Whenever carbohydrate cannot be ingested or digested to a sufficient degree, 10 per cent dextrose phleboclysis should be resorted to

6 In poisoning with diffusible poisons, the diuretic and possible liver protective action of dextrose phleboclysis adds itself to the foregoing therapeutic values

7 Concentrated (25 per cent) dextrose solution may be of value in certain internal hemorrhages, in inflammatory and exudative pulmonary edema, to lessen intracranial pressure (unless there is cerebral hemorrhage) and possibly in myocardial weakness

8 During phleboclysis, other remedies may be conveniently infused, e g, antisera, epinephrine, insulin, iodide, sedatives and stimulants

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STREPTOCOCCUS (VIRIDANS) MENINGITIS WITH RECOVERY

IMMUNOLOGIC STUDIES

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The streptococcus is not commonly involved in meningeal infections, but the disease, when once in progress, is highly fatal. Kolmer,¹ in fact, has set the mortality rate at nearly 100 per cent. However, instances of recovery from streptococcal meningitis have been reported. Comprehensive reviews of the literature on this subject have been made by Rosenberg and Nottley² and by Appelbaum.³ The last named author was able to gather forty-six cases, including three of his own. Since his paper, eleven new cases have been added to the literature.⁴

A brief survey of the fifty-seven cases available for study shows the following facts. The onset usually followed an infection of the upper respiratory tract. The organisms that have been isolated include both the hemolytic and nonhemolytic types and *Streptococcus viridans* was definitely involved in only four instances. Trauma was directly responsible for the meningeal infection in four cases, and of these one showed a hemolytic streptococcus and another *Streptococcus viridans*. The therapy varied within wide limits.

From the Department of Laboratories and Medical Research, Bronx Hospital

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Muller M. La question du delai dans les meningites aigues traumatiques. *Echo med. du nord* 37: 271 (June) 1933

We are indebted to Dr. Sidney Cohn for the opportunity of studying the following case of *Streptococcus viridans* meningitis.

REPORT OF CASE

A man, aged 22, white, was struck on the right side of the head, Jan. 6, 1934. Examination revealed a deep laceration of the scalp, but roentgenographic study of the skull showed no fracture. The patient was somewhat drowsy and complained of headache. The fluid obtained by lumbar puncture was opalescent, but no organism was obtained from it by culture (Fordham Hospital). Six days after the injury the patient was admitted to the Bronx Hospital with symptoms of increasing drowsiness, headache and soreness of the neck. The latter was moderately rigid. The leukocyte count was 20,000 per cubic millimeter, with 89 per cent mature polymorphonuclear neutrophils. The urine contained some albumin. The following day 20 cc of turbid spinal fluid was obtained which showed 5,000 cells per cubic millimeter, of which 96 per cent were polymorphonuclear cells. Sugar was present (166 mg per hundred cubic centimeters) and the total protein was 0.43 per cent. Smears of the centrifuged sediment showed cocci and a gram-positive bacillus suggestive of the anaerobic group. For this reason the senior author advised the use of gas gangrene serum. Accordingly, 5 cc of gas gangrene serum was administered intraspinally and the dose was repeated on the same day. The following day the patient appeared to be much improved. Further bacteriologic studies revealed *Streptococcus viridans* in pure culture in the fluid obtained by both taps. In view of the marked improvement, however, the gas gangrene serum was repeated in 5 cc doses on each of two subsequent days. The patient made a rapid convalescence and left the hospital one week later. The temperature curve showed peaks of 104.6 F. January 12, the day of admission, 104.2 F. January 13, 101.4 F. January 14, with a gradual remission thereafter to 99 F. by January 17. The pulse curve showed a corresponding decline from 130 to between 80 and 90.

The rapid transformation from an almost moribund state to one of complete recovery was of no little interest. Since no really specific therapy was utilized in affecting the disappearance of the organisms, an investigation was undertaken to determine the possible role played by the gas gangrene serum in the patient's recovery. We thought that this serum, if of high

Immunologic Study

Tube	Organism 0.1 Cc Blood Broth Culture 18 Hours Old	Serum 0.5 Cc	Cells Cc	Cells Showing Phagocytosis per Cent	Growth on Culture
1	From spinal fluid	Patient	0.2	32	1 +++
2	From spinal fluid	Patient	0	0	6 +++
3	From spinal fluid	0	0.2	21	6 +++
4	From spinal fluid	Gas gangrene	0.2	58	1 +
5	From spinal fluid	Gas gangrene	0	5	3 ++
6	From spinal fluid	Normal human	0.2	27	3 ++++
7	From spinal fluid	Normal human	0	14	4 +++
8	From spinal fluid	0	0	52	5 ++++
9	From throat	Patient	0.2	29	0 +
10	From throat	Patient	0	0	0 ++
11	From throat	0	0.2	19	0 +
12	From throat	Gas gangrene	0.2	34	0 +
13	From throat	Gas gangrene	0	0	0 ++
14	From throat	Normal human	0.2	17	0 +
15	From throat	Normal human	0	1	1 +++
16	From throat	0	0	5	5 +++

opsonic power, would manifest its properties in the phagocytosis of the streptococcus by the numerous leukocytes present in the spinal fluid.

With this in mind, the immunologic study outlined in the accompanying table was made.

The table summarizes the results of two trials. The materials used were obtained as follows:

(a) Patient's serum. Taken when signs of recovery were evident.

(b) Gas gangrene serum A product of the Lederle Laboratories containing antibodies to the more common anaerobes i. e., *Clostridium perfringens*, *oedematiens*, *histolyticum* and *sordellii* and *Vibrio septique*

(c) Normal human serum

(d) *Streptococcus viridans*, spinal fluid Isolated from the first specimen of spinal fluid when the patient's condition was most critical

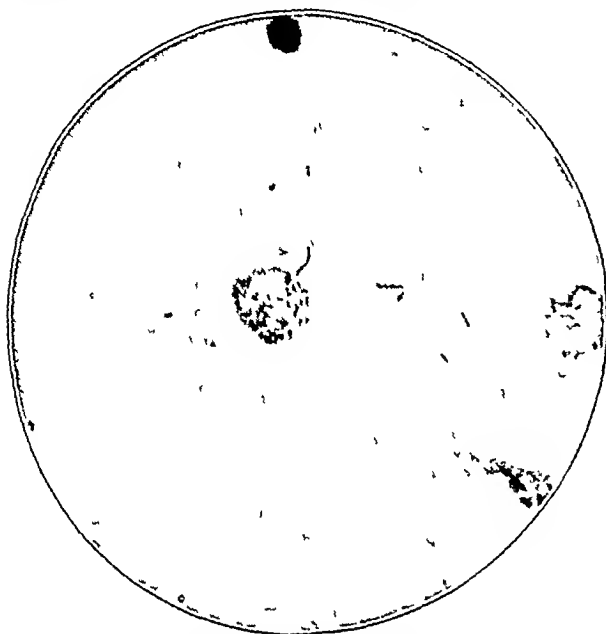


Fig. 1—Smear from mixture in tube 4 The two macrophages are loaded with streptococci

(e) *Streptococcus viridans*, throat A throat culture from the patient yielded this organism in pure culture

(f) Cells Obtained by intrapleural injection of a normal rabbit. One pleural cavity received 10 cc. of a 10 per cent solution of calcium gluconate. Into the other cavity was injected 6 cc. of sterile broth plus 4 cc. of the rabbit's own blood. Within forty-eight hours, both cavities yielded a purulent exudate which consisted mainly of polymorphonuclear leukocytes and mononuclear cells. A mixture of the two exudates was used for the test

The degree of phagocytosis was determined by staining smears from each tube with Wright's stain. The amount of growth was determined by streaking a loopful from each tube onto a blood plate. These cultures were made after two hours' and eighteen hours' incubation of the mixtures. The final reading represents an average of the two. In the column "growth on culture," the numbers refer to the number of colonies. The + sign was used in the second experiment because a heavier culture was tested and the colonies were too numerous to be counted, +++ signifies a heavy growth, while + signifies that only a few scattered colonies were visible after forty-eight hours' incubation

The results obtained confirm the hypothesis made previously, namely, the injected serum, by virtue of a property previously unknown, was distinctly inhibitive in its effect on the growth of these strains of *Streptococcus viridans*. We cannot postulate that the organism isolated from the throat was the same as the one found in the spinal fluid. The reactions of the two strains to the various serums were comparable, although the throat organism was more susceptible to phagocytosis. The mere presence of cells seemed sufficient to inhibit its growth (tube 11). In both cases the gas gangrene serum increased the degree of phagocytosis (tubes 4 and 12), as compared both with the patient's serum and with the normal serum control. With the organ-

ism, obtained from the spinal fluid, this increase was marked (tubes 1, 3 and 4)

If this "in vitro" test represents the reactions that took place within the spinal canal of the patient, it might be reasonably concluded that the fortuitous injection of the gas gangrene serum played a major role in the patient's recovery. The possibility of a spontaneous recovery, however, must also be borne in mind in view of Brieger's⁵ work. This investigator was able to reproduce experimental streptococcal meningitis in dogs and monkeys. Of fourteen infected but untreated dogs, four recovered spontaneously. In monkeys, the proportion of spontaneous recovery was one out of three.

However, because of the sudden change in the patient's condition which followed the injection of the gas gangrene serum and the experimental data we feel that the possible value of this therapy must be considered. On the other hand, we do not advocate the use of this serum as a specific for streptococcal meningitis. Other foreign serums might have acted similarly. The conclusions drawn from our study apply only to the case at hand.

The senior author saw, through the courtesy of Dr. A. Noah Schuller at the Jewish Memorial Hospital, another case of *Streptococcus viridans* meningitis which was secondary to the accidental puncture of the cribriform plate of the ethmoid during a nasal operation. The patient was treated with antimeningococcus serum until the organisms were identified by culture after which treatment was limited to repeated lumbar punctures. Recovery was complete in approximately three weeks.

Subsequent to the time this article was submitted for publication there was admitted to the Bronx Hospital,

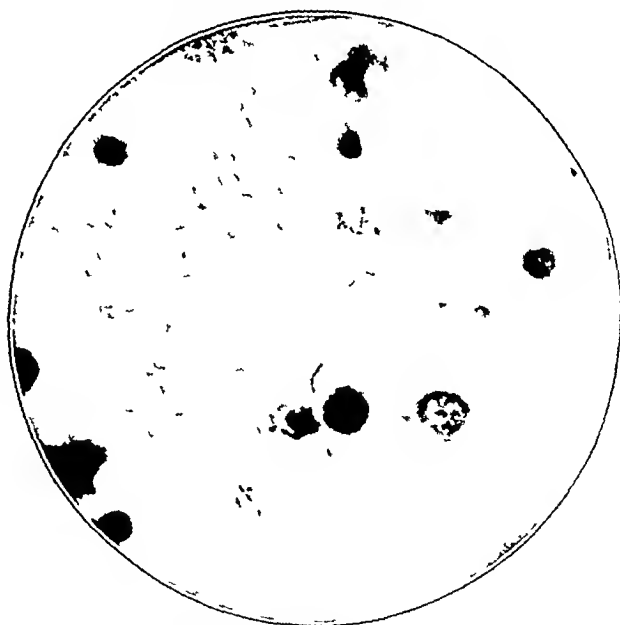


Fig. 2—Smear from mixture in tube 6 The streptococci are seen in the field but have not been phagocytosed. Normal human serum control

April 10, a boy, aged 10 years, with typical meningitis of unknown etiology. *Streptococcus haemolyticus* was obtained from the spinal fluid on the day of admission and disappeared three days later, and the patient was discharged entirely well April 20.

EMBOLISM OF THE PERIPHERAL ARTERIES

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PHILADELPHIA

Portis and Roth¹ recently reviewed the literature on embolectomy of the peripheral arteries and stated that only 131 cases had been reported. Four months earlier, however, Pearse² cited 296 cases which had been reported in the literature to July 1932.

All articles on this subject imply that the authors are in agreement with the commonly accepted opinion, that when gangrene results from the occlusion of large vessels, the resulting gangrene, without operation, is fatal.

Respect, however, has grown for the collateral circulation, especially in those portions of the body where end arteries have been said to exist. Case 1 is reported to demonstrate the fact that a fatal outcome is not always the result of a peripheral arterial embolism without embolectomy. This statement does not detract from the correctness of the conclusion of Key³ and others⁴ that in all threatening cases operation should be done. It merely offers hope for late inoperable cases and gives reason for the institution of general measures of palliative and sustaining treatment.

At the same time, the fact is recognized that the most recent authors⁵ feel that the collateral circulation plays a very important part in the restoration of circulation, even after embolectomy. Also the admission is noted that over half of the patients (52 per cent)² subjected to embolectomy died within a month following operation. It is pointed out that death in these cases was due to a primary systemic disease or to embolism of vital structures such as occurred in case 2.

CASE 1—Mrs. S. B., aged 70, white, seen at home, March 8, 1933, was in a condition of moderate congestive failure with



Fig. 1 (case 1)—The outlined area of scar corresponds to the extent of the preceding visible gangrene.

auricular fibrillation. The blood pressure was 200 systolic, 95 diastolic. She had been up and about doing housework until a few days before. She was given digitals and confined to her bed. Four days later a normal rhythm appeared to be established, when suddenly severe pain developed in the lower part of the left leg. It was not definitely localized but was described chiefly as being in the anterior and lateral portions of the lower two thirds. Posteriorly it was a little higher, although it was not felt in the popliteal space. Examination revealed that the left foot was definitely colder to the touch than the right. No dorsalis pedis pulse was palpated in the left foot, while a good one was palpated in the right foot. No pulse was obtainable in the lower left leg. Vascular sounds

were heard when the postero-internal aspect of the left thigh above the popliteal space was auscultated. A good popliteal pulse was felt and the sounds were heard in compression on the right side.

A diagnosis of popliteal embolism was made, and operation was recommended but refused. In a few days the pain was more definitely localized to the anterolateral aspect of the left leg and this area began to discolor. There was a recurrence of auricular fibrillation. The pain was intense and was relieved only by morphine.

By March 24 a typical gangrenous area was visible over the lower anterolateral aspect of the left leg and the whole calf was firm and tender. A heat cradle and alternate elevation and lowering of the leg brought indifferent results. There was no improvement in any of the vascular areas examined. Both legs continued to be moderately edematous. About the middle of April the pain was much diminished though still annoying, and the process seemed stationary, or even actually improved. Care had been exercised to provide sterile dressings over the gangrenous area to minimize infection and absorption of necrotic material.

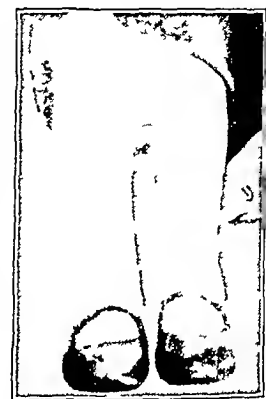


Fig. 2 (case 1)—The arrow points to the contracted scarred area where the gangrene was maximal and corresponds to the widest area in figure 1.

April 28 an attack of acute pulmonary edema developed and the patient seemed to be moribund. However, she responded to morphine and atropine and a venesection of 425 cc. While she was quite weak for some time afterward, she gradually improved in every way. The superficial gangrenous area sloughed away and healing progressed slowly but continuously with only a few minor interruptions until the fall of 1933. At this time the last crust was removed and there was left only a shiny scarred area corresponding to the area indicated in figure 1. The edema had subsided greatly and the calf was soft and not tender. Figure 2 shows the appearance of the two legs on her seventy-first birthday, Jan. 26, 1934, less than a year after the onset. At the present time the color and temperature (to touch) are the same in the two legs. There is no discomfort and she gets about well enough without a crutch or cane to travel in an automobile. The auricular fibrillation has continued and there has been no return of either the popliteal or the dorsalis pedis pulse in the left leg. Her blood pressure at the time of the last picture was from 210 to 230 systolic and 90 diastolic.

CASE 2—Mrs. E. M., aged 71, white, admitted to the medical service of Dr. David Riesman at the Philadelphia General Hospital, July 4, 1933, suffering from moderate congestive failure, which had begun as a cough about three weeks previously and had gradually led to swelling of the ankles, dyspnea and palpitation.

Her general health had been good until three years before, when she began to notice a swelling of the neck. She became nervous and her eyes became prominent. She had some dysphagia and hoarseness.

The family history revealed several instances of hemiplegia and the fact that her mother had died of "galloping" consumption.

At physical examination she was acutely ill, with exophthalmos, which was more marked on the right side. The right pupil was smaller than the left and there was some lagging of the lid. There was shortness of breath, edema of the legs, cyanosis of the nails and distention of the vessels of the neck. A friction rub in the left side of the chest was thought to be due to pulmonary infarction. The heart was enlarged. There were no murmurs, but the rhythm was that of auricular fibrillation, confirmed by electrocardiography.

Three successful basal metabolic rate determinations were made. July 25 it was +33, August 16 it was +55, and August 31 it was +42.

1 Portis, Bernard and Roth, H. A. Embolectomy of the Peripheral Arteries. Report of Three Cases. *J. A. M. A.* 101:1556 (Nov. 11) 1933.

2 Pearse, H. E. Embolectomy for Arterial Embolism of the Extremities (complete bibliography). *Ann. Surg.* 98:17 (July) 1933.

3 Key, Einar. Ein Fall Operierter Emboli der Arteria femoralis. *Wien. klin. Wchnschr.* 26:936 (June 5) 1913.

4 Pearse, H. E. Danzies, Max. Arterial Embolectomy. *Ann. Surg.* 98:249 (Aug.) 422 (Sept.) 1933.

5 Danzies, Max.

Her general condition improved very much in spite of the fact that the auricular fibrillation continued. Operation was considered inadvisable at the time, and she was discharged with instructions to return in a month after a course of compound solution of iodine and digitalis in maintenance dosage.

The patient returned, November 25, in a worse condition than she had evidenced at the time of her previous admission. There was marked anasarca, auricular fibrillation and thyrotoxic symptoms. The basal metabolic rate determination was +41.

The patient did fairly well on conservative treatment until October 10, when she seemed unusually pale and complained of severe pain in the left leg, which had begun earlier in the morning. She was seen by the intern and myself about 11 a m. The whole left leg was colder to touch than was the right. It was slightly swollen and had a bluish hue. There was no dorsalis pedis or popliteal pulse. The only pulsation in the left leg was that of the common femoral artery, palpated for a distance of about 2½ inches below Poupart's ligament.

The patient was seen in consultation shortly afterward by Dr. Patrick McCarthy of the surgical staff, who concurred in the diagnosis of femoral embolism. He advised immediate operation which was done under local 2 per cent procaine hydrochloride anesthesia at 2:30 p m.

An incision was made along the line of the left femoral artery. The vessel was exposed and its sheath incised. The location of the clot was visible and palpable at the bifurcation of the artery into the deep and superficial vessels.

An incision was made into the superficial femoral artery close to its origin and the obstruction was removed. It proved to be a "saddle" embolus involving both deep and superficial vessels. The vessel was closed and the wound was sutured without drainage.

There was some change in the color of the foot almost immediately, but there was some uncertainty as to whether the dorsalis pedis pulse could be palpated. However, the pulsation of the superficial femoral artery for a point some distance below its site of origin was good.

The next day the general condition was slightly improved and there was no evidence of gangrene. The auricular fibrillation continued.

The operative wound and the left leg improved steadily, but the patient's general condition was not good. Incontinence of urine and feces developed, October 13, and the patient was returned to the medical service, October 14, after removal of the sutures. There was good circulation in both legs.

When she returned to the medical ward, it was noted that the right side of the face was flattened and she appeared to have had a small cerebral vascular disturbance. Part of her drowsiness was evidently due to sedatives of the barbiturate group.

The general condition improved, though she continued to be incontinent. October 23, she was able to sit up, take medicine and answer questions intelligently. She had a good appetite. The patient maintained a fairly satisfactory condition, with occasional periods of mental confusion until November 7, when she became a little unruly and quite garrulous. She tried to get out of bed.

Death occurred suddenly, November 15, at 9:20 a m, without apparent pain or struggle. There was no autopsy.

SUMMARY

In two cases of peripheral arterial occlusion in elderly white women of similar ages, auricular fibrillation was present. In the first case the popliteal artery was occluded. A condition of gangrene resulted in the affected area. Termination of the gangrenous process and healing ensued. The patient is alive nearly a year later.

In the second case, complicated by thyrotoxic symptoms, the femoral artery was occluded. An embolectomy was done. The patient died nearly six weeks later after complete healing of the operative wound and restoration of circulation in the affected limb.

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MORQUIO'S DISEASE

REPORT OF TWO CASES

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AND

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GRAND RAPIDS, MICH.

In 1929, Morquio¹ of Montevideo reported a peculiar form of familial osseous dystrophy, occurring in four children of five in the same family. He was unable to find similar cases in the literature available to him.

Morquio stated that the children were apparently healthy and had developed normally during the first year. At the time that they began to walk, bony changes appeared, "sparing only the head and face and causing no pain or other suffering but functional troubles affecting especially motility and physical



Fig 1—Appearance of patients at ages of 6 and 9 showing scaphocephalic skulls, square chests and pot bellies. Note umbilical hernia in older boy.

trouble destroying the harmony of the body." He noted that the deformities were symmetrical, that the extremities were of normal length, though deformed, and that the thorax "was reduced in length and broadened." The results of a roentgen examination in each reported case of this peculiar form of dwarfism have been as characteristic as those described by Morquio. There has been demonstrated "osseous exuberance, for instance, in the vertebral column, the epiphyses of the elbows, the shoulders and the knees, or absence of ossification, for instance, in the wrists."

Since the publication of the description of the disease by Morquio there have appeared reports of the same condition by other authors.² None of the later

¹ Morquio L. Sur une forme de dystrophie osseuse familiale. *Bull. Soc. de pediat. de Paris* 271:145 (Feb.) 1929.
² Ruggles H. E. Am. J. Roentgenol. 25:91 (Jan.) 1931.
Meyer H. F. and Brennemann Joseph. Rare Osseous Dystrophy (Morquio). *Am. J. Dis. Child* 43:123 (Jan.) 1932.
Barnett, E. J. Morquio's Disease. Presentation of Two Cases. *J. Pediat* 2:651 (Jun.) 1933.

writers have described marked osseous changes in the skull or any eye disturbances, nor have they substantiated the presence of a low blood calcium, which was noted by Morquio. Although various glands have been mentioned, none of the authors have described the condition of the thymus gland.

As we have studies on the blood calcium, made three and one-half years apart, roentgenograms of the skulls

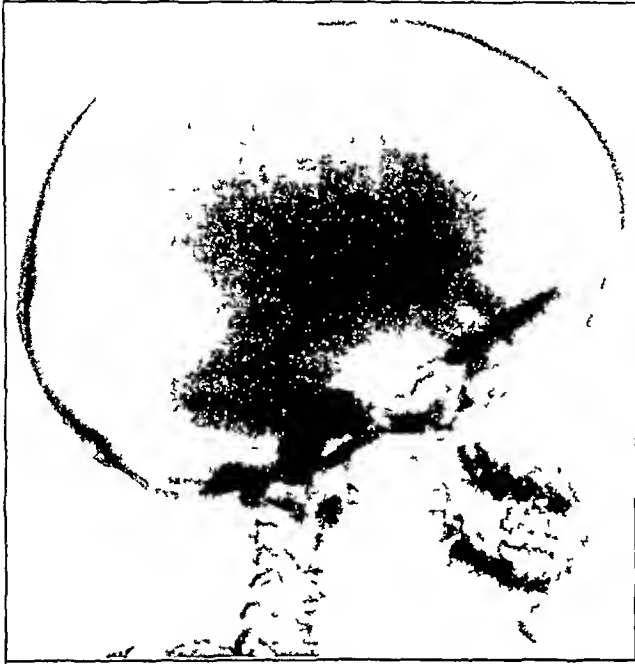


Fig 2—Scaphocephalic skull showing diastasis of coronal suture fused lambdoid sutures flattening of base and imperfectly developed anterior wall of sella

and the thymus glands, and also, in one instance, an encephalogram, we believe that our observations on this disease are worth recording.

REPORT OF CASES

Two brothers, R. C., aged 6 years, and K. C., aged 9 years, at the time of the original examination, Aug 15, 1930, were sent into the clinic with a diagnosis of cretinism. The father, aged 44, was living and well. The mother had died in 1925 following a pelvic operation. The oldest child, a girl, aged 14 years, died in 1915. Cretinism was given as the cause of death. Those who had seen her stated that her appearance was similar to that of the patients. A second daughter, aged 23 years, was feebleminded and was in an institution at the time the history was taken. The father stated that the mental disturbance had followed an attack of scarlet fever at the age of 8 years. A third daughter, aged 15 years, was normal except for the fact that she was slightly overweight.

When R. C. was 1 year old, it was noted that his head was becoming abnormally large, particularly in the anteroposterior diameter. Soon afterward, he could not completely flex the fingers on either hand, and he could not completely flex or extend the arms on the elbows. A similar condition was present in K. C.

Nothing was done for the children, although the deformities increased, until 1929, when they were seen by a physician who made a diagnosis of cretinism and placed them both on thyroid medication for three months. No improvement of their condition resulted.

In February 1930 they had been examined by the department of pediatrics at the University of Michigan.³ The results of examination of the two brothers were essentially similar, for

this reason only the results of the physical examination of R. C. will be given.

The head was found to be markedly enlarged. The occipitofrontal circumference was 55 cm (22 inches). The mouth was somewhat larger than normal. The hair was abundant but coarse. The nose was short and stubby, and there was a saddle-like depression of the bridge. The tonsils appeared to be hypertrophied. The tongue was larger than normal. The teeth were small. The chest was abnormal in shape. There was marked flaring at the costal margin, a prominent Harrison's groove, and some beading at the costochondral junction. The spleen was palpable two fingerbreadths below the costal margin. The liver was markedly enlarged and extended to the midpoint in the lower right quadrant of the abdomen. There was abdominal distention of the "pot belly" type. The circumference at a point 1 inch below the umbilicus was 60 cm (24 inches). The fingers were short and stubby. He had a typical spade or trident hand.

The blood chemistry of R. C. showed serum calcium, 112 mg (normal, from 9 to 11 mg per hundred cubic centimeters), inorganic phosphorus, 39 mg (normal, 37 mg per hundred cubic centimeters), and the fasting blood sugar was 85 mg (normal, from 90 to 120 mg per hundred cubic centimeters). The blood chemistry of K. C. showed serum calcium, 114 mg, inorganic phosphorus, 38 mg, and sugar, 81 mg. A dextrose tolerance test was performed on each patient and gave essentially normal results.

A diagnosis of bilateral buphthalmos was made on each of the patients, February 11, by the department of ophthalmology, and a bilateral iridectomy was advised for each. This operation was performed on K. C., March 25.



Fig 3—Lateral view of spine in January 1934, showing lack of normal curvatures, irregular vertebral bodies and some areas of exuberance, as in August 1930.

Roentgen studies of the hands, wrists, knees and elbows in both patients showed delayed epiphyseal development and distortion of the shaft of the phalanges, metacarpals and metapophyseal ends of the bones of the arm and forearm. The phalanges were thickened and their trabeculae were irregular and distorted. There were irregular areas of decreased density near the metaphyses. A flat projection of the skull showed a large cranial vault with a thin wall showing no increase in

³ Cowie D. M. Personal communication to the author with permission to use the observations made by the Department of Pediatrics University of Michigan.

digital markings The anterior wall of the sella was imperfectly developed The bridge of the nose was sunken

The description of one child is the same as that of the other, and therefore we shall record our notes only on the older child, K. C. The head, which seemed almost to sit on the shoulders, owing to the short neck, was scaphocephalic. Because of the shape of the head, the bridge of the nose appeared to sit back in the face and the lower part of the nose at the nares appeared to be broad and somewhat flattened. The jaw bone was larger than normal and out of proportion to the skull Figure 1 shows the squareness of the chest, which was due to an increase in the anteroposterior diameter He had a pot belly and an umbilical hernia, which protruded 2.5 cm The younger child had no hernia

In a relaxed standing position (fig 1), the backward position of the hips and the forward bend of the thighs was readily noted. The latter was due to the lack of ability to extend the legs on the thighs completely In fact, he could not completely extend the extremities at any of the joints, including the fingers The fingers could not be completely flexed

Nothing abnormal was noted about the thyroid, the lymphatic glands or the testes

There was no roentgenographic evidence of enlargement of the thymus The heart and lungs were normal

The intelligence seemed to be unimpaired. Vision was poor

The blood counts, the urinalyses and the Kahn tests were negative.

The roentgenologic studies were made by Dr T O Menees, and mention will be made of only those changes which are additions to the observations made by the University of Michigan Films of each head showed an unusually large cranium, with a thinning of the bones in the skull cap and dilated diploic channels The sagittal and lambdoid sutures were fused (fig 2) There was a diastasis of the coronal suture in the younger boy The spine was straight, showing a lack of normal curvatures, and it presented areas of exuberance (fig 3)

Because of the completely negative neurologic examinations and the presence of increased intracranial pressure, it was decided to make an encephalogram on the older boy This showed symmetrically enlarged lateral ventricles, with a slightly enlarged third ventricle, and a patchy distribution of air over the cortex

The patients were seen again in January 1934 Little change had taken place in the deformities (figs 4 and 5) The blindness had increased in both boys, but especially in the older, who was barely able to distinguish light and dark objects The optic disks in each case were extremely white, and there was an almost complete loss of all fine vessels Nothing abnormal was noted about the skin hair, nails or teeth No changes had appeared in the thyroid, testes or thymus (the latter checked by roentgen examination) The liver and spleen could not be palpated The blood calcium was 8.6 mg in the case of K. C, and 9.7 mg in that of R. C



Fig 4—Appearance of patients in January 1934 Both boys are trying to extend the arms and the fingers

The measurements for K. C, at the age of 13 years and R. C at the age of 9 years are given in the accompanying table

The results of the roentgen examinations were the same as those of 1930, except that in each case the skull showed an increase in the scaphocephalic deformity, and in the younger boy a ridge could be palpated along the line of the sagittal suture

The hands showed the same osseous deformities that were noted first at the University of Michigan in February 1930 The carpal bones presented the same changes (fig 6) as noted by Ruggles when he stated that "ossification begins in the distal row of carpal bones and they are always small and irregular in outline"

COMMENT

The history and physical examination of the one boy is virtually that of the other The changes that have taken place over a period of three and one-half years are well illustrated in the illustrations, particularly figures 1, 4 and 5

A review of the literature has convinced us that our cases are identical with those reported under the name of Morquio's disease In all reported cases of this type of osseous dystrophy there is a complete agreement as to the appearance of the body, but not as to the face and head Morquio stated that the face and head were not involved, Meyer and Brennemann noted that the head was large, Ruggles stated that the head was large, "eyes

wide spaced and the root of nose depressed", Barnett made the same statement as Ruggles No observer has noted any abnormalities on roentgen examination of the calvarium Our patients showed not only the large head, wide spacing of the eyes and the depressed bridge of the nose but, in addition, definite skull changes on roentgenologic examination

The skulls presented no suture lines in the plates made in August 1930 The shape of the heads was characteristic of scaphocephaly as described in pediatric textbooks The optic atrophy, with resulting blindness, is usually seen in the later stages of such a condition We did not therefore consider that the blindness was an unusual manifestation in our patients

Morquio stated that the oldest boy in the family he reported, although physically normal, was retarded mentally and had nocturnal hallucinations In the family that we have described, the oldest girl apparently had had the same osseous dystrophy as the boys,

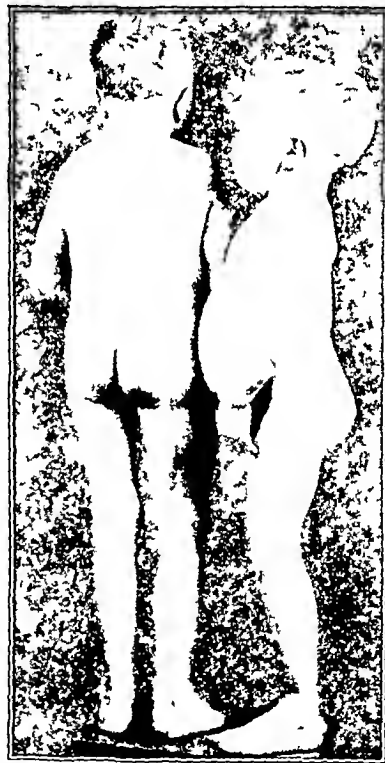


Fig 5—Rigid midthoracic region of spine, and partially flexed knees and elbows as they appeared in January 1934

while the second child, also a girl, although physically normal, was an imbecile

Some effort has been made to determine whether blood chemistry changes may act as a causal factor in

Measurements of the Two Patients

Measurements for K. C. at the age of 13 years		Approximate Normal (Holt)	
Circumference of the head	22 ⁷ / ₈ inches	21	inches
Standing height	47 ¹ / ₂ inches	53 ⁷ / ₁₀	inches
Circumference of the chest	23 ³ / ₄ inches	27 ⁷ / ₁₀	inches
Weight	62 ² / ₁₀ pounds	88 ³ / ₁₀	pounds
Measurements for R. C. at the age of 9 years			
Circumference of the head	22	20 ⁸ / ₁₀	inches
Standing height	43	50 ¹ / ₁₀	inches
Circumference of the chest	22 ⁷ / ₈	27 ¹ / ₁₀	inches
Weight	49	60	pounds

production of the disease. Morquio is the only writer who has observed marked abnormality in the blood chemistry. He believed that the profound disturbance of osteogenesis could be explained by the low calcium content of the blood (4 and 5 mg, respectively, in the cases he studied). His theory has not been substantiated by the observations of Meyer and Brennemann, Ruggles or ourselves. The first readings in our cases, which were 112 mg for R. C. and 114 mg for K. C. in 1930, and the later ones of 97 mg for R. C. and 86 mg for K. C. in 1934 can be considered as normal.



Fig. 6—Right hand of older boy in January 1934 with no new centers of ossification since August 1930.

some of the characteristics of achondroplasia, there are certain changes that cannot be explained entirely on this basis. There are, as Morquio has said, "Rarefaction deformations, destructions, delays and absences." These changes affect the entire skeleton and are not limited chiefly to the epiphyses of the large and small bones of the extremities, as he stated. Other than achondroplasia, we know of no osseous dystrophy which this condition even resembles.

SUMMARY

1 So far as we are able to learn, the two cases of Morquio's disease, or generalized osseous dystrophy here described, are the only reported cases presenting extensive changes of the skull, which resulted in brain disturbance and optic atrophy.

2 No abnormality in the blood calcium was noted in either case in two observations made three and one-half years apart.

3 We believe that in this condition the osseous dystrophy is generalized, and the process not confined to the extremities, as in achondroplasia.

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A RATIONAL, NONSURGICAL TREATMENT FOR INTESTINAL FISTULAS

REPORT OF A CASE

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The presence of an intestinal fistula, especially of the small intestine, whether it occurs spontaneously or is made surgically for the purpose of draining the bowel, is a most unwelcome condition and a trying ordeal for the patient and is frequently dangerous to life itself. To the surgeon it is frequently a most baffling complication to contend with, not only because of the difficulty to obtain a spontaneous closure but also because of the detrimental effects it has on the patient's organism as a whole as a result of the loss of the essential intestinal juices which, if not reabsorbed, cause marked changes in the body chemistry.

Much has been written in recent years concerning the toxemia of fistulas of the upper intestinal tract. Walters and Bollmann¹ have shown that the toxemia of acute duodenal fistula is due to the loss of pancreatic juice and the acid and chloride of the gastric juice through the fistulous opening. This toxemia is similar to that which occurs in high intestinal obstruction and is associated with a high concentration of blood urea, a decrease in blood chlorides and an alkalosis. The amount of fluid lost in these high fistulas is considerable and results in marked symptoms of dehydration.

Experimentally it can be shown that animals with an isolated loop of duodenum draining its contents to the outside die in from seven to eight days, although the continuity of the gastro-intestinal tract is restored by means of an anastomosis. In such cases blood studies reveal practically a normal chloride content but an enormous increase in blood urea. The importance of the reabsorption of intestinal juices was clearly shown by Wilkie in a case of obstruction in which an enterostomy was performed above the obstruction. Although this completely relieved the obstruction, the patient gradually grew worse until another enterostomy was made below the obstruction and the intestinal juices, which were being lost from the upper fistula, were reverted by means of a connecting tube into the lower fistula. The condition of the patient immediately improved.

Pancreatic juice is a powerful digestant of tissue and when it comes in contact with the tissues of the abdominal wall causes a marked destruction and irritation of the skin and underlying tissue, with large crater formation. It is therefore clear, from both clinical and experimental observation, that the leak from intestinal fistulas must be controlled and stopped for two reasons: (1) to prevent the loss of intestinal juices which are so essential to the body, and (2) to prevent the digestion of the abdominal wall, with the resultant slough and infection.

Fistulas of the upper intestinal tract are not infrequent and may occur as a result of operative procedures on the stomach or duodenum or spontaneously from a ruptured gastric or duodenal ulcer. The making of an enterostomy of either the small or large intestine is often a life-saving procedure and is a simple method

¹ Walters, Waltman and Bollmann. L. The Toxemia of Duodenal Fistula. J. A. M. A. 89: 1847-1853 (Nov. 26) 1927.

of decompressing a distended bowel. It is frequently performed as a preliminary to a more extensive operative procedure or in cases of acute mechanical obstruction, when, owing to the serious condition of the patient, a rapid and simple opening of the ileum or jejunum will often save a life.

It is my purpose in this paper not to dwell on the indication for jejunostomy or ileostomy, as they are well understood, but to emphasize a form of nonoperative therapy to be used in closing up these fistulas, which is simple, physiologically rational and attended with excellent results. It is well known that the operative attempt at the closure of such fistulas frequently results in failure and, owing to the presence of infection and loss of abdominal wall tissue, is fraught with much danger to the patient. Only rarely do these fistulas close spontaneously. In speaking of duodenal fistulas, Pannett² stated that they never heal spontaneously and if not closed prove fatal.

Any method of closure that is without risk to the patient and that is successful in a high percentage of cases will be welcome to the surgeon and to the desperately ill patient. The severity of intestinal fistulas varies directly as their distance from the pylorus—the closer to the pylorus, the more marked the toxemia and digestion of the abdominal wall. Although fistulas low down in the ileum produce very little toxemia, marked digestion of the abdominal wall occurs. Fistulas of the large bowel produce no toxemia and little or no abdominal wall digestion.

Potter³ of St. Joseph, Mo., was the first to make use of a physiochemical method to close these fistulas. He used tenth normal solution of hydrochloric acid to neutralize the alkalinity of the pancreatic juice, thus preventing tryptic activity, which is the active destructive and digesting agent in these cases. Tenth normal hydrochloric acid is the percentage of hydrochloric acid that is normally present in the gastric juice and therefore should be the ideal strength to use. Together with the acid, Potter also employed sterile beef extract and olive oil, which would act as a pabulum for the excess of pancreatic juice and bile that was not neutralized by the hydrochloric acid. At that time Potter reported one case of duodenal fistula which occurred following operation on a perforated duodenal ulcer and which was unsuccessfully treated by surgery. Within a few weeks after the use of the hydrochloric acid treatment the fistula was entirely closed and the wound healed. In 1929 Potter⁴ reported eight more cases of duodenal and intestinal fistulas, which were quickly healed by the use of the hydrochloric acid treatment.

FORMER METHODS OF TREATMENT

Operative intervention is usually attempted to close these fistulas and it is readily seen that their success is most limited. In fistulas close to the pylorus the general condition of the patient is usually precarious, the tissues are most friable, infection is present and accurate surgical closure is most difficult to obtain and frequently results in the reforming of the fistula. Also, patients frequently die of toxemia, exhaustion, emaciation or dehydration before an attempt at surgical closure can be made. In the treatment of duodenal fistula,

Cameron⁵ used a continuous suction apparatus in an effort to prevent the digestive juices from coming in contact with the tissues of the abdominal wall. Although theoretically this is a logical method of attack, nevertheless practically many difficulties are encountered, and it is most difficult to keep the wound dry and free from the digestive fluids. Constant attendance is required at all times. Co-Tui,⁶ in an experimental study on dogs, used kaolin powder around the mouth of the fistula in order to remove the enzyme trypsin. The powder must be changed as soon as it becomes saturated, the number of changes depending on the amount of discharge. I am not familiar with this method of treatment.

PROPOSED METHOD OF TREATMENT

This is the method suggested by Potter and consists of the application of tenth normal hydrochloric acid. The hydrochloric acid solution is used as a wet dressing around the wound and a plug of gauze saturated with the acid solution is put into the crater of the fistula. No petrolatum or other ointment is used around the wound. The dressings are changed as often as they become saturated, and it is most important to have an excess of acid present to neutralize the alkalinity of the wound discharge completely. In a high fistula the dressings must be changed frequently because of the high alkalinity and large amount of the discharge and because the discharge is so liquid. At the time of each dressing the fluid in the crater of the wound is gently aspirated, thus keeping it as dry as possible at all times. In order to render the fecal content more solid, the patient is placed on a constipating diet, from 4 to 6 ounces (120 to 180 cc) of boiled skim milk being given every few hours. Opium may be given in the form of either the tincture or the powder. The amount of other fluids by mouth is limited to 1,000 cc a day. The solidification of the fecal content considerably lessens the irritation. In the case of a duodenal fistula, the intestinal discharge is water-like, and it is impossible to solidify it by any known means. Together with the hydrochloric acid Potter used sterile beef broth, which acts as a pabulum for the trypsin. However, in fistulas of the lower part of the ileum it is possible to control tryptic activity with the use of hydrochloric acid alone, as I was able to do in the case here reported. When tryptic activity is most pronounced, as in the upper part of the intestine, it may be necessary to include the sterile beef broth with the hydrochloric acid, since the pancreatic juice is present in such large quantities that complete neutralization with hydrochloric acid alone is difficult to secure.

REPORT OF CASE

The following is a report of a fistula of the ileum made surgically for the purpose of relieving tension and draining the bowel in a case of paralytic ileus following appendectomy.

A. H., a man, aged 57, with a negative family history, seen by me on the morning of Sept. 16, 1933, stated that he had never had a serious illness, although he had been having some backache on the right side for the past year, which he attributed to an injury of the back. He had also suffered a number of mild attacks of abdominal pain, which would last

² Pannett C. A. Contribution to the Treatment of Duodenal Fistula. *Lancet* 1: 1109 (April 18) 1914.

³ Potter Caryl. The Treatment of Duodenal Fistula. Report of a Case. *J. A. M. A.* 88: 899-901 (March 19) 1927.

⁴ Potter Caryl. Treatment of Duodenal and Fecal Fistula. *J. A. M. A.* 92: 359-363 (Feb. 2) 1929.

⁵ Cameron A. L. The Treatment of Duodenal Fistula. *Surg. Gynec. & Obst.* 37: 599 (Nov.) 1923.

⁶ Co-Tui F. W. Excoriations Around External Gastrointestinal Fistulae. Experimental Studies on Their Etiology and Further Experience with the Kaolin Powder Treatment. *Ann. Surg.* 98: 161-320 (Aug.) 1933.

only a few hours and for which he did not seek any medical attention. The present attack began ten hours before with severe cramplike pain in the abdomen. The temperature was 100 F, the pulse 90 per minute, the respiration rate 16 per minute.

General physical examination was negative except for the abdomen, which showed marked tenderness over the entire right lower quadrant and right lumbar region. There was severe pain on any attempt to extend the right thigh at the hip. Laboratory examination showed 16,500 white blood cells per cubic millimeter, with 85 per cent neutrophils. The urine was normal. A diagnosis of acute appendicitis was made and immediate operation was decided on.

Under spinal anesthesia the abdomen was opened through a McBurney incision. A small amount of free seropurulent fluid was present in the peritoneal cavity. The appendix was perforated at the distal end and a small fecalith was free in the peritoneal cavity. The cecum and appendix were firmly bound down to the posterior parietal peritoneum, and there was extensive gangrene of the mesenteric lumen. Appendectomy was performed in the usual manner and a cigaret drain was placed at the base of the cecum. The abdomen was closed in the usual manner.

At the time of operation it was noted that the small intestine was somewhat dilated. Although nothing was given by mouth and fluids were given intravenously, distention gradually increased. There was no evidence of any peristalsis, and signs of paralytic ileus became more marked. The usual palliative measures were of no avail and on the fourth postoperative day an ileostomy was performed under local infiltration anesthesia. A left muscle-splitting incision was used and a catheter was sewed into a loop of ileum with the Witzel method. There was immediate evacuation of much foul and toxic material through the ileostomy opening. Within two days gas began to pass both by rectum and through the ileostomy tube, and feeding of dextrose and sodium chloride was started through the tube. The general condition of the patient gradually improved and the enterostomy tube was removed on the seventh day. Within three weeks the appendectomy wound, which had had a considerable amount of fecal drainage was entirely closed, but as bowel tonus increased the thin, watery fecal drainage from the enterostomy wound became so profuse that dressings had to be changed every two hours. The skin became raw and irritated and a large crater formed, which showed no signs of healing. The discharge was strongly alkaline.

October 22, about four and one-half weeks after the original ileostomy was performed, the Potter method of treatment for closure of the fistula was started. Gauze soaked with tenth normal hydrochloric acid was applied to the wound in the form of wet dressings, and a plug of gauze was inserted into the crater. Dressings were changed as often as they became saturated with bowel secretion. Boiled skim milk and tincture of opium were given in an attempt to harden the fecal contents. November 5, i. e., fifteen days after the beginning of treatment with hydrochloric acid, the fistula was entirely closed and the wound all healed.

COMMENT

In this case, within a period of about two weeks it was possible to close a fistula of the ileum, which was discharging very alkaline irritating fecal matter, by the use of wet dressings of tenth normal hydrochloric acid. The fistula showed no signs of closing spontaneously, in fact, the digestion of the abdominal wall was becoming more pronounced every day. The method is based on physiologic principles, is without danger to the patient and is highly successful. The method should be given a fair trial in all cases of intestinal fistula before any attempt at operative intervention.

CONCLUSIONS

- 1 The persistence of intestinal fistulas is due to the proteolytic action of trypsin.
- 2 Upper intestinal fistulas heal spontaneously only on very rare occasions.

3 High intestinal fistulas, per se, result in marked changes in the blood chemistry due to fluid losses and chloride depletion.

4 The use of dressings soaked in tenth normal hydrochloric acid will neutralize the alkalinity of the intestinal juices and thus inhibit tryptic activity, resulting in closure of the fistula.

5 The risk and poor results of operative intervention is eliminated by the use of tenth normal hydrochloric acid.

6 The Potter method of treatment of intestinal fistulas is based on physiologic principles, it is without danger and should be tried in all cases.

510 Bank of America Building

Clinical Notes, Suggestions and New Instruments

ONYCHIA DUE TO CHRONIC HYPOVITAMINOSIS

CLEVELAND WHITE M.D. CHICAGO

Clinical pictures of unmistakable signs and symptoms due to hypovitaminosis or avitaminosis are well known. In a recent editorial¹ of THE JOURNAL are emphasized the remarks of McLester² that chronic vitamin deficiency may produce vague borderline or subclinical disorders. While many syndromes are being attributed to lack of vitamins at the present time, seven cases of definite nail deformities have been observed in the past two years which are believed to have been due to chronic hypovitaminosis, especially B and D.

CLINICAL MANIFESTATIONS

The earliest manifestations are irregular, longitudinal ridging with short transverse, semipunctate depressions. This was first observed in a woman aged 38, who had restricted her diet too severely in controlling the symptoms of another disease. The six other patients were all women who had dieted for several years because of a marked tendency to become obese. Ages ranged from 35 to 50. All had abstained from butter and all "fattening" foods. The most pronounced case showed marked dystrophy of the terminal portion of the nail plates. All gradations of nail changes occurred between these two types. All nails were involved and there were no subjective symptoms. There were no other dermatologic changes. Two showed lowered metabolic rates of -20 and -14, but administration of thyroid extract by mouth did not effect any improvement in the nails, whereas giving foods and medicaments containing vitamins B and D did. The nails had shown changes for about six months to six years.

DIFFERENTIAL DIAGNOSIS

In the more pronounced cases, onychomycosis (ringworm of the nails) and psoriasis must be ruled out. In a series of seventy-four cases of onychomycosis, the absolute diagnosis can be made only with the finding of fungi either microscopically or culturally, because the clinical picture varies from a mild scaly nail thickening to almost total destruction of nails with a remaining powdery residue. Psoriasis of the nails can occur alone but is usually associated with typical cutaneous changes of that disorder. The nail manifestations of psoriasis are being discussed in another paper.³

Result of studies and research under therapeutic grant 143 of American Medical Association.

Part of the Scientific Exhibit on Diseases of Nails at the Eighty Fourth Annual Session of the American Medical Association Milwaukee June 12-16 1933.

From the Departments of Dermatology of Northwestern University School of Medicine, Passavant Norwegian American and West Suburban hospitals and the Illinois Eye and Ear Infirmary.

1 Dermal Manifestations of Vitamin A Deficiency editorial J A M A 102 770 (March 10) 1934.

2 McLester J S Nutrition and Diet in Health and Disease ed 2 Philadelphia W B Saunders Company 1931.

3 White Cleveland Diseases of the Nails with Especial Reference to Ringworm and Psoriasis to be published.

COMMENT

That vitamin deficiency can produce dermatologic syndromes is well illustrated in a recent paper by Loewenthal.⁴ He noted a papulofollicular dermatosis associated with dryness of the skin. Hutter and Middleton⁵ have noted the tongue changes in a number of cases due to vitamin B deficiency. Nail changes have been noted in the various anemias by many writers, and numerous causes have been mentioned in such cases.

No animal experimental work confirms these clinical impressions, and Steenbock⁶ states that he has not regularly noted such nail changes in his animal studies. No nails were removed for histologic study, as patients would not permit it.

The treatment consisted of large doses of haliver oil with vosterol and foods containing vitamins B₂ and D. The nails of six patients became essentially normal, while the seventh is vastly improved. The last patient had had nail changes for six years and the nails had become disintegrated, showing only about one eighth of normal nail present when first observed. Six had had local therapy in other hands with no improvement.

SUMMARY

Nail changes varying from slight transverse depressions with longitudinal ridging to marked dystrophy were noted in seven patients.

Deficiency of vitamins B₂ and D due to restricted diet was believed to be the etiologic factor.

All the nails have responded either by a cure or by marked improvement to the administration of these vitamins or foods containing these vitamins.

122 South Michigan Avenue

MASSIVE SKIN GANGRENE COMPLICATING CHICKENPOX

T. M. WATSON, M.D., GREENVILLE, N. C.

This case is reported because massive gangrene of the skin is an unusual complication of chickenpox.

REPORT OF CASE

H. C. Jr., a schoolboy, aged 6 years, had had a normal birth and infancy. He had never had any severe illness. There had been frequent colds before the tonsils and adenoids had been removed two years before. Since that time he had been perfectly well except for a mild case of measles four months previously. He was doing well in school.

There was an epidemic of chickenpox in the schools at the time of the onset of illness. Five days before he entered the hospital a low grade fever developed and the boy complained of pains in the joints. Two days later vesicles characteristic of chickenpox appeared on the skin. There were few of them and all indications pointed to a mild attack. On the fourth day of the illness the patient became very restless, the temperature went to 104 F, the pulse to 180, and the boy had a convulsion. Examination at this time showed no evidence of infection except the chickenpox lesions on the skin and an elevated tumor surrounding a small lesion on the skin. This was in the right axillary line at the level of the ninth rib. It was one-half inch (1.27 cm) in diameter and was indurated and tender. There was no discoloration of the skin.

The white blood cell count was 16,000 with polymorphonuclears, 62 per cent; small lymphocytes, 34 per cent; eosinophils, 2 per cent; transitionals, 2 per cent. The urine was normal except for a fairly heavy trace of albumin. The Wassermann reaction was negative. The tuberculin test was negative. The spinal fluid, the bleeding time and the coagulation time were normal.

Four hours after examination the skin over the tumor became discolored, apparently from intracutaneous hemorrhage, and twelve hours later a section of skin an inch (2.5 cm) in diameter, over and surrounding the tumor, became gangrenous and showed that it was going to slough. For an inch around the sloughing area the skin showed ecchymosis. The intra-

cutaneous hemorrhage, followed in a few hours by gangrene, spread so rapidly that at the end of twenty-four hours the gangrenous area was 6 inches (15 cm) wide and extended from just below the axilla to the crest of the ilium. The patient was profoundly toxic, nauseated and delirious, and the temperature ranged from 104 to 107 F. The skin was dry, the eyes were sunken, and the expression was pinched.

The fifth day after the onset, he was taken to the hospital. One thousand cubic centimeters of Hartman's solution¹ was given intraperitoneally and 400 cc. of 10 per cent solution of dextrose intravenously. This did not improve the general condition much. The symptoms of toxemia continued, and the gangrene, preceded by intracutaneous hemorrhage, continued to spread.

Eight hours after admission to the hospital a transfusion of 500 cc of blood was given. The effect of the blood was rapid and marked. The symptoms of shock cleared promptly. After three hours the temperature was 102 F, and the pulse rate had come down from 180 to 120 per minute. The patient was quiet and rational. The vomiting was checked and he began taking and retaining fluids. It was most noticeable that neither the hemorrhage in the skin nor the gangrene advanced any further after the blood was given.

For two days after the transfusion, progress was satisfactory, then there was a return of the toxic symptoms, with a temperature of 104 and a pulse of 170. There was rigidity of the neck and the Kernig sign was positive. Anhydremia



Skin lesion thirty days after onset, showing first patch of grafts

was evident, in spite of the fact that the patient was getting a fair amount of fluid by mouth and was getting from 1,500 to 2,000 cc parenterally each day. There was no extension of the skin lesion. The slough had broken loose from the surrounding skin and left a punched out border, and the surrounding skin was undermined for about half an inch. The dead skin was contracting toward the center and there was an enormous exudation of yellowish fluid from the raw surface. Examination of the chest revealed bronchopneumonia in the lower lobe of the right lung.

A second transfusion was given from another donor. Improvement was not so marked as was the case after the first transfusion, but the general condition improved somewhat. The signs of meningeal irritation cleared after eight hours and there was much less fluid loss from the skin lesion. For ten days after the second flare up the course was that of a severe bronchopneumonia, then the lung signs and the fever gradually cleared. The temperature reached normal on the eleventh day after the second transfusion was given. For two weeks the patient did not lose ground, but he made very little progress. His appetite was poor and great difficulty was experienced in administering enough food and fluids. A third transfusion was given from the original donor. After this, the climb to recovery was steady.

1. The formula of Hartman's solution of physiological buffer salts (Lilly) is as follows: sodium lactate (lactic acid 85 per cent) 0.6 cc, sodium chloride 1.5 Gm, potassium chloride 0.1 Gm, calcium chloride 0.05 Gm, distilled water sufficient to make 10 cc. This stock solution is to be diluted twenty five times before using.

4. Loewenthal, L. J. A. A New Cutaneous Manifestation in the Syndrome of Vitamin A Deficiency. Arch. Dermat. & Syph. 28: 700 (Nov.) 1933.

5. Hutter, A. M. and Middleton, W. S. with the collaboration of Steenbock, Harry. Vitamin B Deficiency and the Atrophic Tongue. J. A. M. A. 101: 1305 (Oct. 21) 1933.

6. Steenbock, Harry. Personal communication to the author.

The skin lesion was treated by Drs J L Winstead and W I Wooten of the Pitt Community Hospital. Wet boric acid dressings were kept on the area almost continuously until the sloughing skin and subcutaneous tissue had cleared away, leaving a healthy granulating surface. Three weeks after admission to the hospital autoplasmic grafting was started, as shown in the accompanying illustration. A small patch of tiny pinch grafts was put on every three or four days until the surface was covered. Practically every graft taken from the patient grew.

Isoplastic pinch grafts from the mother were tried, about 4 inches square being covered by her skin. These looked perfect for eight days and then the whole area covered by the mother's skin swelled up about half an inch above the level of the surrounding skin. There was vomiting, diarrhea and generalized urticaria, and the face was swollen markedly. This protein reaction continued for forty-eight hours and then subsided. As the swelling cleared from the isoplastic grafts they dried up and fell off while those taken from the patient on the same day grew.

Besides the lesion described, there were fifteen other vesicles which crusted over and spread out to about 25 mm. When these crusts were removed, a superficial ulcerated area was seen. They did not involve the entire thickness of the skin, as was the case in the major lesion.

The patient was discharged from the hospital in good condition sixty-four days after the onset of his illness. At the time of discharge the hemoglobin registered 110 per cent.

CONCLUSION

Frequent blood transfusion and large amounts of parenteral fluid are of decided value in the treatment of disseminated gangrene complicating chickenpox.

408 State Bank Building

THE EYE DROPPER

T J DIMITRI, M.D., NEW ORLEANS

The construction of the eye dropper is such that the contained fluid comes in contact with its rubber bulb or cap, and this not alone at a time following a change in its position from the vertical to the horizontal but also when the rubber bulb has a greater pull than is necessary to fill merely a part of the glass tubing, and, as a result of this, the contents act on the rubber bulb and produce a change that becomes a source

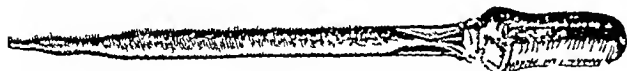


Fig 1—Eye dropper made of glass. At the bulb end the lumen of the tubing is reduced to capillary size. The outer dimensions remain in conformity to the rest of the tube.

of danger when dropped onto or into sensitive parts of the body. An applicable example is the danger at the time of a cataract extraction when an open wound is exposed to these products of rubber dissolution.

This danger is so obviously true concerning the harm that can come from the disintegrated rubber in an open wound that it was thought proper to devise an eye dropper that would prevent the fluid coming in contact with the rubber bulb and

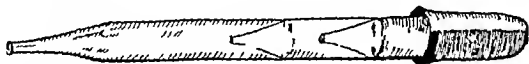


Fig 2—One or more capillary tubings are inserted into a glass tubing and made enduring by the application of heat. These smaller tubings prevent the fluid from coming in contact with the rubber bulb.

in doing so, remove a hazard that is commonly unrecognized by the ophthalmologist and is detracting from his endeavors in the prevention of blindness. Therefore, I submit an eye dropper or droppers that will minimize and probably entirely remove this danger, and without greatly increasing the cost of construction.

The tubing part is made of any length, of the same material, namely glass, the smaller end is unaltered and the rubber bulb remains the same. The difference in the type offered as compared to the old is featured at the rubber bulb end in which

the lumen is reduced to a capillary size, this being done without change in the outer dimensions of the tubing. At the time of its construction, when a part of the tubular glass is held in the flame and about to become a solid unit at the heated part, a small amount of air is blown from one end of the tube while yet in the flame. When the tube is removed from the flame, the diameter of the lumen of the part that was in the flame is governed by the amount or force of air blown through the tube. (The finished product is shown in figure 1.)

This dropper is most satisfactory and answers well the requirements, yet others may desire it to be made even more certain in action so as to avoid the vacuum lost, for the objec-

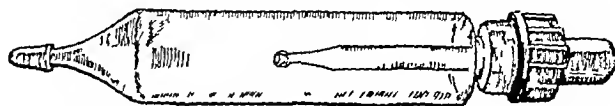


Fig 3—A modification of Stern's container for eye medication.

tion may be raised that the liquid can be made to enter the rubber after repeated pressure on the bulb and if the bulb happens not to fit perfectly to the tube, either because of over size or of a decrement in its elasticity. For this reason, I produced dropper 2 which is shown in figure 2. It is made by inserting in the glass tubing a division having the appearance of the smaller end of a dropper in a glass tubing of larger size and the large tubing retains the same pointed end as in the old type. This is accomplished by first making the tips. These are inserted into a glass tubing of larger size and made enduring by applying heat. Because of these divisions, the fluid cannot come in contact with the bulb, and the rubber, as a consequence, retains its physical and chemical qualities much longer.

The third is a modification of Stern's container and eye dropper. This was also suggested because of contact of the liquids with the rubber caps. The objection can be overcome by utilizing the feature spoken of in dropper 2 and the reduction in size of the smaller end. This modification is shown in figure 3.

These types of eye droppers have been constructed for me by Mr G P Seiler of this city.

Teresita Apartments, St Charles at Napoleon Avenue

A SIMPLE METHOD OF TREATING COMPLETE SEVERANCE OF THE URETHRA COMPLICATING FRACTURE OF THE PELVIS

JOHN K ORMOND, M.D., AND ROBERT M COTHRAN, M.D., DETROIT

Fracture of the pelvis is now a fairly common occurrence and is frequently complicated by rupture of the bladder or urethra and, at times, by complete severance of the bladder from the urethra. When this occurs the tear takes place at the point of exit of the urethra from the prostate gland itself with the prostatic urethra remaining attached to the bladder. In such cases immediate repair is urgently indicated, for if the repair is left till later the scar tissue and distortion resulting from the effects of the original trauma render a plastic operation difficult of performance and a stricture following the repair an almost inevitable sequel. For some years we have had under our care one such patient on whom Dr Hugh Young had operated eleven years after his accident obtaining a splendid result. The continuity of the urethra had been restored, allowing the cystostomy of eleven years' duration to close. But it is still necessary for him to have the urethra dilated from time to time.

In case the repair is made immediately and the continuity of the urethra restored before scar tissue has formed, there is apt to be much less trouble later. Unfortunately, these patients often suffer from shock and any lengthy procedure is contraindicated. Drainage of the bladder of course is necessary. In some cases good results in restoring urethral continuity have been obtained by the use of an indwelling catheter introduced at the time of operation.

In a recent case we made use of a simple method for restoring the continuity of the urethra which we believe has

From the Division of Urology, Henry Ford Hospital

definite advantages over the indwelling catheter in effectiveness and is just as quickly and easily applicable

REPORT OF CASE

A man, aged 47, was brought to the hospital in the early morning, following an automobile accident. He was found to have a fractured pelvis. There were no signs of rupture of the bladder or of urinary extravasation, but he was unable to void. In the afternoon, since he had not voided and since there was dullness rising above the symphysis a catheter was passed, it being necessary to use a filiform and follower catheter on account of an old stricture in the perineal urethra.

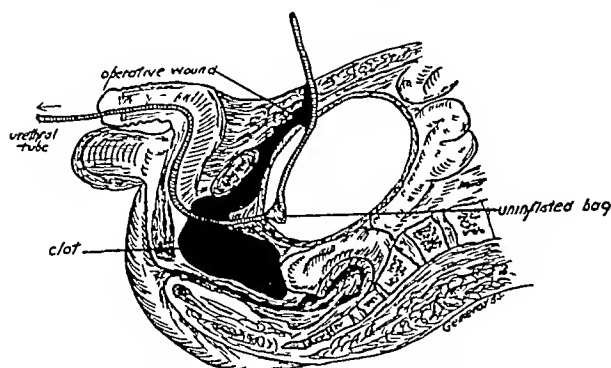


Fig 1—Uninflated bag in place but not drawn down

A small amount of blood was obtained but no urine. Suprapubic operation was then done. The bladder was found distended with urine, and it and the prostate were completely torn away from the urethra, there being a large amount of clot and liquid blood in the subvesical space, into which the catheter had entered. Speed was essential on account of the patient's condition. Moreover, because of the pelvic fracture, it did not seem to us advisable to place him in the lithotomy position, which would have been necessary for suture of the urethra through the perineal approach. Accordingly, a small sound was passed through the urethra till the end was felt in the subvesical space, through the opened bladder a finger was passed through the prostatic urethra into the subvesical space, meeting the end of the sound and guiding it into the bladder. Then the urethral tube of a Picher bag was threaded onto the end of the sound and drawn out of the urethra. After the

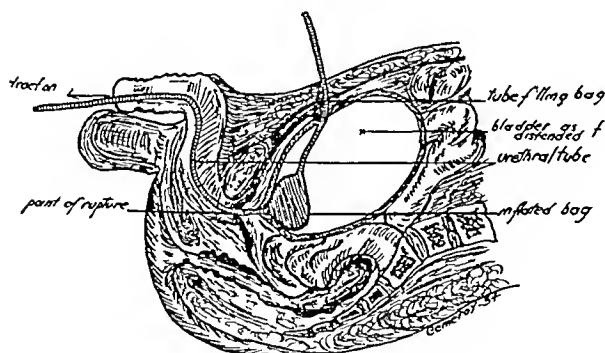


Fig 2—Bag inflated and drawn down. The blood clot has been removed

bag was distended with water the neck of the bladder could be drawn down till it seemed to us that the lower pole of the prostate was in apposition to the torn end of the urethra, at the triangular ligament. This approximation was maintained by strapping the tube to the patient's thigh under just enough tension to hold the bladder neck snugly in place. It was left in this way for two weeks. The water was then allowed to escape from the bag, and the bag was drawn up out of the wound and cut off from the urethral tube, which was left in place as an indwelling catheter for a few days longer, and then withdrawn. As the suprapubic wound closed the patient has been able to void freely and with perfect control. We have as yet no information concerning his sexual

powers but feel sure that they stand a better chance of remaining intact than if an extensive perineal operation had been performed. He will, of course, be watched carefully for strictures, and the urethra will be dilated from time to time for the old stricture requires this whether the scar of the healed rupture contracts or not.

The accompanying diagrams show the position of the bag and illustrate its use. The bladder is shown as if it were distended, in order to bring out the position of the bag more clearly. Obviously, with a suprapubic opening the bladder would in actual fact be collapsed.

The bag is commonly employed to produce hemostasis following suprapubic prostatectomy, and a few cases of temporary weakness of the external sphincter after its use have been reported. Being conical and lying in the prostatic bed, it must have been drawn partly into the membranous urethra, dilating it and causing ischemia. In a case such as we have described, this need not be feared, for two reasons. First, only moderate tension is necessary. Second, the bag lies wholly within the bladder and will not be drawn into the membranous urethra.

OSTEOMYELITIS OF THE RIB COMPLICATED BY EMPYEMA IN AN INFANT

RECOVERY OF BOTH PROCESSES FOLLOWING ASPIRATION OF EMPYEMA

I J WOLF M D PATERSON N J AND H B RING M D
PASSAIC N J

This report is prompted by the complete recovery occurring in a case of osteomyelitis of the rib complicated by an empyema in an infant, in which conservative treatment was followed.

REPORT OF CASE

History—Thomas P., aged 6 months, was admitted to the Barnert Hospital, Dec 29, 1933. One month before he had caught cold, and a left otitis media developed a week later. A myringotomy was performed and the ear drained for three weeks. About a week after the ear was opened, an indurated swelling about 2 inches in diameter appeared on the right side of the back at the angle of the scapula. This seemed to recede somewhat and a few days later a much smaller swelling was noticed on the lower part of the right forearm. The infant's past history was irrelevant.

Physical Examination—The temperature on admission was normal. During the examination the infant cried constantly but more so when the swellings on the back and forearm were manipulated. The left ear was draining slightly. The chest was clear, the abdomen was normal. The knee jerks were hyperactive the left more so than the right. The right superficial abdominal reflex was not elicited. On the dorsum of the right forearm overlying the ulna at the junction of the lower third and the upper two thirds, a slightly reddened, fluctuant swelling was found about 24 mm in circumference. A larger fluctuant swelling about the circumference of an orange was seen on the right side of the back at the angle of the scapula. These gave the impression of abscesses.

Progress—The next day the infant was much less irritable. The evening temperature of the previous day was 104 F. The abscess on the back had completely disappeared, and the swelling on the right forearm was considerably smaller. When the chest was examined, unmistakable signs of fluid were found on the right side. This was striking, as the chest had been clear the day before. The respiratory rate was 40. A roentgenogram of the chest revealed a homogeneous opacity obliterating the right costophrenic and cardiophrenic angles and the axillary portion of the right lung, the heart was displaced to the left. In addition there was a considerable destruction of the right ninth rib near its angle. A roentgenogram of the wrist showed a stripping of the periosteum of the right ulna in its lower half.

December 31 a thoracentesis was performed in the right posterior axillary line, but only a few drops of purulent hemorrhagic fluid were obtained.

January 1 the respiratory rate was 70, the infant was cyanotic. The temperature rose to 105 F the evening of the

From the pediatric service of the Barnert Hospital Paterson N J

previous day. A second roentgenogram showed a homogeneous opacity of the entire right chest due to effusion. A blood culture taken on this day proved negative. A blood count revealed 3,800,000 red cells, 72,000 white blood cells, with 86 per cent polymorphonuclears, 2 per cent eosinophils and 12 per cent lymphocytes. The urine showed amorphous urates and an occasional epithelial and red blood cell. The infant's general condition was poor. He was placed in an oxygen tent and was kept stimulated.

January 3, 40 cc of frank pus was aspirated from the right chest. On smear there were polymorphonuclear leukocytes and streptococci, on culture, a pure strain of hemolytic streptococci. Following the tap the infant's condition was markedly improved. The temperature and respiratory curves fell to normal and an uneventful recovery followed. January 5, a thoracentesis proved unsuccessful. A roentgenogram, January 8, revealed considerably less fluid in the right side of the chest than on January 1, but more than on December 30. January 23, the fluid in the right chest was absorbed. The osteomyelitis of the rib showed healing. The wrist appeared unchanged and examination of the part showed induration.

March 3, the patient visited the clinic. He had gained 5 pounds (2.3 Kg). Physical examination of the chest and wrist were negative. Roentgen examination also was negative. A blood Wassermann test was negative.

COMMENT

An osteomyelitis of the right ninth rib and the right ulna complicated a purulent otitis media in an infant aged 9 months. An abscess of the soft parts overlying the osteomyelitis of the rib subsequently ruptured into the pleural cavity. Whereas the chest had been clear the previous day, the right side was found to be filled with fluid subsequent to the disappearance of the abscess on the posterior chest wall. Roentgenographic examination corroborated this and revealed a well advanced osteomyelitis of the right ninth rib. The child became very toxic, dyspneic and cyanotic. His condition was very poor for several days. The case was treated as an ordinary empyema complicating a pneumonia. Tapping was resorted to, to relieve the fluid accumulation and to give the mediastinum an opportunity to become fixed. One aspiration of 40 cc of pus was sufficient to enable the infant to resorb the remaining fluid, making thoracotomy unnecessary. Resection of the osteomyelitic portion of the rib was also unnecessary as it healed of its own accord, as did the process in the right ulna.

714 Broadway—112 Lexington Avenue

OCCURRENCE OF DIABETIC GANGRENE IN AN UNUSUAL LOCATION

C W W ELKIN M D PITTSBURGH

This case of diabetes mellitus is reported because of the unusual location of the complicating gangrene and infection.

Mrs. S. L., aged 42, a married Jewish woman, seen in October 1931, gave a history of having had diabetes mellitus for six years, without any dietary or insulin treatment. After a short period of supervision of treatment, the patient went through a pelvic operation quite satisfactorily in November 1931, but refused to follow dietary instructions or take insulin. She was not seen again until Nov. 28, 1933, when she was found in a stuporous condition with "air hunger" and "acetone breath." Over the lower part of each labium majus was a large gangrenous area, from one of which (the right) was draining considerable pus. In addition there was a gangrenous area over each ischial region, with considerable sloughing of tissue on the right side. Between the labial and ischial areas involved there was practically continuous swelling, redness and induration, and on the right side an apparent subcutaneous sinus connecting the two areas. Through this sinus pus could be expressed. Marked glycosuria was present, the blood sugar being 0.240.

The patient refused hospitalization. Treatment with diet, insulin and local care of the infected gangrenous areas resulted in marked rapid improvement, and Feb. 2, 1934, the wounds were healed and the diabetes well under control.

121 University Place

POISONING BY CAMPHOR

WILLIAM R. KLINGENSMITH M.D. AMARILLO, TEXAS

Camphor poisoning is uncommon. Cases with a fatal termination have been reported.¹ Recovery following the ingestion of 450 grains (30 Gm.), and death from the ingestion of 18 grains (1.2 Gm.) is reported. Benz,² Haft,³ Blair¹ and Cottrell⁴ report recovery after the ingestion of varying amounts of camphor in oil. Osborne⁵ says "It is difficult to cause poisoning in the human unless the amount is excessive, then respiratory depression and convulsions might be caused." Stevens⁶ says "Toxic doses first produce excitement, nausea and vomiting, delirium and epileptiform convulsions, then coma and collapse." Neither text states that the outcome may be fatal. Recovery without sequelae or complications seems to be the rule, however, in Cottrell's⁴ case very definite evidence of cerebral irritation continued for several days. Of the later reports in the literature, camphor in oil is universally the preparation ingested. The earlier reports in the literature^{1,2} indicate that a solution of camphor in alcohol may have been responsible for the poisoning in many instances. Probably alcoholic solutions are more rapidly absorbed, thus accounting for the incidence of more fatalities in the earlier reports. Clinical manifestations vary. Predominant among the cases reviewed are the following symptoms: convulsions, epileptiform in character, coma, and spasticity of musculature. Convulsions are severe and usually unattended by loss of sphincter control. The pulse rate, blood pressure and respiratory rate may be normal or increased. There is no criterion on which to base the diagnosis except the history or the detection of the drug in the stomach contents.

REPORT OF CASE

Miss N. T., aged 22, admitted to the Northwest Texas Hospital, Nov. 27, 1933, took by mistake, thirty minutes prior to admission 2 ounces (60 cc.) of a 20 per cent solution of camphor in oil (180 grains, 12 Gm.). About twenty minutes later she became nauseated and vomited recently eaten food containing unmistakable evidence of camphor. The nausea was preceded by a slight burning in the epigastrium, otherwise there was no discomfort. Immediately following emesis she had a violent convulsion, epileptiform in character, unattended by loss of sphincter control. A few minutes later when she was pale, appeared terrorized and was unable to talk. Her hands and arms were in constant purposeless motion. An immediate examination revealed a general spasticity of the skeletal muscles and a slight increase in the patellar reflexes. The eyes responded sluggishly to light, the pupils being of equal size but irregular in outline. The blood pressure was 140 systolic, 90 diastolic, the pulse was 140.

At about the time these observations had been made she had the second violent convulsion, similar to the first. She was immediately given $\frac{1}{100}$ grain (0.0006 Gm.) of scopolamine hydrobromide subcutaneously and 0.5 Gm. of sodium amylal intravenously. She responded at once, became completely relaxed and went into a profound sleep. The patient's stomach was then lavaged thoroughly with sodium bicarbonate solution. Two ounces of magnesium sulphate, saturated solution, was given through a lavage tube. Hypodermoclyses with 500 cc. of physiologic solution of sodium chloride completed the immediate treatment. About five hours later when she awoke there was no evidence of any confusion or distress except a severe headache. The next day, about twelve hours later, urine examination was negative and the leukocytes had risen to 13,400, with a normal differential count. Recovery was uneventful. The patient was discharged on the third day and readmitted on the fourth day. The complaint on readmission

1 (a) Emerson J. H. Camphor Poisoning in Reference Handbook of Medical Sciences. New York: William Wood & Co. 8 460 1906.
(b) Blair Jackson. Camphorated Oil Poisoning. Report of a Case. Ohio State M. J. 25 808 (Oct.) 1929.

2 Benz, R. W. Camphorated Oil Poisoning with No Mortality. Report of Twenty Cases. J. A. M. A. 72 1217 (April 26) 1919.

3 Haft, H. H. Camphor Liniment Poisoning. J. A. M. A. 84 1571 (May 23) 1925.

4 Cottrell, J. Poisoning by Camphorated Oil. Brit. M. J. 1 97 (Jan. 17) 1931.

5 Osborne, O. T. Principles of Therapeutics. Philadelphia: W. B. Saunders Company 1922. p. 257.

6 Stevens, A. A. A Textbook of Therapeutics. ed. 6. Philadelphia: W. B. Saunders Company 1923. p. 141.

was malaise, anorexia and violent headache. The general examination revealed no abnormality except that the blood pressure was 154 systolic, 100 diastolic. Eyeground examination was negative. The icterus index was 6. Treatment was symptomatic, the blood pressure gradually returning to normal within the week. The patient continues in good health two months later.

COMMENT

Because of the increase in blood pressure and the rather persistent headache, the possibility of cerebral irritation was considered. However, a lumbar puncture was not done, nor was it insisted on in view of the rapid amelioration of the symptoms and the negative eyeground examination. Through the agency of glycogen the liver is able to detoxify camphor by conjugation to nontoxic glucuronates.⁷ No evidence of liver damage has been apparent.

Fisk Medical and Professional Building

Council on Pharmacy and Chemistry

SPECIAL REPORT OF THE COUNCIL

THE COUNCIL RECENTLY DECADE INTERESTED IN THE RELATION OF AMIDOPYRINE TO GRANULOCYTOPENIA. A MEMBER OF THE COUNCIL WHO IS ESPECIALLY INTERESTED IN THE PROBLEM WAS ASKED TO PREPARE A REPORT ON THE SUBJECT. DR. PAUL REZNIKOFF OF CORNELL UNIVERSITY MEDICAL COLLEGE HAD PREPARED A BIBLIOGRAPHY ON THIS SUBJECT AND OFFERED THE MEMBER A REPORT BASED ON HIS INVESTIGATIONS. THIS WAS SUBMITTED TO THE COUNCIL FOR CONSIDERATION AND AS A RESULT THE COUNCIL SPONSORED PUBLICATION OF THE REPORT AS FOLLOWS TOGETHER WITH THE APPENDED COMMENT ON AMIDOPYRINE WHICH WAS PREPARED IN THE COUNCIL'S OFFICE.

PAUL NICHOLAS LEECH Secretary

THE RELATION OF AMIDOPYRINE AND THE BARBITURIC ACID DERIVATIVES TO GRANULOCYTOPENIA

The etiology of granulocytopenia has been a matter of speculation for a considerable time. It was generally considered that individuals suffering from this condition had constitutionally defective granulopoietic tissue and that one of many contributing factors might cause an acute depression of the bone marrow. Some of these contributing factors were fatigue, menstruation and infection.

The experimental production of agranulocytosis was reported by Kracke in 1932.¹ Madison and Squier² reported before the sixth annual meeting of the Central Society for Clinical Research in Chicago, Oct. 27, 1933, that an analysis of thirteen consecutive cases showed that all of the patients were physicians, nurses or patients under a physician's care and that they all had been using drugs containing a barbiturate combined with amidopyrine. Of even greater interest was the observation of these workers that three of their patients after recovery had an abrupt or fluctuating drop in granulocytes after medication. In two cases single doses of a benzene ring derivative caused such a relapse.

Following this report many physicians found a similar condition in their patients. Watkins³, Grant,⁴ Hench,⁵ and McGuire,⁶ all substantiate the observations of Madison and Squier. Since that time reports have been numerous indicating that amidopyrine is an important factor in the production of an acute attack of granulocytopenia. Rawls⁷ reported two

cases. Holten, Nielsen and Transbøl⁸ described five fatal cases in patients who developed granulocytopenia after they had been hospitalized for other disorders and who received amidopyrine. In a subsequent report Madison and Squier⁹ felt that in all their fourteen cases amidopyrine either alone or in combination with a barbiturate preceded directly the onset of the attack. Randall's¹⁰ case might be added to this series. Hoffman, Butt and Hickey¹¹ report that thirteen of fourteen patients had received amidopyrine alone or in combination with other drugs and died. The fourteenth patient took dinitrophenol four times a day for two weeks and is certain that she received no other drugs. She recovered. Zininger¹² found that two of her patients who died had been taking large amounts of amytal compound which contains amidopyrine, for a fairly long period of time. Recently Sturgis¹³ reported before the Association of American Physicians his observations on granulocytopenia. In agreement with other workers he finds that amidopyrine is an important factor in the production of granulocytopenia.

Attempts to reproduce this condition in rabbits with amidopyrine have thus far not been very successful. Madison and Squier⁹ produced a drop and an antemortem disappearance of granulocytes in one rabbit given large doses of allylisopropylbarbituric acid with amidopyrine (allonal) by mouth but failed in seventeen other rabbits to change the blood picture significantly. Hoffman, Butt and Hickey¹¹ obtained some depression in rabbits but they do not report any bone-marrow studies in their preliminary report.

Several questions have been raised by these important contributions to the question of etiology of granulocytopenia. Some of them are:

1 Is amidopyrine primarily responsible for the production of granulocytopenia?

2 Are the barbiturates themselves important in the causation of this condition?

3 Are any other predisposing, contributing or specific factors involved in this disease?

4 Assuming that amidopyrine is an etiologic agent in granulocytopenia, is it necessary to stop its general use, or modify its use, or do the conditions under which it is prescribed suggest that its relationship to granulocytopenia is within the realm of unavoidable accident and that any special caution may be disregarded?

As far as can be learned from the evidence at hand there can be no question that amidopyrine is very important in the production of granulocytopenia. In fact no other agent has been found, either chemical or bacterial, which has been a factor in causing so many attacks.

In the second place no definite case has been reported in which a barbiturate alone is responsible. From the present data it appears that barbiturates have little or nothing to do with granulocytopenia.

There also is no doubt that many cases of granulocytopenia have occurred in which amidopyrine has never been taken, or any other drug, for that matter. One patient had three attacks. She never took drugs of any sort previous to the attack and during her last attack she received a sedative containing amidopyrine, and she recovered promptly in spite of the constant administration of this drug throughout the acute phase of her illness. Moreover, it must be remembered that all patients who take or are given amidopyrine are suffering from some complaint or illness at the time the drug is being administered. There can be no question that fatigue¹⁴ and menstruation¹⁵

7 Althausen T. L. Dextrose Therapy in Diseases of the Liver J. A. M. A. 100 1163 (April 15) 1933

1 Kracke R. R. Experimental Production of Agranulocytosis Am. J. Clin. Path. 2 11 (Jan.) 1932

2 Madison F. W. and Squier T. L. Primary Granulocytopenia After Administration of Benzene Chain Derivatives Central Society for Clinical Research 6th Annual Meeting Chicago Oct. 27-28 1933 Reported in J. A. M. A. 101 2076 (Dec. 23) 1933

3 Watkins C. H. in discussion on Kracke. The Possible Role of Barbiturates and Amidopyrine in Causation of Leukopenic States Proc. Staff Meet. Mayo Clin. 8 713 (Nov. 22) 1933

4 Grant S. B. in discussion on Kracke.

5 Hench P. S. in discussion on Kracke.

6 McGuire J. in discussion on Kracke.

7 Rawls W. B. Case Report. Neutropenia Developing During Amidopyrine Medication. Two Cases. Address before the Clinical Society of the New York Polyclinic Medical School and Hospital Feb. 5 1934 (Reported in the New York M. Week 13 6 [Feb. 31] 1934)

8 Holten C., Nielsen H. E. and Transbøl K. Five Nosocomial Cases of Agranulocytosis in Patients Treated with Amidopyrine. Contributions to Knowledge of Etiology of Agranulocytosis (Preliminary Report) Ugeskr. f. Læger 96 158 (Feb. 8) 1934 abstr. J. A. M. A. 102 1350 (April 21) 1934

9 Madison F. W. and Squier T. L. The Etiology of Primary Granulocytopenia (Agranulocytic Angina) J. A. M. A. 102 755 (March 10) 1934

10 Randall C. L. Severe Granulocytopenia Following the Use of Barbiturates and Amidopyrine. Report of a Case J. A. M. A. 102 1137 (April 7) 1934

11 Hoffman A. M., Butt, E. M., and Hickey, N. G. Neutropenia Following Amidopyrine (Preliminary Report) J. A. M. A. 102 1213 (April 14) 1934

12 Zininger Pauline. Correspondence J. A. M. A. 102 1420 (April 28) 1934

13 Sturgis C. C. Observations Concerning the Etiology of Agranulocytosis 49th Annual Meeting Assoc. of American Physicians May 2 1934 Atlantic City

COUNCIL ON PHARMACY AND CHEMISTRY

Jour A M A
June 30 1934

are important factors in inducing an attack quite apart from the drug therapy.

When one considers the enormous amount of amidopyrine consumed and the relatively few individuals afflicted with granulocytopenia, it is obvious that one is dealing with a question of sensitivity in certain patients rather than with a universal action of the drug. In some respects it is analogous to the use of arsphenamines and the occasional occurrence of hepatitis or panmyelophthisis. It would be desirable to determine susceptibility in patients before amidopyrine is administered by the use of a test dose and a blood count, or perhaps by patch test but it is apparent that such a procedure is impractical. Of course, if a patient complains of a rash, dizziness or a chill after amidopyrine is given, it should be discontinued. Probably the safest course to follow is to use another drug such as acetylsalicylic acid, one of the barbiturates or codeine if any of these are just as effective as amidopyrine for any particular symptom. If, however, amidopyrine is found to be unrivaled in its action for a special complaint, it should not be administered for any great length of time, as a routine or in large doses unless white blood cell and differential counts are made at regular intervals. This is suggested, not because the occurrence of granulocytopenia is frequent but because when it does occur, it is an extremely serious accident. The indiscriminate and unnecessary administration of amidopyrine and the self administration by the public is certainly dangerous and should be discouraged.

Comment—The Council fully concurs in the recommendation of Dr. Reznikoff discouraging the indiscriminate administration of amidopyrine, particularly the exploitation to the public in which individuals are importuned to resort to self medication. There are on the market many products containing amidopyrine. Some of these products are advertised to physicians, others to the public. Because of interest in amidopyrine and products containing it, the following statement is opportune. Amidopyrine (Pyramidon) appeared on the clinical use of Nos 5 and 6, Lepine. On the Therapeutic Value of Pyramidon *Ztschr f klin Med* 1896 32, 1897, No 24. Pyramidon has been on the American market for at least twenty-five years under the pharmacopeial designation "amidopyrine" the drug has been marketed by American manufacturers for approximately twelve years.

Practically all pharmaceutical manufacturers and physicians supply houses sell one or more preparations which contain amidopyrine. In some instances the presence of the drug is indicated in the name of the preparation, in other cases the presence of amidopyrine can be determined only by a reading of the label or advertising material, in a few instances the presence of amidopyrine is not indicated in the name, on the label or in the advertising.

The introduction, more than ten years ago, of two widely advertised proprietary combinations of amidopyrine with a hypnotic drug of the barbituric acid series (Allonal and Peralga) was followed by the marketing of a number of preparations of this type. The following are representative examples (Amytal Compound (Eli Lilly & Co), Amido-Neonal (Abbott Laboratories), Cibalgine (Ciba Co, Inc), Pyraminal (H A Metz Laboratories), Phenamidol Compound Tablets (Abbott Laboratories), Phenamidol Compound Tablets (Sandoz Chemical Works), Amarbutal Tablets (A W Kretschmar) (Chicago).

Amidopyrine is also marketed in combination with drugs other than barbiturates. The following are examples of some of the many preparations that contain amidopyrine in combination with one or more other drugs: Amidophen-Lilly, Combral-Winthrop, Midol-General Drug Co, Dysco Tablets-Abbott, Cinchopyrine Tablets-Abbott, Kalms Johnson & Johnson, Mylin-Mifflin Chemical Corp, Benzod Compound Capsules-Abbott, Lumodrin-Winthrop and Hexin (Hexin, Inc).

The examples that have been cited serve also to show the desirability of the rule of the Council which provides against the recognition of proprietary, uninformative names for well known pharmacopeial substances or for mixtures of well known drugs.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS
PAUL NICHOLAS LEECH Secretary

ALPHA NAPCO AND DOSAGE FORMS OMITTED FROM N N R

Alpha-Napico, which is a compound solution of alpha naphthol, contains 10 Gm alpha-naphthol, 32 Gm glycerin 23.8 Gm soft soap (prepared from cottonseed oil and potassium hydroxide) water to make 100 Gm and gluside and essential oils to flavor. Although the description in New and Non official Remedies, 1933, did not mention beta-naphthol, it has been admitted that the product contains about 15 per cent beta naphthol. It is marketed by the Caryl Laboratories, Redondo, Calif.

- 1 Alpha Napico Camphor Nasal Unguent—containing 2 per cent alpha naphthol and 2 per cent camphor in petrolatum.
- 2 Alpha Napico Cones—made of Alpha Napico boric acid and sodium bicarbonate. They are recommended on the label for gynecological applications.
- 3 Alpha Napico Menthol Suppositories—containing Alpha Napico menthol oil of theobroma and yellow wax. On the label they are recommended for gynecological applications.
- 4 Alpha Napico Rectal Suppositories.
- 5 Alpha Napico Zinc Stearate Camphor Ointment.
- 6 Alpha Napico Zinc Stearate Powder.

Consideration of Alpha-Napico by the Council began in 1923. The product was rejected under the name Benetol in 1927. Following this there were three years filled with correspondence and discussion voluminous evidence of the Council's attempt to cooperate with a manufacturer who had difficulty in making his product and advertising methods acceptable to the Council. Finally, after many changes in composition, labels, dosage forms and advertising matter, the product was accepted under the name Alpha-Napico in 1930. The firm was given permission to use on labels and advertisements the statement "formerly Benetol" in accordance with the Council's custom when such changes of name are made one year from date of acceptance, through oversight, the firm was not informed at the time of acceptance of this limitation. Space does not permit recounting the long history of difficulties in making and keeping Alpha-Napico acceptable. The firm would promise compliance and seem to agree to required changes and limitations. But each submission of new circumvention of the rules or neglected them. When the period of acceptance expired in 1933, the firm was asked to submit the continued eligibility of the product for inclusion in New and Nonofficial Remedies. The Council's referee found that the material still contained objectionable statements, some of which were in direct contravention of the numerous explanations the firm had received.

In reporting on the eligibility of Alpha-Napico for reacceptance the Council's referee, without discussion of these infractions of the Council's instructions, considered the following more fundamental questions:

- (1) Is Alpha-Napico of sufficient prophylactic and therapeutic value as an antiseptic to warrant continued inclusion in New and Nonofficial Remedies and
- (2) Do not the complexities of the preparation and its dosage forms place the

14 Reznikoff Paul. Neutropenia Laryngoscope 44 66 (Jan) 1934
Scanlan D W. Agranulocytosis (Pernicious Leukopenia) Including Report and History of a Primary Case J M Soc New Jersey 31 17 (Jan) 1934
15 Jackson Jr H and Merrill D. Agranulocytic Angina Associated with the Menstrual Cycle New England J Med 210 178 (Jan 25) 1934
Thompson W P. Observations on the Possible Relation Between Agranulocytosis and Menstruation with Further Studies on a Case of Cyclic Neutropenia New England J Med 210 176 (Jan 25) 1934

in conflict with Rule 10 (Unscientific and Useless Articles—mixtures containing an excessive number of ingredients)?

The Alpha-Naphco preparations are recommended chiefly for local use as an antiseptic and germicide. The present evidence of their usefulness for this purpose is inadequate, nor is there convincing proof that the alpha naphthol by itself exerts any more antiseptic action than do some of the other constituents in these preparations. The phenol coefficient of Alpha-Naphco is said to be 146. Evidence was supplied in March 1932 by reports from a commercial laboratory that a 1:300 solution of Alpha-Naphco will kill *Staphylococcus aureus* in five minutes. The preparation is a weak antiseptic and germicide.

These reports of the commercial laboratory which were considered by the Council in February 1931 compared the antiseptic and germicidal properties of Alpha-Naphco with those of phenol, cresol and surgical solution of chlorinated soda when tested against *Staphylococcus aureus* in water, blood serum, saliva, and equal parts of saliva and blood serum. The preparation was found to be much more active than surgical solution of chlorinated soda in the presence of saliva and of serum, about three times as active as phenol and slightly more active than compound solution of cresol, U S P. Other tests with Alpha Naphco were also made against *B. pyocyaneus*, *B. typhosus*, and *B. anthracis*. The protocols of the latter tests as given in the reports are too brief to be of value there being no complete statement of the conditions. It must be pointed out that the other substances with which Alpha-Naphco was compared in these tests are generally considered to be weak antiseptics and the value in such test tube experiments in proving the efficacy of antiseptics when applied to the skin or mucous membranes is questionable. The firm was informed (March 19, 1932) that tests under such conditions do not simulate those in wounds or infected body cavities.

The value of Alpha-Naphco as an intestinal antiseptic was taken up in another report, at which time the results of tests on human beings were presented by the firm and discussed. These tests showed that the compound acted as an intestinal antiseptic only in very large doses and the claims for its use for this purpose were not accepted. Except for these tests, no evidence has been presented by the firm to support its claims for the antiseptic or germicidal action of alpha-naphthol when applied to skin or mucous membranes.

It is pointed out in Cushing's 'Pharmacology and Therapeutics' that substances such as pyrogallol, naphthol and chrysarobin may owe their effects in skin diseases as much to slight irritation and improved nutrition as to their retarding effect on the growth of micro organisms. It certainly seems that there are many antiseptics other than those of the phenol-cresol naphthol group which are stronger and preferable for use on the skin, especially in first aid.

The use of naphthol preparations in the nose and throat is of very doubtful value. Both alpha and beta naphthol have an irritating effect on the mucous membranes. The antiseptic action of Alpha-Naphco when used as a spray or gargle or its value in preventing colds, as claimed by the manufacturer is questionable. The Council has opposed the exploitation of antiseptic mouth washes and gargles.

Similar questions may be raised in regard to the three suppository preparations offered by the firm. Whatever favorable effects these may have might be attributed to the action of the wax or boric acid vehicles. The Alpha-Naphco Zinc powder is probably little more useful than other similar powders not containing alpha-naphthol.

Attention must also be called to the constituents other than alpha naphthol of several of the preparations. Two of them contain camphor, which is itself an antiseptic. One of the suppositories contains menthol, and the cones contain a large amount of boric acid in addition to the Alpha-Naphco. It also is not unlikely that the soap contained in these preparations may exert an antiseptic effect in contact with the skin and mucous membranes almost equal to that of the other constituents.

Since the first presentation of the products, a few minor changes have been made in the composition of the preparations. The original Benetol ointment contained menthol 0.3 per cent, zinc oxide 5 per cent and boric acid 3 per cent in addition to the other constituents now in the ointment and these have

been omitted from the present Alpha-Naphco Camphor Ointment. Other changes in composition were omission of 0.1 per cent and 0.2 per cent menthol, respectively, from the cones and rectal suppositories. The original Benetol powder contained 3 per cent bismuth subnitrate, 12 per cent zinc oxide and 30 per cent boric acid, which were later omitted. No changes were made in Alpha-Naphco (Benetol) itself or in the nasal unguent or the menthol suppositories. In retrospect it appears that the only noteworthy changes were those made in the ointment and in the powder. Although these revised formulas were considered at the time not to be in conflict with rule 10, the Council decided, on reconsideration, that many of the preparations are still too complex and therefore are in conflict with rule 10. Were Alpha-Naphco able to stand on its own merits, it would hardly seem necessary to include camphor in the preparations.

The Council voted that Alpha-Naphco and its dosage forms be omitted from New and Nonofficial Remedies (a) because there is no reliable evidence that this weak antiseptic is of prophylactic or therapeutic value, (b) because the complexities of the mixtures place them in conflict with rule 10, and (c) because of difficulties in controlling the claims and advertising matter of the firm.

ASTHMOLYSIN AND SPASMOLYSIN NOT ACCEPTABLE FOR N N R

Asthmolysin, manufactured by Dr. Kade of Berlin, is promoted by H. H. Beisner of New York City. It is claimed to be a preparation of outstanding therapeutic value in asthma. It has been the subject of many inquiries addressed to the Council in the past ten years. Asthmolysin is stated to have been 'discovered during 1912 by Dr. Weiss, an authority on Asthma, of Berlin, Germany.'

It is alleged to be "prepared according to a special method," details of which are not given. Other advertising states that the product consists of the active principles of the suprarenal and hypophysis cerebri prepared according to a secret process. No biologic or pharmacologic standardization is mentioned on the label or in the advertising. The mixture of pituitary extracts with epinephrine if, indeed, there is epinephrine in the preparation, would appear to be therapeutically inconsistent, since hypophyseal extracts, by their general stimulation of smooth muscle, are contraindicated in asthma because of the possibility of enhancing or aggravating the constriction of the bronchioles and alveolar ducts. Any effect in asthma which this preparation may exert is therefore in spite of the pituitary extract which is said to be present, a mixture containing epinephrine and pituitary is unscientific and not to be commended.

It was pointed out in THE JOURNAL, Oct. 1, 1927, page 1170 that the firm alleged that it had obtained testimonials from 121 physicians. As THE JOURNAL stated,

Such testimonials given for a semisecret preparation of unscientific character are no credit to those members of the supposedly learned profession that gave them.

Testimonials, whether lay or professional, are a time-honored and overworked means of promoting valueless products concerning which no truly scientific evidence of therapeutic efficacy can be adduced.

A postscript to a letter issued by the firm states

You may have cases of EPILEPSY. If so attached reprint on Spasmolysin will interest you.

According to a "reprint," Spasmolysin has the following formula (?) Asthmolysin + Parathyroid Extract. According to the generally accepted criteria for formula writing, the foregoing presents certain obvious if not glaring deficiencies. No one has ever demonstrated any relationship between suprarenal, hypophysis and parathyroid, on the one hand, and epilepsy on the other. Spasmolysin would then seem to be a preparation typical of the unscientific, irrational mixtures which will be avoided by the scientifically trained physician.

The Council declared Asthmolysin and Spasmolysin not acceptable for New and Nonofficial Remedies because they are semisecret, unscientific preparations marketed under proprietary and therapeutically suggestive names with exaggerated and unwarranted claims, which tend to replace well known drugs of proved effect in corresponding disorders.

Committee on Foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMOTION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG Secretary

IRRADIATED VITAMIN D PASTEURIZED MILK

- (1) ADOHR MILK FARMS'
- (2) JOFFE'S
- (3) F. B. MALLORY, INC.
- (4) PURE WHITE DAIRY COMPANY'S JERSEY, SPECIAL AND HOLSTEIN
- (5) ROCHESTER DAIRY COMPANY'S
- (6) TELLING-BELLE VERNON COMPANY'S
- (7) VALLEY BELL

Distributors—(1) Adohr Milk Farms, Los Angeles, (2) Joppe's Dairy, Grand Rapids, Mich., (3) F. B. Mallory, Inc., Springfield, Mass., (4) Pure White Dairy Company, Tulsa, Okla., (5) Rochester Dairy Company, Rochester, Minn., (6) The Telling-Belle Vernon Company, Cleveland, (7) Valley Bell Dairy Company, Inc., Charleston, W. Va.

Description—Bottled pasteurized vitamin D milk irradiated with ultraviolet rays (patent No. 1,680,818).

Preparation—The milk complies with legal requirements and is pasteurized by the standard holding method. For description of irradiation, see THE JOURNAL Oct 7, 1933, page 1155.

Vitamins—Clinical investigation shows this milk to be a reliable antirachitic agent if proper amount is used. Contains 135 U. S. P. X (Revised, 1934) vitamin D units per quart.

Claims of Distributors—Irradiated antirachitic pasteurized milk having otherwise the flavor and food values of usual pasteurized milk.

STOKELY'S FOR BABY SPECIALLY PREPARED STRAINED PEAS SEASONED WITH SALT

Manufacturer—Stokely Brothers & Company, Inc., Indianapolis.

Description—Sieved peas slightly seasoned with salt. Largely retains the natural minerals and vitamins.

Manufacture—Fresh peas, harvested at the height of development while still in the tender, succulent stage, are shelled, thoroughly washed, inspected to eliminate any defective peas, and graded; the selected peas are given a minimum blanch in hot water, removed from the water, steamed in a closed kettle until soft, comminuted, canned and processed as described for Stokely's Strained Green Beans (THE JOURNAL, May 26, 1934, p. 1762).

Analysis (submitted by manufacturer) —		per cent
Moisture		86.6
Total solids		13.4
Ash		1.1
Sodium chloride		0.7
Fat (ether extract)		0.4
Protein (N × 6.25)		3.5
Reducing sugars as dextrose		0.2
Sucrose (copper reduction method)		2.3
Crude fiber		0.8
Carbohydrates other than crude fiber (by difference)		7.6
Alkalinity of ash (cc normal acid per gram ash)	4.1	
pu	5.6	

Calories—0.5 per gram 14 per ounce

Vitamins—The natural vitamin content is retained in large measure in the manufacturing process by the use of equipment and procedure which exclude incorporation of air; the vegetable material is exposed to steam only.

Claims of Manufacturer—Supplementary to the infant milk diet, and valuable for children and adults on soft diets. Has

smooth consistency and supplies desirable bulk without roughness. The straining renders the nutrient content readily available for digestion. Scientifically prepared to retain in high degree the natural flavor, mineral and vitamin values. Seasoned to bring out full flavor and packed in enamel lined cans. Requires only warming for serving.

18-K BRAND VACUUM PACKED FRESH ROASTED COFFEE

Manufacturer—Winston and Newell Company, Minneapolis.

Description—Ground roasted coffee packed in tins under "vacuum."

Manufacture—The coffee beans are blended and roasted in one operation, screened and granulated. The chaff is removed by air, ground and removed with the coffee. The coarsely ground coffee is packed in tins which are sealed under "vacuum."

Analysis (submitted by manufacturer) —		per cent
Moisture		5.0
Ash		4.0
Fat (petroleum ether extract)		15.6
Total nitrogen		2.2
Protein nitrogen		1.9
Protein (noncaffeine N × 6.25)		11.9
Crude fiber		11.3
Carbohydrates other than crude fiber (by difference)		51.0
Caffeine		1.2

Claims of Manufacturer—Sealed in "vacuum" to retain freshness and flavor.

(1) SANTA FE BRAND CRYSTAL WHITE TABLE SYRUP

(2) SANTA FE BRAND GOLDEN SYRUP

Distributor—The Ranney-Davis Mercantile Company, Arkansas City and Anthony, Kan., Enid, Ponca City and Woodward, Okla.

Packer—The Hubinger Company, Keokuk, Iowa.

Description—(1) Table syrup, corn syrup flavored with sucrose syrup and vanilla extract.

(2) Table syrup, corn syrup flavored with refiners' syrup.

Manufacture—The same as Hubinger Crystal White Syrup, THE JOURNAL, Jan 27, 1934, page 293, and Hubinger Golden Table Syrup THE JOURNAL, Jan 20, 1934 page 213.

Claims of Manufacturer—Recommended for use as an easily digestible and readily assimilable carbohydrate supplement to milk in infant feeding and as a syrup for cooking, baking and the table.

BEECH NUT PRESSURE COOKED FARINA- OATMEAL-WHEAT GERM BLEND CERE-JEL

(SLIGHTLY SEASONED WITH SALT)

Manufacturer—Beech-Nut Packing Company, Canajoharie, N. Y.

Description—Sieved cooked farina, oatmeal and wheat germ retaining in high degree the natural vitamin and mineral content, seasoned with salt.

Manufacture—Farina, oatmeal, wheat germ and salt in definite proportions are cooked in water, strained, packed and processed as described for Beech-Nut Pressure Cooked Farina Cere-Jel (THE JOURNAL, May 26, 1934 p. 1762) and Beech-Nut Strained Carrots (THE JOURNAL, Nov 11, 1933, p. 1562).

Analysis (submitted by manufacturer) —		per cent
Moisture		86.5
Total solids		13.5
Ash		0.9
Sodium chloride		0.5
Fat (ether extract)		0.2
Protein (N × 6.25)		2.2
Crude fiber		0.2
Carbohydrates other than crude fiber (by difference)		10.0

Calories—0.5 per gram 14 per ounce

Claims of Manufacturer—Especially intended for infants, children and convalescents and for special smooth diets. Only warming is required for serving. The natural mineral and vitamin values are efficiently retained.

MEAD'S BREWERS YEAST POWDER
MEAD'S BREWERS YEAST TABLETS*Manufacturer*—Mead Johnson and Company, Evansville, Ind*Description*—Dried brewers' yeast in powder form or in tablets*Manufacture*—Brewers' yeast is cultured, harvested, spray dried and packed in powder form or in 6 gram tablets (compressed) For spray drying, a suspension of the yeast in water is sprayed into a current of heated air Dehydration is practically instantaneous, the dry powder falling to the base of the drying chamber, from which it is automatically and continuously removed The temperature attained by the yeast is less than 100 C and probably not over 70 C and the heating time probably less than thirty secondsThe yeast is cultivated by inoculating a sterilized wort containing dextrose, sucrose and raffinose of molasses and other vegetable products and nutrient minerals of organic and inorganic origin, with a pure culture of *Saccharomyces carlsbergensis* The fermentation is carried on in a filtered air atmosphere and is much slower than for aerated bakers yeast The yeast is harvested centrifugally

<i>Analysis</i> (submitted by manufacturer) —		per cent
Moisture		5.0
Ash		6.0
Fat (Mojonnier method)		2.0
Protein (N X 6.25)		48.0
Crude fiber		0.0
Carbohydrates (by difference)		39.0

Calories—3.7 per gram 105 per ounce*Vitamins*—Biologic tests show 13 and 10 Chick and Roscoe vitamins B and G units respectively per gram*Claims of Manufacturer*—Rich source of vitamins B and GCALIFORNIA HOME BRAND PURE
TOMATO JUICE*Manufacturer*—California Conserving Company, Inc., San Francisco*Description*—Tomato juice seasoned with salt, retaining in high degree the natural vitamins*Manufacture*—California ripe tomatoes are inspected, mechanically washed scalded, spray washed, hand peeled and cored The juice is expressed without beating or agitating homogenized under 1,500 pounds pressure, "vacuumized" to remove incorporated air, seasoned with salt, canned, and processed for four minutes at 90 C The cans are sealed and heated for fifteen minutes at 100 C

<i>Analysis</i> (submitted by manufacturer) —		per cent
Moisture		94.8
Total solids		5.5
Ash		0.8
Sodium chloride		0.4
Fat (ether extract)		0.1
Protein (N X 6.25)		0.9
Crude fiber		0.1
Carbohydrates other than crude fiber (by difference)		3.6

Calories—0.2 per gram 6 per ounce*Vitamins*—Process is efficient to retain vitamins A and C in high degree*Claims of Manufacturer*—Especially prepared for table use and as a vitamin C supplementary food for infant feeding The speed of handling tomatoes from field to finished product keeps mold and bacteria at a minimum and protects tomato flavor and color

GOETZE'S QUALITY WIENERS SAUSAGE

Manufacturer—Albert F Goetze Inc Baltimore*Description*—Smoked cooked (79 C) sausage containing cured U S government inspected and passed pork and beef salt corn syrup mixed ground spices paprika and sodium nitrate*Manufacture*—U S government inspected and passed beef (minus sinews) and pork trimmings are cured for forty-eight hours by addition of a mixture of salt sodium nitrate and sugar and ground separately The beef and spices are chopped together, the pork is added and the mixture is further chopped at 7 C stuffed into selected sheep casings which are linked, cooled for twelve hours at 3 C, sprayed with cold water and allowed to hang at room temperature for two hours The

sausage is smoked at from 50 to 82 C for one and one half hours, with clean hardwood sawdust smoke, cooked for ten minutes at 79 C, cold water sprayed, dried, banded, packed in cartons and delivered under refrigeration

<i>Analysis</i> (submitted by manufacturer) —		per cent
Moisture		57.5
Ash		2.2
Fat (ether extract)		23.6
Protein (N X 6.25)		13.4
Carbohydrates (by difference)		3.1

Calories—2.8 per gram 80 per ounce

KRIM-KO CHOCOLATE FLAVORED DRINK

Manufacturer—Krim Ko Company, Chicago*Description*—Pasteurized chocolate flavored sweetened skim milk, contains skim milk (from 0.5 to 1.5 per cent milk fat), sucrose, chocolate and cocoa, tapioca flour, salt and traces of tartaric acid and agar, flavored with imitation vanilla extract*Manufacture*—The skim milk is brought to a temperature of 60 C in a milk vat containing an agitator and steam coils A definite proportion of Krim-Ko Chocolate Flavored Drink Base (THE JOURNAL, June 2, 1934, p 1851) is added, the temperature of the mix is brought to 82 C and maintained for twenty minutes, after which it is cooled to approximately 4 C and bottled in milk bottles for distribution to consumers The mixture is kept under refrigeration until the time of delivery

The product is prepared and distributed under license contract issued by the manufacturer of Krim-Ko Chocolate Flavored Drink Base

<i>Analysis</i> (submitted by manufacturer) —		per cent
Moisture		79.7
Ash		0.9
Fat (ether extract)		1.4
Protein (N X 6.25)		2.2
Reducing sugars as invert sugar		4.5
*Reducing sugars as lactose		4.6
Sucrose (copper reduction method)		2.4
Crude fiber		0.1
*Carbohydrates other than crude fiber (by difference)		15.7
*Caffeine and theobromine		0.02

* Calculated from composition of Krim-Ko's chocolate flavored Drink Base (THE JOURNAL June 2 1934 p 1851) or milk ingredients

Calories—0.8 per gram 22 per ounce

SUNSHINE DUTCH RUSK

Distributor—Loose-Wiles Biscuit Company, Chicago*Manufacturer*—Dutch Tea Rusk Company, Holland, Mich*Description*—Round slices of toast prepared from flour, water, sucrose, shortening, malt extract, milk, eggs, yeast, salt lactose baking soda and lecithin, the same as the accepted Hekman's Dutch Tea Rusks, THE JOURNAL, April 22, 1933, page 1238

SUNKIST BISCUIT FLOUR

BLEACHED

Manufacturer—Maney Milling Company, Omaha*Description*—Self rising flour containing short patent flour, hydrogenated cottonseed oil, dry skim milk, sugar, calcium acid phosphate, sodium acid pyrophosphate, salt, and sodium bicarbonate*Manufacture*—All ingredients excepting the shortening are thoroughly mixed the shortening is then worked in The mix is automatically packed in glassine bags in cartons

<i>Analysis</i> (submitted by manufacturer) —		per cent
Moisture		8.8
Ash		4.0
Fat (ether extraction method)		12.5
Protein (N X 5.7)		8.8
Crude fiber		0.2
Carbohydrates other than crude fiber (by difference)		65.7

Calories—4.1 per gram 116 per ounce

GOLD COIN EVAPORATED MILK

Manufacturer—Consolidated Dairy Products Co, Seattle*Description*—Canned unsweetened sterilized evaporated milk the same as Federal and Darigold Brands Unsweetened Evaporated Milk (THE JOURNAL Dec 3 1932, p 1949)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 30, 1934

THE RIDDLE OF MIGRAINE

The truth of the idea that "a multiplicity of remedies advocated for the treatment of any one disease indicates poverty rather than wealth in therapy" is well illustrated by migraine. A hundred miscellaneous "remedies" have been advanced for the treatment of migraine, and still it is largely incurable. The addition of more remedies for migraine merely adds to the embarrassment of riches unless the new remedies throw a ray of light on the essential nature of the condition and make treatment more rational.

Thomas C. Hunt,¹ in an article on bilious migraine, reports a reinvestigation by newer methods—bile drainage and cholecystography—of the old and generally abandoned idea that migraine has something to do with biliary disturbance. He concludes that local gallbladder disease or dysfunction is *not* a cause of migraine but probably rather a result. This does not, however, discourage him from trying bile salts for the purpose of influencing "liver function," which he still believes must somehow be deranged in this disease. He reports that sodium glycocholate and a proprietary preparation of dehydrocholic acid produced considerable improvement in nineteen among twenty-two patients, provided the use of the remedy was maintained and its dose doubled when an attack seemed to be threatening. Of the patients that were relieved, nine had no attacks while under treatment and the others had the number of attacks considerably reduced. He believes that this result suggests that some hepatic dysfunction may be the cause of migraine in certain cases. Unfortunately this conclusion *et juvantibus* as to the cause of migraine is hardly tenable, as strangely similar results are claimed for quite a number of other treatments from the correction of eye strain to avoidance of "offending" foods as determined by skin tests, or the use of peptone, of cannabis or of glyceryl trinitrate.

Obviously, when so many different agents can influence a certain condition the rational view must be unitarian and focus attention on the one factor com-

mon to them all. This must be the psychic factor. Therefore, instead of proving the thesis of a "biliary" migraine, the partial success of the bile salt treatment merely adds another means of escape from the manifestations of this condition, provided the physician as well as the patient has sufficient faith in it. When a rational remedy is found, its effects are much more definitely predictable than is evidently the case with bile salts in the treatment of migraine.

In the same way, success in securing relief of an attack of migraine by means of slow hypodermic injections of epinephrine, in doses of from 0.6 to 1.3 cc of the solution, cannot be cited as a proof of the "allergic" nature of this disease or as analogous to the definite effect of epinephrine in asthma. It is even impossible to speculate on the manner in which such relief is obtained in those cases in which it is secured. Nearly every well developed attack of migraine passes through two stages: that of vasoconstriction followed by vasodilatation, and a vasodilator such as glyceryl trinitrate, which may produce relief in the one stage, may aggravate the other. In experiments, the brain volume has been shown to be increased—probably passively—by epinephrine, and, as Hunt finds that the effect is better the earlier in the attack it is given, which would coincide with the stage of vasoconstriction, the actual mode by which epinephrine produced relief might be the same as that of glyceryl trinitrate. Perhaps epinephrine is a remedy of real value as far as correcting the abnormal distribution of the blood in an attack of migraine is concerned, but there is need to know whether it is to be used in the stage of vasoconstriction or the stage of vasodilatation.

THE MECHANISM OF EXOPHTHALMOS

"Apart from gross neoplastic and inflammatory lesions of the orbit, the mechanism of exophthalmos is still little understood." This curious statement emanates from the textbook of Brain,¹ one of the leading members of the distinguished London school of neurologists, nevertheless the mechanism of exophthalmos is well understood, though the knowledge would seem to be poorly disseminated. This fault must be laid in part at the door of the anatomists, who, though describing accurately enough the external ocular muscles controlled by the third, fourth and sixth cranial nerves, have failed to teach the known anatomic knowledge in regard to the antagonists of these muscles, which are unstriated and controlled by sympathetic nerves. The physiologists, too, must share the blame, for what explanation do they offer of the delicately balanced muscular mechanism that results in normal binocular vision and in diplopia when this mechanism is disturbed? Are we to believe that the powerful rectus muscles do not contract against equally

¹ Hunt T. C. Bilious Migraine. Its Treatment with Bile Salt Preparations. *Lancet* 2: 279 (Aug. 5) 1933.

¹ Brain W. R. *Diseases of the Nervous System*, London, Oxford University Press 1933.

powerful antagonists? Such an assumption is physiologically untenable

Fortunately the *argumentum ad absurdum* is not required, for sound anatomic and physiologic evidence is available. In 1858 Heinrich Muller described briefly three groups of plain muscle fibers—one bridging over the infra-orbital fissure, and one in each eyelid—which constitute the so-called muscle of Muller. It has been theoretically advanced that a spastic condition of Muller's muscle causes the type of exophthalmos now under discussion, but its obvious inadequacy from both its size and its position to produce exophthalmos makes such an explanation unsatisfactory. Other theories have been advanced but none have been accepted.

Landstrom² in 1907 published the results of a careful histologic study of the orbital contents. He removed intact by subperiosteal dissection the contents of several orbits, together with the lids and septum orbitale, and sectioned them serially in various planes. His preparations revealed a well developed cylinder of plain muscle arising from the septum orbitale anteriorly and inserted just posterior to the equator of the ball. The results of his work he summarizes thus: "The bulbus oculi, enclosed within a connective tissue capsule and surrounded by a pad of fat, is suspended in the orbit anteriorly by a cylinder-shaped plain muscle running from the septum orbitale to the equator of the bulbus, and posteriorly by the rectus muscles." Exophthalmos is produced when the hypertonicity of this cuff of plain muscle—the opponens recti—overcomes the tonus of its antagonists—the rectus muscles.

Landstrom's histologic work served to confirm the important observations of MacCallum and Cornell.³ These authors removed the roof of the orbit and orbital fat in dogs and on electrically stimulating the cervical sympathetic produced great exophthalmos and observed peristaltic waves passing backward throughout the tissue surrounding the eyeball. By dissection and histologic study they were able to demonstrate the presence of smooth muscle fibers forming a conical mantle about the ball, with anterior and posterior attachments essentially as described later by Landstrom.

The literature has been reviewed by Friedgood⁴ in a paper confirming and greatly extending some observations of Barker and Hanes.⁵ His paper contains abundant evidence from the clinical side that exophthalmos and other eye signs are the result of hypertonicity of the plain muscles of the orbit due to sympathetic overstimulation. It is, of course, well known that enophthalmos, myosis and ptosis (Horner's syndrome) are due to interruption of the sympathetic innervation of orbital plain muscles.

POSTOPERATIVE EDEMA

Edema is one of the common symptoms with which the practicing physician is forced to cope. Certain types of edema have long been recognized as concomitants of circulatory or renal disorders, notably in association with heart disease, venous and lymphatic obstruction and acute glomerular nephritis. Of late, considerable interest has been centered in a formerly unrecognized cause of fluid accumulation in the tissues in which the dominant factor is a lowered content of protein in the blood plasma. Experiments on animals have confirmed the development of so-called nutritional edema, commonly described as "war edema" during the World War, as a result of protein deficiency in the diet. As a recent writer¹ has summarized present knowledge, chronic malnutrition, from whatever cause, and particularly dietary deficiency of protein, is invariably associated with a decrease in plasma protein. The albumin fraction is especially affected, because it is formed with greater difficulty than globulin. If the reduction in plasma protein, and especially of albumin, is sufficient edema develops. In so-called nephrosis of man, in which two of the chief manifestations are the excretion of large quantities of protein in the urine and edema, accumulation of fluid in the tissues usually begins when the level of serum protein falls below 5 Gm per hundred cubic centimeters. This so-called edema level is subject, however, to variation, depending on the relative proportions of albumin and globulin.

Generalized edema of the tissues sometimes appears as an annoying complication following ordinary surgical procedures. The explanation has never appeared to be quite as simple as it seems to have become in the classic types of nephrosis. Surgical investigators have pointed out that the lowering of the serum protein and of the serum albumin is of importance in tending to make fluid accumulate in the tissues, but edema can readily occur in the presence of normal values. The latest researches of Jones, Eaton and White² at the Massachusetts General Hospital in Boston represent an effort to examine some of the heretofore little understood possibilities experimentally, notably to develop postoperative edema. For this purpose they have attempted to reproduce in animals the actual condition occurring in ordinary surgical procedures on human beings, particularly as related to abdominal surgery. In these experiments they have tried to control and study general nutrition from the point of view of caloric requirements, the intake of nitrogen, sodium chloride and water, respectively, the absorption of nutritive material from the gastro-intestinal tract, serous drainage, abscess formation, and, to a certain extent, surgical shock following general anesthesia and an abdominal operation. Factors that seemed to be

² Landstrom, John Ueber Morbus Basedowii thesis Stockholm 1907

³ MacCallum, W. G. and Cornell, W. B. The Mechanism of Exophthalmos. *N. Y. News* Oct. 15, 1904

⁴ Friedgood, H. B. The Ocular Manifestations of Sympathetic Nervous System Hyperactivity in Conditions Other than Exophthalmic Goiter and Especially in Essential Hypertension. *Am. J. M. Sc.* 180: 836 (Dec.) 1930

⁵ Barker, L. F. and Hanes, F. M. Exophthalmos and Other Eye Signs in Chronic Nephritis. *Am. J. M. Sc.* 135: 469, 1909

¹ Bodansky, M. Introduction to Physiological Chemistry. New York: John Wiley and Sons, Inc. 1934

² Jones, C. M., Eaton, F. B. and White, J. C. Experimental Postoperative Edema. *Arch. Int. Med.* 53: 649 (May) 1934

secondary to those listed and that were beyond control were those related to hepatic and renal insufficiency. The factors that were approximately under control were those frequently encountered in operative conditions, particularly in those involving operations on the gastro-intestinal tract.

The factor of undernutrition, and particularly of protein starvation, was found to be of fundamental importance, as was anticipated. In numerous instances, peripheral edema and visceral edema of marked degree occurred in the presence of normal values for serum protein and albumin. Again, the serum protein depletion was not always sufficient to precipitate the edematous condition. An adequate fluid intake also was always essential. As the Boston investigators remark, when the lack of nitrogen was acute, water tended to accumulate in the tissues more rapidly, provided the fluid intake was considerable.

The importance of serous drainage as a factor in producing edema after operations is strongly suggested by these studies. Jones and his collaborators admit the improbability that the actual loss of protein occasioned by drainage of any of the fluids would in itself seriously alter the serum protein content under normal conditions. In association with marked undernutrition and the administration of moderately large amounts of fluid and salt, it is entirely possible that such a loss of protein may be of real importance in the production of edema, probably through a lowering of the serum protein. Sepsis appears to be of great moment. It is possible, according to the Boston investigators, that there is a constant general reaction of the body to histamine or histamine-like substances in the presence of abscess formations, with resulting increased capillary permeability. Under such conditions, lack of nitrogen and a somewhat excessive fluid intake might result in a striking accumulation of fluid in the tissues.

One striking feature of the experiments was the edema noted in various important viscera. Sometimes there was an involvement of the heart, intestine, pancreas and kidneys, leading one to wonder whether such changes may not so alter the functions of these organs as to interfere seriously with homeostasis. Under such conditions the circulatory, urinary, hepatic and digestive systems, for example, may all be somewhat disturbed and, from a lack of correct individual functioning, may fail to coordinate properly among themselves. The diarrhea that occurred in several of the animals, for example, appeared always to be a concomitant of edema of the intestinal tract. With diarrhea, all the nutritional processes were manifestly upset and a vicious circle was at once established. From the standpoint of the clinical application of these observations, the Boston investigators believe, one can readily conceive of the difficulties that may face the depleted preoperative patient when subjected to any major surgical procedure that necessarily involves further deple-

tion, surgical shock, hypodermoclyses and possible surgical drainage. Obviously, they conclude, measures tending to maintain nutrition must be instituted, and the dangers of flooding the patient with excessive amounts of water and salt must be minimized as much as possible.

Current Comment

THE INDEX NUMBER

This issue of THE JOURNAL contains the index covering the numbers from January through June. Because of the length of the index and the vast amount of material included in this period, it is necessary to omit from this issue some of the departments that are usually included. It is, moreover, impossible, because of the limitations on our space, to make adequate comment on some of the important actions taken by the House of Delegates of the American Medical Association at the annual session. It is proposed, however, to call specific attention in forthcoming issues to many of these important actions and to emphasize particularly economic problems which the House of Delegates feels should be brought prominently to the attention of the profession.

AMIDOPYRINE AND GRANULOCYTOPENIA

Elsewhere in this issue appears a statement prepared for the Council on Pharmacy and Chemistry by Dr. Paul Reznikoff on the relation of amidopyrine and the barbituric acid derivatives to granulocytopenia. In sponsoring this statement the Council also appended an informative comment. Apparently amidopyrine may cause granulocytopenia to occur in certain patients but there is no definite evidence that barbituric compounds alone are responsible. On the contrary, it appears from the evidence available that barbiturals have little or nothing to do with the occurrence of this condition. Considering the amounts of amidopyrine that have been used, relatively few cases of agranulocytosis have developed. Presumably, therefore, the occurrence of this condition in a patient using amidopyrine indicates an unusual degree of sensitivity to the drug. Amidopyrine is marketed not only in combination with other drugs such as the barbituric derivatives but also with antipyretics such as acetphenetidin and acetylsalicylic acid, and with other drugs. Unfortunately, many of the drug firms do not name the products in such a manner as would indicate readily the presence of amidopyrine. Furthermore, there are a number of nostrums sold directly to the public which contain amidopyrine. The Council points out that this incidence of agranulocytosis as a result of the administration of amidopyrine serves to show the advisability of the rule of the Council on Pharmacy and Chemistry which provides against the recognition of proprietary uninformative names for well known pharmacopoeial substances or for mixtures of well known drugs. It seems probable that drugs other than amidopyrine will be found also to cause granulocytopenia.

PROCEEDINGS OF THE CLEVELAND SESSION

MINUTES OF THE EIGHTY-FIFTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT CLEVELAND, JUNE 11 15, 1934

(Continued from page 2119)

Second Meeting—Tuesday Morning, June 12

The House of Delegates was called to order at 9 30 a m by the Speaker, Dr F C Warnshuis

It was moved by Dr J D Brook, Michigan, seconded by Dr Mather Pfeiffenberger, Illinois, and carried, that the signed attendance slips constitute the roll call of the House

On motion of Dr Charles H Goodrich, New York seconded by Dr Grant C Madill, New York, and carried, the House dispensed with the reading of the minutes

Report of the Reference Committee on Credentials

Dr J D Brook, Chairman, reported that sixty-two additional delegates had filed proper credentials with the committee making a total registration of 164

There being no objections, the Speaker stated that the report of the committee would be received

Report of the Reference Committee on Reports of Officers

Dr J Gurney Taylor, Chairman, presented the following report

1 *Speakers Address* Your committee approves the recommendation relative to suitable comments being added to committee reports, especially when they may relate to major policies

Your committee feels that it is not desirable to abolish the Reference Committee on Rules and Order of Business, since occasions may yet arise when the necessity of such a committee will be apparent

Your committee further recommends that amendments be not adopted to create a Reference Committee on Medical Economics We believe the problems relative to Medical Economics should be referred to the Reference Committee on Legislation and Public Relations Believing that this subject comes under the jurisdiction of this committee, we find no authority in the Constitution and By-Laws relative to the creation of a committee on economics

Your committee does not recommend the appointment of a nominating committee, feeling that the present system has been adequate and has been acceptable to the Fellowship

2 *Presidents Address* Your committee endorses the many sane and practical general suggestions offered in the message of the President, especially those relative to the postgraduate extension work We suggest that the Council on Medical Education and Hospitals consider the feasibility of assisting and encouraging the state medical societies in the establishment of postgraduate courses of instruction

Relative to the method of procedure regarding expert medical testimony it is suggested that each state medical society establish cooperation with its state bar association in an effort to correct this abuse

3 *President Elects Address* Your committee wishes to commend particularly that paragraph of the address of the President-Elect in which he said It is sad to relate that mighty forces have been at work to sow the seeds of discontent in the ranks of organized medicine and to destroy the faith in that leadership which is based on the sacred traditions of sacrifice and devotion to the idealism of medical service In times like these loyalty to the organization and sacrifice of individual prestige to the good of all are necessary for medical advancement

4 *Report of the Judicial Council* Your committee believes that this report contains much material for serious thought

and would emphasize the importance and appreciation of local responsibility by the membership, believing that the prosecution should originate in the local county societies

Respectfully submitted

J GURNEY TAYLOR, Chairman
W G RICKER
WELLS TEACHNOR SR
J R BLOSS
W D JOHNSON

On motion of Dr Taylor, seconded by Dr Joseph F Smith, Wisconsin, and carried, the report of the Reference Committee on Reports of Officers was adopted

Report of the Reference Committee on Legislation and Public Relations

Dr Charles E Mongan, Chairman, presented the following report

1 Your committee heartily approves of the excellent work done by the Bureau of Legal Medicine and Legislation in the matter of NIRA legislation and urges the Bureau to continue to watch the development of codes likely to affect the practice of medicine and especially to endeavor to protect the physician engaged in the practice of roentgenology

2 *Federal Emergency Relief Administration* Your committee commends the interventions of the Bureau in the development of emergency medical relief service and approves of its acts, your committee recommends that the proper agency of the American Medical Association make an early survey of conditions existing at this time with a view to correcting discrepancies in the service and making possible improvements

3 Your committee would point to the fact that the freedom of choice of physician has been preserved in this service and that for the first time the fact that only the medical profession may properly evaluate medical service has been recognized

4 *Federal Civil Works Administration* This report is historical The only phase of this service of interest now is the delay in adjustment of claims of physicians for services rendered This delay is due largely to the need of correction of errors in the reports of physicians who rendered the service The Bureau should continue in touch with the situation and facilitate the proceedings as much as possible

5 *Hospitalization of Veterans* This report reiterates and presents in compact form the oft repeated position of the American Medical Association on this subject and recommends that it be approved as such

6 *Contract Surgeons of the Spanish-American War* In the light of the report the contract surgeons of the Spanish-American War deserve special consideration There is no reason why they should not be given the same treatment as others who rendered the same or similar service, particularly the contract nurses

7 *Library of the Surgeon-General's Office* Your committee approves the observations made in the report and joins in the recommendation that the profession unite in an effort to preserve and protect this institution

8 *Food, Drug and Cosmetic Legislation* The bureaus of the American Medical Association are evidently in close touch with this matter The position of the Association on the subject is well known and should be reiterated and emphasized It is well to add to the activities of the Association in this connection the subject of cosmetics and truth in advertising

9 Report of Committee on Legislative Activities Your committee commends the Committee on Legislative Activities for its judgment and acts, particularly with reference to the question of veterans' legislation Your committee would impress on the several state societies the necessity of educating the public on the science of medicine and the public welfare Each member of the House of Delegates should feel it his bounded duty to impress on his state society and county societies the importance of individual efforts in this direction

10 Resolutions on State and Federal Relief Committees Your committee recommends the adoption of the resolutions, with the observation that not only state relief commissions but county administrations as well should have physicians in their personnel

11 Resolution on Free Choice of Physician Your committee finds that the matter referred to is covered by a federal statute (enacted in 1916) and not by rules and regulations Your committee recommends that this resolution be referred to the Board of Trustees for further consideration and suitable action

12 Resolutions on Discrimination Against Certain Members of the Medical Profession The matter was fully covered by the resolution adopted by this House in 1933 as follows

Resolved That the American Medical Association in annual session assembled condemns the persecution of any individual on account of race or religion by any state or under any flag

13 Resolutions introduced by Dr Holman Taylor, Texas, with reference to support of the Army Medical Library The Reference Committee approves the resolutions and recommends their adoption

Respectfully submitted
CHARLES E. MONGAN, Chairman
GRANT C. MADILL
C. W. WAGGONER
HOLMAN TAYLOR
JOSEPH F. SMITH

On motions, duly seconded and carried, each section of the report of the Reference Committee on Legislation and Public Relations was adopted, after which the report was adopted as a whole on motion of Dr Mongan, seconded by Dr Mather Pfeifferberger, Illinois, and carried

Report of the Reference Committee on Sections and Section Work

Dr Isaac A. Abt, Section on Pediatrics, presented the following report

Your committee wishes to commend the sentiment expressed concerning the activities and worth of Dr John E. Lane. The House of Delegates recognizes his long and distinguished service in the House and as a member of the Council on Scientific Assembly

Your committee wishes to approve the program initiated this year of holding General Scientific Meetings on Monday and Tuesday of each annual session

Your committee also approves the setting aside of one session of the Section on Miscellaneous Topics to consideration of a program on Forensic Medicine, as well as a session of the same section for discussion of the subject of Nutrition

Your committee recommends the adoption of the resolution of Dr Albert Soiland and suggests that the House of Delegates authorize the Section on Radiology cordially to invite the fifth international congress to be held in America, at such time and place as may be decided on by the International Committee of the Fifth Congress of Radiology

Finally, your committee desires to commend the Council on Scientific Assembly for its splendid work during the past year which expresses itself in the excellent scientific program to be presented at this meeting of the Association

Respectfully submitted
ISAAC A. ABT, Chairman
A. R. McCOMAS
C. W. ROBERTS
W. H. SEEMANN

On motion of Dr Abt, seconded by Dr J. Gurney Taylor, Wisconsin, and carried the report was adopted

Report of Reference Committee on Medical Education

Dr Irvin Abell, Chairman, presented the following report

1 The Reference Committee on Medical Education has considered the report of the Council on Medical Education and Hospitals, as published in the Handbook, and heartily commends it in its entirety

Paragraphs 1 and 16, dealing with Americans studying in countries other than North America, are particularly worthy of attention in view of the great number desiring to enter the field of medicine. Paragraph 5 shows an astonishing ratio of college students to the whole population, it being in the United States 1 to 125, and varying in foreign countries from 1 to 455 to 1 to 1,150. Obviously, this is an economic situation about which this organization can do nothing further than to make the facts known

Paragraphs 4 and 17 indicate the great activity of the Council in that 755 hospitals were visited by its staff during the year and that there were 200 smaller hospitals to which the staff of the Council has been able to bring considerable assistance by giving suggestions regarding organization and operation

The conclusion of the Council, expressed in paragraph 8, that it would be undesirable to abolish examinations by state boards and substitute therefor a diploma is commended. Your committee would urge all candidates for licensure to take the examinations of the National Board, since its certificate is recognized by the majority of the state licensing boards

Publications referred to in paragraphs 11, 12 and 13 comprise an enormous amount of important data of incomparable value to the profession and furnish the record of a most worthwhile work of the Council

Paragraph 14 refers to a comprehensive survey of medical education now being undertaken. The report of this activity will be awaited with great interest because of the number of years that have passed and of the great changes that have occurred in educational procedures since the last survey

It is interesting to note in paragraph 19 that the general hospitals show an average of 155,000 unoccupied beds and that the special hospitals had an average of 61,754 unoccupied beds in 1933. This is forceful testimony of the effects of the depression as well as of excessive hospital facilities

2 Supplement A of the Council, which formulates essentials for an approved special examining board, is recommended for adoption with the suggestion that definition of special fields be made more elastic so that, for instance, one contemplating specialization in obstetrics would not be required to take the examination in gynecology also, and vice versa. Further, that one desiring to specialize in gynecology and abdominal surgery could apply for examination in such fields without, as under the proposed set up, also being required to take the examination in general surgery and obstetrics. The field of internal medicine could be subdivided so as to cover those who restrict their activities to one of its integral parts

3 The resolution introduced by Dr G. H. Mundt, delegate from the Illinois State Medical Association, specifying that the staffs of hospitals designated for intern training should comprise only members in good standing in their local county medical societies, is referred to the Council on Medical Education and Hospitals with the following comment

Your committee approves the principle of this resolution but feels that its general application at the present time is inadvisable. Paragraph 3 of the report of the Council indicates that approximately 87 per cent of the staffs of the 6,437 hospitals of the country are members of the American Medical Association

4 The resolutions introduced by Dr George M. Fisher, delegate from the Medical Society of the State of New York, referring to the restriction of x-ray practice, both diagnostic and therapeutic to the direct supervision and control of duly licensed physicians or dentists, are approved

5 The resolutions introduced by Dr E. P. North, delegate from the Missouri State Medical Association requesting that the American Medical Association shall not approve any institution for any purpose unless and until such institution shall be

officially in the approved list of component medical society or societies in the jurisdiction of which such hospital or institution is located or operates are disapproved

6 The resolution introduced by Dr C B Reed delegate from the Illinois State Medical Society, requesting establishment of standards, ratings and inspections of training schools in physical therapy, is covered in the report of the Board of Trustees, page 49, as follows

"The Council on Medical Education and Hospitals is cooperating with the Council on Physical Therapy in formulating essentials for Physical Therapy and Occupational Therapy Schools"

7 The resolutions introduced by Dr Holman Taylor delegate from the State Medical Association of Texas providing that the American Medical Association respectfully request of proper authorities the setting aside of an adequate sum for the construction of a new building to house the Army Medical Library and the Army Medical Museum, are approved

8 The resolutions introduced by Dr B R Shurly, delegate from the Section on Laryngology, Otology and Rhinology, regarding qualifications and standards for hospital inspection and the supply of these to all state, county and city government officials are fully covered by publications of the Council and such information is available on request made to the headquarters office of the American Medical Association in Chicago

Respectfully submitted

IRVIN ABELL, Chairman
J W AMESSE
FRED MOORE
J F HAGERTY
W A COOK

On motions duly seconded and carried, the first two sections of the report were adopted

Dr Abell moved that section 3 of the report referring to the resolution introduced by Dr G Henry Mundt Illinois be adopted The motion was seconded by Dr William H Ross, New York

Dr G Henry Mundt, Illinois, moved as a substitute motion that the resolution as introduced by him be adopted The substitute motion was seconded and carried after discussion by Drs R W Fouts, Nebraska John F Hagerty, New Jersey B F Bailey, Nebraska James E Paulin Jr, Section on Practice of Medicine, Irvin Abell, Kentucky William F Bowen, Kansas C S Gorsline, Michigan, W E Bannen, Wisconsin Virgil E Simpson, Kentucky, Charles B Wright, Trustee, Mather Pfeifferberger, Illinois E H Cary Texas Leonce J Kosminsky, Arkansas, and Horace Reed Oklahoma

On motions, duly seconded and carried, sections 4 5 6, 7 and 8 of the report were adopted

Dr Abell moved that the report be adopted as a whole with the exception of the third section, which was amended by the adoption of the resolution as introduced by Dr Mundt The motion was seconded by Dr Joseph F Smith, Wisconsin, and carried

Report of the Reference Committee on Miscellaneous Business

Dr H B Everett, Chairman presented a report of the Reference Committee on Miscellaneous Business and moved its adoption On motion made by Dr Charles H Goodrich New York and seconded by Dr Samuel P Mengel, Pennsylvania, the matter was referred back to the committee

Report of the Reference Committee on Amendments to the Constitution and By-Laws

Dr H H Shoulders, Chairman presented the following report

Three amendments to the Principles of Medical Ethics were referred to your committee for consideration They were all prepared by the Judicial Council and introduced by the Chairman Dr G E Follansbee, who came before the committee to give valid reasons for the adoption of each of these amendments

Your committee finds that the amendments do not add any new principles They all serve the purpose of facilitating the interpretation of the principles by the membership at large

Your committee cannot describe these amendments in language more brief than the amendments themselves

Your committee recommends the adoption of the amendments
Respectfully submitted

H H SHOULDERS, Chairman
J N HUNSBERGER
H C MACATEE
E A HINES
R L SENSENICH

On motions of Dr Shoulders, duly seconded and carried, the report of the committee recommending the adoption of each amendment was adopted, and on separate motions, duly seconded and carried the sections of the Principles of Medical Ethics were amended in accordance with the report

Report of the Reference Committee on Reports of Board of Trustees and Secretary

Dr W F Braasch, Chairman, presented the following report

1 Report of Secretary Your committee notes with much satisfaction that there has been a very small net loss of Fellows enrolled in the American Medical Association for this year That this loss should be so small in spite of the continued financial difficulties which have seriously affected the medical profession during the past year shows beyond any doubt the great desire of the bulk of the profession to support organized medicine This fact might be used by secretaries of state and county medical associations as a stimulus to their efforts to increase membership

Your committee endorses the comments of the Secretary on the value of militant active county societies in our organization It should be emphasized that the county society is the backbone of medical organization and medical stability

We note a growing tendency on the part of the leaders of the medical profession to take a more active part in the affairs of organized medicine The strength of the state, as well as the county society, depends largely on active participation by its leaders

Your reference committee wishes to express its commendation of the earnest and sincere work of the Secretary and of the devotion rendered by him to this position in the service of medicine

2 Your committee believes that the Board of Trustees is to be congratulated on its excellent financial report in spite of present unfavorable economic conditions and the various readjustments that were found necessary in the number and the remuneration of its employees It is of interest to note that the net profit for the year was approximately only \$5,000 and that the total income was but little less than last year

THE JOURNAL In keeping with the action taken in all previous years, your committee commends the high character and the valuable influence that the Association maintains under the able management of its present editor Your committee is glad to note that the recent editorial policies have deviated somewhat from those of the past in that suggestions previously made by the House of Delegates have been followed to an increasing extent during the past year, in regard to devoting more attention to matters of economic interest It seems to your committee that the high standard of THE JOURNAL has in no way suffered as a result of such action

While we agree that the main object of THE JOURNAL is in the field of medical science, nevertheless economic problems of fundamental importance are constantly arising which should be discussed and analyzed so that the medical profession might be given at least an abstract of current developments Your committee believes that this field merits more attention in the columns of THE JOURNAL and that such articles should be displayed so as to be easily assimilated by the general profession

Your reference committee wishes to call attention particularly to the foreign correspondence in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, a feature that is unique since there is no other medical publication in the world which maintains similar correspondents in all the leading nations of the world This service has been of great value in keeping the American medical profession informed accurately of official and economic changes in other countries

3 Special Journals Your committee had noted with apprehension in previous years the constantly mounting cost of the special journals. Your committee is glad to note that the cost of publication of the special journals exceeded the income by only approximately \$10,000, which represented a marked decrease in the loss sustained in preceding years. The saving in the cost of the special articles has been brought about by more careful selection of illustrations and by closer scientific scrutiny on the part of the editorial boards of material submitted for publication.

Your committee notes with satisfaction that the loss incurred in the publication of *HYGEIA* amounted to only \$30,000. The indirect good done to the profession by this publication may not be generally appreciated, but it is worthy of our most active support. It is of interest to note that only 14,000 physicians in the United States were subscribers to *HYGEIA* last year. A plea should be made that every physician subscribe to at least one copy, which might be found in his waiting room if not in his library.

4 QUARTERLY CUMULATIVE INDEX MEDICUS Your committee recommends the continued publication of the *QUARTERLY CUMULATIVE INDEX MEDICUS* and is well aware of the good it is doing. In view of the fact, however, that it is being consulted by so many varied interests other than those strictly related to the profession, one wonders whether the cost of its publication might not be shared by other agencies. Furthermore, we hope that the loss incurred in its publication, which was approximately \$44,000 in the past year, may in some way be lessened in the future. Such a publication for the advancement of scientific medicine might well be considered worthy of endowment by those interested in furthering medical progress.

5 Council on Pharmacy and Chemistry Your committee heartily endorses the ever increasing efficiency and importance of the work done by the Council on Pharmacy and Chemistry, as well as that of the chemical laboratory. We fear that many members of the Association fail to appreciate the important bearing this work has on the progress of the medical profession. We believe that this work should receive continued and unstinted support.

In view of the current economic stress, your reference committee suggests the possibility of a joint study by the Council on Pharmacy and Chemistry and the Bureau of Medical Economics of the costs of proprietary and other remedies employed by the medical profession in the diagnosis and treatment of disease. In many instances the exorbitant price has been a serious burden on the patient.

6 Council on Physical Therapy Your committee wishes to commend the splendid work done by the Council on Physical Therapy. We are impressed with the care and thoroughness of its investigations and the good it is doing. The Council has been of great help to the medical profession in preventing the exploitation of physical methods and of apparatus that are of doubtful value. Its efforts to educate the profession by means of exhibits and demonstrations as well as in regulating and controlling manufacturers, are of fundamental importance and deserve great praise. It is to be hoped that the state associations will take full advantage of the various opportunities offered by the Council to augment our knowledge of physical therapy.

Your reference committee would also recommend increased attention by the Council to the problems in physical therapy arising in the practice of the physician.

7 Bureau of Exhibits The development of scientific exhibits in recent years has been one of the most interesting phases of medical progress. Its educational value is being appreciated by the general profession. As a result of the stimulus given by scientific exhibits at the Association meetings, similar exhibits have been developed at the meetings of several state associations. In many of the sections the Scientific Exhibit has come to be regarded as the pivotal feature of the program, the papers read being more or less of an explanatory and supporting nature.

The Bureau also deserves much praise for the excellent exhibit shown at the Century of Progress exposition in Chicago. Your reference committee wishes to suggest to the House of Delegates that it express its appreciation to Dr. D. Chester Brown, retiring member of the Board of Trustees who has

been for many years chairman of the Committee on Scientific Exhibit.

8 Committee on Foods Too much praise cannot be given for the development of the work of the Committee on Foods. Its importance is being widely recognized and its recommendations are being adopted not alone by members of the Association but by the public. Its value as a protection to public health is generally realized and it is rapidly becoming one of the more important activities of the Association. We note with interest its rapid growth and extension into associated fields, as described in the report.

This is one of the necessary functions performed by the American Medical Association until the public generally and the government shall recognize the necessity for such a service on a public basis and assume this liability by legislative enactment.

9 Radio Broadcasting The far reaching influence of radio broadcasting on medical subjects on public thought is worthy of continued commendation and unlimited support. The pity is, however, that the radio activity on matters of public health and of sickness is not all under the control of the Association.

Your committee wishes to express the appreciation of the American Medical Association to the radio broadcasting chains for offering their facilities and expresses the hope that they will continue to afford such facilities to the Association in the future. At the same time your committee would condemn the increased broadcasting of unestablished remedies directly to the public and urge further activities on the part of the Board of Trustees leading to some type of control over this evil.

10 Field Secretary Attention has been repeatedly called by the House of Delegates to the desirability of bringing the central organization of the Association in closer contact with the various activities of the constituent societies. Committees of previous years believed that closer cooperation between the state societies and representatives from the Association headquarters would be of mutual benefit. At the meeting of last year your committee asked that the Board of Trustees consider the advisability of appointing a field secretary.

Your committee appreciates that the decision of the Board of Trustees to the effect that it would be inadvisable to take final action in the appointment of a field secretary at the present time is based on careful consideration.

However, these suggestions have resulted in bringing about a much more intimate relationship between the officers of the Association and the constituent state organizations than had previously existed and, as a result, has added to the loyalty and interest of the profession in the work of the Association.

Your committee notes and approves the fact that officers of the Association and the directors of the different bureaus have extended the work to county and state societies and other organizations, making a total of 500 addresses during the past year.

Although many of the state associations have developed into strong, active organizations nevertheless there are some state societies that are comparatively inadequately organized. In confirmation one reads in the report of the Bureau of Legal Medicine and Legislation of this year that in an increasing number of states the cults have scored heavily during the year 1933.

In the opinion of many delegates, particularly those representing some of the smaller and more sparsely settled states even further support from the Association headquarters would be desirable.

The possibility suggests itself of sending some representative of the central office who has had experience in the ways and means of certain fields such as legislative activities for example to study the problems involved and give such counsel as may be indicated.

Another method suggests itself whereby the activities of the Association headquarters might be brought in closer contact with the constituent societies. Many of the members of the House of Delegates have expressed the desire of more active and continued contact with the central office. With the adjournment of the House official relationship of the Delegates to the Association practically ceases. While it is realized that the obstacles in the way of calling an interim session are many nevertheless in many quarters the desirability of so doing,

particularly in times of danger or of stress, has been expressed. It is true that monthly bulletins issued in recent years have helped to give us some information concerning current problems. Nevertheless, some means whereby the members of the House of Delegates might be kept in closer touch with the activities and the policies of the Association headquarters would be of great value.

Your committee would therefore suggest to the Board of Trustees the advisability of maintaining an informational service on social, medical and economic subjects to be sent monthly as a bulletin to members of the House of Delegates, the committee in charge of the bulletin to include the Chairman of the Board of Trustees, the Secretary of the Association, the Editor of THE JOURNAL, the Speaker of the House of Delegates, and the directors of the Bureau of Legal Medical Legislation and the Bureau of Medical Economics, this bulletin to be sent monthly to all members of the House of Delegates and alternates regularly certified by the state medical societies.

Respectfully submitted

W F BRAASCH, Chairman
A J BEDELL
S P MENGEL
C J WHALEN
J B HARRIS

On motions of Dr. Braasch, duly seconded and carried, each of the ten sections of the report was adopted.

An amendment to the tenth section of the report that the representatives of the sections be included with the delegates from states was adopted on motion of Dr. Arthur J. Bedell, New York, seconded by Dr. Charles J. Whalen, Illinois, and carried.

The report was adopted as a whole, on motion of Dr. Braasch, seconded by Dr. Mather Pfeifferberger, Illinois, and carried.

Report of the Judicial Council

Dr. George Edward Follansbee, Chairman, presented the following report:

A resolution introduced by Dr. Charles J. Whalen, Illinois, calls attention to a recent action by the Medical Service Board of the American College of Surgeons approved by its Board of Regents, advocating and publicizing a procedure for furnishing medical and hospital care for certain classes of the population. No consideration appears to have been given to policies or procedure previously adopted by the American Medical Association, of which the Board of Regents are members. The American Medical Association is the one organization representing the entire body of physicians constituting the medical profession and by virtue of that fact is the only organization qualified to speak for the varying interests and ideas of the profession as a whole.

Recurring proposals concerning the entire practice of medicine from small sections of the profession without due regard to the policies of the entire profession as represented by the American Medical Association when presented to the public through other channels than the representative body are confusing to the public mind, are harmful to the profession and give aid and assistance to those bodies and individuals attempting to revolutionize medical practice.

The Judicial Council therefore recommends the adoption of the resolution as follows:

WHEREAS The American Medical Association including 100,000 physicians is the only democratic body representing the organized profession of this country through delegates regularly elected through county and state medical societies and

WHEREAS Other medical organizations and groups representing selected groups of specialists have from time to time issued pronouncements of policies in the field of medical economics and medical practice which do not represent the views of organized medicine and which purport to guide the medical profession and the public in the administration of medical affairs and

WHEREAS The House of Delegates of the American Medical Association has repeatedly condemned the issuing of such announcements and policies, which seriously embarrass the attempts of this organization to secure adequate care for the health of the American people and to protect the ideals of the medical profession and

WHEREAS The Board of Regents of the American College of Surgeons assembled in Chicago on Sunday June 10 promulgated a policy includ-

ing a prepayment plan for medical care restricted to so called approved hospitals to members of the staffs of such hospitals and to physicians acceptable to such staffs and

WHEREAS This action of the Board of Regents of the American College of Surgeons has been spread to the people of the United States through the public press on the opening day of the annual session of this House of Delegates therefore, be it

Resolved That the House of Delegates of the American Medical Association express its condemnation of such tactics and of this apparent attempt of the Board of Regents of the American College of Surgeons to dominate and control the nature of medical practice and be it further

Resolved That the House of Delegates request the Board of Trustees of the American Medical Association and the Judicial Council to ask the Board of Regents of the American College of Surgeons who are themselves members of the American Medical Association to explain the reasons for their action and to justify the attempt by this small group within a specialistic organization to legislate for all the medical profession of this country truly represented only by the American Medical Association

The report of the Judicial Council was adopted on motion of Dr. C. E. Humiston, Illinois, seconded by Dr. Albert Sorland, Section on Radiology, and carried unanimously.

Report of Reference Committee on Medical Economics

Dr. Frederic E. Sondern, Chairman, presented the following report:

1 Relative to the preamble and resolutions from the Section on Radiology, to wit:

WHEREAS It has been reported to the officers and members of the Section on Radiology of the American Medical Association that an intolerable condition exists between certain otherwise acceptable hospitals and their departments of radiology and

WHEREAS It is known that in several such hospitals the business management does the collective bargaining for x-ray business with staff members and outsiders to the detriment and the professional and financial loss of their staff roentgenologists and

WHEREAS Such practice is not only unethical but places such hospitals on a direct competitive medical practice basis with their respective roentgenologists which practice has been declared illegal in several states and

WHEREAS The practice of roentgenology or radiology is *ipso facto* the practice of medicine and cannot be separated therefrom be it therefore

Resolved That the House of Delegates of the American Medical Association go on record as opposing the exploitation of members of their own body in the manner outlined and be it further

Resolved That the House of Delegates of the American Medical Association in session duly assembled orders this resolution to be referred to the Council on Medical Education and Hospitals for the study and formulation of plans tending to the abatement of these highly unprofessional and obnoxious evils

Your committee considers the questions involved in these resolutions as being primarily ethical, rather than truly economic, and for this reason, while recognizing the evil, refrains from direct comment concerning them and recommends that the resolutions be referred to the Council on Medical Education and Hospitals for such action as its wisdom may indicate.

2 Relative to the preambles and resolution from the delegates from Indiana, to wit:

WHEREAS The legislative program for consideration of the next Congress will no doubt include prospective measures of social insurance, and

WHEREAS There are those who strongly favor including in this program the enactment of legislation creating some form of sickness insurance and

WHEREAS Ill advised legislation would harmfully affect the group of individuals to whom sickness insurance would be offered as well as the medical profession who would be required to provide the service and

WHEREAS A review of the history of the creation of sickness insurance as recently reported by the Bureau of Medical Economics of the American Medical Association indicates that the establishment of sickness insurance in Europe has frequently been actuated by political motives or economic purposes not giving full consideration of the best interests or wishes of the groups involved and in no country have the labor unions led a demand for sickness insurance and

WHEREAS In the present period of readjustment of the relationship of employer and employee under guidance of the state the demands of those who will peak for the body of millions of organized labor will be an all important factor in determining the shape any such legislation will take be it therefore

Resolved That the Board of Trustees be requested to appoint a committee whose duty it shall be at the proper time to contact the leaders of organized labor to learn the attitude of the group they represent and in conference with them to present the medical factors involved

Your committee realizes the importance of this resolution and would recommend that the Trustees be requested to contact at such time and in such manner as they deem proper with the leaders of those groups or bodies interested, to bring about a mutual understanding of their aims and desires not only from the point of view of the medical profession but also for the best interests of the patient with due regard to the basic beliefs and principles of medicine. It would likewise be well if the suitable committees of state societies would do the same.

3 Relative to the report of the Bureau of Medical Economics as printed in the Handbook on pages 50 to 60. Careful reading of this report convinces your committee of the efficient, thorough and unprejudiced manner in which it was made by the Bureau and your committee begs that you will commend these efforts in no uncertain terms. Almost every subject in the scope of medical economics has had consideration and as much reliable information as possible has been collected for your instruction and guidance. The matter of sickness insurance, state medicine and what not, call it what you will, is the burning question of the hour in the minds of many medical men. So much so is this the case that many a physician who has lost practice as well as income from savings during the five year period of depression looks eagerly to this House of Delegates for relief from his burdens, thinking that the delayed solution of the matter is the reason for his prolonged hardship. While the results of the many investigations and conclusions of the Bureau are available to every physician in *THE JOURNAL* and in the *BULLETIN* of the Association, it is the opinion of your committee that this information should be more definitely impressed on every physician of this country and your committee begs to suggest that you recommend this to the Trustees to be done in such ways as they deem best. While the Bureau endeavors to present each subject as fully as possible and to point out the reasons for various cautions, it has in no instance recommended a course of procedure. In consequence your committee has no recommendation but feels called on to express a warning that any effort on the part of organized medicine to solve these problems be predicated on the studies made or to be made by the Bureau. It is aptly stated, for example that while many lay interests have continued their activities in medical economics there is also a marked increase in proposals by groups within the profession to modify the established form of medical practice with the grave query whether such temporary expedients will bring greater benefits than those represented by the existing social values in medicine, which might be destroyed thereby. The matter of health insurance has been the subject of intensive study by the Bureau and the preliminary report in the April issue of the Association *BULLETIN* is particularly commendable. Details concerning the conditions at the beginning of sickness insurance, the changes in institutions and objectives, the medical service, the physician in sickness insurance and some general professional and social effects indicate the scope of the work and the information it conveys. This also should have the careful consideration of those who are giving thought to this matter. All said and done sickness insurance was the product of the brain of the German chancellor Bismarck, just half a century ago. Why? Not that adequate medical care should be provided for all, but because industry required the standardization of expense to make more certain the exact cost of production, the better to meet keen world competition. Bismarck won, but who lost? The doctor to be sure, but essentially the patient—study the figures published by your Bureau.

4 Relative to the report of the Bureau of Legal Medicine and Legislation. Your committee has read with interest the references to economic subjects under such captions as National Industrial Recovery Act, Federal Emergency Relief Administration and Federal Civil Works Administration and begs you to realize that the profession has accepted in view of the existing unparalleled economic situation, conditions of medical practice which should not and would not be tolerated under normal conditions.

5 Relative to the Report of the Judicial Council. Your committee would specially commend and invite your individual attention to that portion of the report dealing with medical economics on page 117 of the Handbook.

The statement is made that an organized and financial campaign for a socialized system of medical care to a large proportion of the population has crystallized into definite plans with the millions of certain foundations backing the effort. This is but one of several dangers to which attention is called in the report, which deserves your earnest study and every consideration.

The first section of the report was adopted on motion of Dr. Sondern, seconded by Dr. Grant C. Madill, and carried. An amendment offered by Dr. H. H. Shoulders, Tennessee, seconded by Dr. R. W. Fouts, Nebraska, that the matter be referred to the Judicial Council rather than to the Council on Medical Education and Hospitals, was lost.

The other four sections of the report were each adopted on motions of Dr. Sondern, duly seconded and carried.

On motion of Dr. Sondern, seconded by Dr. A. J. Scott Jr., California, and carried, the report was adopted as a whole.

The meeting recessed at 12 noon to reconvene at 2 p. m.

Tuesday Afternoon, June 12

The House of Delegates was called to order at 2 15 p. m. by the Speaker, Dr. F. C. Warnshuis.

Report of the Board of Trustees

Dr. J. H. J. Upham, Chairman, presented the following report:

1 At its meeting on Tuesday, the Board gave careful consideration to the resolution introduced by Dr. Joseph F. Smith, Wisconsin, relative to the composition of the Council on Physical Therapy. The Board would point out that in carrying on the work of that Council it has regularly maintained the original membership of the Council but has added thereto men to carry out special phases of the work, and that the Board will request the Council to pay increasing attention to the practical aspects of this work, adding to the membership of the Council accordingly.

2 Concerning the resolutions introduced by Dr. Clarence G. Toland, California. The Board is in intimate touch with plans already under way to make exhibits of importance in the Century of Progress permanent and will instruct the Bureau of Exhibits which it has established, to give special consideration to the dissemination of such exhibit material within the limits of the funds available for the purpose.

3 Relative to the resolution introduced by Dr. Horace Reed, Oklahoma, in behalf of the Oklahoma delegation, concerning the perfecting of a plan for the handling of liability insurance. The Board has appointed a committee to investigate the feasibility of the Association's instituting such a plan and will give consideration to the matter at a subsequent meeting.

Section 1 of the report was adopted on motion of Dr. Grant C. Madill, New York, seconded by Dr. William H. Ross, New York, and carried.

Dr. Arthur J. Bedell, New York, moved that the second section of the report be adopted. The motion was seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried.

On motion of Dr. William H. Mayer, Pennsylvania, seconded by Dr. Arthur J. Bedell, New York, and carried, the third section of the report was adopted.

Report of the Reference Committee on Hygiene and Public Health

Dr. W. F. Draper, Chairman, presented the following report:

1 Your committee approves the report of the Bureau of Health and Public Instruction included in the report of the Board of Trustees.

2 Relative to the resolution introduced by Dr. George W. Kosmak, New York.

WHEREAS It is now accepted that asphyxia plays a wider role than was formerly understood in death from other causes than mechanical suffocation and

WHEREAS The total toll of all asphyxial deaths is large and

WHEREAS It is known that many such deaths could be averted by prompt and proper use of modern measures and equipment for the relief of the element of asphyxia and

WHEREAS The Society for the Prevention of Asphyxial Death has been organized for the purpose of saving lives that would without up to date management be lost because of failure to relieve asphyxia and

WHEREAS That society has the approval of leaders in medical thought and administration therefore be it

Resolved That the Medical Society of the State of New York approves the aims and purposes of the Society for the Prevention of Asphyxial Death and instructs the delegates to the House of Delegates of the American Medical Association to sponsor a similar resolution at the next meeting of the American Medical Association

Your committee approves the principles embodied in the foregoing resolution and recommends that they be endorsed by the House of Delegates

3 Relative to the resolution introduced by Dr A J Scott Jr, California

WHEREAS The California Medical Association is informed that the American Medical Association through one of its departments favors the pasteurization of milk including certified raw milk and

WHEREAS The California Certified Milk Commissions has been embarrassed in this publication by the American Medical Association and

WHEREAS State organizations should receive complete support from the American Medical Association and

WHEREAS Certified raw milk as it is produced handled and inspected in California especially is safe raw milk now therefore be it

Resolved That the House of Delegates of the American Medical Association in the session at Cleveland request that the proper department be instructed to take such measures as may be necessary to restore the confidence in the use of certified raw milk

Your committee feels that the Board of Trustees may wish to refer this matter to the Committee on Foods, under whose jurisdiction it is believed that it would properly come

4 The following resolutions (containing amendment to send copies also to broadcasting companies) were drafted by your committee to cover the resolutions introduced by Dr C S Skaggs, Illinois, and Dr Orrin S Wightman, New York

WHEREAS The health of the citizens of the United States constitutes the greatest asset of the nation and the responsibility of conserving the health of the citizens and restoring them to health in times of illness reposes in the medical profession and

WHEREAS This responsibility is very great as is evidenced by the high educational and professional standards which physicians are required to meet in the various states of the Union before being permitted to diagnose disease and treat the sick and

WHEREAS Satisfactory and safe service of this type can only be rendered after a long and careful study of the causes and symptoms of disease and that these causes and symptoms can only be determined after an interview with and physical examination of the patient and

WHEREAS No rational or safe treatment can be decided on and carried out under circumstances other than those above set forth without danger to the life or health of the patient and

WHEREAS For many months past the radio broadcasting companies of the United States have through their various broadcasting stations permitted the exploitation of many drugs preparations patent medicines and so-called cures to the radio audiences of America and

WHEREAS It has been well established that some of the drugs preparations and patent medicines so exploited are dangerous in the hands of the layman others are of doubtful value and in practically all instances their value for the relief of the symptoms and conditions for which recommended have been overstated and are misleading to the public and

WHEREAS The symptoms and conditions for which these drugs preparations and patent medicines are recommended may be and frequently are indications of serious conditions calling for careful study on the part of a well qualified physician in order that a correct diagnosis may be made and the proper treatment instituted before the disease reaches an advanced stage and

WHEREAS Radio broadcasting is under the control of the Federal Radio Commission and the radio is being used to broadcast unsupportable claims and statements regarding a large number of drugs and preparations for the treatment of human ailments therefore be it

Resolved That the American Medical Association is opposed to the advertising recommending or in any way exploiting over the radio any preparations remedies medicines or appliances for the treatment of human ailments and that a copy of these resolutions be forwarded to the Federal Radio Commission with a request that in the interest of the health of the citizens of the United States they exercise their authority to discontinue such advertising over the radio Be it

Resolved That we favor a central national clearing bureau of the medical profession which shall act as a reference committee to confer and advise the broadcasting systems as to the propriety of accepting commercial programs advertising various proprietary and household remedie Be it further

Resolved That physicians use such influence with their cooperation in sending protests to the Federal Radio Commission and to broadcasting stations against misleading and unwarranted medical advertising Be it further

Resolved That copies of these resolutions be sent to all members of Congress and the United States Senate so that they shall be thoroughly informed of this menace to the health of our citizens and that they be urged to pass necessary laws to eliminate these dangers

Your committee approves these resolutions and recommends their adoption by the House of Delegates

W F DRAPER, Chairman
R L GREEN
R W FOUTS
E F CODY
JOHN W BURNS

On motions of Dr Draper, duly seconded and carried, the report was adopted section by section and as a whole

NEW BUSINESS

Resolution Opposing Plan to Make a State Controlled Commodity of the Practice of Medicine

Dr William H Seemann, Louisiana, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations

WHEREAS There is at present an attempt on the part of the board of administrators of the State Charity Hospital in the city of New Orleans to establish a \$9 500 000 addition to this hospital with Federal PWA funds and

WHEREAS They propose to liquidate this debt partly by the sale of state medical services therefore be it

Resolved That this House of Delegates of the American Medical Association go on record as being opposed to any such plan that directly or indirectly makes a state controlled commodity of the practice of medicine

Resolutions Authorizing Judicial Council to Make Investigations of Ethical Practices of Institutions

Dr E G Wood, Tennessee, presented the following resolutions which were referred to the Judicial Council

WHEREAS The principles of the Code of Ethics of the American Medical Association enjoins on institutions and organizations to observe the same principles as individual practitioners and

WHEREAS It is of the most vital importance to the public and to the medical profession that the principles of the Code of Ethics be observed by institutions organizations and individuals and

WHEREAS The Judicial Council of the American Medical Association has discretionary powers (conferred in chapter IX section I of the By Laws) to investigate practices in any community but is without the machinery and finances necessary for such investigations therefore be it

Resolved That the Judicial Council be directed to exercise its discretionary powers to make investigations of ethical practices of institutions wherever in its opinion such investigations should be made Be it further

Resolved That the Board of Trustees is requested to appropriate funds in such amounts as are necessary to enable the Judicial Council to set up and finance an organization for making such investigations under rules and regulations prescribed by the Council Be it further

Resolved That in the event an institution is found to be engaging in practices which are unethical the authorities of the institution shall first be so advised and given a reasonable time in which to alter its practices and in the event practices are not altered so as to conform to the Principles of the Code of Ethics the approval of such an institution shall be stricken from the lists of approved institutions by the American Medical Association The state and local medical societies of the state in which such an institution is located shall be notified by the Council of the action taken also the action shall be published in the official publications of the American Medical Association

Resolutions on Therapeutics in Diseases of Children

Dr Arthur C Morgan, Pennsylvania, on behalf of Dr Isaac A Abt Section on Pediatrics, presented the following resolutions, which were referred to the Reference Committee on Hygiene and Public Health

WHEREAS Therapeutics in diseases of infants and children constitutes an important and much neglected phase of pediatric practice and

WHEREAS Those remedial agents prescribed by the profession official in the United States Pharmacopoeia and National Formulary V are employed extensively in treating disease in infants and children and

WHEREAS The acceptance of new drugs and the deletion of remedies at present official in the Pharmacopoeia and National Formulary concerns pediatricians as well as the general practitioner who treats infants and children and

WHEREAS There is a strong tendency to undermine official remedies including those of pediatric importance and therapeutic usefulness by

proprietary remedies through clever advertising exploitation and salesmanship therefore be it

Resolved That the Philadelphia Pediatric Society take the initiative in urging the House of Delegates of the American Medical Association through its proper channels to suggest to the officers of the Pharmacopeal Convention 1930 and to the officers of the National Formulary Convention of 1930 the appointment of a representative group of pediatricians whose function shall be to suggest and advise those remedial agents (drugs and preparations of pediatric importance and therapeutic necessity) to be deleted retained and added to both the Pharmacopeia and the National Formulary who will cooperate with all present committees of the Pharmacopeia and National Formulary in furthering the work for revision Be it further

Resolved That the suggestion of average doses for the periods of infancy and of preschool and school ages be included in both texts as has been carried out previously with Pharmacopeal and National Formulary remedies in adults and that application be filed with the Committee of Credentials of the Pharmacopeal Convention and the National Formulary for a permanent seat as delegates to the convention for 1940

Resolution Requesting Appointment of Committee to Investigate Control of Patents on Devices

Dr George Blumer, Connecticut, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations

WHEREAS The number of patents covering products and devices used in the practice of medicine for the prevention of disease and for the care of the public health has multiplied greatly in recent years and

WHEREAS These patents are being administered under various types of control by universities foundations institutions and special committees and

WHEREAS The Principles of Ethics of the American Medical Association indicate the desirability that all such patents shall be given freely for the benefit of the public and

WHEREAS Changing conditions indicate a desirability for the formulation of a proper system of control of such patents for the benefit of the medical profession and the public therefore be it

Resolved That the House of Delegates request the Board of Trustees to appoint a committee to make a comprehensive study of this situation and report to the House of Delegates the situation existing and suitable recommendations for a plan of control Furthermore that the Board of Trustees appropriate such funds as may be necessary to carry out such a study as promptly and as completely as possible because of the pressing character of the situation

Resolutions Protesting Against Activities of Government Hospitals Beyond Purposes for Which They Were Created

Dr Henry C Macatee, District of Columbia, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations

WHEREAS This House of Delegates at the session held in Milwaukee in 1933 endorsed in principle the Minority Report of the Committee on the Costs of Medical Care and

WHEREAS That report defined the extent to which the federal government should engage in the practice of medicine through its various categories of medical personnel and

WHEREAS The Medical Society of the District of Columbia through its Committee on Medical Economics has found that the medical employees of the United States government in the District of Columbia are required to render medical care in many cases and under many circumstances not contemplated by the law creating the medical agencies involved such as the common practice of cabinet officers senators representatives and others high in official life to enter governmental hospitals and receive medical treatment without charge at the expense of the tax paying people of the United States the admission to government hospitals for free hospitalization and free medical care of the domestic servants and other employees and their families of individuals in public life and in active military and naval service and the maintenance of dispensaries or so called clinics in the capitol the Senate and House office buildings and in the following government departments and bureaus Agriculture Bureau of Engraving and Printing Commerce Interior Justice Labor Navy State Treasury War and so on the medical service rendered free in which dispensaries goes far beyond the requirements of first aid for which they were created and

WHEREAS The Medical Society of the District of Columbia in common with the other residents of the national capital has no means of making effective its protests against these unjust practices through the power of the franchise therefore be it

Resolved That the House of Delegates of the American Medical Association endorse in principle the report of the Medical Society of the District of Columbia on the subject of hospitals and dispensaries maintained by the United States government in the District of Columbia and the protest of the said society against the extension of the activities of these agencies beyond the legitimate purposes for which they were created and be it

Resolved That the House of Delegates recommend that the constituent state associations take such action as may so influence their representatives in Congress that the taxpayers of the country may be relieved of

the unjustified expenditure of public funds herein set forth and that the protest of the medical profession of the District of Columbia may be supported by the voting strength of the national profession

Resolution on the Recognition of Specialties for Certification by the American Medical Association

Dr Descum C McKenney, Section on Gastro-Enterology and Proctology, presented the following resolution, which was referred to the Reference Committee on Medical Education

WHEREAS The specialties of gastroenterology and proctology are recognized by the American Medical Association by an active section of the Association and

WHEREAS Nearly 2 000 Fellows of the Association are limiting their practices to either proctology or gastroenterology and

WHEREAS The primary thought behind the certification of specialties is the protection of the public against those who are setting themselves up as specialists in these specialties and

WHEREAS There should be an official and authentic check up and regulation of those Fellows who are practicing these specialties and

WHEREAS The omission of these two specialties from the list of specialties now recognized for certification by the Council on Medical Education and Hospitals will impede the efforts of ethical specialists in these fields of medicine in their battle against quacks charlatans and irregulars who are holding themselves up as specialists be it

Resolved That the specialties of gastroenterology and proctology as now recognized by the established section on these specialties be added to the list of specialties in medicine and surgery to be recognized for certification by the Council on Medical Education and Hospitals of the American Medical Association

Resolution on Irregularities in Investigation and Prosecution of Sales of Impure Foods and Drugs

Dr John F Hagerty New Jersey, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations

WHEREAS The Medical Society of New Jersey has learned of many irregularities in the investigation and prosecution of sales of impure foods and drugs be it

Resolved That the delegates to the American Medical Association be urged to bring this matter to the attention of the Association at its annual meeting urging congressional investigations for the purpose of correcting these evils which constitute a danger and menace to the public health

Resolutions on the Crisis of Organized Medicine

Dr John F Hagerty, New Jersey, presented the following resolutions, which were referred to the Reference Committee on Medical Economics

WHEREAS The Medical Society of New Jersey assembled at its one hundred and sixty eighth annual meeting at Atlantic City N J through its house of delegates has approved the recommendation contained in the annual address of the president Dr Frederic J Quigley relative to the crisis of organized medicine and

WHEREAS This society feels that unless the parent body of organized medicine the American Medical Association immediately assumes the leadership to meet the greatest threat that has ever been made to American medicine to wit the menace of control of medicine by the state be it

Resolved That the delegates representing the Medical Society of New Jersey in the House of Delegates of the American Medical Association be directed to call attention of the House of Delegates to our concept concerning the imminent crisis now upon us and be it further

Resolved That our delegates be requested to use their best efforts to the end that a plan and scope to meet this emergency be forthwith promulgated through the channels of the American Medical Association

Resolution on Contraceptive Devices and Methods

Dr L J Hirschman, Michigan, for Dr Arthur H Curtis, Section on Obstetrics, Gynecology and Abdominal Surgery, presented the following resolution, which was referred to the Reference Committee on Hygiene and Public Health

WHEREAS Innumerable devices chemical substances and techniques are being promoted to the public for the purposes of contraception and

WHEREAS Members of the medical profession are constantly asked by the public to advise them relative to scientific efficacy of such materials and methods therefore be it

Resolved That the Board of Trustees of the American Medical Association request the Council on Pharmacy and Chemistry Council on Physical Therapy the Bureau of Investigation and a committee of five to be selected by the Section on Obstetrics Gynecology and Abdominal Surgery to investigate the virtues and dangers of the various materials and methods and to publish its report when complete in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

Resolution on Birth Control

Dr William Ellingwood, Maine, presented the following resolution, which was referred to the Reference Committee on Hygiene and Public Health

Resolved By the House of Delegates of the Maine Medical Association assembled in regular annual session at Bangor Maine on May 28, 1934

First that we approve the principle of birth control

Second that we approve of Senate Bill 1842 and of House Bill 5978 now pending in the Congress of the United States and that we would amend sections 211 and 245 of the U S Penal Code and sections 311 and 312 which affect the territories and districts of the United States by adding the following paragraph to each section

The provisions of this section shall not be construed to apply to any book or information relating to the prevention of conception or article instrument substance drug medicine or thing designed adapted or intended for the prevention of conception for use

1 By any physician legally licensed to practice medicine in any state territory or the District of Columbia or by his direction or prescription,

2 By any medical college legally chartered under the laws of any state territory or the District of Columbia

3 By any druggist in filling any prescription of a licensed physician

4 By any hospital or clinic licensed in any state territory, or District of Columbia

N B—Passage of the foregoing by our delegates means that our delegate to the A M A meeting is instructed by inference to support similar legislation, when it comes before the national body

Report of Council on Scientific Assembly

Dr Olin West, Secretary, presented the following report
The Council on Scientific Assembly at a meeting held on June 12, 1934, was favorably disposed toward a joint scientific meeting of the Canadian Medical Association and the American Medical Association

The report of the Council was adopted on motion of Dr Arthur C Morgan, Pennsylvania, duly seconded and carried

Resolution on Establishment of Standards, Ratings and Inspections of Training Schools in Physical Therapy

Dr Olin West Secretary, presented the following communication and resolution received by him from the American Physiotherapy Association, which were referred to the Reference Committee on Medical Education

My dear Dr West

The enclosed resolution has been drawn up by a committee made up of representatives of the Council on Physical Therapy and of the American Physiotherapy Association The Executive Committee of the American Physiotherapy Association urgently request that the resolution be presented to the House of Delegates at the annual meeting of the American Medical Association and that members be made fully acquainted with the purpose for its adoption

Since the war, orthopedic surgeons have used the physiotherapy technician in large measure to aid in their reconstruction work The organization of technicians has been striving to keep its standards high and we feel it is essential at this time that high educational standards be established

The members of the American Physiotherapy Association, working only under supervision of the medical profession wish to place the matter of training schools in the hands of the American Medical Association

Copies of the resolution have been given to the two Chicago members of the House of Delegates Dr Reed and Dr Humiston who will give their support

Thank you for your attention to this

Very truly yours,

BESS B SEARLS, Secretary,

AMERICAN PHYSIOTHERAPY ASSOCIATION

WHEREAS There is a recognized demand for qualified professionally trained physical therapy technicians in the hospitals clinics crippled children's schools and physicians offices of this country and

WHEREAS The work of these technicians is under the direction of members of the medical profession and

WHEREAS The medical profession and the American Physiotherapy Association recognize the vital importance of establishing minimum standards of training and the inspection of training schools in physical therapy by a qualified and authoritative organization therefore be it

Resolved That the entire subject be left to the Board of Trustees of the American Medical Association with the request that it be given careful study and consideration, and if practical and feasible some plan for the establishment of standards ratings and inspections of training schools in physical therapy be effected providing that the expense of such inspection be borne by the school requesting the same

Executive Session—Tuesday Afternoon, June 12

The Speaker declared the House in executive session

Report of Special Committee

Dr Nathan B Van Etten, Chairman, read the following report of the Special Committee appointed to consider the resolution submitted to the House of Delegates from the delegates of the state of Michigan and a statement of the Board of Trustees concerning Sickness Insurance in the United States

The following resolution was submitted by delegates of the Michigan State Medical Society

WHEREAS There is substantial evidence that powerful forces and agencies are working toward the development of health insurance in the United States and

WHEREAS During the course of its studies of medical economic problems the Michigan State Medical Society after a conference with officials of the American Medical Association found it necessary to send a commission to England to inquire into the subject of health insurance and

WHEREAS The commission presented the following report—which has been printed in full in the *Journal of the Michigan State Medical Society*—and placed in printed form in the hands of all of the delegates of this House

WHEREAS The report of the commission raises certain grave questions concerning the policy of the officials of the American Medical Association toward health insurance and the effects of this policy on the practicing membership of the American Medical Association and

WHEREAS The report of the commission was transmitted to the Board of Trustees of the American Medical Association through the chairman in February 1934 and

WHEREAS The Michigan State Medical Society has received no word nor has it any other evidence that the Board of Trustees of the American Medical Association has considered or acted on the report transmitted in February 1934 therefore be it

Resolved That in order to avert a repetition in the United States of the disastrous consequences that attended the adoption of health insurance in England the Speaker of the House of Delegates of the American Medical Association appoint a committee to investigate and consider the policy of the Association toward health insurance and present a report to the House of Delegates

Your reference committee has reviewed with painstaking interest the report of the procedures of the commission of the Michigan State Medical Society, commends the efforts of the commission to study and digest an important social operation concerned with medical service in England applauds the sanity of its conclusion and its recorded opposition to the introduction into the United States of any system of health insurance now existing in any country in Europe because no system conforms at present with all of the policies adopted by the Michigan House of Delegates in July 1933, namely

1 Free choice of physician by the insured

2 Limitation of benefits to those of medical service

3 The control of medical service benefits by the profession

4 The exclusion of individuals or organizations that might engage in health insurance for profit

Your committee believes that their principles are basically sound and that they should be included within any further study of medical service to be adopted as the policy of organized medicine

Your committee regrets the criticisms of policy and sincerity of officials of the American Medical Association and the publicity given to them and finds that it was due to a misunderstanding regarding information which failed to reach the delegates from Michigan This relates to the efforts of the Board of Trustees the Bureau of Medical Economics, the Secretary and the Editor to study continuously all forms of social experiment affecting the practice of medicine

Your committee believes in the sincerity of the officials of the American Medical Association in promoting free access or any member of the Association to all of the files and completed records in which he may be interested

The Chairman of the Board of Trustees presented the following statement at an earlier session of the House

Since 1912, when the British government, through the action initiated by Lloyd George, established a system of compulsory health insurance, this problem has been prominently before the House of Delegates and other official bodies of the American Medical Association As early as 1916, the House of Delegates requested the Board of Trustees to

undertake an investigation of social insurance in all its forms and to make suitable report to the House. The subject has been raised from time to time since that date. On every occasion on which the House of Delegates has officially considered the questions of compulsory health insurance and social insurance, as well as the entrance of the state into medical practice, it has reaffirmed the independence of medicine as a profession and it has always condemned any system whereby the state would in any way enter into the practice of medicine. In 1920, following the report of the committee appointed to study compulsory health insurance, the House of Delegates adopted a resolution strongly condemning all forms of compulsory health insurance.¹ It is a well known fact that voluntary insurance has always been the forerunner of compulsory insurance, and even the most ardent advocates of voluntary insurance admit that fact. The action of that House of Delegates has not been rescinded by any subsequent action taken by the House of Delegates.

As far as state medicine is concerned the House of Delegates in 1921 adopted a resolution approving and endorsing all activities and policies of the states directed to the prevention of disease, but opposing the state treatment of disease except for the delinquent and the defective." Again in 1922 the Association declared its opposition to all forms of state medicine because of the ultimate harm that would come thereby to the public weal through such form of medical practice.

The Judicial Council of the Association has repeatedly brought reports to this House of Delegates sustaining the same point of view, and all these reports of the Judicial Council have been accepted and approved by the House of Delegates.

Finally last year the House of Delegates unanimously approved in principle the Minority Report of the Committee on the Costs of Medical Care and urged that the Board of Trustees of the American Medical Association in cooperation with its constituent bodies conduct an intensive campaign to disseminate this point of view among the medical profession and the public, with a view to the maintenance of high ethical standards and the preservation of professional ideals.

Your Board of Trustees your executives and all the publications of this Association have done their utmost thus far to carry out the policies which you have established. Today we are confronted with an extraordinary situation of the utmost importance to the health and welfare of the American people and to the American medical profession. It is no secret that a considerable number of foreign nations have already established state systems of medical care and that an intensive campaign has been carried on in this country for many years, led by philanthropists, social workers, economists and various foundations to cause the American medical profession and the American people to accept a similar type of medical practice. In accordance with the mandate of this House of Delegates, all the facilities of the American Medical Association have been used to oppose this trend and the propaganda in support of it, which has been widely circulated and for which vast sums of money have been and are being expended by various interested parties. It is also now well known that the President of the United States, in a recent message, has come forth for the principle of social insurance, with special reference to old age pensions and unemployment insurance.

In 1930 the House of Delegates recommended to the Board of Trustees the establishment of a Bureau of Medical Economics in the headquarters office for the study of all these problems as they affect the medical profession. From time to time this Bureau has issued bulletins of the greatest importance, not only for the factual data which they present but also for the interpretation of medical economic trends. In accordance with a special request by the Board of Trustees, your Bureau of Medical Economics has prepared an extended statement of the conditions in relationship to state

medicine and compulsory insurance, as they exist in other nations. This statement was made available to all Fellows of the American Medical Association by publication in the BULLETIN of the Association for April 1934. In connection with the publication of these data and this critical analysis, the Bureau of Medical Economics has also drawn up a statement entitled *Sickness Insurance Problems in the United States*, which purports to be an interpretation of the data already referred to and which includes a presentation of twelve basic principles, which should be given most careful study in relationship to any recommendations that this House may care to make on this problem for the future. This statement will now be distributed to the House of Delegates.

There are manifestations of unrest in relationship to the economic situation among some of the component and constituent bodies of this association. On several occasions, communications have been made to the Board of Trustees and to the headquarters office, urging a change in the activities of the organization which would in effect demand a departure from the policies set down by this House of Delegates during the past eighteen years. The problem is before you. The opportunity is offered here this afternoon for an extensive discussion of the situation as it confronts the medical profession today. The Board of Trustees hopes that you will give it earnest and careful consideration. Only the House of Delegates has the power to define the policies that are to guide this Association in the coming years.

Your committee believes that this statement of the Chairman of the Board of Trustees briefly reviewing the history of the action of the House of Delegates during the past eighteen years sufficiently illuminates the sincere and deep concern of the American Medical Association regarding all social programs affecting the delivery of medical service.

The delegates have in their hands a pamphlet entitled "*Sickness Insurance Problems in the United States*" as presented by the Board of Trustees.

Your committee does not recommend any plan but has abstracted from the pamphlet the following principles and suggests that they be followed by all constituent bodies of the American Medical Association as bases for the conduct of any social experiments that may be contemplated by them.

First All features of medical service in any method of medical practice should be under the control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.

Second No third party must be permitted to come between the patient and his physician in any medical relation. All responsibility for the character of medical service must be borne by the profession.

Third Patients must have absolute freedom to choose a duly qualified doctor of medicine who will serve them from among all those qualified to practice and who are willing to give service.

Fourth The method of giving the service must retain a permanent confidential relation between the patient and a family physician. This relation must be the fundamental and dominating feature of any system.

Fifth All medical phases of all institutions involved in the medical service should be under professional control, it being understood that hospital service and medical service should be considered separately. These institutions are but expansions of the equipment of the physician. He is the only one whom the laws of all nations recognize as competent to use them in the delivery of service. The medical profession alone can determine the adequacy and character of such institutions. Their value depends on their operation according to medical standards.

Sixth However the cost of medical service may be distributed the immediate cost should be borne by the patient if able to pay at the time the service is rendered.

Seventh Medical service must have no connection with any cash benefits.

¹ Index and Digest Official Actions of American Medical Association p. 53

² Index and Digest Official Actions of American Medical Association p. 175

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Eighth Any form of medical service should include within its scope all qualified physicians of the locality covered by its operation who wish to give service under the conditions established

Ninth Systems for the relief of low income classes should be limited strictly to those below the comfort level

Tenth There should be no restrictions on treatment or prescribing not formulated and enforced by the organized medical profession

If it is determined in a community that some experiment to change or improve the method of administering medical service is desirable, observance of these principles will remove many of the "disturbing influences" from such an experiment. In all such experiments, attention must be sharply focused on the quality of medical service.

Such restrictions will undoubtedly lower the enthusiasm of many of the present advocates of such schemes. They remove the interest of the politician the commercial promoter and all those who consciously or unconsciously are seeking to achieve other objectives than better medical care for those unable to provide such care for themselves under present conditions. All these principles are directed toward protecting the character of the service to be given and all are directly designed to guard against abuses which experience shows are bound to arise when these principles are neglected. In most communities it will be found that comparatively few changes in the methods of administering medical care will be necessary. That type of medical practice which preserves the personal relationships between physician and patient, that maintains the practice of medicine as a profession, and that has withstood the test of centuries must be preserved for the best interests of both the public and the medical profession.

The report of the committee was adopted section by section and as a whole on motions of Dr Van Etten, duly seconded and carried, with the substitution of the words 'legally qualified Doctor of Medicine' for the word 'physician'.

Requests for Appointment of Standing Committee to Continue Study of Subject

A proposal was submitted by Dr J D Brook, Michigan, to the effect that a standing committee of seven from the House of Delegates, composed of men in active practice of medicine be appointed by the Speaker to continue the further study of the subject. This was referred to the Reference Committee on Medical Economics.

Press Committee

On motion of Dr H A Luce, Michigan, seconded by Speaker, was requested to appoint a press committee for the release of such information as the committee may deem proper relative to matters discussed in the executive session. The Speaker appointed the following press release committee: Drs Nathan B Van Etten, Frederic E Sondern and Morris Fishbein.

There ensued discussion by Dr Nathan B Van Etten New York, Dr H M Johnson Minnesota, Dr Frederic E Sondern New York, Dr Holman Taylor Texas, Dr J Newton Hunsberger, Pennsylvania, Dr W A Bates South Dakota, Dr Walter E Vest West Virginia, Dr William H Mayer, Pennsylvania, Dr H H Shoulders Tennessee, Dr Arthur C. Morgan Pennsylvania, Dr Joseph A Pettit, Board of Trustees, Dr R W Fouts Nebraska, Dr John F Hagerty New Jersey, Dr Crum Epler Colorado, Dr Virgil Simpson, Kentucky, Dr William D Johnson New York, Dr G Henry Mundt Illinois, Dr E H Cary Texas, Dr Morris Fishbein, Editor of THE JOURNAL, Dr Leonce J Kosminski, Arkansas, Dr Charles H Goodrich New York, Dr Felix J Underwood Mississippi, Dr George P Johnston Wyoming, Dr William D Chapman Illinois, Dr T B Throckmorton Section on Nervous and Mental Diseases, Dr William G Ricker Vermont, Dr Fred Moore Iowa, Dr Olin West, Secretary, and Dr Austin A Haven Board of Trustees.

Resolution on Communications to Delegates

Dr Arthur C Morgan, Pennsylvania presented the following resolution which was referred to the Reference Committee on Medical Economics

Resolved That it is the sense of this House of Delegates that the Secretary of the American Medical Association shall in his discretion communicate with the members of the house of delegates from the state society concerned when communications of criticism from the rank and file are received at the headquarters for friendly suggestion and recommendation

The House of Delegates adjourned from executive session into regular session

Report of the Reference Committee on Miscellaneous Business

Dr H B Everett, Chairman, presented the following report

On resolution introduced by Dr Vander Veer at the request of the House of Delegates of the Medical Society of the State of New York pertaining to administration of anesthetics, which was recommended for further action, your committee is of the opinion that, owing to the varying conditions which prevail in urban and rural districts, the matter in question deserves more careful study and survey than this committee can give at this time. We recommend that this resolution be referred to the Council on Medical Education and Hospitals for further study and report at a later time.

Respectfully submitted

H B EVERETT, Chairman
E N ROBERTS
J D COLT
G W WELLS
H A MILLER

On motion of Dr Everett, seconded by Dr Arthur J Bedell, New York and carried, the report was adopted

Report of the Judicial Council

Dr George Edward Follansbee, Chairman, presented the following report

1 Resolution from the House of Delegates of Oklahoma. This resolution provides that the American Medical Association adopt policies by which it shall not approve any hospital or other institution for any purpose unless and until it has been officially approved by the medical society of the county in which it is located.

The terms of this resolution are so broad and indefinite that the Judicial Council believes them to be impractical. It is also of the opinion that the question of approval or disapproval of the hospitals or other institutions of the country should be based on a uniform standard and appraisal rather than on such varying standards as would be the case if the appraisal were the function of the local medical society. Thus opinion is not changed by a provision in the resolution granting to a disapproved institution the right of appeal to the American Medical Association.

The Council is of the opinion that, so far as the Council on Medical Education and Hospitals goes in obtaining information and laying down the principles governing approval, its work is well done and not open to criticism. However, it may be advisable in establishing its standards for approval to extend its field of inquiries beyond the professional and economic features into the ethical as well.

For the foregoing reasons the Judicial Council disapproves the resolution.

2 Resolution presented by Dr Ben R McClellan Ohio. This resolution asks that renewed attention and emphasis be placed on an action taken by the House of Delegates in 1924. The Judicial Council recommends its adoption. The resolution is as follows:

WHEREAS There are occasional evidences of advertising publicity and propaganda by certain large clinics in violation of the proper ethical and professional restrictions placed on individual physicians therefore be it

Resolved By the House of Delegates of the American Medical Association at its Eighty Fifth Annual Session in Cleveland June 11 to 15 1934 that attention of the county medical societies be called and emphasis again be placed on the following declaration of policy and principle incorporated in resolutions adopted by this body in 1924:

1 Publicity by clinics hospitals sanatoriums and other semipublic medical institutions as to quality of work done implies unusual and

exceptional ability and efficiency on the part of their professional staffs and therefore is advertising of the medical men concerned. This type of advertising distinctly savors of quackery and is unethical.

2. Publicity by any such institution stating or implying that by reason of its exceptionally fine equipment and material resources, it is able to or does give the public better medical service than similar institutions are able or willing to render, is advertising for purposes of self aggrandizement. Statements of this type are frequently exaggerated and misleading and are detrimental to the best interests of the public of the institution concerned and of true medical progress. Publicity of this kind is unethical.

On motions of Dr. Follansbee, duly seconded and carried, the report of the Judicial Council was adopted section by section and as a whole.

Resolution on Fellowship, Containing Amendment to By-Laws

Dr. George Edward Follansbee, Chairman, Judicial Council, presented the following amendment to chapter XI, section 2, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

WHEREAS In chapter IX, section I of the By-Laws is the following provision: The judicial power of the Association shall be vested in the Judicial Council whose decision shall be final. This power shall extend to and include (1) all questions involving Fellowship in the Scientific Assembly or the obligation rights and privileges of Fellowship. Although the powers given are broad the Judicial Council in its opinion is compelled by the by-law chapter XI, section 2 to do injustice to a few physicians not contemplated when this by-law was amended in 1930.

This by-law by requiring that an applicant for Fellowship must have graduated from a recognized school bars from Fellowship a few men who have attained prominence in medicine and against whom no disqualification exists except their unfortunate matriculation in a substandard school in most if not all cases due to ignorance. Many graduates of nonrecognized schools are Fellows having become such before the amendment barring such graduates was made. Should such Fellows Fellowship terminate temporarily for any cause under the by-law he cannot again be admitted. Therefore be it

Resolved That the By-Laws Chapter XI, section 2 be amended by adding at the end of the section: In exceptional cases members holding a degree equal in requirements to that of M.D. but not graduated from a recognized school who formerly were Fellows or who have established a high standard of professional attainment may be admitted as Fellows by the Judicial Council if in their judgment such action is desirable.

The House recessed at 5:20 p.m., to meet at 1 p.m., Thursday, June 14.

Third Meeting—Thursday Afternoon, June 14

The House of Delegates was called to order at 1 p.m. by the Speaker, Dr. F. C. Warnshuis.

Report of the Reference Committee on Credentials

Dr. J. D. Brook, Chairman, reported that 165 delegates had presented proper credentials and moved that the report of the committee be adopted. The motion was seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried.

Roll Call

Dr. Olin West, Secretary, called the roll and announced that more than a quorum of the House had responded.

Report of the Reference Committee on Credentials

Dr. J. D. Brook, Chairman, reported that an additional delegate had deposited credentials, making the total registration 166. The Speaker announced that, there being no objection, the report would be received.

Report of Judicial Council

Dr. Follansbee, Chairman, presented the following report: The resolutions introduced by Dr. E. G. Wood, Tennessee, in effect, urge the Judicial Council to use the discretionary power to investigate general professional conditions in a community, conferred on it by the Constitution and By-Laws, in the investigation of hospitals and other institutions and to use such powers of warning, discipline and publicity as it possesses to force such hospitals and institutions as it finds guilty of unethical practices to discontinue them. They also request the Board of Trustees to finance such organizations as may be necessary to carry out the provisions of the resolutions.

It seems to the Judicial Council that the field which it probably would be necessary to cover is so extensive as to

make the proposal unpractical on account of the time and expense involved. It also believes that the Council would be called on in cases of factional or trivial disputes which should be settled by the county society and brought to the Judicial Council only on appeal from the state association.

The Council recognizes that the maintenance of ethical practices in hospitals approved for intern training is important in the education of the young doctors about to enter private practice but believes that other methods of approaching the desired end should be tried before such a time consuming and expensive procedure is established.

The resolutions are therefore disapproved.

Respectfully submitted

On motion of Dr. Ralph A. Fenton, Oregon, seconded by Dr. A. A. Walker, Alabama, and carried after discussion by Dr. H. H. Shoulders, Tennessee, the report of the Judicial Council was adopted.

Report of the Reference Committee on Medical Education

Dr. Irvin Abell, Chairman, presented the following report:

1. The resolution regarding the request for the establishment of standards, ratings and inspections of training schools in physical therapy is approved and referred to the Board of Trustees.

2. The resolution introduced by Dr. L. J. Hirschman, Michigan, and Dr. D. C. McKenney, Section on Gastro-Enterology and Proctology, on the recognition of specialties for certification by the American Medical Association, was considered by your committee, to the deliberations of which many members of the Section on Gastro-Enterology and Proctology and members of the Council on Medical Education contributed. In view of the fact that the American Medical Association recognized and provided a Section on Gastro-Enterology and Proctology, now in existence for sixteen years, this committee approves of the resolution and recommends that it be referred to the Board of Trustees and Council on Medical Education and Hospitals for determination of the methods of examination and certification in these specialties.

Respectfully submitted

IRVIN ABELL, Chairman
J. W. AMESSE
J. F. HAGERTY
FRED MOORE
W. A. COOK

On motions of Dr. Abell, duly seconded and carried, the report was adopted section by section and as a whole.

Report of the Reference Committee on Legislation and Public Relations

Dr. C. E. Mongan, Chairman, presented the following report:

1. In regard to the resolution introduced by Dr. John F. Hagerty on behalf of the Medical Society of the State of New Jersey relative to investigations and prosecutions of the sale of impure foods and drugs, the committee recommends that the matter covered by this resolution be referred to the Board of Trustees.

2. Concerning the resolutions presented by Henry C. Macatee, on behalf of the Medical Society of the District of Columbia: Your committee finds that the purport of the resolutions are in accord with the policies of the American Medical Association and it is recommended that this House of Delegates regard it essentially unfair to the tax-paying public and the medical profession for the government, federal, state or municipal, to extend free medical and hospital services to persons not legally entitled thereto.

3. Concerning the resolution offered by Dr. William H. Seemann, Louisiana, with reference to the proposed extension of service of the State Charity Hospital in the city of New Orleans by the use of federal PWA funds: Your committee finds that while the resolution is local in character, it involves a policy of national interest and concern. It is therefore recommended that this House of Delegates go on record as opposing the use of federal funds as a loan for the promotion of any enterprise the cost of which is to be eventually repaid through exploitation of the medical profession.

4 Your committee recommends the adoption of the resolution offered by Dr George Blumer, Connecticut with reference to patents concerning products and devices used in the practice of medicine

Respectfully submitted

C E MORGAN, Chairman
G C MADILL
C W WAGGONER
HOLMAN TAYLOR
JOSEPH F SMITH

The report was adopted section by section and as a whole, on motions of Dr Morgan, duly seconded and carried

Report of the Reference Committee on Hygiene and Public Health

Dr W F Draper, Chairman, presented the following report

1 Relative to the resolutions introduced by Dr A C Morgan, Pennsylvania, providing that the House of Delegates through its proper channels suggest to the officers of the U S Pharmacopeial Convention 1940 and the National Formulary Convention 1940 the appointment of a representative group of pediatricians to advise in regard to the retention and deletion of remedial agents of pediatric importance and necessity The Committee approves the resolutions and recommends their endorsement by the House of Delegates

2 The committee has ascertained that the work contemplated in the resolution, introduced by Drs E A Hines and J H Cannon, South Carolina, has received the approval of accredited representatives of the American Medical Association and the United States Public Health Service and that it has also received the endorsement of the Southern Medical Association, the American Laryngological, Rhinological and Otological associations and a number of state medical societies

In the opinion of your committee, this work is worthy of the support of the American Medical Association and the committee recommends the adoption of the resolution

3 Relative to the resolution introduced by Dr L J Hirschman, Michigan, which provides that the Board of Trustees of the American Medical Association request the Council on Pharmacy and Chemistry, the Council on Physical Therapy, the Bureau of Investigation and a committee of five to be selected by the Section on Obstetrics, Gynecology and Abdominal Surgery to investigate the virtues and dangers of the various materials and methods used for contraception and to publish its report, when complete, in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION The committee begs to refer this resolution back to the House of Delegates without recommendation by the committee

4 Relative to the resolutions introduced by Dr J D Brook, Michigan, providing for the appointment of a special committee to study and report on the problem of birth control in all of its medical aspects, the committee recommends that the resolutions be not approved

W F DRAPER Chairman
R W FOUTS
J W BURNS
R L GREEN
E F CODY

On motion of Dr Draper, duly seconded and carried the report of the committee was adopted section by section

Dr Draper stated, on inquiry by the Speaker, that the committee had a resolution of the Maine Medical Association but that it was simply a resolution of that association for the information of its delegates, and the committee did not feel that it was called on to act on that resolution

On motion of Dr Draper seconded by Dr William H Mayer Pennsylvania and carried, the report of the committee was adopted as a whole

Report of the Reference Committee on Amendments to the Constitution and By-Laws

Dr H H Shoulders, Chairman, presented the following report

Concerning an amendment to the By-Laws regarding Fellowship introduced by Dr George Edward Follansbee Chairman

of the Judicial Council, the preamble of the resolution sets out the reasons for the adoption of the amendment

In the opinion of your committee, the adoption of this amendment will enable the Judicial Council to deal justly with applicants for Fellowship It will not admit to Fellowship any one who does not deserve it It will enable the Council to admit some who deserve Fellowship but to whom that relationship is denied on technical grounds only

Your committee recommends the adoption of the amendment

Respectfully submitted

H H SHOULDERS, Chairman

Dr Shoulders moved that the amendment to the By-Laws be adopted The motion was seconded by Dr J Newton Hunsberger, Pennsylvania, and carried

Report of the Reference Committee on Reapportionment of Delegates

Dr Olin West, Chairman, presented the following report

The present apportionment of delegates is on the basis of one delegate for each 800 members or fraction thereof Each

Number of Delegates Based on Different Ratios

State	Number of Members 4/1/34	Bases of Apportionment and Number of Delegates Under Each	775	800
Alabama	1 452	2	2	2
Arizona	246	1	1	1
Arkansas	880	2	2	2
California	5 167	7	7	7
Colorado	1 069	2	2	2
Connecticut	1 472	2	2	2
Delaware	195	1	1	1
District of Columbia	676	1	1	1
Florida	971	2	2	2
Georgia	1 689	3	3	3
Idaho	194	1	1	1
Illinois	6 879	9	9	9
Indiana	2 807	4	4	4
Iowa	2 191	3	3	3
Kansas	1 536	2	2	2
Kentucky	1 698	3	3	3
Louisiana	1 169	2	2	2
Maine	718	1	1	1
Maryland	1 432	2	2	2
Massachusetts	4 619	6	6	6
Michigan	3 218	5	5	5
Minnesota	2 212	3	3	3
Mississippi	1 218	2	2	2
Missouri	3 212	5	5	5
Montana	311	1	1	1
Nebraska	1 058	2	2	2
Nevada	102	1	1	1
New Hampshire	499	1	1	1
New Jersey	2 899	4	4	4
New Mexico	206	1	1	1
New York	13 074	17	17	17
North Carolina	1 516	2	2	2
North Dakota	368	1	1	1
Ohio	5 168	7	7	7
Oklahoma	1 571	3	3	3
Oregon	706	1	1	1
Pennsylvania	7 831	11	11	11
Rhode Island	495	1	1	1
South Carolina	895	2	2	2
South Dakota	266	1	1	1
Tennessee	1 597	3	3	3
Texas	3 879	6	6	6
Utah	379	1	1	1
Vermont	350	1	1	1
Virginia	1 823	3	3	3
Washington	1 312	2	2	2
West Virginia	1 196	2	2	2
Wisconsin	2 121	3	3	3
Wyoming	159	1	1	1
Alaska	14	1	1	1
Hawaii	221	1	1	1
Isthmian Canal Zone	108	1	1	1
Philippine Islands	666	1	1	1
Puerto Rico	331	1	1	1
Army Navy & P H S	3	3	3	3
For 15 Sections	15	15	15	15
TOTAL		172	168	

Total voting membership of House shall not exceed 175

constituent association is represented by at least one delegate irrespective of the number of members

The By-Laws specifically provide that the total membership of the House of Delegates shall not exceed 175 The total membership of the Association on April 1 as recorded in the office of the Secretary was 98041

An apportionment on the basis of one delegate for each 750 members would produce a total of 177 delegates, two more than are permitted by the By-Laws

On the basis of one delegate for each 775 members, the total membership of the House would be 172, which is one less than the present membership. On this basis, Pennsylvania and Texas would each gain one delegate, while Alabama, Illinois and North Carolina would each lose one delegate.

On the basis of one delegate for each 800 members, the total membership of the House would be 168. On this basis Alabama, Illinois, North Carolina, Oklahoma and Tennessee would each lose a delegate.

The committee recommends that the apportionment of delegates for the next three years be made on the basis of one delegate for each 775 members or fraction thereof. Each state medical association, irrespective of the number of members, no matter how small its membership may be, is entitled to one delegate. On this basis, the membership of the House will be 172.

Respectfully submitted

OLIN WEST, Chairman
F C WARNSHUIS
C B REED

On motion of Dr C B Reed, Illinois seconded by Dr J Newton Hunsberger, Pennsylvania, and carried, the report of the Reference Committee on Reapportionment of Delegates was adopted.

Report of the Reference Committee on Medical Economics

Dr Frederic E Sondern, Chairman, presented the following report:

1 Relative to the resolutions from the Medical Society of New Jersey, presented by Dr John F Hagerty, your committee recognizes fully the serious tenor of these resolutions and the urgent desire of the delegates from New Jersey to secure the complete cooperation of this House in the matter.

Your committee feels, however, that the report of the special committee accepted by this House covers fully the requests made and also that the endorsement of this House one year ago of the Minority Report of the Committee on the Costs of Medical Care must be kept in mind therewith.

2 Relative to the resolution presented by Dr A C Morgan, Pennsylvania, requesting the Secretary in his discretion to communicate with members of the House of Delegates from the state societies concerned when communications of criticism are received from the rank and file, your committee would commend this effort in the interest of understanding and harmony and believes that the matter may well be left to the discretion of the Secretary of the Association.

3 Relative to the resolution requesting the appointment of a standing committee of seven, your committee assumes that this resolution was prompted by the accepted report of the special committee and, therefore, deals with the matter of sickness insurance although this does not appear clearly in the resolution itself. Your committee is in complete sympathy with any effort that will aid in the clarification of this matter and in the finding of a concrete solution. It must be apparent to all that the Bureau of Medical Economics of the American Medical Association not only has every facility for the further study asked for but also has demonstrated its efficiency, thoroughness and impartiality in this regard. Your committee would recommend that if the Bureau of Medical Economics feels the need of an advisory committee of outstanding members of the Association, a request for the same to the Board of Trustees would have every consideration.

On motions of Dr Sondern, duly seconded and carried, the report of the committee was adopted section by section and as a whole.

Resolutions Referred Back to the House by the Reference Committee on Hygiene and Public Health

The Speaker presented to the House the resolution introduced by Dr L J Hirschman, Michigan, and the resolutions introduced by Dr J D Brool, Michigan, which had been referred to the Reference Committee on Hygiene and Public Health and referred back to the House by that reference committee without recommendation, and asked what the pleasure of the House was with respect to them.

Dr B F Bailey, Nebraska, moved that the resolutions be tabled. The motion was seconded by Dr Horace Reed, Oklahoma, and carried.

Report from the Section on Nervous and Mental Diseases

Dr Tom B Throckmorton, Section on Nervous and Mental Diseases, presented the following report:

A committee appointed by the Section on Nervous and Mental Diseases last year met with similar committees of the American Psychiatric Association and the American Neurological Association at a preliminary meeting in New York in December 1933 to consider the formation of a board of examiners in psychiatry and neurology for the purpose of certifying physicians in these respective branches of medicine. At this conjoint meeting, certain broad principles were laid down, the name decided on for the governing board was the American Board of Psychiatry and Neurology. It was the consensus that there should be equal representatives of neurology and psychiatry on the board of examiners and that the board should be composed of four members from the American Psychiatric Association, four members from the American Neurological Association, and two psychiatrists and two neurologists appointed by the Section on Nervous and Mental Diseases of the American Medical Association. It was also the consensus of the meeting that there should be drawn up by the Board of Psychiatry and Neurology separate qualifications for psychiatrists and for neurologists and that there should be separate examinations for applicants wishing to be certified in one or both of these specialties.

The American Psychiatric Association and the American Neurological Association through their respective Councils, later approved the formation of the American Board of Psychiatry and Neurology.

The committee from the Section on Nervous and Mental Diseases, in conjunction with committees appointed by the American Neurological and the American Psychiatric Associations, then proceeded to draw up recommendations for the guidance of the Board of Certification on Psychiatry and Neurology in establishing the requirements for such certification in these respective specialties.

As a result of these various deliberations on the part of the special committee appointed last year from the Section on Nervous and Mental Diseases, the committee from the American Psychiatric Association and the committee from the American Neurological Association, the following recommendations were adopted by the Section on Nervous and Mental Diseases:

1 That the Section on Nervous and Mental Diseases of the American Medical Association cooperate with the American Psychiatric Association and the American Neurological Association in the establishment of the American Board of Psychiatry and Neurology.

2 That four members of the section, two neurologists and two psychiatrists, be elected to serve on the board for terms of from one to four years that each year hereafter a member be elected to take the place of the retiring member, neurology and psychiatry being always equally represented.

On motion of Dr Throckmorton, seconded by Dr J Allen Jackson, Pennsylvania, and carried, the report was adopted.

Resolutions Registering Disapproval of Employment of Optometrists by Hospitals, from the Section on Ophthalmology

Dr Emory Hill, Section on Ophthalmology, presented the following resolutions, which were adopted on motion of Dr Hill, seconded by Drs W Albert Cook, Oklahoma, and G Henry Mundt, Illinois, and carried:

WHEREAS It has come to the attention of the officers of the Section on Ophthalmology that some hospitals employ optometrists to prescribe glasses and

WHEREAS The members of the section are convinced that this practice is not to the best interest of the patient and

WHEREAS The only reason for such an unprofessional method seems to be monetary reward to the hospital and

WHEREAS The younger ophthalmologists need practice in refraction which is best secured under the direction of skilful physicians devoting themselves to the treatment of diseases of the eye be it

Resolved That the Section on Ophthalmology of the American Medical Association hereby registers its disapproval of the employment of optometrists by hospitals and be it further

Resolved That the House of Delegates of the American Medical Association be urged to institute the necessary measures to stop this pernicious invasion of the practice of medicine

Resolution on the Definition of Blindness, from the Section on Ophthalmology

Dr Emory Hill, Section on Ophthalmology presented the following resolution, which was adopted on motion of Dr Hill, seconded by Dr Ralph A Fenton, Oregon, and carried

WHEREAS A committee was appointed by the Section on Ophthalmology of the American Medical Association in response to a request from the Department of Public Welfare of the State of Illinois for a definition of blindness in scientific terms that might be made statutory and

WHEREAS There are various grades of blindness which should be distinguished, therefore be it

Resolved That the following definitions for grades of blindness be accepted by the House of Delegates

Total Blindness is inability to perceive light lack of light perception The person who is totally blind cannot tell whether strong light falls on his eyes or whether they are in total darkness Light perception is vision such as one has when the eyelids are closed

Economic Blindness is absence of ability to do any kind of work industrial or otherwise for which sight is essential In general visual acuity of less than one tenth has been classed as economic blindness meaning that objects can be recognized only when brought within one tenth of the distance at which they can be recognized with standard vision Such vision in the better eye when corrected with the best possible glass would be recorded as less than 0.1 or 6/60 or 20/200 or as an equally disabling loss of the visual field

Vocational Blindness is impairment of the vision that makes it impossible for a person to do work at which he had previously earned a living He may still have vision enough to do some other kind of work that may yield him an adequate support Such vision in the better eye with the best possible correcting glass may vary from one tenth to one third that is from 0.1 or 6/60 or 20/200 to 0.3 or 6/18 or 20/60 depending on the vision required for the occupation previously followed

Educational Blindness is such loss of sight as makes it difficult dangerous or impossible to learn by the methods that are commonly used in schools This necessitates two types of schooling for such individuals namely sight saving classes and schools for the blind The requirement for admission to sight saving classes is vision in the better eye with the best possible correcting glass of less than 20/70 and more than 20/200

The requirement for admission to the school for the blind is vision in the better eye with the best possible correcting glass of 0.1 or 6/60 or 20/200 or less

Communication from the Session on Forensic Medicine of the Section on Miscellaneous Topics

The Secretary presented the following communication from the Session on Forensic Medicine of the Section on Miscellaneous Topics which on motion of Dr A A Walker Alabama seconded by Dr Fred Moore Iowa and carried, was referred to the Council on Scientific Assembly

On motion by Dr Harrison S Martland duly seconded and carried, it was voted that the session organize a committee for the purpose of acquainting the suitable authorities in the legal profession with the existence and reliability of the blood grouping tests so that statutes may be enacted authorizing courts to order individuals to submit to blood grouping tests when they are required, in those jurisdictions in which blood tests are not obligatory at present

On motion of Dr Oscar T Schultz Evanston, Ill seconded by Dr Harrison S Martland, Newark, N J, it was voted that the session, through the secretary express its appreciation to the proper officials of the American Medical Association for the privilege of having held this meeting of the necessity and advisability of future meetings of this session at other meetings of the Association and that a committee be appointed to study this question of the advisability of future meetings

Communications from the Catholic Medical Mission Board and from the Kentucky State Medical Association

The Secretary presented a communication from the Catholic Medical Mission Board requesting a meeting of doctors especially interested in the work of that board

The Secretary also presented a letter from Dr A T McCormack Secretary of the Kentucky State Medical Association inviting the House of Delegates of the American Medical Association to attend the unveiling of the plaque in honor of the pioneer physicians of Kentucky at Fort Harrod Harrodsburg Ky June 21

Dr Mather Pfeifferberger, Illinois, moved that the communication be accepted and placed on file and that the invitation be accepted The motion was seconded by Dr Randolph Winslow, Maryland, and carried

Resolution on Proper Medical Care

Dr Ralph Fenton at the request of Dr Joseph A Pettit, received the unanimous consent of the House to present the following resolution, which was adopted on a motion of Dr Fenton, seconded by Dr Arthur J Bedell, New York, and carried after discussion by Drs J Tate Mason, Section on Surgery, General and Abdominal, and Joseph A Pettit, Trustee

WHEREAS In accordance with the traditions governing the medical profession physicians have always given and still give first consideration to the health and welfare of their individual patients and

WHEREAS The introduction into the practice of medicine of the mass production methods employed in industry cannot fail to be detrimental to the health and welfare of the individual patient therefore be it

Resolved That whether definitely stated or not it is the position of the American Medical Association that all conditions or principles adopted by the Association concerning the position of the medical profession in any form of medical practice are set forth primarily in order to maintain such standards and safeguards as are essential to the maintenance of the best medical care and the protection of the health of all members of the community

ELECTION OF OFFICERS

Election of President-Elect

The Speaker called the attention of the delegates to the provision of the By-Laws limiting to three minutes all nominating speeches, and then called for nominations for the office of President-Elect of the American Medical Association

Dr A A Walker, Alabama, nominated for President-Elect Dr James S McLester Birmingham, Ala, and the nomination was seconded by Drs C A Grote, Alabama F Clifton Moor Florida W H Robey, Massachusetts, George Blumer, Connecticut, Guy W Wells Rhode Island, H B Everett, Tennessee, William G Ricker, Vermont J Tate Mason, Section on Surgery, General and Abdominal, and Irvin Abell, Kentucky

Dr Holman Taylor, Texas nominated Dr Hugh S Cumming, Washington, D C The nomination was seconded by Drs Carl Moll in behalf of the Michigan delegation, A R McComas, Missouri, Stanley H Osborn, Section on Preventive and Industrial Medicine and Public Health, John W Ames Colorado Burt R Shurly, Section on Laryngology, Otology and Rhinology Ralph A Fenton, Oregon, J Gurney Taylor, Wisconsin, Albert Soiland, Section on Radiology, and J P DeWitt Ohio

The Speaker declared the nominations closed and appointed as tellers Drs O S Wightman, New York, A J Scott Jr, California Vernon L Treynor Iowa J D Colt Sr, Kansas, and James Beebe, Delaware

The Secretary, at the request of the Speaker, announced that 156 delegates had been recorded as present and that 156 votes had been cast, of which Dr James S McLester, Birmingham, Ala, received 85 and Dr Hugh S Cumming, Washington, D C, 71

The Speaker declared Dr James S McLester, having received the majority of the votes cast, elected President-Elect of the American Medical Association

Election of Vice President

Dr Ben R McCellan, Ohio nominated for Vice President Dr George G Reimle Oakland, Calif, and the nomination was seconded by Dr Clarence G Toland California

Dr William R Molony California moved that the nominations be closed and the motion was seconded by Drs Arthur J Bedell New York and William H Mayer, Pennsylvania, and carried

On motion of Dr G Henry Mundt Illinois seconded by Dr Albert Soiland Section on Radiology, and carried, the Secretary cast the ballot of the House for Dr George G Reimle as Vice President for the ensuing year

Election of Secretary

Dr William H Mayer, Pennsylvania, nominated Dr Olin West Chicago to succeed himself as Secretary of the Ameri-

can Medical Association, and the nomination was seconded by Dr Orrin S Wightman, New York On motion of Dr E R Mulford, New Jersey, seconded by several and carried unanimously, the nominations were closed

On motion of Dr Albert Soiland, Section on Radiology, seconded by Dr Samuel P Mengel, Pennsylvania, and carried, the Speaker cast the ballot of the House for Dr Olm West as Secretary of the American Medical Association and declared Dr West elected Secretary for the ensuing year

Election of Treasurer

Dr J H J Upham, Chairman of the Board of Trustees, nominated for the office of Treasurer Dr Herman L Kretschmer, Chicago The nomination was seconded by Dr W F Braasch, Minnesota, and Dr H W E Walther, Section on Urology Dr Mather Pfeifferberger, Illinois, moved that the nominations be closed, and the motion was seconded by Dr O S Wightman, New York, and carried

Dr B F Bailey, Nebraska, moved that the Secretary be instructed to cast the ballot of the House of Delegates for Dr Herman L Kretschmer, Chicago, as Treasurer The motion was seconded by Dr A J Scott Jr, California, and carried, and the Secretary cast the vote of the House for Dr Herman L Kretschmer, Chicago, as Treasurer of the Association for the ensuing year and the Speaker declared Dr Kretschmer so elected

Election of Speaker of the House of Delegates

Dr Nathan B Van Etten Vice Speaker, took the chair and announced that the next order of business was the election of a Speaker of the House of Delegates

Dr C S Gorshine, Michigan, nominated for Speaker of the House of Delegates Dr F C Warnshuis, Grand Rapids, Mich The nomination was seconded by several, after which Dr J N Vander Veer New York moved that the nominations be closed, and the motion was seconded and carried

On motion of Dr Albert Soiland, Section on Radiology, seconded by Dr J Newton Hunsberger, Pennsylvania, and Dr Charles H Goodrich, New York and carried the Secretary cast the vote of the House for Dr F C Warnshuis to serve as Speaker of the House of Delegates for the next year, and Dr Van Etten declared Dr F C Warnshuis elected Speaker of the House of Delegates

Election of Vice Speaker of the House of Delegates

The Speaker resumed the chair and called for nominations for Vice Speaker of the House of Delegates

Dr Arthur J Bedell, New York, nominated Dr Nathan B Van Etten, New York, and the nomination was seconded by several Dr Thomas Farmer, New York moved that the nominations be closed, and the motion was seconded by Dr J Newton Hunsberger, Pennsylvania, and carried

On motion of Dr J D Brook, Michigan, seconded by Dr H B Everett, Tennessee, and carried, the Secretary cast the vote of the House for Dr Nathan B Van Etten as Vice Speaker of the House of Delegates, and the Speaker declared Dr Nathan B Van Etten elected to the office of Vice Speaker for the ensuing year

Election of Trustees

The Speaker declared the next order of business to be the election of a trustee for a term of five years to succeed Dr D Chester Brown, Danbury, Conn, whose term expired this year and who, according to the By-Laws, was not eligible for reelection

Dr E F Cody, Massachusetts, nominated Dr Roger I Lee, Boston and the nomination was seconded by several delegates Dr Arthur J Bedell, New York, moved that the nominations be closed, and the motion was seconded by Dr J W Burns, Texas, and carried

On motion of Dr John H O Shea, Washington, seconded by Dr Ralph A Fenton, Oregon, and carried the Secretary cast the ballot of the House for Dr Roger I Lee, Boston, to serve as a member of the Board of Trustees for a term of five years, and the Speaker declared Dr Roger I Lee so elected

The Speaker called for nominations for the office of Trustee to succeed Dr Allen H Bunce, Atlanta, Ga, whose term of office had expired

Dr C W Roberts, Georgia, nominated Dr Allen H Bunce, Atlanta, Ga, to succeed himself The nomination was seconded by several, after which, on motion of Dr H B Everett, Tennessee, seconded and carried, the nominations were closed

On motion of Dr H H Shoulders, Tennessee, seconded by Dr Leonce J Kosminsky, Arkansas, and carried, the Secretary cast the ballot of the House for Dr Allen H Bunce, Atlanta, Ga, to succeed himself as Trustee for a term of five years, and the Speaker declared Dr Allen H Bunce so elected

Address of President-Elect James S McLester

The Speaker introduced President-Elect James S McLester, who addressed the House as follows

When you raise a man suddenly to a great height it makes him a bit dizzy, and he doesn't know just what to say In raising me to a position of leadership in this, the greatest medical organization in the world, you have raised me to great heights indeed and I am warmly appreciative

I am also deeply conscious of a sense of obligation, and in my poor way I shall endeavor to fulfil this obligation properly

We live in a changing world All human relationships are being examined if not in actual process of readjustment, and this is especially true of that happy relationship which has existed for so many generations between doctor and patient We must see to it you and I, in these changing times that no violence is done that fine relationship

I have a great deal of faith, I am confident, and I say this after mature deliberation that for the physician of character and training the world will always find a suitable reward and a place, not a mere cog in a bureaucratic piece of machinery, but as a counselor who fills a human and a thoroughly personal relationship

In our efforts toward the realization of that, I pledge you the best there is in me

Nominations for Standing Committees

Dr Walter L Biering, President presented the following nominations for Standing Committees

Judicial Council Dr Emmett P North, St Louis, to succeed Dr James B Herrick, for a term ending in 1939

Council on Medical Education and Hospitals Dr Fred Moore, Des Moines, Iowa, to succeed Dr Emmett P North, for a term ending in 1941, Dr John H Musser, New Orleans, to succeed Dr James S McLester, who had been elected President-Elect, for a term ending in 1940

Council on Scientific Assembly Dr Irvin Abell, Louisville, Ky, to succeed himself, for a term ending in 1939, Dr Cyrus C Sturgis Ann Arbor, Mich, to fill the unexpired term of Dr John E Lane, deceased, for a term ending in 1936

On motion of Dr Arthur J Bedell, New York, seconded by Dr Thomas F Thornton, Iowa, and carried, the House confirmed the nominations

Election of Honorary, Affiliate and Associate Fellows

REPORT OF COUNCIL ON SCIENTIFIC ASSEMBLY

The Secretary presented the report of the Council on Scientific Assembly recommending the election of Dr Howard Atwood Kelly, Baltimore, to Honorary Fellowship Dr Randolph Winslow, Maryland, moved that the report be adopted The motion was seconded by Dr Irvin Abell, Kentucky, and carried

APPLICANTS FOR ASSOCIATE FELLOWSHIP FROM AMERICAN MEDICAL MISSIONARIES APPROVED BY THE JUDICIAL COUNCIL

Bell L Nelson Tsingkiangpu China
Brown Roswell K Tripoli Syria
Butka L H Shanghai China
Dawson Calvin D Puebla Puebla Mexico
Demaree Eugene W Wonsan Korea
Henke Harold E Shunthefu Hopei China
Hutchison Harry S Tanta Egypt
James Harold E Chungking Szechwan China

Kemp Alexander H Malange Angola Africa
Marcus Elias G Cholo Nyrsaland Africa
Pirley John S Manigua Nicaragua
Wilbur Leonard F Peiping China
Crawford Porter J Recife Pernambuco Brazil

APPLICANTS FOR ASSOCIATE FELLOWSHIP NOMINATED
BY THE SECTIONS INDICATED

SURGERY, GENERAL AND ABDOMINAL

Loucks H H Peiping China

LARYNGOLOGY, OTOTOLOGY AND RHINOLOGY

Christiansen George W Detroit

PATHOLOGY AND PHYSIOLOGY

Cohn Maurice L Denver
Fleisher Moyer S St Louis

PREVENTIVE AND INDUSTRIAL MEDICINE AND
PUBLIC HEALTH

McAlpine James G Montgomery Ala

Dr Mather Pfeifferberger, Illinois moved that the applicants listed be elected to Associate Fellowship in the American Medical Association. The motion was seconded by Dr Felix J Underwood, Mississippi, and carried.

APPLICANTS FOR AFFILIATE FELLOWSHIP APPROVED
BY THE COUNCIL ON SCIENTIFIC ASSEMBLY

On motion of Dr W H Breuer Missouri, seconded by Dr Ralph A Fenton, Oregon, and carried, the following were elected to Affiliate Fellowship in the American Medical Association

Abbott H P Providence R I
Braunwarth Anna M Chicago
Braunwarth Emma L Muscatine Iowa
Bacon C S Chicago
Bliss M A St Louis
Cohn Salo New York
Goble Ezra T Earlville Ill
Gaston William Clarksburg W Va
Hektoen Ludwig Chicago
Howland Edward DeMonte Chicago
Jackson Charles William Monson Mass
Kingsbury D W Nanticoke Pa
LeTourneau R A Chicago
Linsz H P Wheeling W Va
Luehr Edward South Chicago
Noble W L Chicago
Newman Henry P San Diego Calif
Ravold Amand St Louis
Robinson F J Fairfield Maine
Stanton Samuel C Hinsdale Ill
Wright Franklin R Minneapolis

Place of 1935 Annual Session

The Speaker announced that the next order of business was the selection of the place of the 1935 annual session and requested the Board of Trustees to present nominations.

Dr J H J Upham, Chairman, presented the following report of the Board of Trustees

Mr Speaker Members of the House

Within the actual prescribed time for the presentation of invitations for the place of meeting there was but one invitation received, that from Atlantic City. The Board of Trustees, according to your direction, has inspected the facilities of Atlantic City and finds that city abundantly able to take care of this meeting in 1935.

A little later than the prescribed time was received an invitation from the city of Chicago. The Board has investigated the facilities at Chicago and knows no one building that has the facilities for housing all the meetings of the Association. It gives the preference of its recommendation to Atlantic City for 1935.

Dr Walt P Conaway New Jersey, extended an invitation from Atlantic City, after which on motion of Dr James N Vander Veer New York, seconded by Dr Arthur C Morgan, Pennsylvania, and carried the Secretary cast the vote of the House of Delegates for Atlantic City as the place of meeting of the American Medical Association in 1935 and the Speaker declared that the House had selected Atlantic City for its 1935 session.

UNFINISHED BUSINESS

Vote of Appreciation

Dr James N Vander Veer, New York, moved that the House of Delegates extend the cordial thanks and appreciation of the members of the Association to all those who contributed to their pleasure, entertainment and comfort, and to the press of the country as well as of the city of Cleveland who rendered such splendid service to the Association. The motion was seconded by Dr J Newton Hunsberger, Pennsylvania, and carried.

Appreciation of Services of Dr D Chester Brown

Dr George Blumer, Connecticut, moved that the House of Delegates extend to Dr D Chester Brown, Danbury, Conn, who this year retired as a member of the Board of Trustees, a resolution of appreciation for his services. The motion was seconded by several and carried, and the Speaker conveyed to Dr Brown the appreciation of the House.

Dr Brown addressed the House as follows

Mr Speaker and Gentlemen of the House of Delegates

I think you are going to establish a very bad precedent if you are going to reward the services of your members of the Board of Trustees by calling them up and giving them special recognition, it is going to be something that will take a good deal of your time, because many of them deserve very much more recognition than I.

I take great pleasure in expressing to you at this time what the Board of Trustees has as an animating purpose throughout its deliberations. You elect them to represent you during the time that you are not in session, and having had seventeen years on the Board I want to state to you that a loyalty to this House animates the Board in every action it takes. You have no idea how extensive that is, how it follows through every action of the Board, and there is never at any time a desire to usurp the prerogatives of the House of Delegates.

It has been a great pleasure to me during these past seventeen years to have served you, and I thank you very much for this expression of your appreciation.

Invitation from Miami, Florida

Dr F Clifton Moor, Florida, gave notice that Miami, Fla, would extend an invitation to the Association to meet in Miami in 1936.

The House of Delegates adjourned sine die at 3 25 p m

(To be continued)

Association News

THE GOLF TOURNAMENT AT CLEVELAND

The twentieth annual tournament of the American Medical Golfing Association held at the Mayfield Country Club, Cleveland, June 11, was a great success, attracting a total of 185 players. Some of the leading scores were as follows:

J P Loudon Yakima	76-76-152
G R Love Oconomowoc	80-78-158
J L Lattimore Topeka	84-76-160
Mark Bach Milwaukee	81-81-162
R P Bell Cleveland	84-81-165
J A Johnson New York	78-87-165
L Mark Columbus	85-84-169
J J Marek Cleveland	83-86-169
R H Burge Cleveland	90-80-170
E S Egerton Wichita	85-85-170
F M Casto Cleveland	88-82-170
J D Fouts Dayton	85-86-171
H K Nicoll Chicago	86-86-172
F T Gallagher Cleveland	87-85-172
W A Welsh Youngstown	87-86-173
C H McCaskey Indianapolis	86-87-173
A V Boysen Cleveland	87-87-174
G C Glenn St College Pa	89-86-175
R R Hansen Marshalltown	86-90-176
C A Nafe Indianapolis	87-90-177
D C Brennan Akron	86-91-177
C P Rutledge Shreveport	88-89-177
H M Shuffie Canton	88-90-178
W Z Rundles Flint	89-89-178

At the banquet which lasted until the small hours of the morning prizes were awarded and Dr Charles Lukens of Toledo was elected president of the American Medical Golfing

Association for the ensuing year, Drs Charles H Henninger, Pittsburgh, and John B Morgan, Cleveland, vice presidents, and Dr Homer K Nicoll, Chicago, advisory director William J Burns, Detroit, continues as executive director

MEDICAL BROADCASTS

Columbia Broadcasting System

The American Medical Association broadcasts on a Western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4 30 to 4 45, Central daylight saving time The speaker will be Dr W W Bauer The next three broadcasts will be as follows

July 5 Death Angel
July 12 A Healthful Vacation
July 19 Entertaining the Convalescent Child

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS EDUCATION PUBLIC HEALTH ETC)

ARIZONA

Public Health Meeting—At the seventh annual meeting of the Arizona Public Health Association, Prescott, June 5-6, Dr William P Shepard San Francisco, among others, spoke on Present-Day Opportunities for the Practicing Medical Profession in the Field of Public Health, Dr Warren F Fox, director, Imperial County Health Unit, El Centro, Calif., 'Problems of the County Health Unit' and Mr H C Moore, chief of the Los Angeles Station, U S Food and Drug Administration, 'Menace of Spray Residue'

State Medical Election—Dr Charles R K Swetnam, Prescott, was chosen president-elect of the Arizona State Medical Association at its annual meeting in Prescott June 7-9, Dr Meade Clyne, Tucson, was installed as president, and Dr Clarence F Harbridge, Phoenix, was reelected secretary The next session will be in Phoenix Out of state speakers included Drs Dudley A Smith, San Francisco, on 'Menace of Rectal Suppositories—Care of Rectal Cases' Edward Clarence Moore, Los Angeles, 'Preoperative Preparation and Post-operative Care', Howard K Gray, Rochester, Minn., 'Surgery of the Biliary Tract', Arthur E Smith, Los Angeles, 'Plastic and Reconstructive Surgery of the Head' Samuel D Ingham, Los Angeles, 'Neurologic Conditions Commonly Associated with Diabetes, Pellagra and Pernicious Anemia' Francis C Goodwin, El Paso 'A Bone Brace to Prevent Toe Drop in Paralytics,' and George T Colvard, Deming, N M, 'Rural Obstetrics—Delivery in the Home' Other speakers included the following physicians

William O Sweek and Guy C French Phoenix Intestinal Obstruction
Zebud M Flinn Prescott Anorexia
William Roy Hewitt Tucson Proctoscopy as an Aid to Diagnosis
Ralph F Palmer Phoenix Rating Permanent Partial Disability by Functional Measurements
Max Pinner Tucson Physiology of Pulmonary Collapse
Howell S Randolph Phoenix Pneumothorax Treatment in Acute Lobar Pneumonia—Report on Eighteen Cases
William Warner Watkins Phoenix Roentgen Therapy of Inflammations
Louis C B Baldwin Phoenix Treatment of Secondary Anemia
Robert S Flinn Phoenix Treatment of Nephritis
Robert K Smith Tucson Postpartum Hemorrhage
Meyer I Leff Glendale Common Sense About Medical Ethics

CALIFORNIA

Personal—Dr Edward B Shaw has been promoted to associate clinical professor of pediatrics at the University of California Medical School, San Francisco effective July 1—Dr Wilton L Halverson has been appointed health officer of Pasadena, succeeding Dr Jay D Dunshee who is now health director of the California State Department of Public Health—Dr Charles Newell Mell is the new health officer of Emeryville succeeding Dr Emily H Emery—Dr Harold G Gentry has resigned as health officer of Redlands

Deaths from Automobile Accidents Increase—There were 2403 deaths caused by automobile accidents in California in 1933, as compared with 2347 in 1932 Of the first total, 1816 victims were men and 587 were women Fewer deaths occurred in collisions of motor vehicles with pedestrians but

more in collisions of motor vehicles with other motor vehicles, railroad trains and electric cars Out of 809 deaths in accidents involving motor vehicles and pedestrians, 221 were of persons 65 years of age and over, while fatalities in noncollision accidents involved the age group 15 to 24 years More deaths in collisions of motor vehicles with motor vehicles occurred in the age groups 15 to 24 years and 25 to 34 years than any others

COLORADO

Course in Ophthalmology and Otolaryngology—The twelfth annual meeting of the Colorado Congress of Ophthalmology with its attendant graduate course in ophthalmology and otolaryngology will be given in Denver, July 23-August 4, a week to be devoted to each subject Guest speakers will be Drs Sanford R Gifford, Chicago, Frank E Burch, St Paul, Edward Cecil Sewall, San Francisco, Isidore Friesner, New York, and Gordon B New, Rochester, Minn The fee for the course is \$50 and application for registration should be made to Dr Harry L Whitaker, 1234 Republic Building, Denver

CONNECTICUT

Compulsory Examination of Prisoners—The Public Health Council of Connecticut recently passed the following regulations as amendments to the sanitary code, effective June 15

The conviction of any person for any offense involving sexual promiscuity or illicit sex relations shall constitute reasonable grounds for a health officer to believe that that person may have been exposed to a communicable disease and shall justify the examination and such other measures of control of that individual as are deemed necessary and proper by the state department of health for the protection of public health and the prevention of spreading of diseases

It shall be the duty of the warden or other person in charge of any prison or jail in the state of Connecticut to notify the prison or jail physician in writing within twenty four hours on the receipt of a prisoner who may have been exposed to a communicable disease and of every prisoner who has been convicted of any offense involving sexual promiscuity or illicit sexual relations A routine medical examination shall be made on every prisoner whose conviction involves sexual promiscuity or illicit sex relations Upon expiration of the sentence any person having syphilis or gonorrhea whether in an infectious or noninfectious stage in need of follow up treatment shall be reported to the state health department

FLORIDA

Personal—Honorary memberships were conferred on Drs Andrew P Albaugh, Tarpon Springs, John D Peabody, St Petersburg and Charles L Jennings Jacksonville, by the Florida Medical Association at its annual meeting in Jacksonville April 30—Dr Leland F Carlton Tampa, was named president-elect of the Florida Railway Surgeons Association at its annual meeting in Jacksonville, April 30 and Dr Walter C Page, Cocoa, was installed as president Dr Edmund W Warren Palatka, for many years secretary-treasurer, was made a life member

Society News—Dr Odis G Kendrick Tallahassee was elected chairman of the Florida Crippled Children's Commission at its annual meeting recently—The Winter Haven Medical Society was recently created with Drs Omer R Alexander and Wiley T Simpson as president and secretary respectively—Dr Horton R Casparis, Nashville was the guest speaker at the annual session of the Florida Tuberculosis and Health Association in Jacksonville, April 30, his subject was "Prevention and Control of Tuberculosis"

ILLINOIS

Annual Clinic—The Winnebago County Medical Society cooperated with St Anthony's Hospital Rockford in sponsoring the fourth annual clinic at the institution in May Speakers included the following physicians

David S Hillis associate professor of obstetrics Northwestern University Medical School Chicago
Robert A Black professor of pediatrics Loyola University School of Medicine Chicago
Max S Wien assistant professor of dermatology University of Illinois School of Medicine Chicago
Henry W Meyerdinger associate professor of orthopedic surgery University of Minnesota Graduate School of Medicine Rochester Minn
Aaron Arkin associate clinical professor of medicine Rush Medical College Chicago
Theodor Lang pathologist of St Anthony's Hospital

Chicago

Dr C J Herrick Becomes Professor Emeritus—Charles Judson Herrick, ScD chairman, department of anatomy, Division of Biological Sciences University of Chicago, will become emeritus professor in July, having reached the retirement age The administration of the department during the coming year has been referred to a committee consisting of George W Bartelmez, PhD, Dr Basil C H Harvey and Dr Charles H Swift Dr Herrick succeeded Dr Robert R

Bensley, who became professor emeritus in 1933 after holding the position since 1906 Both Dr Herrick and Dr Bensley will continue their research in the Hull Laboratory of Anatomy

IOWA

Society News—Dr Edna K Sexsmith, Greenfield, was elected president of the State Society of Iowa Medical Women at its annual meeting in Des Moines, May 8 Dr Cora B W Choate, Marshalltown, is secretary—At a joint meeting of the Pottawattamie and Woodbury County medical societies in Council Bluffs, May 29, Dr George W Koch, Sioux City, among other speakers, discussed "Duodenal Stasis"—Dr Frank W Fordyce spoke on "Perforation of Peptic Ulcer" before the Des Moines Academy of Medicine and Polk County Medical Society, May 29, and Drs Nevin Boyd Anderson and Dwight C Wirtz on "Etiology of Goiter and Its Relation to Children in Des Moines" and "Some Factors of the Backache Syndrome," respectively

KENTUCKY

Personal—It is reported that Dr John D Jackson, Danville, has been named physician to the Kentucky School for the Deaf, Danville, succeeding Dr Oscar L May—Dr William R Thompson, Lexington, has been appointed psychiatrist at the Central State Hospital at Lakeland Dr Thompson was formerly assistant superintendent of the Eastern State Hospital at Lexington but recently has been engaged in private practice

Society News—Speakers before the Lawrence County Medical Society, Louisa, May 3, were Drs Walter E Vest and Robert J Wilkinson, Huntington, W Va, on "Abscess of the Lungs" and "Cancer of the Breast," respectively, and Joshua B Lukins, Louisville, "The Legal Aspect of Medicine"—Speakers at the semiannual meeting of the Fifth District Medical Society, Carrollton, May 10, were Drs Isaac A Arnold, on gas gangrene, David Y Keith, radiology in general practice, and Louis Wallace Frank, uterine carcinoma, all of Louisville.—At a meeting of the Third District Medical Society, Bowling Green, April 18, speakers were Drs Austin Bell, Hopkinsville, Harrison S Shoulders, Hollis E Johnson and Alfred Blalock, all of Nashville All discussed aspects of tuberculosis—Dr John S Boggess, Washington, D C, presented a paper on "Menace of Human Defectives" before the Jefferson County Medical Society, June 18

MASSACHUSETTS

Personal—Dr Hans Zinsser, professor of bacteriology and immunology Harvard Medical School, will go to the University of Paris for the second half of the academic year 1934-1935 as exchange professor from Harvard

University News—During the annual meeting of the Massachusetts State Medical Society, a local committee sponsored a luncheon meeting of graduates of the University of Maryland Medical School, Baltimore Medical College and the College of Physicians and Surgeons, Baltimore, now residing in Massachusetts, about fifty of the more than 200 graduates of these schools now practicing in the state attended the meeting, the first one held in twenty years It is planned to hold a similar meeting in Boston next year Dr Charles E Gill, 8 Irvington Street, Boston is secretary

Library of Legal Medicine—The George Burgess Magrath Library of Legal Medicine at Harvard Medical School was dedicated, May 23 Housed in the Faculty Club, the library is named for Dr Magrath medical examiner of Suffolk County, who is the first occupant of the chair of legal medicine at Harvard This chair was established in 1932 by Mrs Francis Gleffner Lee of Littleton, N H, who is also the donor of the new library The library will have 1 000 volumes of rare editions According to the *New England Journal of Medicine*, it is the intention of the donor that it shall be the best collection of literature extant relating to the specialty

MICHIGAN

Society News—Dr Howard H Cummings, Ann Arbor addressed the Monroe County Medical Society, April 19 on Gynecology and the General Practitioner—At a meeting of the St Clair County Medical Society in Port Huron, May 15 Dr Frederick C Kidner, Detroit discussed fractures—The Houghton County Medical Society was addressed in Houghton June 5 by Drs Harry E Johnson Redridge and Frank F Marshall, L'Anse on Mucin Treatment of Gastric Ulcer and "Asthma Etiologic Factors" respectively—Dr Warren L Babcock, medical director Grace Hospital Detroit was elected president of the Michigan Hospital Association at the annual session, May 25

MINNESOTA

Impostor Reinardy Sentenced—Robert G Reinardy, St Paul, was sentenced by Judge Michael of the district court, April 27, to a term of not to exceed ten years at the St Cloud Reformatory, following his plea of guilty to a charge of forgery in the second degree For the past six months, Reinardy has been posing in St Paul as a physician under the name of Dr R G Brian Using this name, he cashed a check for \$9 in a grocery store When the check returned from the bank marked "no account" the proprietress telephoned the state board of medical examiners for the address of Dr Brian Since there was no Dr Brian registered under the basic science law, an investigation followed and resulted in Reinardy's arrest April 16 A kit containing medicines and narcotics was found in his home Reinardy admitted that he had cashed several checks and posed as a physician He examined patients and furnished them with medicine he said, but denied that he ever made a charge for his services His sentence was stayed and he was placed on probation for three years In addition, he was ordered to make full restitution for the checks he cashed, which, it was stated, approximate \$465

MISSOURI

Dr Cowdry Gives First Charlton Lecture—Edmund V Cowdry, Ph D, professor of cytology, Washington University School of Medicine, St Louis, delivered the first annual Harry Hayward Charlton Memorial Lecture in anatomy at the University of Missouri School of Medicine, May 21 His subject was "The Significance of Nuclear Changes in Virus Diseases"

Society News—Dr Carliss Malone Stroud addressed the St Louis County Medical Society, May 23, on "Diagnosis and Treatment of Certain Allergic Conditions"—Drs Higdon B Elkins and George E Grim addressed the Adair County Medical Society in Kirksville, April 5 on nephritis—At a meeting of the Buchanan County Medical Society, May 2, Dr Frederick Gregg Thompson, St Joseph, discussed "Section of the Phrenic Nerve in the Neck"—Dr William A Fuson, Trenton, talked on "Sickle Cell Anemia" before the Grundy County Medical Society at Trenton, May 1—Dr Arthur E Hertzler, Halstead, Kan addressed the Jasper County Medical Society, April 24, on diagnostic problems of acute conditions in the abdomen

NEW HAMPSHIRE

Discharge of Waste into Lake Prohibited—The discharge of sewage at any point on the waters of Lake Winnepesaukee is prohibited under a recent regulation of the state board of health There is a similar prohibition already in effect at Lake Pausus This regulation applies to vessels, boats and other structures operating or maintained on the waters of these lakes

NEW YORK

Dr Hartman Goes to Ohio State University—Frank A Hartman, Ph D, professor of physiology at the University of Buffalo since 1919, has accepted the professorship of physiology at the Ohio State University School of Medicine Columbus, according to the *New York Times* June 24 Dr Hartman was awarded the Chancellor's Medal of the University of Buffalo in 1932, in recognition of his research on Addison's disease

Personal—The course in surgical methods in experimental biology to be held this summer at the Biological Laboratory, Cold Spring Harbor, will be directed by Dr George W Corner, professor of anatomy University of Rochester School of Medicine and Dentistry, Rochester instead of Edgar Allen, Ph D, professor of anatomy, Yale University School of Medicine Dr Allen has had to change his plans on account of illness—Dr Charles M Burdick has retired as superintendent of the Dannemora State Hospital for Criminal Insane, a position held since 1922

New York City

Society News—The Medical Society of the County of New York was addressed May 28 by Dr Abraham J Rongy on "The History of Abortion" Dr Isador W Kahn "The Abortion Racket in New York City" and Reed B Dawson Esq "The Legal Responsibilities of the Physician in Cases of Abortion"

Personal—Dr Sam Z Levine has been appointed acting pediatrician in chief to New York Hospital and acting professor of pediatrics at Cornell University Medical College, succeeding Dr Oscar M Schloss who recently became professor of clinical pediatrics and attending pediatrician to the

hospital—Dr Charles Gordon Heyd was recently appointed professor of clinical surgery and executive officer of the department of surgery of the New York Post-Graduate Medical School and not at Columbia University College of Physicians and Surgeons, as reported in THE JOURNAL, June 9, page 1949. Dr Allen O Whipple is executive officer of the department of surgery at the College of Physicians and Surgeons, professor of surgery and director of the department of surgery at Presbyterian Hospital.—The honorary degree of doctor of science was bestowed on Drs Florence R Sabin and Ludwig W Kast by Syracuse University at the annual commencement, June 4. At the same time Dr Livingston Farrand, president of Cornell University, received the honorary degree of doctor of laws.—Dr William Seaman Bambridge, after twenty-one years service, has been promoted to medical director with the rank of captain in the U S Naval Reserve.

NORTH DAKOTA

State Medical Election—Dr Archibald D McCannel Minot, was chosen president-elect of the North Dakota State Medical Association at the annual meeting, May 29. Dr Clyde E Stackhouse, Bismarck, was installed as president and Dr Albert W Skelsey, Fargo, was reelected secretary. The next annual session will be in Minot.

PENNSYLVANIA

Society News—Drs John T Burnite and Josiah F Reed addressed the Dauphin County Medical Society, Harrisburg, June 5, on "Modern Treatment of Sterility" and "Modern Contraceptive Methods".—Dr Pascal Brooke Bland, Philadelphia, addressed the Harrisburg Academy of Medicine, June 19 on "Intracranial Damage of the New-Born".

Medical Alumni Day—The University of Pittsburgh School of Medicine held its first homecoming day for alumni June 2. More than fifty faculty members conducted clinics and at luncheon Dr Ralph H Boots, New York, of the class of 1915, made an address on "Medical Viewpoints Regarding Arthritic Diseases". The alumni also joined in the annual faculty dinner to the graduating class, at which Dean Raleigh R Huggins presided and Dr deWayne G Richey, Pittsburgh, spoke on "Medical Traditions of Western Pennsylvania".

Philadelphia

Lowest Record for Typhoid—Philadelphia had 105 cases of typhoid with twelve deaths during the past year, the lowest mark ever reached, the health department announced. In 1910 there were 1,745 cases with 272 deaths, in 1925 there were 234 cases with 45 deaths.

Hospital News—Dr Mitchell Bernstein was recently elected chief of medical service at the Jewish Hospital.—Approximately 900 tuberculosis patients were cared for in general hospitals of Philadelphia during 1933, according to a survey made by the Philadelphia Health Council and Tuberculosis Committee, this marks a radical change from the former policy of general hospitals, which would not accept cases of tuberculosis until recently.

Personal—Dr Robert H Ivy, professor of maxillofacial surgery, University of Pennsylvania Graduate School of Medicine, has been elected to membership in the Imperial German Academy of Natural Sciences.—Dr Luther C Peter received the honorary degree of doctor of science from Susquehanna University at the annual commencement June 4.—The honorary degree of master of arts in medicine was conferred on Dr Wilmer Krusen at the annual commencement of Hahnemann Medical College and Hospital, June 7, Dr Krusen delivered the address of the occasion.

Faculty Changes at Jefferson—Dr Ross V Patterson, dean of Jefferson Medical College since 1906, has been named Sutherland M Prevost professor of therapeutics, succeeding Dr E Quin Thornton, who became emeritus professor of therapeutics. Other changes in the faculty include the following promotions:

Dr Michael A Burns professor of neurology
Dr John M Fisher clinical professor of surgery
Dr John T Brundage assistant professor of pharmacology
Dr Robert M Lukens assistant professor of bronchoscopy and esophagoscopy

At the annual alumni dinner May 31, busts of Mr Alba B Johnson, president of the board of trustees and of Dr Patterson the dean were presented to the college. The graduating class of 1934 presented a portrait of Dr J Torrance Rugh James Edwards professor of orthopedic surgery to the college April 27.

RHODE ISLAND

State Medical Meeting and Election—Dr Roland Hammond, Providence, was chosen president-elect of the Rhode Island Medical Society at the annual meeting, June 7, in Providence. Dr Albert H Miller, Providence, was installed as president and Dr James W Leech, Providence, was reelected secretary. The annual session for 1935 will be held in Providence, June 6. Speakers at this year's session were:

Dr Frank M Adams Providence Middle Ear Disease
Dr Frank S Hale Providence Pernicious Vomiting of Pregnancy
Dr Clifton B Leech Providence Use of Quinidine Sulphate in Heart Disease
Dr Eske H Windsberg, Providence Total Removal of Right Lung for Bronchiectasis

A symposium on diseases of the biliary system was presented by Drs Irving J Walker, Franklin W White, William Richard Ohler and John B Hazard, Boston. Senator Felix Hebert was the speaker at the annual dinner at the Metacomet Golf Club in the evening.

SOUTH DAKOTA

Personal—Dr Gustav A Landmann, for twenty years mayor of Scotland was recently reelected.—Dr John S Tschetter has been named city commissioner of Huron, in charge of the public safety department.

TEXAS

Health at El Paso—Telegraphic reports to the U S Department of Commerce from eighty-six cities with a total population of 37 million, for the week ended June 16, indicate that the highest mortality rate (21) appears for El Paso, and the rate for the group of cities as a whole, 10.3. The mortality rate for El Paso for the corresponding period last year was 11 and for the group of cities, 10.6. The annual rate for eighty-six cities for the twenty-four weeks of 1934 was 12.2 as against a rate of 11.6 for the corresponding period of the previous year. Caution should be used in the interpretation of these weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

GENERAL

Results of Board Examinations—Sixty-one candidates were examined by the American Board of Obstetrics and Gynecology in Cleveland, June 11-12. Fifty were approved, ten were conditioned and one failed.

Eradication of Animal Diseases—Plans for eradication of animal diseases were to have been launched the first part of June in twenty-four states and the District of Columbia. The activities will be a continuation, along intensified lines, of disease eradication programs conducted in the past by the bureau of animal industry and cooperating state and local veterinary officials. The states in which the work will be expanded first, largely in cattle tuberculosis eradication, are Arizona, Arkansas, California, Colorado, Georgia, Indiana, Iowa, Kansas, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Mexico, New York, Ohio, Oklahoma, Pennsylvania, Tennessee, Texas, Vermont, Virginia, Wisconsin, Wyoming and the District of Columbia.

Society News—The American College of Physicians will hold its nineteenth annual clinical session in Philadelphia, April 29-May 3, 1935.—Mr Charles Frankenger, librarian, Medical Society of the County of Kings and Academy of Medicine of Brooklyn, was elected president of the Medical Library Association at its thirty-sixth annual meeting in Baltimore, May 21-24, and Miss Frances N A Whitman, librarian, Harvard University, schools of medicine and public health, Boston, secretary. The next annual session will be held in Rochester N Y in June 1935.—The Central Association of Obstetricians and Gynecologists will hold its fifth annual meeting in Milwaukee October 5-7.

Sight Conservation Activities—The National Society for the Prevention of Blindness recorded in its annual report among other points that five states are now requiring automobiles to be equipped with nonshatterable glass as a means of safety, that this type of glass has been perfected for use in spectacles that the society has adopted a positive program in cooperation with other organizations of active promotion of education in prenatal care for syphilitic mothers, that in spite of curtailment of many activities in education, seventeen new sight saving classes were established during the year. A trial study of the causes of blindness among children in schools for the blind disclosed that many of these children might regain

sight through proper medical or surgical treatment, and the society in cooperation with the American Foundation for the Blind and the Committee on Statistics of the Blind is taking measures to provide treatment

Physicians Requested to Safeguard Their Narcotics—The Bureau of Narcotics of the U S Treasury has requested in connection with its annual report of thefts of drugs that physicians and druggists exercise greater precautions looking to a further reduction of these thefts. The number of thefts in 1933 was 831, considerably less than the number in 1932, but still large, especially when it is considered that all the drugs went into illicit channels, Acting Commissioner Louis Ruppel pointed out. All legitimate handlers of narcotic drugs are asked to store them under lock and key, preferably in metal cabinets or safes, since the check up of many thefts has shown that they were committed without trouble, owing to the use of wooden cabinets and unlocked cases. Legal purveyors were cautioned also against letting the government order forms issued to the drug trade and the medical profession fall into the hands of illicit traffickers and addicts. The greatest number of thefts were reported in the South and Southwest.

PUERTO RICO

Malaria Control—The New York *Times* reports that a program of malaria control in Puerto Rico has resulted in an appreciable reduction in the death rate. In the first two months 51,000 patients were treated with quinine, which was purchased in sufficient quantity for 28,000,000 doses. Public school records showed that absences of children had been cut from 40 to 10 per cent.

CANADA

University News—Dr Charles H Best, professor of physiology and assistant professor of hygiene and preventive medicine, University of Toronto Faculty of Medicine gave a course of three lectures at University College London, recently on "Role of the Liver in the Metabolism of Carbohydrate and Fat."

Personal—Dr George J Wherrett of the staff of the Fort Qu'Appelle Sanatorium, Fort San, has been appointed executive secretary of the Canadian Tuberculosis Association. He succeeds Dr Robert E Wodehouse, who was recently appointed deputy minister of health in the department of pensions and national health at Ottawa.

Celebration in Winnipeg—In connection with a celebration of the fiftieth anniversary of the University of Manitoba, a "clinical week" was held by the medical school, May 14-19. Subjects handled in clinics included fractures, surgical emergencies, functional disorders of the nervous system, obstetric subjects, diseases of children and a medical symposium on digitalis therapy, anemias, essential hypertension and diarrhea in adults. Addresses were made at luncheon and in the evening by the following speakers, among others:

Dr David A Stewart, Ninette Progress of Medicine in Fifty Years
Dr Norman M Keith, Rochester Minn, Essential Hypertension
Dr William Boyd, Winnipeg, The Gordon Bell Memorial Lecture

FOREIGN

Dr Martin Heads Pasteur Institute—Dr Louis Martin, nominal head of the Pasteur Institute since the deaths of Dr Albert Calmette and Dr Emile Roux last winter and chief of the serotherapy service, was officially appointed director by the institute board, May 16, the New York *Times* reported. He has been associated with the institute for forty years. Dr M G Ramon, chief of the veterinary service of the Pasteur Institute at Garches, succeeds Dr Calmette as under director.

International Congress of Radiology—The fourth International Congress of Radiology will be held at Zurich, Switzerland, July 24-31. Meetings will be held during the first four days at the University of Zurich and the Federal Institute of Technology. The Swiss Roentgen Society will entertain the delegates at a luncheon on the opening day, a festival of Swiss national costumes will be presented, July 27, and there will be a trip to St Moritz, July 28. Dr Hans E Walther, Zurich, Gloriastrasse 14 is secretary of the congress.

British Prizes Awarded—The Sir Charles Hastings Clinical Prize of the British Medical Association for 1934 has been awarded to Dr Dulcie Helen Lukis, New Malden for a study entitled "The Problems of Anesthesia in General Practice." The Katherine Bishop Harman Prize, awarded every second year for study and research in connection with risks apt to arise in pregnancy and childbirth was presented

to Prof John M Munro Kerr, Glasgow, for his clinical study "Maternal Mortality and Morbidity: A Study of Their Problems."

International League Against Cancer—An International League for the Combat of Cancer was founded in Paris, March 24, 1934, at a meeting attended by representatives of thirty-two nations, it is reported. Former French minister Godart was elected president. It is planned to have a permanent office in Paris and to publish a yearly report. The league also plans to organize an international convention in Rome, probably for 1936, to seek international cooperation in the field of statistics and in the campaign against quackery and in exchange of literature.

International Conference on Tuberculosis—The ninth conference of the International Union Against Tuberculosis will be held in Warsaw, Poland, September 4-6. Three subjects will be discussed: biologic variations of the tubercle bacillus introduced by Professor Karwacki, Poland; tuberculosis of the bones and joints, by Professor Putti, Italy; and use and organization of tuberculosis dispensaries, by Prof Leon Bernard, France. Americans listed for discussions are Drs Esmond R Long, Philadelphia, Clarence L Hyde, East Akron Ohio, James A Miller, New York, and Berthold S Pollak, Secaucus, N J. Information may be obtained from the National Tuberculosis Association, 50 West Fiftieth Street, New York. A special party is being arranged to go from the United States, and for those who can leave in advance a trip to Russia is scheduled that will permit delegates to arrive in Warsaw in time for the meeting.

Personal—Sir Robert McCarrison of the Indian Medical Service recently was awarded the prize of the Arnold Flinker and Julius Wagner-Jauregg Foundation of Vienna for a paper on the etiology of goiter which he delivered at the International Congress on Goiter in Bern in 1933. The prize, 2,000 Austrian shillings, had never before been awarded outside of Austria. Dr Edward Johnson Wayne has been appointed professor of pharmacology at the University of Sheffield. He will succeed Dr Edward Mellanby, who was appointed in 1933, but was almost immediately afterward appointed secretary of the Medical Research Council following the death of Sir Walter Fletcher. Dr Hugh Crichton-Miller has resigned the directorship of the Institute for Medical Psychology, London. He was succeeded by Dr J R Rees. Dr Miller founded the institute. Dr Karl Frederick Wenckebach, emeritus professor of medical pathology and therapy at the University of Vienna, recently celebrated his seventieth birthday. Dr Andrew Hunter, professor of physiologic chemistry, University of Glasgow, has been elected dean of the faculty of medicine for 1934. Dr Farquhar Macrae, formerly lecturer in clinical surgery, University of Glasgow, has been appointed secretary of the Indian Medical Council, organized in 1933. Lord Moynihan, emeritus professor of surgery, University of Leeds, and Sir Frederick Gowland Hopkins, president of the Royal Society and professor of biochemistry, University of Cambridge, received the honorary degree of doctor of laws from the University of St Andrews at its graduation exercises, June 29. Mr Frank W Ramsay, Bournemouth, president-elect of the British Medical Association, has resigned because of ill health and Dr Sydney Watson Smith has been appointed to fill the office until the annual meeting of the association. A motion was also adopted to nominate Dr Smith for president for 1934-1935.

Government Services

Memorial to Colonel Bruns Dedicated

The dedication of a portrait of Col Earl H Bruns took place in the Officers' Club of the Fitzsimons General Hospital, Denver, May 24. Col Carroll D Buck was chairman. Speakers on the program included Dr Harry J Corper, "Evolution of the Memorial." Governor Ed C Johnson, "Colorado's Appreciation," Mayor George D Begole, Denver and Colonel Bruns", Major William C Pollock, "Colonel Bruns the Teacher", Major Paul M Crawford, "Colonel Bruns the Physician", Col Robert M Hardaway, "Colonel Bruns and His Civilian Conferees." Dr Arnold Minnig, Tributes, Dr Cicero L Lincoln Jr, "Colonel Bruns' Contributions to Medical Literature." Dr Henry Sewall presented the portrait to the tuberculosis service of the U S Army. The artist was Mr J I McClymont. Colonel Bruns died in 1933.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 2, 1934

The Development of Municipal Hospitals

The president of the Socialist Medical Association is Mr Somerville Hastings, a laryngologist to the Middlesex Hospital, the ablest and most important of the small band of medical socialists. The London County Council has been captured by the socialists (not because London has become socialist but because of the apathy of a large part of the electorate), and Mr Hastings is now chairman of the public health committee, which controls the biggest public health organization in the world and the huge municipal hospital system of 30,000 beds. Mr Hastings' scheme for completely socializing the medical profession has been described in *THE JOURNAL* (February 24, p 628). In opening a discussion at the annual meeting of the Socialist Medical Association (*Lancet* May 26 p 1136) on the "Present Scope and Future Development of Municipal Hospitals" he pointed out that recent legislation transferred the powers of "guardians of the poor," who maintained hospitals that were mainly infirmaries for the poor to the local health authorities. The latter were empowered to establish hospitals, in the ordinary sense of the term, for the use of the inhabitants of their districts. The result was that a large number of authorities (including London) had appropriated the old poor-law hospitals and were running them as municipal hospitals. But Mr Hastings thought it a disaster—naturally as a socialist he would—that the cost of maintenance and treatment for any disease, other than infectious, had to be recovered from the patient who could afford to pay. This severance from the poor law opened enormous possibilities of development especially in urban areas. Specialization became possible, certain wards in one hospital could be set aside for the treatment of cancer by radium and roentgen rays, in another hospital for eye cases, facilities could be provided for thoracic surgery or bronchoscopic work in a third, and so on.

A local authority could not legally refuse admission to any destitute patient if his medical necessities demanded immediate hospital treatment. (This represents the old poor law treatment.) Accordingly, the number of beds had to be the highest that could possibly be demanded. Consequently in the summer months a good many beds were vacant, which could be used for operations that were not urgent. A consultative outpatient department then became essential. There the local authority could carry out its tuberculosis, venereal disease and school clinics. Thus medical centers for the districts could be developed. This unification should prove of value for research and medical education. Instruction in fevers had long been given in municipal hospitals, and everything possible should be done to bring the stimulating and critical influence of students within the walls of all hospitals. There was nothing to prevent the development of medical schools in association with municipal hospitals. Mr Hastings might have given the example of the Hammersmith Hospital, which, as described in previous letters to *THE JOURNAL* is to be the hospital of the recently formed Postgraduate Medical School of London. This is a municipal hospital. It was not found possible to associate the school with any of the great voluntary hospitals, as they are medical schools fully occupied in undergraduate teaching. Mr Hastings stated that these developments were increasing confidence in municipal hospitals, which were being preferred by many to voluntary hospitals. The public was beginning to feel that the hospitals belonged to them and that they could go there

by right of citizenship and not as charity patients, and should anything go amiss they had the right to protest through their elected representatives.

Moving Roentgen Ray Pictures

At the Royal Society of Medicine, Dr Russell Reynolds gave a remarkable demonstration of moving pictures taken of subjects exposed to roentgen rays. As long ago as 1896, within a few months of Roentgen's discovery, Dr John MacIntyre demonstrated in Glasgow a film of the movement of the bones of a frog's leg taken with roentgen rays. But this was very large, and for human subjects the direct method, whereby a continuous film is substituted for the usual "still" picture, presents great difficulties. The method adopted by Dr Reynolds is to allow the rays to produce their effect on a fluorescent screen in the ordinary way and then photograph this with a film camera. He has so simplified the apparatus that he was able to take a picture of a moving hand at the meeting and produce this fully developed at its close. By moving pictures the exact movements at a joint, whether healthy or diseased can be studied and demonstrated to students. The movements of the heart and lungs are also shown in a form easy to study, and so are the movements of the alimentary canal after a bismuth meal. The possibility of linking up sound with the pictures has been considered. The movement and sounds of the heart might be recorded together and in this way some of the teaching with regard to what is heard with the stethoscope might be discontinued. At the same meeting Dr R Janker of Bonn gave a demonstration of moving roentgen ray films similarly produced.

The Reduction of Disease Among Milk Cattle

A committee appointed by the government to consider measures for reduction of disease among milk cattle, particularly of tuberculosis has presented a report. The president was Sir F G Hopkins, the biochemist, and the members included such experts as Prof E P Cathcart (physiologist), Dr A Stanley Griffith (pathologist and authority on bovine tuberculosis), and Prof J H Jones.

DISEASE COMMUNICATED TO MAN

Bovine tuberculosis is responsible for more than 2,500 deaths annually in Great Britain, and for a still greater amount of serious illness. Undulant fever is rarely reported in Great Britain, but possibly it often passes unrecognized. About 100 outbreaks of epidemic disease, due either to mastitis in cattle or to subsequent infection of milk by those handling it, have been recorded in this country since 1903. The most important outbreak occurred at Hove in 1929, when 1,000 families were affected and sixty-three deaths occurred. The committee recommended that routine veterinary inspection should be made obligatory for all local authorities. The veterinary service should be expanded under the immediate control of local authorities but with coordinating powers of the department of agriculture. The veterinary officers should be responsible for eradication of disease and should do the tuberculin testing for the purpose of milk designation.

THE ERADICATION OF TUBERCULOSIS

This scheme, which will require the active supervision of the Ministry of Agriculture, should provide for the following: 1 A list of tuberculosis-free herds tested with tuberculin from time to time under official supervision. 2 Free advice and free tuberculin-testing for owners who agree to make bona fide efforts to free their herds from tuberculosis, or who have established free herds. 3 Financial help where necessary by way of loans to approved owners for expenditure required by the veterinary inspector as necessary to eradication. 4 Securing to owners of disease-free herds of a higher price for their

milk 5 Measures to secure tuberculosis-free cattle being moved about and exposed for sale without the risk of contact with other cattle 6 All milk should be sold under an official designation and should attain a fixed standard of cleanliness It should conform to one of the following designations (a) "Certified milk"—which has not undergone any heat treatment and is derived from tubercle-free herds This milk should not be required to be bottled at the farm (b) "Pasteurized milk"—which has undergone once only a process of approved heat treatment in a plant licensed for the purpose (c) "Sterilized milk"—which has been raised to the boiling point or higher in a licensed plant (d) "Uncertified milk"—which has undergone no heat treatment and is not derived from tubercle-free herds but attains a certain hygienic standard

Increase in the Number of Physicians

The Medical Register at the beginning of the present year contained 56 741 names, the largest ever reached, and 340 students more than last year had registered their names At the session of the General Medical Council of Medical Education and Registration Sir Norman Walker in his presidential address quoted these figures and reminded the council that its first object was to improve medical education The boundaries of medicine were ever extending, and the last twenty years had seen even greater and more rapid changes than those that had led to the passing of the Medical Act of 1886 The council could not, however, frame a model curriculum which would suit every country and every school, and a hard-and-fast arrangement of subjects was impossible even if desirable Each licensing body was free to try out new methods and those found successful were likely to be imitated and perhaps improved on by others Other countries did not realize how much we gained from our unique system of external examiners (examiners drawn from outside medical schools) The meeting at the council of teachers from different schools was perhaps the most efficient way of diffusing information

The Effect of Noise on Work

The efforts to deal with the noise evil, produced by machinery in modern civilization, especially by automobile traffic, have been described previously (*THE JOURNAL*, Oct 21, 1933, p 1325, Oct 28, 1933, p 1402) The Anti-Noise League was formed with the support of prominent physicians, for the purpose of inducing the authorities to regulate by law forms of noise that are manifestly injurious to the community Lord Horder, chairman of the Anti-Noise League, presided at a lecture on "Research into the Effects of Noise on Work," delivered at the National Institute of Industrial Psychology by Prof F C Bartlett, director of the Psychological Laboratory of the University of Cambridge Professor Bartlett said that the world became more and more full of noise each year In almost every civilized country committees were appointed to investigate what was called "the menace of noise," and the facts about noise were slowly accumulating Noise might be defined as any sound which was treated as a nuisance and the qualities of any particular sound depended largely on the background against which it was experienced But certain characteristics of sound made them attract attention on almost any background The most important were loudness, ambiguity of direction and unfamiliarity It was only in certain special occupations that there was any evidence of serious damage to hearing by noise The boilermaker working inside a boiler might have to endure a loudness considerably greater than anything used in experiments on human beings Moreover, many of the constituents of the noise were of high frequency so that their loudness was greatly amplified That continued exposure might produce middle-ear inflammation and lead to permanent deafness seemed certain Some other industries might produce more or less similar effects, but except for

highly specific tasks no convincing case could be made out for loss of hearing But there were other ill effects of loud sounds The pneumatic drill, the hoot of the automobile, or the rattle of a busy city street might deafen nobody, but they masked sounds more important to the individual, such as conversation, and so produced irritation Masking was a physical effect, but its reaction on work was psychologic It slowly piled up annoyance and a feeling of defeat and so became a real enemy

PARIS

(From Our Regular Correspondent)

May 9, 1934

The Medical Congress of Tunis

A congress devoted to the study of medical questions pertaining to the French protectorates of northern Africa was held at Tunis under the chairmanship of Prof Charles Nicolle, now professor at the College de France in Paris but for many years director of the Institut Pasteur in Tunis Many French physicians crossed the Mediterranean for the occasion—also several Italian physicians The meeting, which was organized by the North African medical group, was presided over by Dr Brun, director of the Hopital Sadiki at Tunis The crusade against syphilis was the subject of papers by Colombani and Lepinay of Morocco, A Laeroux and Colonieu of Algeria, and Mazeris, Raynal and Louis Chauvin of Tunisia Everywhere may be observed the effects of the crusade undertaken against *Spirochaeta pallida* by the French physicians In Morocco, the mutilating tertiary types are becoming more uncommon In Algeria the number of antivenereal centers is increasing constantly (7 in 1928, 156 in 1930, and 178 in 1933) Here prostitution is the most dangerous factor In the rural districts, fatalism among the Mussulmans is a serious obstacle to the publicity campaign in favor of energetic treatment Tunisia seems to be the country the best organized to combat venereal disease The antivenereal equipment of Tunisia includes, at present, numerous detection and treatment centers for syphilis, not only at Tunis, where there is an excellent dispensary, but also in all the cities of the interior The number of doses of spirillicidal drugs, supplied gratuitously by the hygiene services, has risen from 11,551 in 1923 to 149,486 in 1932 At the same time, the expenditures have risen from 50 000 francs (\$3,250) in 1923 to 534 300 francs (\$34 729) in 1932

Eye conditions associated with congenital syphilis, so frequent in northern Africa, have been the subject of a research by Cuenot and Nataf, based on observations extending over nearly forty years and on 300,000 observations of patients, half of which were natives The authors employ mercury salts in preference to arsphenamines, which latter are used only when there are no changes in the deep membranes of the eye nor in the optic nerve They reject pentavalent arsenicals entirely

Arsenotherapy in the treatment of dementia paralytica and tabes was the second topic on the program and was presented by Dr Cassar, director of the Tunis prophylaxis center The Mussulman of Tunisia seems to have developed an immunity of his central nervous system toward attacks of *Spirochaeta pallida* Tabes and dementia paralytica are rare The treatment with arsphenamines, applied since 1919, has not changed the nature of syphilis as it appears in the natives The baneful effects of inadequate treatment with arsphenamines, which are observed in the European in the form of manifestations of the unapparent neurosyphilis, detectable by examination of the cerebrospinal fluid, are not found in the natives of Tunisia

In addition to numerous special communications presented by physicians of France and Africa, several lectures were given Professor Porot of Algiers spoke on the new ideas concerning the disorders of the cerebral circulation Dr Sabouraud of Paris on physicians as they disport themselves in fields outside of medicine Professor Morav of Paris on dermo-epidermic

grafts, Professor Debre of Paris, on tuberculosis in the child, Dr Diacono of Tunis, on the serologic problem of hemolysis, Dr Deschamps, on arteritis obliterans. In closing, Oran (Algeria) was chosen as the place of meeting for next year, and Professor Abadie was elected chairman.

The Congress of Lyons

A meeting of physicians of French hot springs and climatic resorts was held in Lyons. The attendance was large, as it was in association with Easter holidays. The study of heat treatment as applied to rheumatism, as defined for the first time at Lyons by Poncet, was the chief purpose of the meeting. Heat treatment as applied to respiratory disorders was a second topic. A somewhat new subject was touched on in several papers, namely, the pathogenic role of the humidity of the atmosphere, a subject especially fitting for Lyons, which, being situated at the confluence of the Rhone and the Saone, has a higher humidity than almost any other city of France. The days without a trace of rain are rare in Lyons. Mr Boudry of La Bourboule considered the question from the physiologic point of view. Mr Causy gave his views on the mechanism of the cause of pain by damp weather. The second day was devoted to a discussion on renal tuberculosis.

Experimentation on Man

In reviews of a rather more literary than medical tone, Professor Nicolle is publishing a series of articles on medical philosophy, characterized by perspicacity and containing conclusions of a life devoted entirely to experimentation. His articles are creating a sensation, as did also his book on the destiny of infectious diseases, in which he predicted the disappearance of certain diseases and the possible appearance of new ones. In this new series of articles he is considering the right to experiment on man. He energetically denies such a right, even on criminals. Human life should be sacred to man. One has not even the right to jeopardize one's own life. If Pasteur had inoculated himself first with rabies and the experiment had failed, it would have been a disaster for humanity. This having been said, and just at the moment when he would seem to have succeeded in convincing the reader of the truth of his statement, he admits that experimentation on man has been practiced since time immemorial and that every trial of a new medicine, a new serum, a new anesthetic, a new operative method is, essentially, experimentation, with merely the attenuation that it has always been preceded by trials on animals. But there are many instances in which conclusions based on trials on one species are not a priori applicable to other species, notably the human species. There is still a ravine to be crossed, and Nicolle reaches the conclusion that only the scientist is entitled to cross it, in the calmness of his conscience, after having weighed all the responsibilities and eventualities and having decided that the problem to be elucidated is of cardinal importance for humanity and can be solved in no other way. From this conception, to all appearances contradictory, the conclusion appears to be reached that the scientist, having no selfish interests and placed at the front of human progress, has rights belonging only to himself, which it behooves mankind to recognize. This conclusion appears somewhat strange, and Mr Nicolle states that he would not have adopted it if it had not been the only one possible, if the question was to have any issue.

The Academy's Oldest Member

Dr Guenot, formerly obstetrician to the hopital de Paris and past president of the Academy of Medicine, has completed his 102d year. His health is excellent, and he continues to carry on his studies in his library. He has presented to the Academy the two volumes that he recently published "Observations on Birds, Insects and Plants" and the third edition of the work "How to Live to Be One Hundred Years Old."

BERLIN

(From Our Regular Correspondent)

May 7, 1934

Genes, Chromosomes and Tumors

Prof K H Bauer of Breslau discussed recently the subject of hereditary biology in relation to tumors. He emphasized that at the beginning of every tumor blastoma cells develop. They originate from body cells, but modification of the cells cannot lead to tumor cells. Crossing has not been demonstrated, but a mutation of the gene can be assumed with a high degree of certainty, just as such mutation can be held responsible for the origination of hereditary diseases (multiple exostoses, xeroderma pigmentosum). The assumption that mutated genes are the substantial carriers of tumor qualities can be shown by the fact that the tumor cells give evidence not only of new but also of old functions in some form or other. A retrogression of mutation cells never occurs. Metastases and recurrences show the contamination or the remnants that support the mutation. Not every mutated body cell becomes a tumor cell, but every tumor cell is a mutated body cell. The peak of cellular division and the places of increased usage are chiefly involved. All influences that disturb the processes of regeneration further tumor formation. Examinations of tumor cells show abnormal conditions with respect to the chromosomes. In some cells, from 95 to 100 chromosomes (basic number 48) were demonstrated. In malignant tumors multiple mitoses were observed. The modifications in the number of the chromosomes furnish the stimulus for the new formation and for growth. Experimentally the agents that are employed biologically for the production of mutation in germ cells may be applied to tumor cells. Roentgen irradiation may cause roentgen carcinoma or sarcoma, likewise, radium may produce carcinoma and sarcoma in plants and animals, and arsenic may produce them in plants. As an indication of the influence of ultraviolet light, it may be stated that skin cancer in man develops only in surfaces exposed to the light. An increased incidence was observed on the skin of mariners and inhabitants of the rural regions. Tumors are a problem of the genes and the chromosomes. The therapeutic effects of roentgen rays are based on their influence on the make up of the genes. The frequency of tumors in man depends on the negative selection. The present longer duration of life leads to marked aging of the tissues and thus to carcinoma in aging persons.

Modern Work Methods

The Kaiser Wilhelm-Institut für Arbeitsphysiologie held recently a working session in Dortmund. Prof Dr Gium general director of the Kaiser Wilhelm-Gesellschaft, Berlin, explained that if Germany is to hold its own against other countries, increased importance must be laid on the highest quality of work. "We are seeking the best working methods. We are gathering experience that we may apply it in a truly social sense. Improvements in machines and apparatus are devised and tested, and our name has become known throughout the world."

A phase of the work is research on the best methods of saving the working strength of creative man, in order to preserve for him his defense forces for life in this machine age. Just what methods should be employed to accomplish this, it is the purpose of this session to discover.

Prof Dr Atzler director of the institute, introduced to the audience some of the problems of the physiology of work, the objective of which is to shape the industrial work of man in accordance with his capacities. Through years of energetic though quiet research, the weapons have been forged with the aid of which the burdens of mankind can be lightened. The maximum burden of work for juveniles, how to preserve the workman's working capacity as he grows older, and the best

methods to employ to strengthen the human body, such as have proved useful of late in the emergency field work service, have been ascertained through scientific research. Germany entails a loss of time and money from pneumoconiosis in miners, amounting to 4,500,000 marks (\$1,710,000) each year. It has been learned that susceptibility to this disease depends to a great extent on the individual structure of the nose, so that, with the aid of an ingenious apparatus, the susceptibility of applicants for work in the mines can be determined.

Prof Dr Kraut made some observations on the nutrition of workmen. Since the beginning of the economic crisis the food question among workmen has been serious. The decline in the quality of the diet is so marked that, along with other damages, there has been a reduction of working capacity. An improvement is expected primarily as a result of the measures adopted by the government and the large industrialists for the betterment of the employment situation. Greater knowledge and care in choosing the proper foods are needed. In recent studies on the food problem among workmen, a lack of high-grade animal protein was evidenced which condition can be improved with the means already at hand. The chief recommendation is an increase of milk consumption.

Attention was called also to the endeavor, by systematic research, to improve the quality of hand work so that it will be better able to compete with machine work. The form of tools used today is, to a great extent, determined by tradition rather than practical usefulness.

Heart Patients and Sport Activities

The question is often raised as to whether heart patients must renounce all participation in sports. Professor Unverricht, the director of the third Medizinische Universitätsklinik in Berlin, gives his views in the *Münchener medizinische Wochenschrift*. He takes the attitude that each individual patient must be considered separately. The desires of the patient must be considered, lest, by general prohibitions, a feeling of complete physical inferiority be induced. By careful measurement of the permissible physical activities the compensation processes demanded by the circulation of the patient with heart defects can be provided for. Thus the general capacity can be strengthened and the joy of living in such persons can be restored. Unverricht reached this conclusion on the basis of observations on juvenile patients who had been affected with mitral insufficiency, mild mitral stenoses, aortic insufficiency or mild aortic stenoses, although they presented no severe subjective symptoms. Exercising the greatest caution, he permitted the patients at first to perform passive movements and then to participate in active gymnastic exercises, finally he allowed them to engage in running, swimming, skating and paddling. He always introduced a mild form of exercise to reduce the tension and to relieve the strain, and he took care to provide also for adequate periods of rest. Before beginning a new form of exercise, the patients were required to participate in deep breathing. Every muscular movement furthers the blood circulation and lessens peripheral disturbances. It is true that the burden of the heart will be increased by the augmentation of the stroke volume. Exercise exerts a favorable influence also on the blood vessels, for they become thereby adapted to the performance of increased labor. Possibly the muscularis of the vessel walls will be strengthened and the venomotor performance will thereby be increased. Thus a compensation process has been consciously introduced, for exercise of the heart and the blood vessels is especially important for patients with heart defects to establish a reserve force in the event of a sudden increased demand on the circulatory system, whether in the form of a suddenly necessary physical exertion or to resist an attack of fever (infectious diseases).

In the changes in the size of the heart brought about under the influence of physical exercise the play of the capillaries is important, that is the development of the adaptability of the capillaries in the muscles and in the skin, hence, the evident value of air baths combined with physical exercise. Through stimulation of the skin, air baths have a tonic effect and increase the well being of the patient. Exercises requiring the exertion of one's strength to the limit, such as running or swimming a certain distance within a prescribed space of time were permitted only after completion of an adequate period of training. When the performance was increased slowly, there was never any essential enlargement of the heart. Great care was taken not to allow the patients to overexert themselves. They were supervised most carefully. No further accentuation of the exercises was permitted when any disturbances resulted, such as disturbed sleep, loss of appetite, mental depression, fatigue, irritability, or the like, symptoms that can be regarded as signs of beginning circulatory weakness and that are seen as fatigue manifestations, even in healthy sport adherents, after an exaggerated course of training. In the cases mentioned, a lowering of the blood pressure value, such as occurs in healthy persons who overexert themselves, was frequently observed. The physician must be personally familiar with the various forms of bodily exercise. The critical task of the physician is to apply to other constitutions his personal experiences, which are of course influenced by his own capacity to perform and his own bodily constitution, and to estimate the capacity of the patient's organism to react to various sport activities. If patients take a stubborn attitude and show an inclination to make records for themselves at any cost, the experiment, as far as they are concerned, should immediately be discontinued. In dealing with heart patients it must constantly be emphasized that the quality of the performance, from the point of view of speed and skill, is a secondary matter.

The Combating of Tuberculosis

A new Prussian law establishes stricter regulations for combating tuberculosis. Heretofore only contagious cases of pulmonary and laryngeal tuberculosis and deaths from these disorders were notifiable, now every death from tuberculosis of any form must be reported, and also every case of tuberculosis of the skin. The notices are to be given to the health officer within one week in the event of illness and within twenty-four hours in case of death. The old regulations provided further that the householders' control committee must report to the proper station any change of residence of such a patient. The new regulations require that any change of residence of a suspected person also be reported. In fact, in general, the new regulations place more emphasis on the suspected patient, for example, they provide that suspected persons may be included in the care-taking measures established for the tuberculous.

The Excess of Females

Before the war there were in Germany 1,029 females to each 1,000 males. After the war this relationship was greatly changed, there having been 1,101 females to each 1,000 males. Gradually, however, the disproportionate number of females has been remedied and recent statistics place the relation at 1,059 females to 1,000 males, while the excess number of male births (1,000 girls to 1,055 boys) appears to be bringing about a further betterment. The present excess of females over males ranges around 1,900,000 and is found almost exclusively in the cities. The excess is largest in Berlin, namely, 1,169 females to 1,000 males. In rural communities the proportion is 1,002 females to 1,000 males, and in many small communities a considerable excess of males may be found. The older age groups present the highest excess of females.

BELGIUM

(From Our Regular Correspondent)

April 26, 1934

The International Association of Preventive Pediatrics

The third conference of the Association internationale de pediatrie preventive was held in Luxemburg, under the chairmanship of Mr Rischard, assisted by Professor Tailens of Lausanne and Mr Daniel Oltramare of Geneva. The first topic, "The Prophylaxis of Infantile Paralysis," was presented by Messieurs P. Rohmer and de Willemm-Clog of Strasbourg, who suggested the following: Early detection and isolation (and specific treatment) of all cases of poliomyelitis, including the abortive cases. Prophylaxis applied to all the children by means of convalescents' serum or the blood of adults. In time of epidemics, the creation of a central medical organization for the application of preventive measures, disinfection measures, sanitary supervision of the sale of food products. Measures to prevent the dissemination of infection: prohibition of all public gatherings. Compulsory notification of the disease, also of sporadic cases, in all countries.

Prof. Arvid Wallgren of Goteburg pointed out that the infective agent in poliomyelitis appears to have a wide distribution. Its distribution is more widespread than the frequency of the disease would lead one to suppose. The infection provokes but rarely clinical symptoms. In this respect, poliomyelitis resembles to a certain extent the chronic infectious type of tuberculosis. The prophylactic measures may be divided into two kinds: those designed to prevent contagion and those directed toward the prevention of the disease by persons exposed. Prophylaxis of exposure has two principal tasks to perform: (a) checking of the dissemination of the infective agent, and (b) prevention of the reception of the infective agent by man. The fact that only a small proportion of the persons exposed come down with the disease shows the great importance of predisposition with regard to the consequences of an infection. Resistance to the disease depends on (a) certain specific factors of biologic immunity and (b) certain constitutional and physiologic factors.

The congress reached the following conclusions: Since infantile paralysis is due to a micro-organism that is still unknown, there are still many obscure points in its etiology, consequently it is difficult to adopt categorically certain prophylactic measures. The little that is known appears, however, to justify the following attitude: infection may develop either by direct contact from child to child or through the mediation of nonparalyzed but nevertheless infected patients or of healthy germ carriers, or, from water or certain foods, more particularly, milk and milk products. In case of epidemics, one should apply the following measures:

1 Compulsory notification of the disease, including sporadic cases, should be introduced in all countries in which such a provision is lacking.

2 It is recommended that the organization of the crusade be entrusted, in case of an epidemic, to a medical service specially created for this purpose, in charge of a qualified physician who will decide on the measures to be taken and will direct their application. He should collect from the infected area all items of information gathered during the epidemic, with a view to their future scientific utilization. He should attach to himself a number of competent physicians and should offer the service of this body to the medical corps to aid in the detection of cases and the application of treatment, including prophylaxis.

3 The first measure to be applied is the early detection and isolation of all cases (including those of the abortive type) under the best possible conditions. Provision should be made for the disinfection of dwellings, personal belongings and excrements.

4 All necessary measures should be taken to prevent dissemination of the disease by water, milk and foods, special attention should be given to the supervision of commerce in food products.

5 Since in epidemics the infection appears to extend to the major part of the population, it is recommended that specific seroprophylaxis be studied and possibly applied in some form that the present status of science places at our disposal. It is advisable that large supplies of convalescents' serum, and possibly of other specific serums, be kept on hand in certain centers.

6 Germ carriers are, in the opinion of most authors, numerous in the infected regions and may be regarded as an important source of infection. Public assemblages of all kinds that might bring about a contact of persons of other regions with the inhabitants of the infected region should be prohibited. In the region invaded by the epidemic, camps and vacation colonies for children coming from other sections should not be established. With the same object in view, all movements of nomadic groups should be prevented. These principles should be kept in mind also in the movements of troops.

7 With regard to closing theaters, schools, consultation centers for mothers and infants, and the like, it is impossible to establish uniform rules. It is advisable to regulate these matters according to the special conditions surrounding each epidemic.

Prevention of Acute Disorders in the Nursing

The second topic before the conference was "Prophylaxis of Acute Specific Disorders in the Nursing." Professor Rott of Berlin presented a paper on "Significance, from the Social Hygiene Standpoint, of Influenza in Preschool Children." Prof. G. Frontali of Padua spoke on "Prophylaxis of Influenza in Early Childhood." The following conclusions were accepted by the congress: For the prophylaxis of acute disorders of the respiratory passages, associated with seasonal or epidemic influenza of early childhood, two kinds of measures are proposed:

MEANS OF AVOIDING CONTAGION

Means of avoiding contagion. In groups of children under institutional care, in cubicles, after rigorous elimination of all notified cases of other infectious diseases, the creation, in waiting rooms of consultation centers for children, of smaller apartments making it possible to keep children separate before consultation. Application to the infant wards of modern methods of air conditioning and the maintenance of a suitable temperature at all seasons of the year. All members of the personnel to report at once the slightest rhinopharyngeal disorder. The use by the personnel of a simple mask, at least with the appearance of the first symptoms, and the regular examination of the personnel to exclude from service all cases of influenza as soon as they appear. The application of these measures to every person coming to visit the children, and, if possible, the rule that children may be seen only through a glass partition. Impressing on the mothers the importance of their own rhinopharyngeal disorders from the beginning, for the health of the children, and the value of their wearing a protective mask when they nurse and care for the child.

MEANS TO STRENGTHEN A CHILD'S RESISTANCE
TO RESPIRATORY INFECTIONS

While still seeking means of immunization, one must not rely too much on their action in the present state of our knowledge of chemical agents. An endeavor should be made to acquire a better knowledge of the influences of weather. The physician should be instructed as to the importance of a well adapted diet, with emphasis on breast feeding, and if that is impracticable, the need of a complete and well balanced diet. Lyons was selected as the meeting place for the next session.

Marriages

HENRY KELSO CUNNINGHAM, Knoxville Tenn, to Miss Marie Russell Nninger of Roanoke, Va, June 9

HERBERT E MOORE to Miss Margaret Winstrom both of Birmingham, Mich, in May

JOSEPH F CARROW, Cadillac, Mich, to Mrs A L Dryer of Marion, June 3

HARVEY GARRISON JR, Jackson, Miss, to Miss Merideth Owens, April 25

CLYDE JOHN GEIGER to Miss Frances Ferry, both of Chicago May 26

Deaths

Joseph John Meyer ☉ Johnstown, Pa, Jefferson Medical College of Philadelphia, 1915, past president and secretary of the Cambria County Medical Society, member of the House of Delegates of the American Medical Association in 1931 served during the World War, on the staff of the Municipal Hospital and formerly on the staffs of the Conemaugh Valley Memorial and Mercy hospitals, editor-in-chief of the *Medical Comment*, aged 41 died May 8 of lobar pneumonia

Robert Lewis Richard ☉ Santa Barbara Calif Medical College of Ohio, Cincinnati, 1894, member of the American Psychiatric Association, was appointed assistant surgeon in the M C, U S Army, in 1903, promoted to captain in 1908 and resigned in 1912, at one time lecturer in psychiatry at the University of California Medical School San Francisco formerly superintendent of the Mendocino State Hospital, Tamage aged 64, died, May 25, in Los Angeles

Charles McPherson Curtis, College Park, Ga Southern Medical College, Atlanta, 1887, member of the Medical Association of Georgia, formerly mayor and councilman of College Park, for many years member of the school board and the Georgia Military Academy, aged 68, died May 6, of heart disease, following an operation for appendicitis

Alexander Marcy Jr, Riverton N I University of Pennsylvania School of Medicine, Philadelphia, 1881 member and past president of the Medical Society of New Jersey member of the House of Delegates of the American Medical Association in 1905 and 1911, formerly bank president aged 75 died, May 1

Robert Wallace Haddon ☉ Chicago, Harvard University Medical School, Boston, 1893, for many years professor of general and orthopedic surgery, Post Graduate Medical School, aged 68, died suddenly June 1, in the Post Graduate Hospital of heart disease, following an operation on the gallbladder

Mary Biddle McCollin Tatum, Radnor, Pa, Woman's Medical College of Pennsylvania, Philadelphia 1889, aged 66 senior member of the board of managers of the Woman's Hospital, Philadelphia, where she died, May 10, of acute suppurative appendicitis with peritonitis

Carl Richard Wagner ☉ Pasadena, Calif Rush Medical College, Chicago, 1921 fellow of the American College of Surgeons, on the visiting staff of the Pasadena Hospital aged 36 died, June 8 in a local hospital of injuries received in an automobile accident

Harvey H Martin ☉ La Porte, Ind, Chicago Homeopathic Medical College 1895, fellow of the American College of Surgeons, served during the World War surgeon to the Holy Family and Fairview hospitals aged 62, died May 27 of heart disease

Charles Henry Francis O'Neill, New York College of Physicians and Surgeons in the City of New York, Columbia University, 1894, member of the Medical Society of the State of New York, aged 64 died suddenly May 10 of heart disease

Paul Elias Kuhl ☉ Trenton N J, University of Louisville (Ky) School of Medicine 1907 on the staff of the Mercer Hospital aged 50 was found dead, April 19, of illuminating gas poisoning, self-administered

Mary Pearlee Manning, Hamilton Ohio Miami Medical College Cincinnati 1904, member of the Ohio State Medical Association public school physician aged 70 died April 11 of pneumonia

Horatio Pilkington, Philadelphia University of Pennsylvania School of Medicine Philadelphia 1879 member of the Medical Society of the State of Pennsylvania aged 78 died March 1

Thomas Wayne King, Lamoni, Iowa Ensworth Medical College St Joseph, Mo 1905, served during the World War, aged 53, died, March 28 of a skull fracture received in a fall

Charles W Miles Sr, Union City, Tenn University of Louisville (Ky) School of Medicine, 1872, formerly member of the board of education, aged 85, died, May 9, of pneumonia

Thomas Maxwell Toler, Washington La, Tulane University of Louisiana Medical Department, New Orleans, 1903, aged 61 died in April, of heart disease

Oliver Perry Jamison, Leon Iowa, Keokuk Medical College College of Physicians and Surgeons, 1905, aged 54 was found dead, April 6, of heart disease

Richard Henry Crisler, Burlington, Ky Long Island College Hospital, Brooklyn 1875, aged 86, died, May 6, in Cincinnati of myocarditis

Hans Herbert Johnston, Los Angeles New York Homeopathic Medical College and Flower Hospital, New York, 1915, aged 47, died, March 30

Vilda Isidore Groulx, Port Hope, Ont, Canada, University of Bishop College Faculty of Medicine, Montreal 1888, aged 71 died, in March

Hugh Custer Arey ☉ Excelsior Minn, University of Minnesota College of Medicine and Surgery, Minneapolis, 1902, aged 55 died May 20

Otto Louis Prien, Denver, University of Colorado School of Medicine, Denver, 1919, aged 51, died suddenly, May 7 of cerebral hemorrhage

Adoniram Judson Parker, Tacoma, Wash, University of Michigan Medical School Ann Arbor, 1883, aged 80, was found dead, April 16

Farris Lucius Jackson, Athens Ga Meharry Medical College Nashville, Tenn, 1917, aged 39, died suddenly, March 27, of heart disease

John F Schmershall, Jerome, Idaho Hahnemann Medical College and Hospital, Chicago, 1904, aged 58, died, May 2, in Santa Cruz Calif

John Calvin Snyder, Newark Ohio, Rush Medical College Chicago 1891, aged 81, died, May 11 of osteosarcoma of the upper jaw

Samuel L Witham, Fortville, Ind, Medical College of Ohio Cincinnati 1879, aged 84, died, May 7, of parenchymatous nephritis

Samuel Petersky, Vancouver, B C Canada, McGill University Faculty of Medicine, Montreal, 1906, aged 50, died, February 16

Austin Flint Townsend, Daleville Ala, Medical College of Alabama, Mobile, 1893, aged 63, died, April 7, of cerebral hemorrhage

Ames Wilsworth Slate, Indian Orchard Mass, Harvard University Medical School, Boston, 1900, aged 59, died, May 11

Lee Washbon Prescott ☉ Sloan Iowa State University of Iowa College of Medicine, Iowa City, 1905, aged 52 died, May 5

Otto Ignatius Rebesch, Buffalo University of Buffalo School of Medicine 1910, aged 52, died, April 25, of angina pectoris

Robert Terry, Gumbo Mo, Barnes Medical College St Louis, 1898 aged 69 died suddenly March 26, of heart disease

Henry George William Reinhardt, Muscle Shoals Ala, Rush Medical College, Chicago, 1897, aged 65, died, May 9

Thomas H Wilson ☉ Chicago, National Medical University Chicago 1903, aged 66 died, March 2 of heart disease

Evert Rodenhuis, Corsica S D, Detroit College of Medicine 1895, aged 70 died March 5, of arteriosclerosis

John Robert Moon, Eagleville Tenn University of Nashville Medical Department, 1878, aged 80, died, April 11

Frank P Klahr, Algona, Iowa Eclectic Medical Institute, Cincinnati, 1875 aged 84 died suddenly April 24

James T Jarrett, Roanoke Va, University College of Medicine Richmond 1898 aged 62, died April 1

William H Damon, Los Angeles Dearborn Medical College Chicago 1904 aged 61 died April 28

Alonzo H Ralston, Fredericksburg Ind Louisville (Ky) Medical College, 1897 aged 74, died May 1

Levi E Reck, Piqua, Ohio Medical College of Ohio, Cincinnati 1891 aged 67 died April 15

L G McElhany Success Ark (licensed in Arkansas in 1923) aged 57 died April 13

Correspondence

STANDARDIZATION OF DIGITALIS

To the Editor—Recent correspondence in *THE JOURNAL* (March 17, p 862, April 14, p 1246) regarding the standardization of digitalis leaves impressions that are likely to increase the dilemma of manufacturers

Pharmacologists are largely responsible for introducing, and carrying on the principal investigations in, bio-assays, but the practice of bio-assay is chiefly the concern of manufacturers of pharmaceutical products. The latter require simple, reasonably accurate and economical methods that will give reproducible results. Such methods will increase the popularity and promote the use of bio-assays.

There is no doubt of the frog method being simple, but there is serious doubt of its giving accurate and dependable results. Moreover, frogs are practically unobtainable in arid and semitropical regions and importations are costly, so that an assay on frogs may actually be more expensive than on cats. However, cats too are difficult to obtain in sufficient quantities almost everywhere. Of course, it might be possible to import frog-assayed or cat-assayed digitalis from other parts, but this may not be desired for various reasons. I need not dwell on other difficulties and complications of the cat method, such as the difficult handling of cats, the indispensability of surgical anesthesia and operation, the complex technical arrangements for bio-assay, the considerable individual variability in animals, at least twelve cats being necessary and not six as stated in the correspondence, and the use of death as a single end point. These various phases of the problem of digitalis assay have long ceased to be academic and the search for other methods has continued.

With the object of improving the bio-assay of digitalis, and of eliminating the difficulties and complications of the frog and cat methods, Shoemaker and I suggested in 1926, and I definitely proposed in 1929, the use of the pigeon. The pigeon method has not been referred to in the correspondence mentioned, although it has been sufficiently described in well known scientific journals. This is not the place to discuss the details of and results with this method. The following list of references will provide these matters.

- Hanzlik and Shoemaker *Proc Soc Exper Biol & Med* 23 298 1926
 Hanzlik P J *J Pharmacol & Exper Therap* 35 363 (April) 1929
 Hanzlik P J and Stockton A B *J Pharmacol & Exper Therap* 35 393 (April) 1929
 Hanzlik P J, Stockton A B and Davis S S *J Pharmacol & Exper Therap* 41 5 (Jan) 1931
 Hanzlik P J and Wood D A *J Pharmacol & Exper Therap* 37 67 (Sept) 1929
 Lehman A J and Hanzlik P J *Proc Soc Exper Biol & Med* 30 140 (Nov) 1932
 Lehman A J and Hanzlik P J *J Pharmacol & Exper Therap* 48 151 (June) 1933
 Dock William Stockton A B and Lehman A J *Am Heart J* 8 707 (June) 1933
 Stockton A B *Am Heart J* 9 248 (Dec) 1933

Applications of the method, with confirmations and suggestions, have been published by

- Burn J H *J Pharmacol & Exper Therap* 39 221 (June) 1930
 Guidi G *Rassegna di terap e pat clin* 2 129 (March) 1930
 Starnotti C *Rassegna di terap e pat clin* 2 385 (July) 1930
 Munch J C *Bio Assays A Handbook of Quantitative Pharmacology*
 Baltimore Williams & Wilkins 1931
 Carratala R E *Semana med* 2 1606 (Nov 26) 1931
 Averhuck S H *Arch f exper Path u Pharmacol* 157 342 1930
 Redonnet Gac med Espan 1930
 Starnotti C *Rev sud Am de endocrinol* 14 349 (June 15) 1931
 Chen K K and Chen A L *J Pharmacol & Exper Therap* 49 503 514 561 (Dec) 1933
 Chen K K, Jensen H and Chen A L *J Pharmacol & Exper Therap* 47 307 (March) 1933
 Lieb C C and Mulinos M G *J Pharmacol & Exper Therap* 48 282 (July) 1933
 Chen and Chen *Arch internat de pharmacodyn et de therap* 47 297 1934

The advantages of the pigeon method may be briefly stated as simplicity, reasonable accuracy, and economy. Pigeons are

easily obtained or raised everywhere, no surgical anesthesia or operation is necessary, a result is obtainable in fifteen minutes, the pigeons can be used repeatedly. A check on the results of bio-assay according to the emetic dose can be obtained, if desired, by determining the fatal dose in the same pigeon. Results with the pigeon method compare favorably with those by the cat method. It is possible to use the emetic dose for estimating the probable full therapeutic dose of digitalis (Stockton, 1933) and more satisfactorily than fatal doses according to the frog and cat methods (Dock, Stockton and Lehman, 1933). While this application should be further investigated, the results already obtained are promising enough to indicate that the denial of such possibilities for a bio-assay method in the correspondence mentioned is unwarranted.

In view of all that has been said, it would pay manufacturers to investigate the practical possibilities of the pigeon method for assaying digitalis.

P J HANZLIK, MD, San Francisco
 Professor of Pharmacology, Stanford
 University School of Medicine

"DINITROPHENOL POISONING"

To the Editor—I should like to make a correction in the article on "Dinitrophenol Poisoning" reported by Drs Jackson and Duvall in *THE JOURNAL*, June 2.

Under the chemical analyses Dr Jackson reported an index of 20 on first examination. At the time the examination was made it was brought to Dr Jackson's attention that the color obtained at that reading was almost entirely dissipated by the addition of 5 per cent hydrochloric acid. This is according to recommendation made by Dr Tainter and his co workers in *THE JOURNAL* of Nov 4, 1933. A second determination could not be made at this time because of lack of serum. The second report of 53 was obtained on later serum (also dark in color), which was decolorized with 5 per cent hydrochloric acid.

I make this correction in order that the report may not be accepted by some as conclusive evidence that liver damage had occurred.

BERTHA L ISAACS, Highland Park, Ill

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address but these will be omitted on request.

SENSITIVITY TO POLLENS AND GRASSES

To the Editor—A man aged 24 has had hay fever followed by bronchial asthma for the past several years. The hay fever has begun every year excepting one during the second or third week in August. One year he had a short and mild attack about the third week in July. The attack lasted only about a week but recurred in the latter part of August. He never has asthma until after the onset of hay fever and the latter ceases after one or two hard frosts. He has recently been tested for sensitivity to the usual summer grasses and ragweed being used. He gave a distinctively positive test to each of these. What treatment would you suggest? Please omit name and town. M D, Wisconsin

ANSWER—This patient is one of a large group who is undoubtedly hypersensitive to the pollen of both the various grasses and ragweeds. He is apparently much more sensitive to the ragweeds, as evidenced by more symptoms in August and September, but the fact that he has had trouble in July would indicate that he is affected also by the pollen of the ordinary grasses, such as timothy, orchard grass, red top and June grass. The finding of positive skin tests with the grasses and ragweeds confirm the double diagnosis of hay fever and asthma.

The patient should be treated as follows. For his hay fever due to the pollen of the grasses he should be treated seasonally, as this season has already started. He should be given

intradermal injections every day or every other day beginning with 0.05 cc of a 1:10,000 dilution of a mixed grass extract, followed by cautious increases up to about 0.50 cc. Treatment for grass pollen hay fever should cease about the first of August.

For the ragweed hay fever the usual preseasonal treatment is advisable if started at once. The first dose should be 0.05 cc of 1:10,000 extract of mixed giant and short ragweed. If in the vicinity of Chicago it would be well to add about 20 per cent of an extract of burweed or march elder to the two ragweeds. The second dose should be 0.10 cc, followed by increases of approximately 40 to 50 per cent up to a dosage of about 1 cc. Then 0.10 cc. of a 1:1,000 extract should be used and this increased similarly up to 1 cc. Following this, 0.10 cc of a 1:100 extract may be used, with gradual increases up to about 0.50 cc.

These injections should be given in separate arms so that if any reactions occur the offending extract may be identified. If the reaction is manifested by a severe local inflammation, the last dose should be repeated and no increases should be given as long as local soreness is present. If, as occurs sometimes, a constitutional reaction follows, as manifested by urticaria, hay fever or bronchial asthma, epinephrine should be given at once in dosages of from 0.50 cc to 1 cc of a 1:1,000 dilution and may be repeated if necessary. Such a reaction calls for a decrease of the next dose of pollen extract.

The injections of ragweed extract had best be given three times a week so that a sufficient amount may be reached before the ragweed starts pollinating, about the middle of August. After this period the injections should be kept up but the dose should be reduced to about one half of the highest amount reached. When the season is over the patient may be treated either perennially by giving injections every two weeks throughout the year or treatment may be stopped and begun again about the first of March of the next year with injections of grass and ragweed extracts.

MONILIASIS OF TONGUE

To the Editor—One of my little patients has a case of moniliasis of the tongue which shows itself as a thick grayish white coating. Monilia organisms were found by smear and culture. Treatment with various fungicides (the last one a mixture of benzoic acid and thymol in water) has not given the slightest relief. This condition has persisted for more than a year. Please let me know what you consider the best treatment. An early reply either by letter or in one of the next issues of *THE JOURNAL* would be greatly appreciated. Kindly omit name.

M D California

ANSWER—The question was submitted to Dr B K Ashford, who writes: "Let us consider that all fungicides of value have been unsuccessfully tried. From now on, attention should be devoted to Monilia vaccines made from a seven-day culture the virulence of which one has attempted to exalt by passage through laboratory animals. If one obtains a sore tongue on the third or fourth day after the injection of the third or fourth dose, one can be pretty sure that one is getting a local reaction which would be highly satisfactory. My method of making these cultures is that of Dr Carl Michel, who worked here with me on preparing vaccines for use in sprue. After the usual method of sterilization, he gaged the strength of his vaccine not by counting the organisms in a given amount but by percentage of the sediment to the total fluid, using a 1 per cent preparation. We began with 0.1 cc, increasing the dose by one tenth more at each injection, these inoculations coming once a week. This should be used together with a strong alkaline mouth wash, and if the child is old enough, a diet consisting of animal proteins, fresh vegetables and fruits, excluding sugars, fats and cereals."

BENEDICT TEST FOR SUGAR

To the Editor—Does it matter if suspected urine and Benedict solution are boiled a long time? What other reaction could it be? I find that after prolonged boiling and letting the solution stand there is a yellow precipitate. Please name a new book on urinalysis.

EMIL LOFGREN M D Rockford Ill

ANSWER—The technic for performing the Benedict qualitative test for sugar in the urine is as follows: To 5 cc of Benedict qualitative reagent add 0.5 cc or 10 drops of urine and mix. Heat in a boiling water bath for five minutes or boil over a flame for two minutes while shaking to prevent bumping. A green, yellow, orange or red finely granular precipitate that rapidly settles out indicates reduction. The color depends on the amount of sugar present. If only a small amount of reduction is present, allow the tube to stand or centrifuge it. The mixture changes to green or yellow when

there is reduction. With complete reduction it becomes almost colorless. A flocculent precipitate that does not settle quickly is due to other substances than sugar.

Benedict's solution is less susceptible than Fehling's to reduction by other urinary constituents, as uric acid or creatinine. It is, however, promptly reduced by alkaptonic acids or the conjugated glycuronic acids, as well as by an excess of preservatives such as chloroform, chloral and formaldehyde.

The first time a urine from any patient shows reduction, further tests are indicated to determine whether the substance is sugar, and the kind of sugar.

To be clinically significant, the urine must contain enough reducing substance to reduce Benedict's reagent in the heating time specified. If more than a trace of protein is present, it should be removed by acidifying with acetic acid, boiling and filtering.

An excellent new book on urinalysis is "Urine and Urinalysis" by Gershenfeld (Philadelphia, Lea & Febiger, 1933).

ONYCHOLYSIS

To the Editor—I have a patient, a woman about 30 years of age, who has onycholysis of every finger of each hand. There is no pain nor discomfort in any way and no other objective symptoms except a turning loose or separation of the nail from the nail bed. After the nail has become separated from the nail bed the nail assumes a lifeless and dead color and has no feeling of life in the separated part. The nails of the toes are perfectly normal. The patient came to Nevada from an Eastern state about three years ago and developed the condition about a year after residing here. She had never had the condition before coming to Nevada. The etiology of this condition is obscure as the personal history and physical examination of the patient are negative for any other pathologic condition. I shall greatly appreciate any information that you may give me concerning the etiology and treatment of this condition. I am particularly concerned about the curative treatment if there is such a thing as the patient's finger nails are in a bad condition and she is at all times terribly self-conscious about her nails. As to treatment I have tried numerous things such as soaking the fingers in hot water and painting the nail bed with tincture of iodine but the treatment has been most disappointing and absolutely devoid of benefit. If you are unable to enlighten me as to treatment I shall greatly appreciate it if you will refer me to some authority who you think might give me the proper information. Kindly omit name and address.

M D Nevada

ANSWER—Onycholysis or separation of the nail plate from the nail bed is one of the characteristic nail changes of psoriasis. In this disease there is at the outset an accumulation of keratotic material beneath the free border, which crumbles away or is removed by the patient, leaving a space between the nail and its bed. Another characteristic change is pitting of the nails. It is possible that this case is due to psoriasis limited to the nails. It may also be due to other unknown causes.

The treatment that would offer the best chance of recovery is roentgen therapy, applied over the region of the matrix of the nail. The best result would probably be obtained by giving three fourths of an erythema dose at monthly intervals using either filtered or unfiltered radiation. A maximum of six such treatments may be given.

TREATMENT OF LATE SYPHILIS

To the Editor—I have been treating a case of apparent tertiary syphilis in a man aged 47. I have given him three courses of treatment of nearsphenamine from 0.45 Gm up to 0.9 Gm bismuth compounds and iodides. The treatment has extended over a period of about one and a half years. Frequent Wassermann tests have continued to show a 4+ and the last showed a 3+ reaction. I have just finished giving him his third course and his eighth treatment with nearsphenamine. Would you kindly advise me as to the correct procedure in his treatment? I am much concerned because of my failure to make any impression with this treatment. Please let me hear from you. Kindly omit name.

M D Wisconsin

ANSWER—The crux of the situation here seems to be what is meant by apparent tertiary syphilis. Late syphilis may cause anatomic and functional damage in a number of different domains, particularly the central nervous system and the cardiovascular apparatus. It is impossible to suggest the proper therapeutic course without knowing the details as to the patient's physical condition. If there is no clinical evidence of neurosyphilis or of cardiovascular syphilis and if the examination of the spinal fluid shows no abnormalities, it is reasonable to assume that the patient has either latent or late cutaneous or osseous syphilis. In the latter case the further management of his treatment might well proceed as suggested in *Queries and Minor Notes* in *THE JOURNAL* Nov 4, 1933, page 1500 the query dealing with the treatment of Wassermann fast syphilis. If the patient has neurosyphilis or cardiovascular syphilis, the proper method of management is the treatment of either of these two conditions and details cannot be furnished without more definite knowledge of the particular patient involved.

DIFFERENTIAL DIAGNOSIS OF DISTURBANCE
OF NERVOUS SYSTEM

To the Editor—A man, aged 42 a robust traveling salesman noticed six months previous to consultation a wasting of the muscles a tingling sensation and impairment of strength of his right hand especially noticed when driving or writing. Examination discloses marked atrophy of fat subcutaneous tissue and the adductor pollicis and the first, second third and fourth lumbricalis muscles of the right hand. The right arm is normal and has the same size and strength as the left arm there has been no injury and he has always been right handed. Repeated physical and laboratory examinations have been negative. The reflexes are intact and normal. The Wassermann reaction of the blood and spinal fluid is negative. Blood counts chemical examinations and culture give negative results. The basal metabolic rate is normal. The patient had a tonsillectomy seven years ago previous to operation he had several attacks of acute tonsillitis. What is your diagnosis prognosis and what treatment would you advise? Please omit name and address

MD Florida

ANSWER—The possible diagnoses to be considered include degenerative changes in the anterior horn cells of the cord, either an amyotrophic lateral sclerosis or a progressive muscular atrophy, or pressure from a syringomyelia or a neoplasm. In the former there are typically no sensory symptoms, though some feelings of numbness may occur, these conditions usually are symmetrically distributed on the two sides of the body. With pressure in the neighborhood of the anterior horns there is usually some pain and hyperesthesia, which are often severe but may be absent in the latter case there will usually be loss of pain sensibility, often without loss of tactile sensibility, of segmental distribution. The degenerative lesions are usually progressive and spread to involve other levels of the cord, often progressing to the medulla and causing a bulbar paralysis. No remedies seem to have much effect in arresting the disease though the administration of increasing doses of strychnine has been advocated. In the pressure conditions it is possible that surgical intervention may have good results. The important indication in this case, therefore, is the establishment of a definite diagnosis. A complete neurologic examination is urgently advised.

COLLECTION OF URETERAL URINE

To the Editor—The general practitioner is in need of a simple inexpensive instrument capable of collecting separate ureteral specimens. I have in mind a rubber catheter consisting of three flexible tubes two molded so as to fall opposite each ureteral orifice after insertion, and one molded so that its tip will rest on the floor of the bladder the whole unit to be manufactured in the usual catheter sizes. First is there such an instrument on the market? Second what is the distance between the interior urethral orifice and the ureteral orifice in the average urinary bladder? In the adult? In a child of about 5 years? Third do the ureteral orifices and internal urethral orifice form approximately an equilateral triangle? In an adult? In a child?

ROBERT MONFORT MD Wolverine Mich

ANSWER—There are a number of such instruments on the market, one is the Harris segregator and another is known as the Luys. Neither of them is used to any extent at the present time because of their obvious inaccuracy. From the description given, an instrument of this kind would not seem to be of much practical value. The distance from the internal urethral orifice to the ureteral orifices is about 2.5 cm in the adult. The internal urethral orifice and the ureteral orifices form approximately an equilateral triangle.

BLOODY SEMEN

To the Editor—Will you kindly let me know the possible causes and course of treatment for bloody semen? Please omit name

MD New Jersey

ANSWER—Hemospermia, or the presence of blood in the semen, is most frequently due to a chronic seminal vesiculitis. It should be noted, however, that it is necessary to differentiate between true and false hemospermia. In true hemospermia the blood and the semen are well mixed, since the bleeding occurred in the seminal vesicles, whereas in false hemospermia the origin of the blood is in the urethra, in which case the semen is streaked with blood.

Although this origin of the blood is generally accepted, there are some who believe that the blood may originate in the prostate gland and not in the seminal vesicle, and others believe that the origin of the blood is a chronic prostatitis associated with urethritis. However, it is the opinion of most urologists that the blood in hemospermia originates in the seminal vesicle. In rare instances hemospermia may be due to sexual excess, although this is very exceptional. Stones in the prostate and carcinoma of the prostate rarely produce hemospermia.

In the management of this condition, due consideration must be directed toward the diet, which should be bland. The use

of alcohol is contraindicated. One should see that the bowels move daily and naturally. Sexual excess is to be avoided. The use of heat by rectum has a definite place in treatment. This may be used either in the form of hot rectal irrigations or by means of a prostatic tube. Next in importance to the use of heat by rectum is massage of the vesicles. Massage should be gentle so as not to produce pain or bleeding. Massage should be carried out about once in five days, best with a full bladder. After the stripping, the patient is instructed to empty the bladder. This may be followed by an irrigation of the urethra and bladder with a warm solution of potassium permanganate in the strength of 1:5,000. Or, instead of irrigations, one may use instillations into the deep urethra of a 1 per cent solution of strong silver protein or a 5 per cent solution of mild silver protein. Internally the use of potassium iodide has been recommended.

In order to facilitate drainage, dilation of the deep urethra with sounds or dilators is indicated, and here again manipulations should be gentle. All traumatism must be carefully avoided during instrumentation.

BACTERIOLOGY OF NORMAL ORGANS

To the Editor—Last fall while I was attending a surgical clinic at Cook County Hospital, I heard the surgeon a professor in one of the large medical schools of Chicago state that in cholecystectomy he rarely peritonealized the gallbladder bed unless it was very easily done and did not require a suture being passed through the liver substance for normally and in health the liver is teeming with bacteria. Some time later I had occasion to ask our pathologist his opinion as to the correctness of this statement about the organisms in the liver tissue. His reply was that not only is that true of the liver but of the skin layers, body musculature peritoneum and organs generally. Can you agree to this and is there any literature on this unusual disclosure?

WILLIS P. BAKER MD Santa Ana Calif

ANSWER—To say that the liver and other internal organs in conditions of health are "teeming with bacteria" is gross exaggeration. Apparently occasional bacteria may occur in the liver and other internal organs in health. This question was studied carefully by W. W. Ford (On the Bacteriology of Normal Organs, *J. Hyg.* 1:277, 1901) and he found that in at least 70 per cent of the animals that he studied the organs contained bacteria that were capable of development provided a sufficient time was allowed to elapse between their removal and their final examination. In no case did Ford or any one else find that normal organs were "teeming with bacteria."

ENLARGED THYMUS RADIATION AND THYMIC DEATH

To the Editor—This question must be decided by our medical board which desires to seek the most authoritative information on this important subject. 1 Do you as a routine roentgenograph all children's chests for an enlarged thymus before operation? 2 If this is your practice have the results justified the procedure? 3 If not your practice to roentgenograph all chests do you roentgenograph any and under what circumstances? 4 If not your practice now, did you at any time do this and what was the reason for abandoning this procedure? 5 Have you had any so-called thymic deaths after diagnosing and treating the case by radiation? ALBERT L. VOLTZ MD, Richmond Hill, N. Y.

ANSWER—In addition to answering the questions specified in the query, it seems propitious that a word be said about the present attitude toward congenital enlargement of the thymus. One has only to review the literature to realize that there has been a decided change during the last ten years. Enlargement of the thymus either alone or in conjunction with a generalized adenopathy was considered a usual cause of sudden death in infants and young children. During the last two years this attitude has been changed to the extent that many feel that enlargement of the thymus should never be credited as causing these sudden deaths. Of the more recent contributions tending to explain sudden death associated with enlargement of the thymus, Waldbott (*Am. J. Dis. Child.* 47:41 [Jan.] 1934) reports the pathologic process in thirty-four cases and discusses the observations and their explanation from an anaphylactic standpoint. He feels that allergic studies should be made in all cases in which there is roentgen evidence of an enlarged thymus.

At present it is not customary to roentgenograph all children's chests for enlargement of the thymus before operation. Infants under 1 year of age are usually examined with the fluoroscope or roentgenographed if time permits, and always in the event of any symptoms.

It is probably advantageous to examine all infants' chests with the fluoroscope whether or not operation is contemplated. With proper precautions and in competent hands, the exposure to x-rays necessary to produce shrinking of an enlarged thymus is accompanied by a minimum of risk.

HYPOTENSION AND BLOOD PRESSURE NEUROSIS

To the Editor—I would appreciate an opinion on the following case. A man aged 60 an executive (plant manager), 6 feet 1 inch (185 cm) in height weighing 193 pounds (87.5 kg) who is active and to all appearances and tests is in an excellent state of health three years ago at a routine physical examination in New York was found to have a blood pressure of 120 systolic 80 diastolic. The physician thought it too low and advised tri weekly injections of ampoules of pitressin. This advice was followed out for three months during which time the blood pressure varied from 116/78 to 126/84, being 122/80 when the medication was stopped. With this psychologic background he now has his blood pressure taken monthly and following each test complains of lack of pep an occasional trifling dizzy spell and thinks that something should be done to increase his blood pressure. Please omit name.

M D Canada

ANSWER—From the data given it is quite clear that the patient has developed a phobia concerning his presumed hypotension. The unwise remarks of the physician in New York unquestionably initiated this lamentable neurotic sequence particularly as the stimulus was repeated thrice weekly for several months while he was receiving the totally unnecessary and obviously useless injections. This arterial tension averaging about 121/80, is within the normal limits, and he should feel notably relieved and grateful that it is not higher. There is no reason whatever for ascribing his complaints particularly the "lack of pep," to the status of the circulation. Other possible causes of his apokammosis and slight vertigo must of course, be ruled out. One of the most common conditions found with complaints such as these is a moderate habitual anemia. It would be interesting to note his subjective complaints if he was misinformed that his tension were higher. An active man of 60 cannot and must not expect to retain his youthful energy and endurance indefinitely. Studies of longevity by several large life insurance companies definitely indicate that those with low normal arterial tension have a greater than average life expectancy. It may be that his apprehension is due, in part to a misunderstanding with regard to the significance of the arterial tension, he may possibly feel that his present condition is due to inadequate cardiac strength. Such an explanation is obviously wrong, for the pulse pressure is quite adequate and nothing was stated about tachycardia or undue distress on exertion. Every possible effort must be made to convince him of the entire normality of his circulation and of the unwise ness of his anxiety.

ETHER AND SURGICAL SOLUTION OF CHLORINATED SODA IN EMPYEMA

To the Editor—I would greatly appreciate any information you can give me with regard to the efficacy of ether irrigations in empyema when surgical solution of chlorinated soda lessens the purulent discharge but does not entirely eradicate it. Please omit name.

M D Chicago

ANSWER—No especial merit in the use of ether in chronic empyema is known. Surgical solution of chlorinated soda is both an antiseptic and a proteolytic agent. Many empyemas of short duration will stop draining if sterile without obliteration of the cavity. If some secretion continues it is usually harmless if sterile but, if infected, reoperation is necessary. When the pleura is markedly thickened, sterilization is difficult and surgical collapse with obliteration of the cavity is usually necessary. The important thing is to keep the drainage wound open until either the cavity is sterile or the lung has expanded so that the wound can heal from the bottom out. The tubes must not be too long for the cavity. The size of the cavity may be determined from time to time by taking a roentgenogram after filling with a liquid opaque substance that will not block drainage. Most of the drained empyema cavities will heal without any irrigation whatever. General nutrition and breathing exercises are valuable.

PREOPERATIVE AND POSTOPERATIVE MANAGEMENT OF GOITER WITH AURICULAR FIBRILLATION

To the Editor—I should appreciate a statement as to the preoperative medical management of a woman aged 63 with adenomatous goiter of several months duration. She has a moderately enlarged heart and auricular fibrillation. The apex rate is 145 and the pulse rate 100. There is moderate hypertension. The liver is moderately enlarged as a result of cardiac decompensation. There is a moderately elevated basal metabolic rate of plus 30 to plus 40. Please omit name and address.

M D Massachusetts

ANSWER—Compound solution of iodine 28 cc a day, should be given continuously until a month after operation. Subtotal thyroidectomy should be in one stage after the greatest cardiac improvement has been obtained by all the usual therapeutic measures. This may not be for five or six weeks. The primary period of lowest metabolic depression under the iodine,

occurring at about two weeks, should be passed by in favor of the later time, when the heart and circulation will be in the best possible condition. Digitalis, absolute bed rest, opiates and diuresis should be used to restore compensation. Conversion of the heart to a regular rhythm is not necessary before operation. It may occur spontaneously postoperatively or be hastened by giving quinidine.

COLDNESS OF SKIN IN LOCALIZED AREAS

To the Editor—Kindly advise me as to the probable cause of coldness of the skin over the anterior surfaces of the thighs and posterior surfaces of the calves of both legs. The sensation of cold necessitates the wearing of woolen hose and underwear, but this does not relieve the sensation of chilliness even in a heated room. The patient is a man aged 52 robust active and in the best of health as proved by several complete physical examinations. He has not been confined to the house from illness for the past thirty years and has no other complaints aside from these localized areas of coldness. Is this a circulatory condition or neurotic and what measures should be instituted to relieve the condition aside from massage infra red therapy and exercise? Please omit name.

M D Ohio

ANSWER—The possibilities are various, but in the absence of signs of spinal cord or neuritic changes the symptoms described are most likely circulatory in origin. Treatment should be directed at the improvement of the general circulation, perhaps with the use of small doses of digitalis. An attempt may also be made to relax and dilate the vessels with phenobarbital or small doses of the nitrites, preferably bismuth subnitrate, 0.65 Gm, three times a day.

NERVE INJECTION FOR NEURITIS

To the Editor—Please give me details of technic of the hypodermic injection for a localized neuritis over the fifth or sixth lumbar region. Give strength of alcohol and amount and if more than one injection. Please omit name.

M D, Missouri

ANSWER—A neuritis localized over the lower lumbar dermatomes is best and most safely treated by the injection of physiologic solution of sodium chloride or of 0.5 per cent solution of procaine hydrochloride in physiologic solution of sodium chloride into the sacral canal. A spinal puncture needle is introduced obliquely between the two sacral cornua so as to pierce the sacrococcygeal ligament and is then directed sharply upward for several centimeters into the epidural space of the sacral canal. From 50 to 80 cc of fluid is injected. Under no circumstances is alcohol to be used in this locality.

ANALGESIC FOR GALLSTONE COLIC

To the Editor—Will you please tell me whether or not there is any drug the action of which may be depended on to relax spasm in a patient who has recurrent gallbladder attacks? These attacks while infrequent, are very severe and often necessitate from one half to three fourths grain (0.03 to 0.05 Gm) of morphine. Atropine cannot be used because of idiosyncrasy. Morphine pantopon and codeine cause violent nausea which lasts from twenty four to forty-eight hours. The barbiturates allonal and sodium amyltal have been tried with little or no success. Any information or help you can give me along this line will be appreciated. Please omit name.

M D Pennsylvania

ANSWER—Sometimes a combination of analgesics acts more powerfully and with fewer side effects than any one of them alone. For instance gallbladder colic as well as renal colic can often be relieved by

Extract of hyoscyamus	0.15 Gm
Phenobarbital	0.50 Gm
Codeine phosphate	0.50 Gm
Amidopyrine	5.00 Gm

Mixed and divided into fifteen capsules, one being taken with hot water every two hours, as required for pain.

IMMUNITY IN UNDULANT FEVER

To the Editor—Is a person who has undulant fever immune to another attack? Is there any method of immunizing one against this disease? Perhaps you can also advise me concerning a veterinarian who feels that he would give up his profession if he should be liable to another attack.

H R MAYER M D Falls City Neb

ANSWER—It is generally considered that one attack of undulant fever confers lasting immunity. The few reported instances of possible reinfection should probably be interpreted as recurrences. Immunity following vaccination has been reported by a few investigators, notably Nicolle and Conseil. Many veterinarians apparently acquire immunity without the development of clinical symptoms of the disease.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALABAMA Montgomery, July 10 13 Sec Dr J N Baker 519 Dexter Ave Montgomery

AMERICAN BOARD OF OPHTHALMOLOGY Chicago Sept 8 *Application must be filed sixty days prior to date of examination* Sec Dr William H Wilder 122 S Michigan Blvd Chicago

ARIZONA Phoenix July 3 Sec Dr J H Patterson 320 Security Bldg Phoenix

CALIFORNIA San Francisco July 9 12 and Los Angeles July 23 26 Sec Dr Charles B Pinkham 420 State Office Bldg Sacramento

COLORADO Denver, July 3 6 Sec Dr Wm Whitridge Williams 422 State Office Bldg Denver

CONNECTICUT Regular Hartford July 10 11 *Endorsement* Hartford July 24 Sec Dr Thomas P Murdock 147 W Main St Meriden *Hemophilic* New Haven July 10 Sec Dr Edwin C M Hall 82 Grand Ave New Haven

DISTRICT OF COLUMBIA Washington July 9 10 Sec Commission on Licensure Dr W C Fowler 203 District Bldg Washington

MAINE Augusta July 5 6 Sec Board of Regis of Medicine, Dr Adam P Leighton Jr 192 State St Portland

MASSACHUSETTS Boston July 10 12 Sec Board of Regis in Medicine Dr Stephen Rushmore 144 State House Boston

NATIONAL BOARD OF MEDICAL EXAMINERS The examinations in Parts I and II will be held at centers in the United States where there are five or more candidates Sept 12 14 Ex Sec Mr Everett S Elwood 225 S 15th St Philadelphia

NEVADA *Reciprocity* Carson City Aug 6 Sec Dr Edward E Hamer Carson City

NORTH DAKOTA Grand Forks July 3 6 Sec Dr G M Williamson 4½ S 3d St Grand Forks

OREGON Portland July 3 6 Sec Dr Joseph F Wood 509 Selling Building Portland

PENNSYLVANIA Philadelphia and Pittsburgh July 10 14 Sec Board of Medical Education and Licensure Mr W M Demison 400 Education Bldg Harrisburg

RHODE ISLAND Providence July 5 6 Dir Public Health Commission Dr Lester A Round 319 State Office Bldg Providence

SOUTH DAKOTA Rapid City July 17 18 Dir Division of Medical Licensure Dr Park B Jenkins Pierre

WASHINGTON *Basic Science* Seattle July 16 17 *Medical* Seattle July 19 21 Dir Department of Licenses Mr Harry C Hu e Olympia

WEST VIRGINIA Wheeling July 9 State Health Commissioner Dr Arthur F McClue Charleston

Presbyterian Hospital Chicago Neurosurgery neurology obstetrics-gynecology and pathology (fellowship)

University Hospitals Iowa City Urology

St Joseph's Hospital, Baltimore Medicine pediatrics

Boston City Hospital, Boston Neurology and neurosurgery

Massachusetts General Hospital Boston Anesthesia

Jewish Hospital, St Louis Ophthalmology-otolaryngology

St Mary's Group of Hospitals St Louis Pediatrics

Lenox Hill Hospital New York Obstetrics tuberculosis otolaryngology and radiology

Metropolitan Hospital New York Ophthalmology otolaryngology neurology orthopedics and pathology

Montefiore Hospital for Chronic Diseases New York Dermatology syphilology

St Luke's Hospital New York Pediatrics and radiology

Cincinnati General Hospital Cincinnati Dermatology and psychiatry

University of Oregon Medical School Hospitals Portland Pathology and radiology

Presbyterian Hospital Philadelphia Urology

Maine March Report

Dr Adam P Leighton Jr, secretary, Board of Registration of Medicine, reports the written examination held in Augusta, March 13-14, 1934. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Six candidates were examined, all of whom passed. Three physicians were licensed by reciprocity and one physician was licensed by endorsement. The following schools were represented:

School	PASSED	Year Grad	Per Cent
Ioyola University School of Medicine	(1933)	86 2*	
Harvard University Medical School	(1932)	84 7	
Tufts College Medical School	(1932) 86 7,	(1933)	82 4
Marquette University School of Medicine	(1933)	86 6	
University of Montreal Faculty of Medicine	(1932)	80	

School	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Chicago College of Medicine and Surgery	(1913)	Illinois	
Rush Medical College	(1911)	Illinois	
Medical College of Virginia	(1930)	Virginia	

School	LICENSED BY ENDORSEMENT	Year Grad	Endorsement of
Harvard University Medical School	(1931) N B M Ex		

This applicant has completed his medical course and will receive his M D degree on completion of internship.

Connecticut March Examination

Dr Thomas P Murdock, secretary, Medical Examining Board, reports the written examination held in Hartford, March 13-14, 1934. The examination covered 7 subjects and included 70 questions. An average of 75 per cent was required to pass. Twenty-three candidates were examined, 17 of whom passed and 6 failed. The following schools were represented:

School	PASSED	Year Grad	Per Cent
Yale University School of Medicine	(1930)	75 9	
Georgetown University School of Medicine	(1933) 78 3	78 9	
University of Maryland School of Medicine and College of Physicians and Surgeons	(1933)	81 6	
Harvard University Medical School	(1933)	76 7	
Tufts College Medical School	(1933) 75 3	78 4	80 6
Columbia University College of Physicians and Surgeons	(1933)	88 5	
Long Island College of Medicine	(1933)	81 5	
New York University University and Bellevue Hospital Medical College	(1926) 75	(1932)	84 4*
Jefferson Medical College of Philadelphia	(1933)	76 6*	
University of Tennessee College of Medicine	(1927)	77 1	
University of Vermont College of Medicine	(1932) 78 8	(1933)	75 6
Ludwig Maximilians Universität Medizinische Fakultät München Bavaria Germany	(1923)	75 1*	

School	FAILED	Year Grad	Per Cent
Georgetown University School of Medicine	(1932) 66 7	(1933) 70 3	71 6
Queen's University Faculty of Medicine		(1924)	73 2
Osteopaths 2†			

Thirteen physicians were licensed by endorsement from January 10 to May 21. The following schools were represented:

School	LICENSED BY ENDORSEMENT	Year Grad	Endorsement of
University of California Medical School	(1931)	California	
Yale University School of Medicine	(1925)	(1928)	New York,
(1932) N B M Ex			
University of Maryland School of Medicine and College of Physicians and Surgeons	(1923)	Maryland	
Harvard University Medical School	(1919)	New York	
(1929) N B M Ex			
Columbia University College of Physicians and Surgeons	(1910) (1927) (1931) N B M Ex. (1920)	(1921)	New York
McGill University Faculty of Medicine		(1931) N B M Ex.	

* License has not been issued.

† One osteopath was examined in medicine and surgery and the other in surgery only.

ADDITIONAL HOSPITALS APPROVED

The Council on Medical Education and Hospitals of the American Medical Association has given its approval to the following hospitals since the publication of the last previous list in THE JOURNAL, March 3.

Hospitals Approved for Intern Training

St Helena Sanitarium and Hospital Sanitarium Calif
Wilmington General Hospital Wilmington Del
Kentucky Baptist Hospital Louisville Ky
Bon Secours Hospital Baltimore
St Vincent Hospital Worcester Mass
All Souls Hospital Morristown N J
Manhattan General Hospital New York
St Thomas Hospital Nashville Tenn
Pierce County Hospital Tacoma Wash

Hospitals Approved for Residencies in Specialties

Mendocino State Hospital Talmage Calif Psychiatry
St Francis Hospital and Sanatorium Colorado Springs Mixed
Garfield Memorial Hospital Washington D C Surgery and radiology
James M Jackson Memorial Hospital Miami Fla Medicine and surgery
Provident Hospital Chicago Medicine obstetrics pediatrics and surgery
Methodist Episcopal Hospital Indianapolis Pathology
Bon Secours Hospital Baltimore Surgery
Provident Hospital Baltimore Surgery medicine and obstetrics
Medfield State Hospital Medfield Mass Psychiatry
State Hospital No 1 Fulton Mo Psychiatry
St Luke's Hospital St Louis Medicine obstetrics gynecology and surgery
Arnot Ogden Memorial Hospital Elmira N Y Mixed
Jamaica Hospital Jamaica N Y Mixed
New York Foundling Hospital New York Pediatrics-obstetrics
Craig Colony Sonoma N Y Epilepsy
James Walker Memorial Hospital Wilmington N C Mixed
Deaconess Hospital Cincinnati Medicine and surgery
Sunny Acres Cleveland Tuberculosis Sanatorium Warrensville Ohio Tuberculosis
George F Geisinger Memorial Hospital Danville Pa Medicine and surgery
Jewish Hospital Philadelphia Medicine and surgery
Reading Hospital Reading Pa Medicine pathology and surgery
John Sealy Hospital Galveston Texas Surgery and obstetrics gynecology

Hospitals Approved for Additional Residencies

Los Angeles County Hospital Los Angeles Orthopedics malignant diseases neurosurgery and communicable diseases
Colorado General Hospital Denver Ophthalmology (fellowship)

Book Notices

The Relief of Pain in Childbirth By F. Neon Reynolds MCOG
FRCS Hon. Obst. Surgeon to the Hospital for Women and Children
Harrow Road, Cloth Price 10/6 Pp. 114 London: Medical Publica-
tion Ltd. 1934

In this monograph the author first takes up preliminary details that he considers of great importance for the relief of pain during labor, namely, the treatment of the more common mental and physical discomforts. He points out the different requirements in the first and second stages of labor and considers in detail a few methods of producing relief in each of these stages of labor. For use in the first stage the author takes up (1) morphine and scopolamine, (2) tribrom-ethanol (avertin), (3) the barbiturates (nembutal, pernocton and sodium amytal), (4) paraldehyde and (5) nitrous oxide and oxygen. For relief in the second stage, he analyzes the advantages and disadvantages of (1) nitrous oxide and oxygen, (2) chloroform, (3) ether and (4) evipan. The author concludes that complete morphine-scopolamine narcosis involving repeated doses of scopolamine is a complicated procedure entirely unnecessary for the average labor. However, a single dose of morphine and scopolamine, given when labor is well established is undoubtedly the safest and most efficient analgesic for the early hours of a primigravida's labor. Tribrom ethanol has minor difficulties of administration and produces inconsistent results, hence the author does not advise this method. He dismisses the barbiturates for routine use because they are dangerous drugs. However, he considers paraldehyde an almost ideal drug. It is perfectly safe for primiparas and multiparas at whatever stage of labor it is given. There is a wide margin of safe dosage, its preparation is easy, and it requires simple apparatus for its administration which can be carried out by any one skilled in giving an enema. It does not prolong labor and has no ill effects on mother or baby. For the second stage of labor the author believes that nitrous oxide and oxygen is ideal as regards safety and efficiency, but to produce these effects it is necessary to have a skilled anesthetist with expensive and cumbersome apparatus. He therefore considers chloroform the only alternative for use during actual delivery and the preceding hour or so. This drug is well tolerated by the pregnant woman, is an extremely efficient analgesic and anesthetic is not bulky, is cheap and is easily administered. The disadvantages consist almost entirely of factors that are under the control of the administrator. In spite of what the author claims for chloroform, it is seldom used in the United States and properly so. Even with skilled administration there is danger of fatal, delayed chloroform poisoning after its prolonged use or in susceptible individuals. The book is timely because of the numerous attempts at present to find new analgesics and anesthetics, not all of which are safe.

Notes on the Medical Treatment of Disease for Students and Young Practitioners of Medicine By Robert Dawson Rudolf C.B.E. MD
F.R.C.P. Professor of Therapeutics in the University of Toronto Fourth
edition Cloth Price \$4 Pp. 540 Toronto: University of Toronto
Press 1934

The aim of this little book, which now appears in its fourth edition since 1921, is to impress on the student and young practitioner the broad principles of the medical treatment of the sick. It is therefore not to be expected that it would cover exhaustively even the frequently encountered diseases with which it deals or that it would delve deeply into the details of special treatment. The latter are, indeed, as stated in the preface "largely omitted or only hinted at." Nevertheless one cannot but wish at times that a few more of them had been given rather than so many statements of a general nature which can be of little direct help to a reader seeking to learn just what to do in a given case. The following is typical (p. 276): "Lately copper has been used as an adjuvant to iron. Small doses of the sulphate are employed." One may conceivably wish to know just what constitutes a small dose of copper sulphate in the circumstances. Queer allocations of space are also not infrequent in the book, as witness (a) Nothing more definite is presented on the newer preparations

of liver and stomach in the treatment of pernicious anemia than the following (p. 281): "Extracts of liver for intramuscular or intravenous use have now been prepared by many workers and promise well. Farquharson [reference] has lately published an encouraging report of their use intramuscularly. An extract of the stomach has the same beneficial action and is now often used instead of liver." But more than two pages is devoted to the use of arsenic in this disease, including a recommended dosage for atoxyl. (b) The treatment of varicose veins is quickly dismissed as being a surgical matter, but the discussion of peritonitis and appendicitis covers together about eleven pages. (c) There are two full pages of iodide therapy in syphilis, only ten lines devoted to bismuth compounds—though to be sure this is three lines more than is given to the raw meat diet, including horse flesh, in the therapy of pulmonary tuberculosis. (d) A ten and one-half page special treatise on the therapeutic use of oxygen is to be found but not one single mention of the oxygen tent, though the writer does state that he saw the oxygen chamber in use at Cambridge in 1919 (p. 301), "where Dr. Barcroft and his assistants were experimenting with it." (e) In connection with Addison's disease there is a more or less correct but nevertheless entirely unnecessary discussion of the general pharmacologic effects of epinephrine. (f) The often effective, though to be sure somewhat difficult, ketogenic diet in epilepsy is discussed as follows (p. 513): "Fits are often stopped by starvation and as this produces acidosis and ketosis it has been suggested that a high fat diet might be of value, and several physicians report good results with this regime [reference]." (g) As specific remedies in amebic dysentery the author discusses only ipecac and its derivative emetine, save for a four-line reference to a brand of chiniofon, of which he says (p. 396) "lately good reports are appearing." The authorities cited with regard to ipecac wrote in 1922-1923.

On the whole it is probable that the grievous faults of this book are solely ascribable to the plan which has been rigidly followed of discussing in fixed order matters of diagnosis, environment, diet, specific treatment and symptomatic treatment in connection with each of a selected list of diseases. Such a formula must force the inclusion of much that is mere space filling just as inevitably as it results in the conspicuous absence of many things of great importance.

Die diätetische Behandlung der Allergie bei Inneren Erkrankungen
von Dr. Carl Funk, Chefarzt der Abteilung für Allergie und Ernährungs-
krankheiten am Elisabeth Krankenhaus Köln Hohenlind Paper Price
2.40 marks Pp. 92 Leipzig: Johann Ambrosius Barth 1934

This work is propaganda on allergic diets. One fourth concerns the most obvious allergic potentialities of foods. The author is indignant at fats, beverages and cheese and relatively shrugs his shoulder at fish and nuts. One eighth of his effort is lavished on the dietetic management of such conditions as acute and chronic gastritis, hypo-acidity, hyperacidity, enteritis, dyspepsia and colitis in allergic individuals. A legitimate eighth spends itself on various diets and so-called cures. One sixth is set aside to consider specific dietetics of specific allergic diseases, and most of the pages are squandered on such sterling allergic worthies as gout arthritis, epilepsy, essential hypertension and acquired hypersensitiveness in the nature of arsphenamine reactions. In the remaining third of the monograph the author propounds his conception that food allergy resembles the sensitization produced by bacterial reinfection, that a good food is one susceptible of being assimilated into the body economy without becoming a foreign protein, and that the basis of all allergic diets should be a dietary poor in animal protein.

Even the enthusiastic American allergist will protest. Where is the proof of these pronouncements? There is no mention of skin tests. Although skin tests have honest limitations that are recognized by the seasoned unbiased scientist, much of the concrete evidence incriminating foods as etiologic factors was originally based on skin tests.

The unfortunate German genius for antagonizing runs comically rampant through this work. In the old days these writers simply ignored American priorities, if, indeed any reference was made. In Funk's book too Rowe's elimination diets

are mentioned only to be belittled for any German use. Rowe's name and the names of other non-German authors are omitted from the bibliography, while Urbach, quoted in the same passage, finds a place. In the portion of the book concerned with foods in general, the most ludicrous attacks are made. Only blind egotism would cast suspicion on French red wines while absolving those of German origin. The author says "When butter is at least compatible, why not German butter instead of foreign oil?" Only such an author could denounce Camembert cheese with an exclamation point. Scientific writing should not be prostituted to political propaganda.

Children Inc. The Post War "Administration" of the Whole Child Life of One Baltic State in Its Critical Period. A Factual Narrative. By Thomas J. Orblson. Chief of Latvian Section American Relief Administration Child Fund. Cloth. Price \$2. Pp 294 with 6 illustrations. Boston: Stratford Company 1933.

During the period of postwar rehabilitation of the European civilian population, the author, a captain in the medical corps, was made chief of the Latvian section of the American Relief Administration Child Fund. He unfolds the tale of that portion of the gigantic relief project with which he was connected, in a simple style that is easy to read. The enlistment of the Women's Committee to his aid and the handling of the local political factions speak for the diplomatic acumen of the author. The chapter on the siege of Riga by the German-Russian White Army is an excellent portrayal by an eye witness of a dramatic incident. The author gives an interesting account of his experiences in postwar child welfare.

Studies on Gonadotropic Hormones from the Hypophysis and Chorionic Tissue with Special Reference to Their Differences. By Christian Hamburger. Acta pathologica et microbiologica Scandinavica Supplementum XVII. Paper. Pp 184 with 33 illustrations. Copenhagen: Levin & Munksgaard 1933.

This excellent monograph is a record of the author's experimental studies carried out during 1930-1933 in the University Institute for General Pathology, Copenhagen, on materials from exclusively human sources; it was translated from the Danish by Dr. Hans Andersen. The experimental work has been comprehensive, the facts rigorously separated from theory, and the deductive part developed in an apparently reasonable manner; the world literature on the subject is treated satisfactorily but not exhaustively.

Dr. Hamburger's principal thesis is that whereas urines of normal men and women do not contain gonad stimulating substances demonstrable by simple injection of the urine into immature female rats and mice, the urines of castrated men and women do contain such substances in relatively large amounts (confirming the observations of Fluhmann in 1929). The gonad-stimulating substances of castrate urines, however, are different from those contained in the urines of pregnancy.

Routine methods of injecting untreated urines, or the alcohol precipitate of the active substance, are given and the author describes with meticulous care the animal responses to these substances (ovarian uterine, vaginal smears), from thirty to fifty animals are often used in the assay of urine from one individual. That urines may be compared adequately, they are reduced to the same specific gravity (a dilution factor being avoided) and the alcohol precipitation method is preferred, though doubt is thrown on a quantitative extraction of the active substance. Animals were killed 100 hours after the first of five injections during two days.

A careful comparison of the effects of castrate urines with the urines of pregnancy revealed noteworthy qualitative differences in the effects of gonad stimulating substances contained in each. Castrate urines characteristically caused only follicle stimulating effects and did not produce "blood points" or corpora lutea (except in very rare instances). All follicles were stimulated but all were of the same size. The uterus was hypertrophied but not fluid distended. Pregnancy urines, on the other hand, stimulated only a selected few follicles and these to a large size, corpora lutea and blood follicles were present and the uterus was usually distended by fluid. The size of ovaries, following castrate urine treatment, were roughly proportionate to the dosage, which does not hold for pregnancy urine effects. Zondek's mouse-rat unit of sensitivity to pregnancy urines was confirmed, as 1 mouse unit equals 5 rat

units, but in castrate urine injections the mouse is more sensitive than the rat, the ratio being 1 mouse unit to from one-third to one-half rat unit.

These and many other lines of evidence lead to the conclusion that the substances in castrate urines differ from those of pregnancy urines, and since implantation of fresh human hypophyses gave responses similar to those from castrate urines and different from those of pregnancy urines, the author marshals a strong line of evidence and argument that the gonad stimulating substances in castrate urines are hypophyseal in origin whereas those in pregnancy urines are decidual in origin.

The author subscribes to the notion of the separateness of the follicle stimulating and luteinizing substance of pregnancy urines and hypophyseal extracts but states his own inability, and that of others, to separate them successfully by extraction methods. It is pointed out that the castrate organism can so separate them since castrate urines do not contain appreciable quantities of the luteinizing principle.

The author's experiments demonstrate a synergistic effect between hypophyseal secretions and the gonadotropic principle from the urine of pregnancy of the nature described by Evans, Meyer and Simpson and explained by them as a catalytic effect of the urine factor on the growth hormone. Hamburger, though in agreement on facts, offers a contrary interpretation in which the action is merely one of follicle sensitization by hypophyseal derivatives which is essential before the effect of the urine extract is possible. Hypophyseal derivatives stimulate many follicles, hence the action of the urinary factor results in more corpora lutea (than with the latter alone) with the consequent greater size of the ovaries. He finds the same synergistic effect if hypophyseal substances and the gonadotropic principle from the urine of pregnancy are injected on two separate days, thus ruling out the notion of a catalytic effect.

Extraction of numerous tissues, including malignant and benign tumors, indicates that all malignant and some benign tumors can give rise to follicle-stimulating substances in the urine but that malignant tumors of the genital organs most usually do so. All forms of chorionic tissue appear to cause the excretion of a gonadotropic substance in the urine. Tumor patients fall into two categories in regard to urine: (1) those producing urines that have an action similar to fresh hypophyseal implants in giving predominantly follicle stimulation (carcinomas) and (2) those producing urines containing follicle-stimulating and luteinizing hormones similar to pregnancy urines (teratomas, chorionepitheliomas, hydatidiform moles, or any other chorionic derivatives). Repeated examination of negative urines is recommended, since in castrates the output of these hormones appears variable. They have been detected up to twenty years after surgical or roentgen castrations and after the menopause.

The book is a valuable contribution as a standard for such clinical examinations, for the introduction of methods, for ideas and for new material.

Medicine. A Voyage of Discovery. By Josef Löbel M.D. Translated from the German by L. Marie Slevking and Ian F. D. Morrow. Cloth. Price \$3. Pp 334. New York: Farrar & Rinehart 1934.

The voyage of discovery, with fifteen ports of call, namely, medicine, biology, anatomy, physiology, pathology, pharmacology, cellular pathology, bacteriology, serology, surgery, stimulative therapy, endocrinology, the theory of constitution, psychoanalysis, personality and back again to medicine, is, in brief, the plan of Löbel's book. It is a series of essays under the titles listed and it deals briefly with each of the important divisions of medicine. It presents little or nothing that is new nor does it pretend to, but it furnishes a well rounded summary of the important sciences contributory to modern medicine. It is scholarly without being prosy, entertaining without being superficial. Only one important error mars the book and that is one of translation involving confusion between the terms typhus and typhoid, a confusion that is readily enough understood by the reader who is familiar both with German and English and with typhus and typhoid. For the audience to whom the book is addressed however, it should be made clear that the German typhus is the English typhoid. This is the kind of book on medicine which well informed lay persons may read with pleasure and profit. It should promote a better appreciation of

medical science on the part of the intelligent lay public. It should also be excellent supplementary reading for such cultural courses in science as aim merely at giving a general acquaintance without delving deeply into technicalities. The style is fresh, interesting and vigorous. The book is well made and well indexed.

Handbuch der Chemotherapie. Von Dr. Viktor Fischl, auswartiger wiss. sachstf. Mitarbeiter der Schering-Kahlbaum A. G. Berlin und Prof. Dr. Hans Schlossberger, Mitglied des Reichsgesundheitsamtes Berlin. Dahlem, Teil 2. Metallidderivate. Paper. Price 35 marks 89 marks for the 2 volumes. Pp. 350 898. Leipzig: Fischers medizinische Buchhandlung, 1934.

This volume completes a veritable Baedeker through "Paul Ehrlich Land," a continent opened up to science only a quarter of a century ago and already possessing a bibliography that defies the efforts of any one individual. This result of the fortunate cooperation of the chemist Viktor Fischl and the physician Hans Schlossberger is destined to become, by reason of its thoroughness, the indispensable basis for scientific excursions into this fascinating domain. The present volume deals with the metal derivatives, as the first volume took care of the metal-free organic compounds. As is fit, from a historical standpoint, the treatise on arsenic occupies almost 200 pages or one fourth of this volume, and it boasts of a bibliography occupying more than thirty-four pages in double column.

Coccidia and Coccidiosis of Domesticated Game and Laboratory Animals and of Man. By Elvyn R. Becker, D.Sc., Associate Professor of Protozoology, Iowa State College. Monograph Number 2, Division of Industrial Science, Iowa State College. Fabricoid. Price \$2.50. Pp. 147 with 25 illustrations. Ames, Iowa: Collegiate Press, Inc., 1934.

The coccidia receive much attention because they cause heavy losses in mammals and birds, domestic and wild in the temperature zone. Their role in man is insignificant. Becker's book gives an excellent summary, with helpful host catalogue and bibliography, of the present knowledge of coccidial species, host specificity, life cycles, pathogenicity, immunity, prevention and treatment.

Pharmaceutical Formulas. P. F. Vol. I. Being The Chemist and Druggist Book of Selected Formulas from the British United States and Other Pharmacopaeias Together with Non Official Formulas from Various Sources Including Numerous Descriptions of Practical Methods Employed in the Manufacture of Pharmaceutical Preparations and Other Information of Use to Pharmacists and Manufacturers. Comprising also a Selection of Formulas far known Admitted and Approved Remedies from Former Editions and from The Chemist and Druggist Diaries. By S. W. Woalley and G. P. Forrester. Editor of The Chemist and Druggist. Tenth edition. Cloth. Price 15s. Pp. 1146. London: Chemist & Druggist, 1929.

Pharmaceutical Formulas. P. F. Vol. II. Being The Chemist's Recipe Book of Formulas for Adhesives, Beverages, Cleaning Materials, Culinary and Household Requisites, Horticultural and Agricultural Preparations, Inks, Laxatives, Perfumes, Photographic Preparations, Polishes, Soaps, Toilet Articles, Varnishes, Veterinary Preparations, etc. Including Numerous Descriptions of Practical Methods Employed in Their Manufacture and Other Information of Use to Pharmacists and Manufacturers. By G. P. Forrester, F.C.S. Tenth edition. Cloth. Price 15s. Pp. 983. London: Chemist & Druggist, 1934.

These books constitute a veritable treasury of formulas collected by the editor of the *Chemist and Druggist*. Volume I contains a comprehensive collection of official and nonofficial formulas selected from the British, United States and other pharmacopaeias, hospital formularies and the current pharmaceutical literature. Volume II contains chiefly formulas that cannot properly be classified as medicinal. It includes chapters dealing with perfumes, toilet preparations, dental preparations, household and culinary requisites, horticultural and agricultural preparations, adhesives, paints, stains and varnishes. These two volumes should certainly be in all libraries of pharmaceutical and medical colleges. They would soon repay for their purchase in almost any one of the larger and busier retail pharmacies. To illustrate the thoroughness with which many of these topics are treated, one might turn to the chapter on perfumes which extends over almost a hundred pages giving one a veritable introduction into the secrets of the production of bouquets and essences from handkerchief perfumes and toilet waters to sachet powders and perfumed cards and papers. The art of combining synthetic perfume constituents is discussed in practical detail as are also the ingredients required for 'fixation' of perfumes such as musk and ambergris. To review these books in detail is as impossible as to review a dictionary.

Lacidose et l'insuffisance rénale aiguë chez le nourrisson. Par Max M. Lévy. Paper. Price 15 francs. Pp. 103. Paris: Masson & Cie, 1932.

In this short manual the author reviews the theories on acidosis and alkalosis in infancy and points out the practical application in various clinical conditions. Examinations of the alkali reserve of the blood and acidity of the urine in pyloric stenosis, acute renal insufficiency and other conditions are given, with examples. The author advises the administration of sodium chloride in hydrochloremia and the injection of sodium bicarbonate in hypochloremia. The author explains that simple blood determinations will indicate whether sodium chloride or sodium bicarbonate is indicated, but there are probably many other physiologic factors involved, and the whole mechanism is more complicated than the author assumes.

External Diseases of the Eye. By Donald T. Atkinson, M.D., Consulting Ophthalmologist to the Santa Rosa Infirmary and the Alvarado Hospital, San Antonio, Texas. Cloth. Price \$7.50. Pp. 704 with 479 illustrations. Philadelphia: Lea & Febiger, 1934.

A volume of this type limiting itself to external disease of the eye is a distinct contribution to the English speaking physician. The author stresses the lesions of the skin in the neighborhood of the eye and a correlation between ophthalmology and dermatology is established. The numerous engravings help to make the book readable. The author illustrates the lesions adequately with drawings and models. A word of praise must be spoken for one endowed with artistic talent, who has used much time and effort to visualize for others. The references are sadly inadequate for the amount of material covered in the text, they are for the most part ancient and they do not include the available rich supply of relevant foreign literature. Some of the methods described are wholly empirical and others are out of date. A cursory perusal reveals that many of the references are inaccurate. Some of the procedures that are described are lacking in facts, in certain cases actual misstatements are made. Ethylhydrocupreine hydrochloride, a specific drug, is not mentioned in the treatment of pneumococcal conjunctivitis or in the list of antiseptics. The collection of photographs from many ophthalmologists and dermatologists in various parts of the country gives a certain value to the book. The illustrations of operative procedures are better than none at all but are reproduced in a size too small to be of great advantage. The volume covers fully the field it represents.

I Know Just the Thing for That! By J. F. Montague, M.D., Medical Director, New York Intestinal Sanitarium. Cloth. Price \$2. Pp. 265. New York: John Day Company, 1934.

"For patients without doctors and doctors without patience" is the subtitle which perhaps best expresses the respect in which this book is weak. With one or two notable exceptions, attempts to write medical books for both doctors and patients have failed, because the approach to one group is entirely different from the approach to the other. This book is a treatise on constipation and its allied and related ills. There is much excellent material in it, particularly in the first half of the book, but the subject could have been handled more expeditiously and there is a question whether any one afflicted with constipation can be benefited by reading about it to the extent of 265 pages. The book is cleverly written in spots but in general could have been greatly condensed without loss of any essential material. The discussion of vitamins, in which cod liver oil is totally omitted, is inadequate and misleading. It is, on the whole, a useful book but not one to arouse enthusiasm.

Bernardino Ramazzini nel III centenario della nascita (1633-1933). Milano 4 Ottobre 1933. Commissione Internazionale Permanente per la Medicina del Lavoro (sezione Italiana). Società Italiana di Medicina del Lavoro. Paper. Price 6 lire. Pp. 95. Milan: Tipografia Antania Cordani S. A., 1934.

This pamphlet published by the Italian Society of Occupational Medicine, is an interesting review of the work of the great founder of modern occupational medicine. It contains some appreciative messages from Professor Butler of the International Labor Bureau and the lectures by Professor Martin of the University of Lyons, Professor Zangger of Zurich and Professor Oliver of Great Britain, Professor Gudjonsson of Copenhagen and others from leading occupational clinics. The address of Professor Devoto, the 'Grand Old Man' of occu-

pational medicine, Milan, is inspiring. All the other short addresses portray some interesting side lights on the life of this remarkable teacher, whose intuitions on the pathologic lesions induced by various occupations mark him as a clinician of the first order.

Medicolegal

Workmen's Compensation Acts Disability Resulting from Operation to Alleviate Industrial Injury Compensable—The employee sustained a hernia in the course of his employment. Two operations failed to reduce the hernia and the employee was totally disabled. He instituted proceedings before the state industrial commission to recover compensation under the Oklahoma workmen's compensation act. The employer then proffered and the employee submitted to a third operation and the commission continued the proceedings pending the outcome of the operation. The hernia was alleviated as a result of the operation, but in performing it the operating physician transplanted the spermatic cord from its natural position. As a result it was pinched and interfered with in such a way as to cause the cord and the right testicle to atrophy. Later the commission held a hearing in the proceedings that had been continued and awarded the employee compensation for the injury to the testicle and cord. The employer brought an action in the Supreme Court of Oklahoma to review that award.

When an employer has knowledge of the facts of a compensable injury, said the Supreme Court, he becomes charged with knowledge of the extent of disability resulting from the original injury. It was not necessary in this case, to give the commission jurisdiction to consider the evidence on which to base the award, that the employee file a specific claim for compensation for the disability resulting from the third operation. Under the Oklahoma workmen's compensation act, an employer is liable for all legitimate consequences following an accident, including unskilfulness or error of judgment of a physician furnished the injured employee by the employer. An injured employee who submits to an operation tendered by his employer for the purpose of restoring the employee's earning capacity is entitled to compensation for any disability that may follow as a result of the operation. The Supreme Court concluded that the industrial commission had jurisdiction and had properly awarded compensation.—*Skelton Lead & Zinc Co v Bagby (Okla)*, 27 P (2d) 168

Workmen's Compensation Acts Appendicitis Attributed to Septicemia Following Leg Injury—Allen injured his leg in the course of his employment, September 12. The leg became infected and on September 21 Allen was taken to a hospital and an operation performed on the leg. Necrotic tissue and diseased periosteum were removed. After the operation, Allen's condition improved slowly, and his temperature subsided some, although he continued to suffer from pains throughout his body. On October 26 he left the hospital and thereafter was brought daily in an automobile to his physician's office for treatment. On November 20 Allen developed more temperature, became nauseated, and had "general pain" especially in the leg and abdomen. On November 27 he was readmitted to the hospital, suffering at that time with great pain in the lower part of the abdomen, especially in the right iliac region, and suffering at all times with his leg. On the following day an abdominal operation was performed. The appendix and colon were found to be ruptured. The abdomen was full of serofibrinous fluid and a mass of adhesions of the appendix and adjacent parts. Allen reacted badly, improved slowly for two days, and then gradually grew worse until December 3, when he died.

Allen's widow brought suit under the employers' liability act of Louisiana for compensation for his death, alleging that the death was due to septicemia resulting from the leg infection and to lowered resistance due to that infection. The employer and his insurance carrier contended that death was caused by

a ruptured appendix and a general peritonitis which had no connection with the injury sustained on September 12. From a judgment for the widow, the defendants appealed to the court of appeals, first circuit, Louisiana.

The attending physician testified, said the court, that, from September 21, Allen suffered from a septicemia caused by the abrasion on his leg and that his power of resistance was thereby lowered, that the blood stream became infected, thereby infecting the appendix and colon. Two other physicians, called by the plaintiff, concurred in the conclusions reached by the attending physician. Five physicians called by the defendant disagreed with these conclusions, testifying that even if there had been a general infection, which they denied, the subsequent appendicitis and diseased colon had no relation thereto. Allen's death, they testified, was due solely to the delay to operate until after the appendix and colon had ruptured. The physicians called by the defendants, observed the court, had neither seen nor treated Allen. Their opinions were based on hypothetical questions. The opinion of the physician who personally attended the deceased and knew his condition from first hand information was entitled to more weight than the opinions of those who never saw him. *Arcender v Grant Timber Co, Inc* 9 La App 132, 119 So 498. While the preponderance of medical opinion, continued the court, was to the effect that there should have been no delay in operating for the appendicitis the widow must not on that account be denied the right to recover compensation. The physician who had personal charge of the case and first hand information as to the condition of the employee thought the delay was advisable. The opposing opinions were based on hypothetical questions, put to physicians who never saw the patient. Under the circumstances, the court said such a difference of opinion is not ground for defeating a claim for compensation.

Furthermore, said the court, one of the physicians who testified for the defendants was in the employ and pay of one of the defendants. Article 2282, Civ Code of Louisiana, provides

The circumstances of the witness being in the actual service or salary of the parties is not a sufficient cause to consider the witness as incompetent but may according to the circumstances diminish the extent of his credibility.

If, observed the court, being employed by one of the parties is sufficient to diminish the credibility of the witness when testifying to matters of fact, the diminishment must be far greater when such witness is called on to express an opinion based on hypothetical questions. The court then quoted from Greenleaf on Evidence, volume 1, part 3, section 440b, as follows:

In weighing the testimony of biased witness however a distinction is to be observed between matters of opinion and matters of fact. Such a witness it is said is to be distrusted when he speaks of matters of opinion but in matters of fact his testimony is to receive a degree of credit in proportion to the probability of the transaction the absence or extent of contributory proof and the general tone of his evidence.

The court, taking into consideration all the evidence concluded that the accidental injury sustained by Allen September 12, was "indirectly responsible and a causative factor, leading to and bringing about the death" of Allen. The judgment in favor of the widow was accordingly affirmed.—*Allen v Louisiana Highway Commission (La)*, 150 So 98

Society Proceedings

COMING MEETINGS

American Association of Railway Surgeons Chicago August 20 22
Dr Louis J Mitchell 21 East Van Buren Street Chicago Secretary
American Ophthalmological Society Lucerne in Quebec Canada July 9 11
Dr J Milton Griscom 2213 Walnut Street Philadelphia Secretary
Minnesota State Medical Association Duluth July 16 18 Dr E A Meyerding 11 West Summit Avenue St Paul Secretary
Montana Medical Association of Helena July 11 12 Dr E G Balsam Box 88 Billings Secretary
National Medical Association Nashville, Tenn August 13 18 Dr C A Lanon 431 Green Street South Brownsville Pennsylvania, General Secretary
New Mexico Medical Society Las Vegas July 19 21 Dr L B Cohenour 219 West Central Avenue Albuquerque Secretary
Pacific Coast Oto Ophthalmological Society Butte Mont July 16 18
Dr F C Cordes Fitzhugh Building San Francisco Secretary
Wyoming State Medical Society Casper July 16 17 Dr Earl Whedon 50 North Main Street Sheridan Secretary

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

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- Differentiation of Entire Young Rabbit Embryos in Omental Grafts A J Waterman Brooklyn—p 347
Types of Subnormal Development of the Head from Inbred Strains of Guinea Pigs and Their Bearing on the Classification and Interpretation of Vertebrate Monsters S Wright and K Wagner Chicago—p 383
Experimental Studies on the Development of the Wing in the Embryo of Gallus Domesticus A E Warren, Boston—p 449
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American Journal of Medical Sciences, Philadelphia

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- Relationship of Polycythemia to Duodenal Ulcer W Boyd Winnipeg Manit—p 589
*Intestinal Intubation Practical Technique T G Miller and W O Abbott Philadelphia—p 595
*Endocrine Effects of Certain Ovarian Tumors E Novak Baltimore—p 599
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Observation on Practical Significance of Venous Pressure in Health and Disease with a Review of the Literature G C Griffith C T Chamberlain and J R Kitchell Jr Philadelphia—p 642
*Arteriovenous Fistula Involving the Common Femoral Artery Identified by Arteriography B T Horton Rochester Minn—p 649
Syndrome of Obstruction in the Lesser Circulation J J Waring and W C Black Denver—p 652
Cor Biatratum Triloculare with Rudimentary Right Ventricle Hypoplasia of Transposed Aorta and Patent Ductus Arteriosus, Terminating by Rupture of Dilated Pulmonary Artery G O Favorite Philadelphia—p 663
Endocarditis Due to a Neisseria Pharyngis Organism J D Goldstein Rochester N Y—p 672
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One Hundred Obesity Diets on One Chart W S Collens Brooklyn—p 683
*Symptomatic Relief of Emphysema by an Abdominal Belt H L Alexander and W B Kountz St Louis—p 687
Mechanism and Use of Abdominal Supports and Treatment of Pulmonary Diseases B Gordon Philadelphia—p 692
Treatment of Tetanus in Hospitals of Lancaster Pa over a Period of Thirty Years Anna P Klemmer and E S Crosland Lancaster Pa—p 700
Modified Mercury Chloride Reaction (Takata-Ara) in Cirrhosis and in Neoplasms of the Liver M P Crane Philadelphia—p 705

Technic of Intestinal Intubation—The technic of intubation, as Miller and Abbott have practiced it, is as follows. The tube with the bag deflated is taken by the fasting subject in the early morning, exactly as are gastric and duodenal tubes, only enough being swallowed at first to reach the stomach, and then, with the subject reclining on his right side, more is introduced slowly until the distal end has reached the duodenum. A little more tube is taken and fluoroscopic observations are made until the capsule has reached at least the third portion of the duodenum. The bag is distended moderately with air or an 8 per cent solution of sodium iodide (to render visualization of the tube and bag easier). After this the subject swallows about 5 cm of tube every ten minutes, fluoroscopic observations being made from time to time until the distal end has reached the desired point. The authors found that within six hours the tube has usually passed along the intestine to a distance of from 120 to 150 cm. beyond the pylorus.

Endocrine Effects of Certain Ovarian Tumors—Novak points out that certain tumors of the ovary, like tumors of other endocrine glands, are capable of highly developed endocrine function. The most clearly defined types are the granulosa-cell tumors and the so called arrhenoblastomas, the latter belonging to the group of testicular adenomas, most often of atypical variety. The granulosa-cell tumors exert a feminizing effect, through the production of theelin by the tumor cells, so that in older women, perhaps far beyond the menopause, they produce most often a hyperplasia of the endometrium associated with periodic bleeding (pseudomenstruation), together with an increase in the size of the uterus. In the few cases seen in young children, they have produced the syndrome of precocious puberty, with precocious menstruation. The arrhenoblastomas, on the other hand, have a definitely masculinizing tendency, as might be expected from the fact that they apparently have their origin from undifferentiated epithelium in the region of the rete ovarii. Under conditions which are not clear, these cells, capable of development along either male or female lines, may assume definitely masculine tendencies, as in the group of tumors under discussion. The relation of this endocrine cause of partial sex reversal to the general problems of intersexuality, sex differentiation and sex reversal is obvious, although knowledge on these subjects is still far from complete. Patients suffering from arrhenoblastoma present in the extreme instances not only such manifestations of defeminization as amenorrhea and breast atrophy but also such evidences of masculinization as a masculine type of hair distribution, deepening of the voice and hypertrophy of the clitoris. The removal of the tumor brings about a regression of these symptoms.

Arteriovenous Fistula Identified by Arteriography—Horton illustrates the importance of arteriography in determining the site of abnormal arteriovenous communications. With the history, the presence of a bruit and thrill over the right thigh and the bradycardiac reaction, the diagnosis of arteriovenous fistula of the acquired type seemed definitely established. The diagnosis was confirmed by the demonstration of a high admixture of arterial and venous blood in the right femoral vein. The site of the fistula could be determined only by means of arteriography, or by surgical exploration. The author believes that arteriography has been used for the first time in his case.

Symptomatic Relief of Emphysema by an Abdominal Belt—Alexander and Kountz state that, in advanced obstructive emphysema, difficulty in breathing is due principally to mechanical factors. The large lungs hold the diaphragm in the position of inspiration and indirectly they also distend the chest to a barrel shape. Respiratory excursion is thereby limited. It has been found that the diaphragm can be pushed upward toward its expiratory position by means of abdominal pressure, properly applied. From this position contraction again occurs. In order to maintain adequate intra-abdominal pressure the authors have devised a belt. In a series of twenty-five patients with advanced obstructive emphysema to whom belts have been fitted, nineteen have been subjectively improved. The average increase in the vital capacity of the lungs has been 39 per cent. With improvement in respiratory function, the characteristically elevated intrapleural pressure of obstructive emphysema has been found to become more negative and thus approach more normal values.

American Journal of Ophthalmology, St Louis

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Detachment and Rupture of the Retina A Hagedoorn Amsterdam Holland—p 400
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Intra Ocular Foreign Bodies Review of Eighty Cases D Marshall Ann Arbor Mich—p 416
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American Journal of Surgery, New York

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- Metastases from Malignant Tumors of the Thyroid Study of One Hundred and Twenty Four Cases R S Dinsmore and N F Hicken Cleveland —p 202
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- *Ovarian Hormones in Relation to Chronic Cystic Mastitis D Lewis and C F Geschickter Baltimore —p 280
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- Chronic Sacro Iliac Sprain with Attendant Sciatica R H Jackson Madison Wis —p 456
- Fracture of the Tibial Spine C S Venable San Antonio Texas —p 478
- Surgery of the Aged F W Bailey St Louis —p 487
- Regeneration of Nerves in Skin Grafts and Skin Flaps J S Davis and E A Kitlowski Baltimore —p 501

Postoperative End Results in Thyrocarditis—Lahey and Hurthall present evidence to prove that thyrocardiac patients in seemingly hopeless stages of decompensation can by subtotal thyroidectomy not only have their compensation restored but themselves be rehabilitated to a degree that permits normal activities in most of the cases. Their follow-up studies prove that at least 71.5 per cent of patients with auricular fibrillation can be restored to and remain in normal rhythm following the removal of their hyperthyroidism, that the mortality, 4.25 per cent, is relatively low for this serious situation and that compensation is restored and persists in at least 95 per cent of the patients.

Ovarian Hormones in Relation to Cystic Mastitis—Lewis and Geschickter present the analysis of 600 cases of chronic cystic mastitis. There are two types of the disease, one in which cyst formation predominates (referred to as cystic disease of the breast) and the other one in which epithelial hyperplasia predominates (referred to as adenosis of the breast). Their study of the breast tissue of women at various known periods of the menstrual cycle and of pregnancy, and of animals which have been injected with theelin and progesterin combined, reveals that the changes are fundamentally the same. The age period at which chronic cystic mastitis is most common corresponds with the age period at which these two hormones are most active. The tendency of the cysts to vary in size and for the symptoms to be exaggerated in the premenstrual period is an expression of periodic variations of the secretory levels of theelin and progesterin. Undeveloped tubules and acini in the adult breast may respond abnormally during the menstrual cycle and form the basis for the later development of cystic disease and adenosis. Under the intense hormone stimulation of pregnancy, normal development may be resumed. During pregnancy the lesions associated with chronic cystic mastitis disappear frequently. The eventual disappearance of the majority of all undeveloped tubules and acini after repeated pregnancies accounts for the fact that chronic cystic mastitis is rarely encountered in women who have borne many children. These observations also account for the frequent occurrence of cystic disease in married women who have not borne children and in the unmarried. The persistence of these structures through one or two pregnancies accounts for the disease in women who have borne few children. From the study of tissue in experimental animals after the injection of theelin, and theelin and progesterin combined, and of human material obtained

at definite known periods of the menstrual cycle and pregnancy, the authors believe that these changes in the apparently normal breast are due to variation in amount or periodic discharge of the ovarian hormones (theelin and progesterin). Histologically, these changes are not unlike those occurring in cystic disease of the breast and adenosis. Therefore they believe that they are justified in drawing the conclusion that these pathologic states of the breast are caused by alteration in character, amount or periodic discharge of the ovarian hormones.

Incision for Cancer of the Breast—For several years, Bullock has employed an incision in operations for cancer of the breast which starts at the ensiform and extends toward the shoulder to the level of the tip of the coracoid with a varying degree of straightness and obliquity, dependent on whether the growth is in the inner or outer half of the breast, to this is added the transverse elliptic incision of Stewart, or part of it, likewise dependent on the location of the growth. The outer end of this transverse incision is carried well back of the fibers of the latissimus. This forms, when dissected back, two broad based flaps, allows ample exposure of the chest wall and the axilla, is easy to close, does not scar the arm or shoulder and after healing is drawn well outward. A separate stab wound is unnecessary as drainage is established through the back end of the transverse cut. The incisions may be modified in direction and length to meet the requirements of the case. The towel clip grasping an unaffected part used to lift up the breast while its lower surface and the skin in contact with it is printed is left in place. By means of the clamp the breast is deployed in various directions and it is never necessary to touch the breast with the hand.

Annals of Medical History, New York

G 95 192 (March) 1934

- Progress and Pioneers of Preventive Medicine H Rolleston Haslemere Surrey England —p 95
- Two Notable Controversies Over the Invention of the Electric Telegraph and the Discovery of Surgical Anesthesia A H Miller Providence R I —p 110
- Glimpse of Seventeenth Century Medicine L Thorndike New York —p 124
- That Remarkable Philosopher and Physician Wells of Charleston The First Exponent of the Theory of Natural Selection Discoverer of the Nature of Dew and Physician F L Pleadwell Honolulu T H —p 128
- Galen's Writings and Influences Inspiring Them J Walsh Philadelphia —p 143
- Shakespeare's Medical Knowledge with Particular Reference to His Delineation of Madness Preliminary Survey of Critical Opinion I I Edgar Detroit —p 150
- Medical Allusions in Don Quixote J R Herd Chicago —p 169
- Medical Wisdom of Bret Harte L J Bragman Syracuse N Y —p 180

Archives of Dermatology and Syphilology, Chicago

29 645 804 (May) 1934

- *Acetarsone in the Treatment of Neurosyphilis L H Griggs Syracuse N Y and J F Schamberg Philadelphia —p 645
- Kahn Reaction with Spinal Fluids Containing Varying Amounts of Syphilitic Blood A B Loveman Louisville Ky and Louise Stocking Ann Arbor Mich —p 653
- Rattlesnake Anaphylaxis Associated with a Generalized Dermatitis C R Lounsberry San Diego Calif —p 658
- Necroderma Pigmentosum Report of Case C M Canright Cranford N J —p 668
- Factors Involved in Leather Dermatitis H Beerman Philadelphia —p 671
- Sulpharsphenamine in the Treatment of Warts H V Allington San Francisco —p 687
- *Acanthosis Nigricans Case of the Benign Form in an Adult Investigated from the Aspect of Endocrine Dysfunction A W Grace and H J Schwartz New York —p 691
- Thrombopenia in Acute Disseminated Lupus Erythematosus H J Templeton Oakland Calif —p 700
- Leukonychia and Colds Secondary to Disturbances of Metabolism E M Josephson and C Lerner New York —p 703
- Aene in One of Identical Twins W A Pusey and H Rattner Chicago —p 706
- Lipid Partition and the Albumin Globulin Ratio in Syphilis I Rosen Frances Krasnow and M A Lyons New York —p 707

Acetarsone in the Treatment of Neurosyphilis—Griggs and Schamberg gave intravenous injections of acetarsone to seventeen patients all of whom showed symptoms of neurosyphilis from a clinical or laboratory point of view. Most of the patients improved subjectively, i. e., obtained relief from the radiating pains. The drug seemed to have a tonic effect. One patient gained 15 pounds (6.8 Kg). In most cases the

condition of the spinal fluid was improved. Reports of a favorable action on the Wassermann and Kahn tests of the blood were noted in some of the cases. In two patients with small veins, occasionally a small part of the dose was given extravasously with no untoward symptoms.

Acanthosis Nigricans—Grace and Schwartz report a case of acanthosis nigricans. Frequent clinical observations were made, supplemented by laboratory procedures. The authors believe the case to be one of juvenile acanthosis nigricans in an adult. The clinical symptoms, other than the cutaneous picture, were faintness, fatigability, vague epigastric pains, loss of appetite and a loss in weight of 10 pounds (4.5 Kg.) within seven months. Laboratory examinations revealed a low blood pressure, a high sedimentation rate of the red blood cells and complete achlorhydria. The high sedimentation rate in this case can be accounted for by the presence of a certain amount of fissuring and infection at the base of the overgrown papillae of the axillae, groins and feet or by the condition of the teeth. The weakness complained of may be ascribed to the low blood pressure, and this in turn may follow the exceedingly poor dentition which prevents the patient from having any but the softest foods. There was a diminution of the gonadotropic factor of the anterior pituitary-like substances of the urine, but this was accounted for by the approaching menopause. The only constant observations in the four cases reported by Wieder, Knowles and his co-workers and Burgess is hypo-acidity of the gastric content, and it is possible that this may be significant in acanthosis nigricans, although Bennett and Ryle showed that 4 per cent of normal persons have no free hydrochloric acid in their gastric juice. There is no apparent connection between the acidity of the gastric content and the endocrine system. The "increased sugar tolerance" in Wieder's case is so slight as to be almost within the range of normal. The figures quoted for the basal metabolic and pulse rates in the same case are normal, and the cessation of menstruation in a girl of 13 during the period of hospitalization is scant evidence of ovarian dysfunction. The authors believe that there is as yet no support for the hypothesis of endocrine dysfunction as an etiologic or concomitant agent in juvenile acanthosis nigricans. If juvenile acanthosis nigricans cannot be linked with the endocrine system, the form associated with a malignant process must be considered to be a different disease or the hypothesis of endocrine dysfunction in both forms of the disease should be abandoned. As the clinical and histologic picture of acanthosis nigricans is the same in all cases regardless of the age of onset or of the presence or absence of a malignant process the authors prefer to regard the disease as a single entity and to view as unfounded the hypothesis of endocrine dysfunction as an etiologic agent.

Archives of Ophthalmology, Chicago

11 751 932 (May) 1934

- Iridenceleisis in Buphthalmos S R Gifford Chicago—p 751
Diabetic and Tobacco Amblyopia Report of Case C E G Shannon and L F McAndrews Philadelphia—p 757
Retinitis Punctata Albescentis and Retinitis Pigmentosa as Affected by Pregnancy Report of Case R H Henderson Wilmette Ill—p 763
Importance of Cephalalgia in Ocular Diagnosis B L Gordon Atlantic City N J—p 769
Effect of Intra Ocular Tension of Corneal Massage with the Tonometer of Schiotz J Bock, P C Kronfeld and J T Stough Chicago—p 797
Calculating Stereoscopic Vergence J I Pascal New York—p 807
O'Connor Cinch Shortening Operation for Heterotropia and Heterophoria Critical Survey G N Hosford and A M Hicks San Francisco—p 814
Pseudoxanthoma Elasticum and Angioid Streaks Report of Case M W Jacoby Cleveland—p 828
Treatment of Mooren's Ulcer F W Dean Council Bluffs Iowa—p 832

Diabetic and Tobacco Amblyopia—Shannon and McAndrews point out that a person may be a heavy drinker and smoker for years and never notice any depreciation of vision. A diabetic person may go through life and suffer no visual disturbance. However if the heavy smoker and drinker acquires diabetes this relative immunity is apt to change. They report a case which exemplifies this apparent relationship between diabetes and toxic amblyopia. As to the cause of diabetes in this patient they can only guess. Lichwitz and von Noorden believe that persons suffering from alcoholism

are susceptible to diabetes. The authors believe that the case they report is one of toxic amblyopia, precipitated in some way by the onset of diabetes.

Pseudoxanthoma Elasticum and Angioid Streaks—Jacoby reports a case of pseudoxanthoma elasticum and streaks of the retina with the ocular changes illustrated by stereoscopic photographs. It would appear that trauma may be an exciting factor in exacerbations of an already existing disease. Inter-current infections elsewhere may be hastening factors in senile elastosis but they are not necessarily the true etiologic factors. The stereophotographs seem to establish definitely that the streaks are due to veins which have undergone modification in an altered collateral circulation.

Canadian Medical Association Journal, Montreal

30 473 588 (May) 1934

- Chemical Nature of the Fat Soluble Vitamin of Growth Phytol, Carotene Vitamin A M Javillier Paris France—p 473
Thyroxinosis and the Autonomic System A Crotti Columbus Ohio—p 479
Etiology of Undulant Fever in Canada Brucella Abortus Isolated from Two Cases in Quebec R Thompson Montreal—p 485
Clinical Application of Hematology to Infants and Children C E Snelling and A Brown Toronto—p 488
*Vectors of Relapsing Fever in Relation to an Outbreak of the Disease in British Columbia E Hearle Kamloops B C—p 494
Indications for Abdominal Cesarean Section and the Low Cervical Operation W J Stevens Ottawa Ont—p 498
Hodgkin's Disease with Marked Eosinophilia Case D F Coburn and J E Pritchard Montreal—p 503
Paroxysmal Ventricular Tachycardia Complicating Complete Heart Block Report of Case G F Strong Vancouver B C—p 507
Papillary Growths of the Renal Pelvis D W Mackenzie Montreal—p 509
Bilirubin Formation and Reticulo Endothelial System III Functional Block of the Reticulo Endothelial System R Gottlieb Montreal—p 512
*Epidermoid Cyst in Bone J H Couch Toronto—p 516
Cyanosis in Nitrous Oxide Oxygen Anesthesia in Man B B Raginsky and W Bourne Montreal—p 518
The Early Diagnosis and Treatment of Carcinoma of the Uterine Cervix A B Whytock Niagara Falls Ont—p 522
Concomitant Squint W H M Thomson London Ont—p 524
Poliomyelitis in the City of Quebec in 1932 E Couillard Quebec—p 527
Sialolithiasis C H A Walters Belleville Ont—p 533

Vectors of Relapsing Fever—From the point of view of arthropod vectors, Hearle discusses an outbreak of relapsing fever, recorded by Palmer and Crawford as the first occurring in Canada. The common "wood tick," *Dermacentor andersoni* Stiles, suggested by the authors, is discarded as a possibility in the particular cases cited since the period of adult activity of this species in British Columbia is from March to May, whereas the cases occurred mainly in late July and August, long after this tick has estivated. Other native ticks commonly attacking man are unknown in this part of British Columbia, and the suggestion is advanced that one of the well known Argasine vectors of the spirochete, such as *Ornithodoros talaje* or *O. turicata*, may have been introduced from the southwestern part of the United States or from Mexico. *Argas persicus* is recorded from Canada for the first time and new hosts are recorded for *Ixodes auritulus* Pack rats, *Neotoma cinerea*, are discussed as possible factors in the disease, both as reservoirs for the spirochetes and as hosts maintaining the ticks when the summer camps are untenanted.

Epidermoid Cyst in Bone—Couch states that there is a typical clinical picture of epidermoid cysts in bone. The history, clinical and roentgen observations are so characteristic that a definite preoperative diagnosis can be made. The complaint is of sudden pain over the terminal phalanx, brought about by slight pressure and coinciding with a fracture of the cortex over the cyst. The tenderness persists. The patient usually recalls a rather severe crushing or puncture injury some time in the past and on examination the affected part is found to be tender with one point of maximal tenderness over the fractured cortex. Comparison with the normal side will show a thickening of the phalanx. Roentgenograms reveal a definite clear cut smooth-walled cyst, which produces atrophy and destruction of nearby bone by pressure. The cortex is thin over the cyst and may be lacking on one side. If there is a history of recent sudden pain on slight pressure, a fracture through the cortex will be seen. The presence of the cyst destroys the phalanx, leaving the cyst covered with a thin shell. But it

also must stimulate bone production, for the whole phalanx is larger than normal and gives the appearance of having been "expanded" by the cyst, new bone must therefore have been laid down outside, as it was eroded inside. The most effective treatment is to remove the cyst intact. The advisability of placing a bone graft in this cavity has been considered, but experience has shown that it is unnecessary if the part is protected from further fracture for three weeks. If untreated, the cysts progress and destroy the affected part of the phalanx. They burst through the cortex and spread in the soft tissue, necessitating amputation. They respond to treatment and may be cured with no likelihood of recurrence. The author reports a case of epidermoid cyst in the bone.

Johns Hopkins Hospital Bulletin, Baltimore

54 315 382 (May) 1934

Observations on the Pathology of High Tone Deafness S J Crowe, S R Guild and L M Polvogt Baltimore—p 315

Journal of Experimental Medicine, New York

59 529 686 (May 1) 1934

Histology of Equine Encephalomyelitis E W Hurst Princeton N J—p 529

Failure to Neutralize the Poliomyelitis Virus with Serums of Adult Macacus Rhesus and of Young Female Rhesus Treated with Anterior Pituitary Extracts N P Hudson E H Lennette and E Q King, Chicago—p 543

Studies on Meningococcus Infection VI The Carrier Problem G Rake—p 553

Selection with the Magnet and Cultivation of Reticulo Endothelial Cells (Kupffer Cells) P Rous and J W Beard New York—p 577

Characters of Kupffer Cells Living in Vitro J W Beard and P Rous New York—p 593

Experimental Type III Pneumococcus Pneumonia in Monkeys I Production and Clinical Course T Francis Jr and E E Terrell New York—p 609

Id II Treatment with an Enzyme Which Decomposes the Specific Capsular Polysaccharide of Pneumococcus Type III T Francis Jr, E E Terrell R Dubos and O T Avery New York—p 641

*Louping Ill in Man T M Rivers and F F Schwenker New York—p 669

Louping Ill in Man—Rivers and Schwenker describe four instances of infection in man that are believed, because of the circumstances under which they occurred and in view of the results of neutralization tests, to represent cases of louping ill. Evidence obtained by the neutralization tests is in favor of the idea that the antibodies against louping ill virus demonstrated in certain serums were most likely the result either of contact with or of infection with the active agent.

Journal of Immunology, Baltimore

26 247 352 (April) 1934

*Experimental Observations on the Antigenic Potency of Haemophilus Pertussis Extracts J J Miller Jr Copenhagen, Denmark—p 247

Studies on Vascularization of the Cornea I Sensitization of the Cornea of Rabbits to Bacteria L A Julianelle, M C Morris and R W Harrison St Louis—p 267

Id II Sensitization of the Cornea of Rabbits to Proteins L A Julianelle M C Morris and R W Harrison St Louis—p 281

Id III Sensitization of the Cornea of Monkeys L A Julianelle R W Harrison and M C Morris St Louis—p 295

Id IV The Question of Passive Corneal Hypersensitivity L A Julianelle M C Morris and R W Harrison St Louis—p 303

The Serum Antibody Titer of Macacus Rhesus Following Repeated Inoculations of Yellow Fever Virus W Lloyd and A F Mahaffy Lagos Nigeria—p 313

Absorption of Phage by Bacilli P Levine A W Frisch and E V Cohen Madison Wis—p 321

Antigenic Potency of Haemophilus Pertussis Extracts—Miller compared the antigenic potency of extracts of Haemophilus pertussis with standard pertussis vaccine. The titer of complement fixing antibodies in rabbits after the injection of these agents was the index used. The observations suggest that fresh extracts of recently isolated strains produce a more rapid rise in titer than does vaccine. The addition of formaldehyde, chinolol and trisresol to these extracts delays the response. Filtration of the extract through a Berkefeld L₂ filter removes the antigen. A more rapid response occurs with the small quantity of extract prepared from a given amount of concentrated bacterial suspension than with the large quantity of standard vaccine prepared from the same amount of concentrated bacterial suspension. Therefore the greater concentration of the antigen in the extract is not the factor responsible for the rapid rise obtained. The unified and

extracellular state of the antigen is the factor responsible. The antigenic component of H pertussis endotoxin is relatively thermostable whereas the toxic component is inactivated by temperatures of 37 C and higher. The author points out that the foregoing data should be verified by further study for they constitute supportive experimental evidence for the trial of H pertussis extract in the prophylaxis and treatment of pertussis.

Journal of Industrial Hygiene, Baltimore

16 147 200 (May) 1934

A Cause for the Decrease in the Number of Ions in Air of Occupied Rooms G R Wait Washington D C—p 147

The Action of Mica Dust on Pulmonary Tissue A Policard, Lyons France—p 160

Röntgen Technic with Especial Reference to Examination to Diagnose or Exclude Silicosis H K Pancoast and E P Pendergrass Philadelphia—p 165

Sericide in Foundry Dust C S Hurlbut Jr and D S Beyer Boston—p 169

Quantitation of Impinger Dust Samples by Dark Field Microscopy T Hatch Boston and C L Pool Providence R I—p 177

An Atmospheric Dust Recorder W G Hazard and P Drinker Boston—p 192

Journal of Lab and Clinical Medicine, St Louis

19 799 916 (May) 1934

*Etiology of Granulopenia (Agranulocytosis) with Particular Reference to the Drugs Containing the Benzene Ring R R Kracke and F P Parker Emory University, Ga—p 799

Blood Iodine Studies II Normal Iodine Content of Human Blood C B Davis Lincoln Ill G M Curtis and Versa V Cole Columbus Ohio—p 818

The Sedimentation Rate and Polymorphonuclear Count in Rheumatoid and Mixed Arthritis Their Value as an Index to Activity W B Rawls B J Gruskin A A Ressa and Marie Jordan New York—p 830

Bactericidal and Fungicidal Action of Homologous Halogen Phenol Derivatives and Its Quasispecific Character I Derivatives of Para chlorophenol E Karmann, V A Sbtenov and L W Gates Bloomfield N J—p 835

Normal Erythrocyte Hemoglobin and Packed Cell Volume Standards in Young Men Study of One Hundred Subjects O S Walters Lawrence Kan—p 851

Wuchereria (Filaria) Bancrofti Infection in Man with an Unusual History Case Report H A Poindexter and R F Jones Washington, D C—p 864

The Toxin of Bacillus Proteus H Randolph Phoenix Ariz—p 870

*Cocaine Poisoning as Influenced by Diets Preliminary Report A J Nedzel Chicago—p 875

Nasopharyngeal Flora and Some Remarks as to Their Relation to Common Colds K Yardumian and Estelle Logan Lightner Pittsburgh—p 877

*Simplified Microdetermination of Cholesterol in Whole Blood Serum and Plasma J Kamlet Brooklyn—p 883

Examination for Tubercle Bacilli Mary Van S McCoy, New York—p 885

Hemoglobin and Blood Cell Relations as Determined by Iron and Oxygen Capacity Methods G O Broun and A P Briggs St Louis—p 886

Comparison of Methods for the Determination of Uric Acid in Human Bovine and Avian Bloods G H Pritham and A K Anderson State College Pa—p 892

Blood Iodine Studies III A Simple Reservoir Buret for Making Microtitrations F J Phillips and G M Curtis Columbus Ohio—p 896

Cage for Mice and Rats A W Blair and E B Carmichael, University Ala—p 898

Maintaining Water and Air Balance During Prolonged Incubation Experiences Gained from Growing Tubercle Bacilli H J Corper and M L Cohn Denver—p 899

Etiology of Granulopenia—Kracke and Parker point out that it seems reasonable that a certain proportion of granulopenia is due to arsenamine and a certain percentage to gold salts and perhaps other chemicals, leaving, however, a large group of the idiopathic type with an unknown etiology. The disease is more prevalent among physicians and their relatives, nurses, hospital employees and members of the allied professions than in any other group of people in the United States. It is essentially a disease of the white race. Its distribution is correlated with the usage of benzamine drugs. The authors present eleven cases in which the clinical onset was preceded by prolonged or intensive administration of drugs containing the benzamine group. Statistics are presented to show that this class of drugs has wide usage among members of the medical and allied professions. A hypothesis for its production, based on oxidation reactions of the benzamine drugs, is

presented In the clinical or experimental development of granulopenia, it is necessary to presuppose the existence of a previously weakened, damaged or idiosyncratic bone marrow which may be congenital or acquired The authors urge that all who have the opportunity to study cases of granulopenia should direct their attention to a careful history of known marrow depressing agents and the usage of benzamine drugs in particular

Cocaine Poisoning as Influenced by Diets—Nedzel performed forty-eight experiments on thirty rabbits Ten animals were kept on oatmeal and water, ten on carrots, and ten on oatmeal, water and carrots The experiments consisted of injections of cocaine into the marginal ear vein of a rabbit The dose of cocaine was 10 mg per kilogram of weight After injection, the animal was observed as long as symptoms were manifest The results show that the animals on the alkali-forming diet and on the mixed diet reacted to the injection of cocaine more or less similarly, though the animals on the alkaline diet reacted more vigorously (two deaths) The animals on the acid-forming diet were definitely more sensitive to cocaine poisoning (four deaths) In general the toxic effects of the cocaine were definitely greater and recovery was considerably delayed It is possible that, in acute cocaine poisoning, the intravenous injection of alkali might be of benefit for the poisoned individual Experiments on animals, to test this question, are called for

Microdetermination of Cholesterol in Blood—Kamlet tried to determine whether the extraction of the cholesterol may be effected at room temperature without the use of complicated extraction apparatus Experiments showed that the cholesterol is quantitatively extracted by chloroform from blood dried on filter paper in two hours at room temperature The following procedure was adopted for the determination of cholesterol in blood On an ordinary 7 cm filter paper preferably ashless, 0.2 cc of oxalated blood, serum or plasma is deposited The paper is worked round until the liquid is distributed evenly over the surface and then it is suspended by means of a thread or wire strung through an unstained area in an incubator at from 35 to 40 C After twenty to thirty minutes the blood is dried The paper is rolled up compactly, folded into quarters and deposited in the bottom of an ordinary 6 by 1 inch test tube Into the tube, 10 cc of chloroform is pipetted, corked and set aside for at least two hours During this period the chloroform should completely cover the folded filter paper In this manner a quantitative extraction of cholesterol from dried blood, serum or plasma is effected without the use of heat, thus avoiding the occasional appearance of an off-color Now 5 cc of the chloroform solution is pipetted into an ordinary test tube Into a similar tube 5 cc of the working cholesterol standard is placed The working cholesterol standard is made by diluting 5 cc of the stock cholesterol standard (stock cholesterol standard 1 Gm of chemically pure cholesterol is dissolved in enough chloroform to make 100 cc of solution) with enough chloroform to make 1,000 cc of solution, 1 cc contains 0.05 mg of cholesterol Both standards keep indefinitely in a refrigerator To each tube 2 cc of acetic anhydride and 0.2 cc of concentrated sulphuric acid are added, stoppered, mixed by inversion, allowed to stand for fifteen minutes in a cool, dark place and compared in the colorimeter Comparison Reading of standard over reading of unknown multiplied by 250 equals milligrams of cholesterol per hundred cubic centimeters of blood The unknown is set at 25 mm and compared The reading of the standard multiplied by 10 gives the milligrams of cholesterol in 100 cc of whole blood, serum or plasma

Journal of Nervous and Mental Disease, New York

79 377-496 (April) 1934

- Psychogenic Factors in Some Epilepsies J H Masserman Baltimore—p 377
Scapular Tendon Reflexes S M Weingrow New York—p 391
Frontal Lobe Lesions with Cerebellar Manifestations Frontal Lobe as a Center of Equilibrium A Gordon Philadelphia—p 411
Treatment of Some Multiple Scleroses by Electropyraxia C A Neymann and S L Osborne, Chicago—p 423

Treatment of Multiple Scleroses by Electropyraxia—Neymann and Osborne treated twenty-five cases of multiple sclerosis by hyperpyrexia, produced by diathermy radiotherapy

and the electric blanket, of which 44 per cent were much improved An additional 40 per cent were improved to a lesser degree During the time interval in which these patients were observed after treatment, all remained stationary This interval varied from a few weeks to eighteen months One patient returned to the hospital with an exacerbation of symptoms and two patients died, one as the result of treatment The authors make no claims for the ultimate success of this therapy

Journal of Nutrition, Philadelphia

7 481 572 (May 10) 1934

- A New Technic for the Measurement of Average Skin Temperature Over Surfaces of the Body and the Changes of Skin Temperature During Exercise A C Burton Rochester N Y—p 481
The Application of the Theory of Heat Flow to the Study of Energy Metabolism A C Burton, Rochester, N Y—p 497
Possible Sources of Calcium and Phosphorus in the Chinese Diet I Determination of Calcium and Phosphorus in a Typical Chinese Dish Containing Meat and Bone P W Hoh Jessamine Chapman Williams and C S Pease Corvallis Ore—p 535
Hypothyroidism and Nutrition I Vitamin B and Thyroxine. B Sure and Margaret Elizabeth Smith Fayetteville Ark—p 547
Storage of Vitamin A in the Liver of the Rat Augusta B McLeod and Ethel M Luce Clausen, Rochester N Y—p 557

Kansas Medical Society Journal, Topeka

35 161 200 (May) 1934

- Pathology of Hypertension H R Wahl and W C Curphey Kansas City—p 163
Use of the Thomas Wrench in the Reduction of Fractures and Dislocations J B Weaver Kansas City Mo—p 164
Cerebral Fat Embolism R W Kerr Kansas City—p 167
Reaction of Tumors to Irradiation F C Helwig, Kansas City—p 169
Management of Empyema Thoracis S H Snider Kansas City Mo—p 173

Michigan State M Society Journal, Grand Rapids

33 235 274 (May) 1934

- Some Functions of Cerebral Cortex Beaumont Foundation Lecture II The Frontal Lobes J F Fulton New Haven, Conn—p 235
Michigan's Contribution to Early Roentgenology W A Evans Detroit—p 243
Typhoid Fever in Detroit 1910 1933 Inclusive F M Meader Detroit—p 249
Hypothyroidism and Cholelithiasis C B Loranger Detroit—p 255

Minnesota Medicine, St Paul

17 237 300 (May) 1934

- Cinchophen Poisoning M W Comfort Rochester—p 237
Tumors of the Brain from the Surgical Standpoint W M Craig Rochester—p 241
Development of the Human Chest Similarity Between Normal Infantile and Adult Tuberculous Chests S A Weisman Minneapolis—p 244
Injection Treatment of Hernia C O Rice Minneapolis—p 248
Anesthesia for Rectal Surgery H F Bayard Minneapolis—p 252
Surgical Treatment of Hemorrhoids W A Fansler Minneapolis—p 254

Surgical Treatment of Hemorrhoids—Fansler describes a procedure, which he believes, with slight modification, can be applied to any case of uncomplicated hemorrhoids The varicose vessels and their interstitial tissue are removed and at the same time enough of their covering is removed so that no skin tabs or redundant mucosa will be left Sufficient mucosa and skin is left to line the lower portion of the rectum and anal canal so that adequate dilatation may occur for defecation and to avoid a stricture The operation is easily and thoroughly accomplished by leaving the hemorrhoids in their normal position and doing the operative procedure through an especially devised anoscope In no case should the hemorrhoid be everted The hemorrhoid to be treated is isolated in the slot of the anoscope In this position it is freely visible and accessible, and the exact amount of tissue to be removed can be determined before the incision is made A plain catgut suture is placed through the uppermost portion of the hemorrhoid An incision is made from the lowermost part of the hemorrhoid mass to its extreme upper pole A second incision is made laterally and parallel to the first and a V-shaped piece of tissue is removed After the original section is removed the edges of the mucosa are retracted with forceps, and the remaining vessels dissected out until the sphincter muscle and the circular muscular coat of the rectum are exposed freely The cut edges are brought into apposition at a few points with plain catgut suture.

Missouri State Medical Assn Journal, St Louis

31 177 224 (May) 1934

- Significance of the Emotional Level The Hodgden Lecture W B Cannon, Boston—p 177
- *An Efficient Method of Heat Therapy in Treatment of Syphilis C C Dennie A N Lemoine and M Palsky Kansas City—p 184
- Roentgenologic Consideration of Silicosis S A Levey St Louis—p 189
- Silicosis H B Goodrich Hannibal—p 193
- Hemolytic Jaundice Unimproved by Splenectomy with Ultimate Remission Following Liver Therapy Report of Case A C Van Ravenswaay Boston and A Van Ravenswaay Boonville—p 198
- Failure of Liver Therapy in Pernicious Anemia Report of Case F S Morest and A H Wells Kansas City—p 201

Heat Therapy in Treatment of Syphilis—With the idea in mind that only a small proportion of syphilitic patients can be subjected to diathermy, malaria and heat cabinets, Dennie and his associates elevated temperatures by means of hot baths in an ordinary bath tub. The degree of temperature elevations that they obtained has been striking and though the series of cases is not extensive they show a few markedly favorable clinical results and that temperatures so produced are fully comparable to those attained in heat cabinets, diathermias and electrotherms. The patient is immersed in a tub of water at from 95 to 105 F and the temperature is gradually increased by the addition of hot water. There is a surprising individual variation, both in the degree of heat a given patient can tolerate and also in the length of time he can endure exposure to it. The individual tolerance is definitely built up from day to day. It is this tolerance which must govern the ultimate amount and intensity of heat that is administered. The goal is a bath water of from 105 to 115 F for from ten to thirty minutes. The patient is watched closely as to his pulse and general appearance. At the first sign of distress, anxiety or collapse, the bath is discontinued. Following the bath there is a profuse diaphoresis during which the patient is warmly bundled up. Normal temperature is regained in from thirty to sixty minutes. The patient rests for several hours fluids are forced, and rarely are any untoward effects seen. Usually there is a stimulation of the appetite and a euphoric reaction after several hours. Patients often gain weight under treatment. Baths are given daily if tolerance is satisfactory. The authors state that they used hot baths in a variety of types of advanced syphilis. Most of the cases have been of advanced tabes and tabes with dementia paralytica, but they have also included interstitial keratitis, gummas of the skin, late nodular syphilodermas, Charcot joints and a few visceral syphilids.

New England Journal of Medicine, Boston

210 935 982 (May 3) 1934

- Acute Thyroiditis Report of Ten Cases R C Cochrane and S J G Nowak Boston—p 935
- Carcinoma of the Small Intestine H K Sowles Boston—p 942
- Excision of the Thoracic Esophagus for Carcinoma with Construction of an Extrathoracic Gullet G G Turner Newcastle on Tyne, England—p 947
- Cesarean Section Review of Four Hundred and Thirty Six Cases C T O Connor Boston—p 948
- The Prevention of Crime The Gangster in the Making L V Briggs Boston—p 955
- Atresia of the Cervix Associated with Hematometra E E Allen Tewksbury Mass—p 959
- Ruptured Biceps Tendon Repair F J Cotton and G M Morrison Boston—p 960

New Jersey Medical Society Journal, Trenton

31 187 248 (April) 1934

- Gas Bacillus Infection E M Finesilver Newark—p 194
- Avertin Rectal Narcosis in Otolaryngology V E Johnson Atlantic City—p 200
- Preschool Medical Examinations in Hackensack J W Demarest Hackensack—p 203
- Cardiovascular Syphilis Analysis of One Thousand Seven Hundred and Thirty Autopsies S Weintraub New York—p 205
- Medicolegal Aspects of Malpractice M Kummel Newark—p 206
- The Tuberculin Test E H Kleinschmidt New York—p 210
- A Successful Operative Procedure for Reshaping the Lower Limbs G Blackburne Newark—p 214
- Roentgen Changes in Intestinal Obstruction R P Sturr Philadelphia—p 216
- Constipation Clinical and Roentgenologic Studies of One Hundred Cases S W Johnson Passaic—p 218
- Clinical Aspects of Appendicitis Factors of Importance in Reducing Its Mortality I F Frost Morristown—p 221

New Orleans Medical and Surgical Journal

86 715 774 (May) 1934

- Some Principles and Policies of the Medical Profession in Its Public Relations C A Weiss Baton Rouge La—p 715
- Tribute to Departed Members J L Scales Shreveport La—p 720
- Symptomatic Agranulocytic Angina Following Neocarphenamine Therapy J C Culley B S Guyton and J R Simms Jr Oxford Miss—p 721
- *Hyperinsulinism Report of Case S Jacobs New Orleans—p 724
- *Cause of Primary Dysmenorrhea and Its Treatment by Hormone Therapy Preliminary Report J T Witherspoon, New Orleans—p 726
- Cervical Discharge Sterility Artificial Insemination J Cohen New Orleans—p 730
- The Abdominal Trinity in Infants and Young Children R M Stephenson Lexington Miss—p 731
- A Head Band O W Bethea New Orleans—p 735

Treatment of Dysmenorrhea by Hormone Therapy—Witherspoon believes that the most important cause of primary dysmenorrhea is the result of endocrine imbalance. The aim of treatment is either to counterbalance the excess of the follicular hormone by substituting additional corpus luteum influence or to withdraw this influence slowly, so that the follicular hormone stimulation of the uterus will not be precipitated but will appear gradually. The method of treatment employed was to give daily intramuscular injections, from three to four days previous to the expected menses and from one to two days during the menses, of 250 rat units (1 cc) of follutein. After the period was passed, no treatment was given until just before the next expected period. Of ten patients so treated, the results were satisfactory in seven. In one, slight relief of pain was noted, in the other two patients the dysmenorrhea continued in its severe form. The only untoward symptoms noted were an occasional local reaction at the site of the injections. This could be alleviated by lessening the dosage given or by diluting the amount of injection with an equal volume of sterile physiologic solution of sodium chloride.

Philippine Journal of Science, Manila

53 1 106 (Jan) 1934

- Leprosy in Cebu II J Rodriguez and F C Plantilla Cebu Cebu—p 1
- Experiments on the Control of the Common Water Leech Hirudinaria Manillensis Z de Jesus Manila—p 47
- Plant Disease Problems Confronting Truck Farmers in Trinidad Valley and the Vicinity of Baguio Mountain Providence Philippine Islands T G Fajardo Manila—p 67
- Studies in Surra I Blood Chemistry in Equine Trypanosomiasis (Trypanosoma Evansi) R Randall Manila—p 97

Public Health Reports, Washington, D C

49 555 580 (May 4) 1934

- *Intravenous Use of Copper Sulphate Combined with Sodium Thiosulphate in Treatment of Trachoma C E Rice A A Drake and J E Smith—p 555
- 49 581 594 (May 11) 1934
- Psittacosis Outbreak in a Department Store in Pittsburgh L F Badger—p 583

Copper Sulphate with Sodium Thiosulphate in Treatment of Trachoma—Rice and his associates used a combination of copper sulphate with sodium thiosulphate intravenously in varying doses as a therapeutic measure in trachoma. In the smaller doses (from 20 to 80 mg, depending on body weight) no change was seen in the pathologic condition of the trachoma. There was symptomatic improvement however, in some cases. In the larger doses (from 180 to 205 mg) there seemed to be some slight effect on the trachoma as well as on the symptoms. In the larger doses advocated by Stastnik there was an undesirable reduction in red blood cells and hemoglobin. It would seem desirable for any one experimenting further with this method of therapy to use caution in giving more than 125 mg of copper sulphate per kilogram of body weight in combination with sodium thiosulphate, and to keep a close check on the hemoglobin. The authors did not secure the striking beneficial results described by Stastnik in any of their cases. This form of therapy did not cause any immediate untoward reactions after any of the intravenous injections, nor was there any undesirable effect on the kidneys that could be ascertained by frequent urinalysis. It seems that the possible dangers of this form of therapy outweigh any slight benefits obtained from it. Certainly it does not compare with the older established methods of therapy.

Puerto Rico J Pub Health & Trop Med, San Juan

9 217 364 (March) 1934

- Relation of Type and Grade to Operability and Prognosis in Gastric Carcinoma A O Whipple and T S Rarford New York—p 217
Studies on Schistosomiasis Mansoni in Puerto Rico II Epidemiology and Geographic Distribution of Schistosomiasis Mansoni in Puerto Rico I Epidemiology of the Infection on the Island W A Hoffman and E C Frust San Juan—p 228
Sedimentation Concentration Method in Schistosomiasis Mansoni W A Hoffman J A Pons and J L Janer San Juan—p 283
Filterable Virus Diseases and the Nature of Their Causative Agents E B McKinley Washington D C—p 299
Influence of Dietary Factors on the Resistance of the White Rat to Experimental Tuberculosis I Vitamin A Deficiency P Morales Otero E Koppisch and J H Axtmayer San Juan—p 314
Causes of Sudden Death in Puerto Rico Analysis of Sixty One Cases Studied Post Mortem E Koppisch, San Juan—p 328

Schistosomiasis Mansoni—The investigations of Hoffman and his associates indicate that the sedimentation concentration method is superior to the routine smear for the detection of eggs of *Schistosoma mansoni* in feces. It may be employed also as an adjunct to indicate the progress of therapy in schistosomiasis mansoni. It may aid in disclosing the presence of other intestinal parasites. Also some evidence has been advanced to suggest that all antimony compounds do not injure the ova of *S. mansoni* situated within the host.

Rhode Island Medical Journal, Providence

17 71 88 (May) 1934

- Treatment of Neurosyphilis Summary and Evaluation of Methods Used During the Past Ten Years W N Hughes Providence—p 71
Injuries to the Coccyx H McCusker Providence—p 77
Interesting Congenital Deformities P Appleton, Providence—p 82

Southern Medical Journal, Birmingham, Ala

27 377 472 (May) 1934

- Diseases of the Nails V Pardo-Castello Havana Cuba—p 377
Benign Tumors of the Small Intestine R M Moore and H C Schmeisser Memphis Tenn—p 386
Abscess of the Liver Complicated by Duodenal Fistula G H Bunch and O B Mayer Columbia S C—p 393
Fractures of the Os Calcis and Astragalus W Clarkson and A Barker Petersburg Va—p 397
End Results of Cova Plana as Related to Treatment G A Caldwell Shreveport La—p 402
Relation of Gallbladder Disease Without Jaundice to Bradycardia and Heart Disease Case Report J L Carmichael Birmingham Ala—p 407
Anginoid Symptoms of Gallbladder Disease Survey of the Literature W E Vest Huntington W Va—p 410
Clinical Value of the Study of the Peripheral Circulation G M Piersol H J Tumen and S Lisker Philadelphia—p 413
Nasal Sinus Disease in Children L W Dean St Louis—p 418
Sympathetic Ophthalmia Report of Twenty Eight Cases L T Post, St Louis—p 421
Paralysis of the Diaphragm as a Therapeutic Agent R B Bailey Wheeling W Va—p 425
Training Desirable in Future Practitioners of Medicine in the Promotion of Child Health J H M Knox Jr Baltimore—p 430
Autistic Thinking W R Houston Augusta Ga—p 435
Advisability of Repairing Old Lacerations of Cervix and Perineum at Time of Subsequent Delivery J R Bloss Huntington W Va—p 439
Simple Method of Treatment of Prostatic Obstruction Case Reports J B Neil Knoxville Tenn—p 442
Ovarian Pregnancy Report of Case Probably Tubo-Ovarian with Fully Grown Fetus C S Neer Vinita Okla—p 445
Malaria Part I Some Research Problems in Malaria C F Craig New Orleans—p 448
Id Recent Work in the Epidemiology of Malaria G E Riley Jackson Miss E C Faust New Orleans and T H D Griffiths, Jacksonville Fla—p 452
Id Malaria Mortality in the Southern United States for the Year 1932 E C Faust and Celeste Goff Diboll New Orleans—p 457
Id Preliminary Observations on Hibernation of *Anopheles Quadrimaculatus* in Southern Louisiana E H Hinman New Orleans—p 461
Id Malaria Surveys in Florida Preliminary Report T H D Griffiths Jacksonville Fla—p 465

Texas State Journal of Medicine, Fort Worth

29 715 782 (April) 1934

- Calculous Obstruction of the Common Bile Duct Its Surgical Management Q B Lee Wichita Falls—p 720
New and Improved Spinal Narcosis as Developed by German Physicians J F Ford Dallas—p 724
Alkaline Encrusted Cystitis Case Reports R E Cone Galveston—p 725
Diseases of the Female Urethral Meatus W J Graber Jr Temple—p 728
Pathologic Significance of the Nevus C Phillips Temple—p 730
High Blood Pressure and Hypothyroidism Florence Widney Austin, Dallas—p 733
Epileptic Syndrome and Treatment P M Bassel Temple—p 736

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Disease in Childhood, London

9 65 132 (April) 1934

- Vitamin A Deficiency in Children Part I Present Knowledge of the Clinical Effects of Vitamin A Deficiency with Especial Reference to Children Helen M M Mackay—p 65
*Solar Irradiation of Children with Especial Reference to Hypervitaminosis D E C Dodds J D Robertson and H J Roche—p 91
*Pyelonephritis in Infancy and Childhood Its Bacteriology and Pathology Mary A Griffin—p 105
A Nutritional Disease of Childhood Associated with a Maize Diet and Pellagra H S Stannus—p 115
Pyelography in Infants W E Underwood—p 119
Unusual Case of Disseminated Sarcoma in a Child E Pritchard and D H Haler—p 125

Solar Irradiation of Children—Dodds and his associates exposed twenty eight children suffering from various orthopedic conditions to solar radiation during the summer months. No clinical ill effects occurred. In no case can it be said that the progress of the patient was retarded as a result of the insolation. The marked improvement in the general condition that followed admission might be attributed partly to a beneficial effect resulting from exposure to the sun. Although the amount of insolation obtained was not the maximum possible, it was sufficient to demonstrate that there is little or no likelihood of producing ill effects due to excessive liberation of vitamin D produced by irradiation of the ergosterol contained in the skin. The increase in the serum calcium and phosphorus which was found to have occurred was within physiologic limits. No signs of toxicity such as have been reported by investigators of hypervitaminosis D have been demonstrated. Taking the combined calcium-phosphorus metabolism into consideration, it appears that on a normal diet doses of vitamin D such as are produced by irradiation cause a greater increase in the blood phosphorus than in serum calcium.

Pyelonephritis in Infancy and Childhood—Griffin performed necropsies in 170 cases of pyuria in infants and children, examining the kidneys histologically in seventy and recording the bacteriologic results in eighty-seven. In twenty-five the formation of agglutinins was studied and in nine complement fixation tests were carried out. *Coliform bacilli* were the organisms most commonly isolated, suggesting that pyuria is due to auto-infection from the intestine. Great specificity to agglutination was shown by the coliform organisms. For this reason only autogenous vaccines are likely to be of benefit. Agglutination of the organisms isolated from the urine with the patient's serum occurred much more commonly in the fatal cases than when the patient recovered. Acutely ill patients whose serum did not agglutinate recovered quickly. Probably the development of agglutinins depends on the extent and severity of the lesions in the kidneys and on the general resistance of the patient. The power of fixing complement did not run strictly parallel to the agglutinating properties of the serum. The morbid anatomic and histologic observations indicate that the lesion is a suppurative nephritis affecting especially the renal cortex and that these lesions may either heal leaving scar tissue or become subacute and show scattered foci of round-cell infiltration. The cortical distribution of the lesions and the relatively infrequent infection of the pelvis and bladder point to a blood infection in most cases.

British Medical Journal, London

1 653 698 (April 14) 1934

- Radium Teletherapy Latest Modification of the Westminster Apparatus and Its Use H T Flint L G Grimmer E R Carling and S Cade—p 653
Two Hundred and Seventy Cases of Fractured Spine Radiologically Considered O L Rhys—p 655
Full Term Ectopic Gestation E B Low and H J McCurrah—p 657
*Unilateral Effect of Phenylhydrazine Hydrochloride in Polycythemia A M Kennedy—p 659
Some Theoretical Aspects of Collapse Therapy F H Young—p 661
*Hemochromatosis Case S W Smith and H Blair—p 663

Phenylhydrazine Hydrochloride in Polycythemia—Kennedy points out that phenylhydrazine hydrochloride has been employed with considerable success in many cases. It has a hemolytic effect and reduces the volume of the blood. It

has been suspected of producing serious toxic damage to the liver and kidneys, but conclusive proof of this change is lacking. Clinical experience has shown that administration is not always devoid of risk for certain types of patients, for example, those more than 60 years of age, with marked arteriosclerosis or advanced disease of the liver, kidneys or other viscera. Its use in such patients should be avoided or attended with special caution and the effect of a dose of $1\frac{1}{2}$ or 3 grains (0.1 or 0.2 Gm) should be watched for several days before more is prescribed. The author reports a case in which four short courses of treatment with phenylhydrazine hydrochloride were given without any untoward effect but a fifth produced a severe hemolytic crisis.

Hemochromatosis—Smith and Blair report a case of bronzed diabetes in which sugar (a trace) was demonstrated in only one specimen of urine. The patient was a girl aged 20 years, with skin pigmentation of considerable depth and of a definite bronze hue, especially on exposed parts. On two occasions she had become so severely jaundiced that the conjunctiva was discolored and cirrhosis of the liver was suspected. At no time was the liver palpable, it had become shrunken and small. During life, a provisional diagnosis of hemochromatosis was made, this diagnosis was verified by the postmortem examination. The cause and the pathogenesis of the rare condition of atrophoderma of the face that was seen in this case are easily explained. The subcutaneous tissues and skeleton grew so rapidly that the skin could not accommodate itself to the increased bulk and became overstretched, as it did at the same time about the hips and thighs. The lesions of the face occurred in the course of about two weeks. They were pinkish at first and paled after some weeks.

Edinburgh Medical Journal

41 245 292 (April) 1934

Preparation of Catgut for Surgical Use E R Porteous—p 245
The Mental Element in Crime and Criminals R A Fleming—p 261

Glasgow Medical Journal

3 125 172 (April) 1934

Pulmonary Tuberculosis and Pregnancy, with Especial Reference to Effect of Compression J Crockett—p 125
Oxygen and Carbon Dioxide Therapy—Some Physiologic Considerations E G Oastler—p 139

Lancet, London

1 773 824 (April 14) 1934

The Medical Curriculum and Medical Education C A Pannett—p 773
*Blood Brain Barrier in Infectious Diseases Its Permeability to Toxins in Relation to Their Electrical Charges U Friedemann and A Elkeles—p 775
Aneurysm of the Innominate Artery A Twenty Three Years History C Miller, R Dolbey and C Ballance—p 778
Preparation and Properties of an Antithyrotropic Substance Evelyn M Anderson and J B Collop—p 784
Artificial Respiration for Two Years Phyllis M Tookey Kerridge—p 786
*Pseudo Ephedrine in Asthma G W Bray and L J Witts—p 788
Effects of Tonsillectomy on Antitoxic Immunity to Diphtheria in a Rural Population W A Buice—p 790

Blood Brain Barrier in Infectious Diseases—Friedemann and Elkeles state that the blood brain barrier is localized in the walls of the cerebral capillaries. Its permeability coincides with that of the cerebral capillaries. They discuss the methods for testing the permeability of the blood brain barrier. In their experiments with toxins they used four methods: (1) artificial perfusion of the brain, (2) auxoneurotropic effect, (3) comparative determination of the lethal dose of the toxin by the intravenous and the intrathecal route and (4) identification of the toxin in the brain after intravenous injection. As a result of a critical reexamination of the literature and of their experiments, they have arrived at the conclusion that the blood brain barrier is permeable to cobra venom and lamb dysentery toxin, and impermeable to diphtheria, botulinus and tetanus toxins. The property of the toxins of vibrión Nasik and vibrión El-Tor are not sufficiently known. Of the toxins investigated the ability to pass the blood brain barrier is correlated to electrical charge. Diphtheria, tetanus and botulinus toxins that do not pass the blood brain barrier carry a negative charge at the pH of the blood. Of the two toxins that pass the blood brain barrier, lamb dysentery toxin is neutral and cobra toxin carries a positive charge at the pH of

the blood. The experiments suggested that the electrical charge of toxins has a bearing on the problem of the incubation period. The two toxins that are either neutral or carry a positive charge have no incubation period. The importance of these results for the pathogenesis of infectious diseases is discussed in the case of diphtheria.

Pseudo-Ephedrine in Asthma—Bray and Witts assessed the relative value of ephedrine and pseudo-ephedrine by the diminution in the number of attacks produced by the continuous administration of the drugs and by the relief of the actual paroxysm by the administration of the drug at the onset of the attacks. Twenty children, twelve boys and eight girls, aged from 4 to 9 years, were chosen who had had their asthma for at least two years, had attacks more or less all the year round and had not previously had hospital treatment. These children were divided into four groups of five children and observed during alternate control periods, periods while taking ephedrine regularly and periods while taking pseudo-ephedrine regularly. The dosage employed one-fourth gram (0.016 Gm) morning and evening for a child less than 7 years of age and one-half gram (0.03 Gm) morning and evening for a child more than 7 years of age. The mothers were instructed to give an additional tablet whenever an attack threatened. During the control period all the children had two teaspoonfuls of water just colored with burnt sugar three times a day. No other treatment, antiasthmatic or otherwise, was given. The twenty children during a control period of twelve months had forty-nine attacks, in eighteen months on ephedrine they had seventy-eight attacks and in eighteen months on pseudo ephedrine they had fifty-two attacks. The attacks were most severe in the control periods, less severe while taking ephedrine, and least severe while taking pseudo ephedrine in almost all cases. It was found that in relieving paroxysms ephedrine gives relief in about 85 per cent of adult asthmatic patients and unpleasant reactions in 50 per cent and that pseudo ephedrine gives relief in about 60 per cent of adult asthmatic patients and unpleasant reactions in 20 per cent. The therapeutic efficiency of these drugs is rather closely correlated with their toxicity, but in a few patients pseudo-ephedrine will relieve the asthmatic paroxysms when ephedrine has had to be abandoned on account of its unpleasant side actions.

1 825 878 (April 21) 1934

Industrialized Man and His Background L P Lockhart—p 825
The Adrenogenital Syndrome L R Broster—p 830
*Lysis of Fibrin by Streptococci Its Application to the Problems of Rheumatic Infection in Children G Hadfield V Magee and C B Perry—p 834
Treatment of Profuse Bleeding from the Stomach and Duodenum R S Atken—p 839
Carcinoma of the Rectum D C L Fitzwilliams—p 842
*Thrombopenic Hemorrhagic Purpura Due to Idiosyncrasy Toward the Hypnotic Sedormid Allergotoxic Effect F E Loewy—p 845
Paper Films in Radiography J V Sparks—p 847

Lysis of Fibrin by Streptococci—Hadfield and his associates tested the susceptibility to fibrinolysis of 130 samples of human plasma and the fibrinolytic power of thirty strains of streptococci showing β -hemolysis on blood plates, and have confirmed the conclusion of Tillett and Garner, and Tillett, Thomas and Garner that hemolytic streptococci vary in their power to liquefy a normal plasma clot. They fall into three groups with a fair degree of accuracy. In the first, fibrinolysis is rapid and complete; in the second the clot is completely digested in approximately double the time taken by cultures in the first group; in the third, lysis is slow and is incomplete at the end of twenty-four hours. Eleven of the thirty strains of hemolytic streptococci were found to liquefy human fibrin rapidly. The majority of these lytic strains were isolated from cases of severe human infection and, with one exception, their colonies on solid mediums were 'rough' and virulent to mice. Weakly fibrinolytic strains showed glossy colonies and were less virulent. The liquefaction of human plasma clot by hemolytic streptococci is not related to the fibrin content. Total resistance to fibrinolysis appears to be a specific immunity response to infection by hemolytic streptococci. The plasma clot of children suffering from acute and subacute rheumatism was frequently found to show total resistance to fibrinolysis.

Thrombopenic Hemorrhagic Purpura—Loewy presents a case of Werlhof's disease and two milder cases of thrombopenic

purpura that were due to prolonged administration of the new hypnotic sedormid (allylisopropyl-acetyl-urea) to hypersensitive patients. In the first case, after recovery, thrombopenic purpura was produced at will by giving from a half to one 4 grain (0.25 Gm) tablet of the drug. The elucidation of these cases was by no means simple, as the drug had been considered harmless and the patients had taken the drug repeatedly for some time without apparent ill results. Severe loss of blood platelets and consequent hemorrhagic diathesis have been caused by the usual doses of the drug. Repeated administration of a drug may lead to an illness due to sensitization, or show an allergotoxic effect. This condition is unlike the typical purely allergic disorders and distinctive according to the chemical nature of the drug. The modern hypnotics and sedatives are valuable but are never entirely harmless. Careful supervision is required, especially with drugs of recent introduction and with hypersensitive patients whose digestive tracts are irritable. Cases of essential thrombopenic purpura may be traced to drugs that have been taken for some time with no evidence of ill effects (arsphenamine, sedormid). If the patient receives a blood transfusion, time will be gained for closer investigation and an operation may be avoided.

Medical Journal of Australia, Sydney

1 455-484 (April 7) 1934

Studies in the Composition of the Gastric Juice Part II G V Rudd —p 455

*Observations on Hemochromatosis K Maddox and E Beatrix Durie —p 463

Observations on Hemochromatosis—Maddox and Durie describe four cases of hemochromatosis. Since cirrhosis and pigmentation of the liver are the only features common to all cases, they are of the opinion that hemochromatosis is merely a syndrome of liver cirrhosis in general and not a separate disease entity. It represents an advanced stage of 'pigment cirrhosis'. The disturbance of carbohydrate metabolism is partly pancreatic but mainly hepatic, wherein the extent of iron deposition is a fairly accurate index of the degree of interference with glycogenolysis and glycogenesis, possibly owing to deficient formation of insulin kinase. In the few patients benefited by insulin, damage or dysfunction of the pancreatic islets is assumed to be present. Prolonged epigastric pain is an evil prognostic sign. The authors believe that further work in this field can be applied best in the direction of ascertaining the character of the iron and copper balance over an adequate period and by close biochemical investigation of the terminal coma of the disease, which clinically has points of difference from both true diabetic coma and cholemia together with further research on the glycogen and pigment metabolism in other types of liver cirrhosis.

Quarterly Journal of Medicine, Oxford

3 137-292 (April) 1934

Increased Carbohydrate Tolerance in Diabetics Following the Hourly Administration of Glucose and Insulin Over Long Periods A Ellis —p 137

Contribution to the Study of Erythroblastosis Icterus Gravis Neonatorum J C Hawksley and R Lightwood —p 155

Pellagra in Great Britain H S Stannus and C R Gibson —p 211

Observations on the Speed of the Circulation C W C Bain —p 237

Peripheral Circulation in Acute Lobar Pneumonia C B Perry —p 273

Carbohydrate Tolerance in Diabetes Following Administration of Dextrose and Insulin—Ellis used dextrose and insulin hourly without other food over periods of days in the treatment of a number of cases of advanced diabetes. Given in this way, large amounts of dextrose 600 Gm daily, are well tolerated in advanced diabetes the requirement of insulin being no greater than that necessary on an ordinary restricted diabetic diet. During and following such administrations of dextrose marked temporary improvement in carbohydrate tolerance with great reduction in the amount of insulin required sometimes occurs. In the most marked instance the reduction of insulin was from 192 units daily before the administration of dextrose to 9 units daily on the twenty-first day after administration of dextrose the diet being unchanged. The explanation of this improvement is not known. The possible bearing of these observations on the theories of the pathogenesis of diabetes is discussed.

Icterus Gravis Neonatorum—According to Hawksley and Lightwood, icterus gravis neonatorum can no longer be regarded as an isolated disease. Evidence has accumulated that brings it into relation with fetal dropsy and hemolytic anemia of the new-born. The diagnosis cannot be reserved for the familial cases, which form only a proportion of the total. Its conception as a disease of the liver must be widened. The blood changes consist in a rapidly developing anemia, almost unanimously agreed to be hemolytic. There is a brisk response by the hematopoietic tissues, which are intensely stimulated, and, with the outpouring of nucleated red cells, an embryonic blood picture occurs. The pathologic observations consist in persistence of extramedullary hematopoiesis, and the cell pattern of the bone marrow shows immaturity and signs of regenerative activity. Cell degenerations and necroses occur in both the liver and the brain in certain cases. Among the known sequelae in nonfatal cases are anemia and nervous manifestations. Evidence is given suggesting that some cases of idiopathic juvenile cirrhosis and splenic anemia may take their origin in icterus gravis and that the etiologic background of hepatolenticular degeneration may be related to kernicterus. The authors discuss the treatment of icterus gravis and emphasize the value of repeated blood transfusions. The cause of fetal erythroblastosis, including icterus gravis, remains unknown, but they conclude that the evidence suggests that it is a primary hemolytic process rather than a primary disturbance of blood formation. There is insufficient evidence definitely to incriminate a toxin (or toxins), though this explanation is suggested by certain of the facts. The possibility of a hereditary factor in the production of the disease has never been adequately investigated.

Peripheral Circulation in Lobar Pneumonia—Perry studied the reactions of the small vessels of the skin in twenty-six cases of lobar pneumonia. An impaired efficiency in the contractility of the capillaries at the height of the disease was demonstrated. The recovery of the capillaries is slow and not immediately affected by the crisis. Part, at least, of the circulatory failure encountered in lobar pneumonia is due to the impaired efficiency of the small blood vessels. The blood pressure is raised rather than lowered during the acute phase of the disease. Experimental and clinical observations suggest that in the majority of cases of lobar pneumonia both the vasomotor center and the myocardium suffer little damage and yet the patient dies of circulatory failure. The author's studies support the suggestion of Ritchie that the circulatory failure in lobar pneumonia is really a failure of the circulation at the periphery. If this theory is accepted it has obvious bearings on the treatment to be adopted, since efforts to stimulate and improve the tone of the minute blood vessels are more likely to benefit the patient than attempts to increase the efficiency of the heart itself. The slow recovery of normal efficiency in contractility of the capillaries observed in this study indicates the need for prolonged and careful convalescence in lobar pneumonia.

South African Medical Journal, Cape Town

8 237-276 (April 14) 1934

Twenty Five Years of General Practice J N W Loubser —p 239

Eczematoid Ringworm of the Extremities F Krone —p 244

*Cerebral Hemorrhage with Recurrent Transient Hemiplegia and Jacksonian Fits Case O K Williamson and F W Simson —p 249

How to Conduct a Baby Show A M Geddes —p 251

Cerebral Hemorrhage, Transient Hemiplegia and Jacksonian Fits—Williamson and Simson report a case of cerebral hemorrhage in which a temporary right hemiplegia occurred, and later on Jacksonian fits, with a temporary right hemiparesis, evidently resulting from a lesion in the same region of the brain. The condition of right hemiplegia the signs of which disappeared completely, seemed to be most reasonably explained by a spasm of the muscular coat of the arterial branches supplying the part of the brain involved, and the Jacksonian fits were accounted for by the same hypothesis. The patient was accordingly treated with increasing doses of erythrol tetranitrate in tablet form. The pyramidal motor fibers passing from the precentral area in front of the fissure of Rolando were uninvolved by the former hemorrhage except in regard to a few of those concerned in the voluntary movements of the arm. The most obvious explanation of the

hemiplegia would appear to be that this was due partly to edema round the effused blood involving the motor fibers, and partly to the pressure of the effused blood itself, the paralysis thus being caused. The extent of the paralytic and other signs in the early stage of a cerebral hemorrhage is greater than that which is noticeable later on when the edema has passed away. Of special interest is the fact that the actual hemorrhage practically left uninvolved the motor fibers, so that all the paralytic signs were due to the associated edema and pressure of the effused blood and that these signs completely disappeared coincidentally with the absorption of the edematous fluid. Such a clinical picture with corresponding postmortem observations must be uncommon. The Jacksonian fits, which started in the area of the right thumb, are explained by the involvement of some of the arm fibers by the hemorrhage. An alternative explanation is that there had been a condition of spasm affecting the arterial branches supplying the area, which was the seat of the old hemorrhage and which also extended to the part corresponding to the transient recurrent paralysis, that later on rupture corresponding to the old hemorrhage took place in some of the vessels, but that the spasm passed off in those vessels supplying the localized area whose temporary loss of function caused the paralysis. It should be borne in mind that the conditions which are believed to favor spasm of cerebral arteries are precisely those which render likely the occurrence of intracranial hemorrhage. Jacksonian fits are rare phenomena as a result of cerebral hemorrhage, though they may occur in any organic lesion of the brain or its membranes or, indeed, in uremia or dementia paralytica. The fact that there was a nutmeg liver suggests that the edema may have been partly cardiac in origin.

Journal of Oriental Medicine, South Manchuria

20 25 32 (Feb.) 1934

- Cholera and Cholera-Like Vibrio. Part II. Water Vibrio Isolated During the Summer of 1932 in Mukden. K. Manako—p. 25
 Id. Part III. Kind of Strain in Dejecta of Patients Suffering from Acute Gastro-Enteric Disorder Agglutinated by Cholera Serum. K. Manako—p. 26
 Food of Japanese Farmers in Manchuria. Experiment on Digestion and Absorption of Mixed Principal Foods from Among the Products of Manchuria. II. A. Abe, U. Takei, O. Ueno, M. Ebihara and A. Yokota—p. 27
 *Nerve-Center Poisoning by Morphine. Part I. Experiments on Rabbits. A. Hayashi—p. 28
 Insertion of the Gluteus Maximus on the Femur in the Chinese. M. Hashimoto—p. 30
 Acute Benign Aseptic Meningitis. T. Akasawa—p. 31
 Supernumerary Nipples in the Chinese. S. Takeya—p. 32

Nerve-Center Poisoning by Morphine.—Hayashi produced either acute or chronic poisoning with morphine in thirteen adult rabbits. He observed the pathologic and histologic changes in their nerve center system. In cases of acute morphinism there was no marked change in the pia mater of the brain and the spinal cord. In cases of chronic morphinism the cerebral pia mater of some of the rabbits became slightly thicker. Acute morphinism caused no marked change in the cells of the walls of blood vessels. Chronic morphinism caused the walls of blood vessels to become slightly thicker and some of the cells in the walls to shrivel and cohere to some slight degree. In both the acute and the chronic type of morphinism, hyperemia and hemorrhage were produced. The change in nerve cells poisoned by morphine is retrograde. In cases of acute morphinism, Nissl's acute cell disease occurs. Chronic morphinism causes serious and chronic cell disease. The lipid content of the nerve cell increases and neurofibrils are altered. The neuroglia is not changed to a marked degree by acute morphinism. In chronic morphinism, both progressive and retrograde changes are noted, with a small increase in the fibroglia. In acute morphinism, the medullary sheath is not changed as a rule. Chronic morphinism causes damage of the medullary sheaths of the telencephalic pallium, spinal cord and spinal root nerves. According to tests made by Marchi's method, granulation is increased slightly. The quantity of lipid is increased as a rule in cases of chronic morphinism and is not altered in cases of acute morphinism. An increase of lipid was observed in the walls of blood vessels, nerve cells and cells of neuroglia. The increase was especially marked in the conical cells of the horn of Ammon, the telencephalic pallium and the globus pallidum.

Archives de Medecine des Enfants, Paris

37 193 256 (April) 1934

- Dolichocolon and Megacolon in Child. P. Nobecourt and R. Richard—p. 193
 *Clinical Diagnosis of Tracheobronchial Adenopathies. Some Hitherto Unpublished Symptoms. K. Rachid—p. 213
 Acute Leukemia with Grave Ulceronecrotic Angina in Child. C. Kizoulis—p. 217

Clinical Diagnosis of Tracheobronchial Adenopathies.—Rachid states that tracheobronchial adenopathies in the course of their development are more easily detected by clinical than by roentgen examination. He maintains that percussion of the anterior aspect of the thorax, especially of the sternoclavicular angles on both sides, is more advantageous than that of the posterior aspect, at which the interscapular region is the site of predilection. The anterior and superior aspects of the thorax in infants possess an almost uniform thickness as far as the axillary line, while posteriorly the uniform thickness of the wall exists only in a small area between the border of the scapula and the prevertebral muscles. Thus, in a child lying supine with arms extended, percussion may reveal an equal resonance in the first intercostal spaces from one axillary line to the other (negative adenopathy) or a diminished resonance close to the axillary line (glandular mass by itself or associated with the apices). This sign points to the existence of relative hypertrophied nodes of the anterior wall. Adenopathy of the thoracic cavity consists of newly formed masses; these tumefactions are found during the stage of phlegmasia. The symptom of respiratory silence is produced by compression of a large bronchus. This arises from the flattening of the bronchus, as a result of the flexibility of the cartilage in the child, by a nearby glandular mass, or is due to a tumor within the bronchus cutting off the air. The symptom often consists of absence of respiratory sounds of the left anterior, posterior or lateral pulmonary lobe in which percussion does not denote any local dullness. When the mass is in the inflammatory stage, auscultation reveals a pleural rub and suppressed breathing. These signs are localized over a large area: the right or left subclavicular space anteriorly, the first and second intercostal and interscapular spaces close to the median line posteriorly. Auscultation is best performed after a slight cough. The development of these signs takes place during the inflammatory stage and disappears after its regression. The author explains the mechanism of the pleural and pulmonary exudation as a vasodilatation and passive hyperemia produced in these tissues by hyperplastic adenitis, the vascularization of which is intensified by inflammation.

Presse Medicale, Paris

42 617 640 (April 18) 1934

- Metabolism of Vitamin A. R. Dehre and A. Busson—p. 617
 *Virulence of Koch's Bacillus in Disappearing Exudates. Y. Nedelkovitch—p. 619
 Traumatic Sacroiliitis and Spondylolisthesis. A. Lippens—p. 622
 Evolution of Idios on Medical Hydrobathology. Transcutaneous Resorption of Thermal Gases. Positive Results of Experimentation. A. Mougeot and V. Aubertot—p. 624
 Duodenal Anomalies. M. Breton—p. 627

Virulence of Tubercle Bacillus.—To answer the question whether in the spontaneously disappearing tuberculous exudates the fluid becomes bactericidal outside the organism, Nedelkovitch made exploratory punctures on eleven patients. Each specimen was left for a longer or shorter period either at the laboratory temperature or that of the incubator. The material was injected into guinea-pigs. In all instances positive evidence of live and virulent tubercle bacilli was obtained. He concludes that tubercle bacilli are not dead in disappearing exudates and that convalescence and cure result in spite of the presence of living virulent organisms. Recovery depends, therefore, not on the presence of bacilli in the exudate but on the relation between the bacilli and the cells (and probably other elements) in the pleural lesions themselves. In the purulent pleuritis of pneumothorax which disappear spontaneously and in which the recovery lasts a long time, the specimens taken toward the end lose their virulence much more rapidly than those obtained at the early appearance of the exudate. Furthermore, it was apparent that the bacilli in the exudates were just as resistant to the bactericidal properties of the exudate outside the body as inside. These bacilli, however, become sensitive to this bactericidal

action of the exudate after passage through culture mediums. When recovery begins, the organism becomes insensible to the poisonous effect of the bacteria, but the bacilli also are resistant to the bactericidal action of the tissues. In making repairs the organism clears out the bacilli in the same way as it does cellular debris or foreign bodies. Thus the enormous number of bacilli disappear, although some may persist and can produce new lesions in case of returned lowered resistance on the part of the host.

Schweizerische medizinische Wochenschrift, Basel

64 409 456 (May 12) 1934 Partial Index

Clinical Aspects and Therapy of Cholesteatoma of Middle Ear L Ruedi —p 411

*Death from Drowning and Its Connection with the Ear A Werner —p 418

*Role of Ear in Etiology of Sudden Death from Drowning J Schmid —p 429

Osteitis Deformans (Paget) of Skull with Auditory Disturbances M Weibel —p 430

Barycoelia in Twins H Mauerhofer —p 433

Detection of Unilateral Deafness H Buchser —p 436

*Paralysis of Hypoglossal Nerve in Sore Throat K Ulrich —p 444

Treatment of Cancers of Larynx R Guyot —p 448

*Treatment of Permanent Stenoses of Larynx by Means of Individually Fitted Retention Tube P von Gunten —p 450

Death from Drowning—Werner shows that the drowning of the person who does not swim differs from the drowning of swimmers, the latter occurrence being designated as sinking. Whereas in the persons who do not swim death is caused by suffocation because of the inability to keep above water and to breathe the cause of the sinking of swimmers lies in the body itself. The sinking of a swimmer generally takes place without a struggle as the result of partial or total loss of consciousness. The author states that laymen generally ascribe the sinking of a swimmer to loss of movement, to "spasm" but he points out that there are several other possibilities. Ulrich advanced the theory that the main cause of the sinking of swimmers is digestion hyperemia, and the author decided to investigate this theory in postmortem examinations on fifty drowned persons of whom twenty-seven had died while swimming. In about 70 per cent of these, digestion hyperemia, occasionally combined with other factors, was the cause of death. 10 per cent had severe cardiac and vascular disturbances, and it may be assumed that they sank because of sudden death in the water, and 20 per cent had no digestive hyperemia but had mild cardiovascular disturbances or other anomalies. In the latter group, various causes may have caused death. In thirty-two cases the petrous bones were examined in order to determine whether the sinking was the result of otogenous factors. The author believes that otogenous drowning is comparatively rare. He thinks that the possibility of this mode of death can be conceded in only one of the thirty-two cases examined for this cause. Approximately 90 per cent of the swimmers who died sinking had slight or no hemorrhages in the middle ear. Such changes were most frequent in the nonswimmers who drowned. The author gives the following warnings to bathing or swimming persons. 1 It is dangerous to bathe or swim while the stomach is filled, for digestion hyperemia is one of the main causes of death. 2 Weak and hypersensitive persons, and particularly those with heart disease, must be especially cautious. 3 Patients with disease of the middle ear should be aware of the fact that the entrance of cold water into the ear irritates the labyrinth, causes vertigo and may lead to drowning.

The Ear and Death from Drowning—Schmid states that the managements of swimming pools warn persons with defective tympanic membranes against diving. The author relates the histories of three persons in whom a rupture of the tympanic membrane occurred while diving. In discussing these cases he shows that not only perforated tympanic membranes deserve attention but abnormally thin membranes and those with atrophic scars likewise present a grave danger. For this reason the examining otologist should search for perforations and should examine the mobility of even apparently normal tympanic membranes by means of Siegle's speculum. Moreover even in the case of an apparently normal tympanic membrane the diver should be advised to protect the ears against the force of the water.

Paralysis of Hypoglossal Nerve in Sore Throat—Ulrich reviews twelve cases in which unilateral paralysis of the tongue developed in acute pharyngeal disturbances. The causal disorder was generally a severe sore throat with abscess formation or extensive swelling of the cervical glands. The hypoglossal paralysis was always unilateral and developed on the more severely affected side. The direct overlapping of an inflammatory process on the nerve seems to be the main factor in the development of the hypoglossal paralysis. The author also describes four cases of his own observation. In two instances microscopic examination revealed that the lesion of the hypoglossal nerve was due to periphlebitis of the jugular vein and of the posterior facial vein, respectively. The surgical observations in the third case and the clinical course of the fourth indicate the same mode of impairment.

Treatment of Laryngeal Stenoses—The therapeutic method suggested by von Gunten for the treatment of laryngeal stenoses employs an individually fitted retention tube. It avoids the obstacles developing as a result of the irritation of the mucosa and also exerts a mild and uniform pressure on the stenosis. In order to fit the tube correctly, an imprint is made of the larynx by means of gutta-percha. A cast is made of this imprint and then a silver tube is formed. Illustrations of the tube in various positions show that the external orifice can be closed by a valve. One of the two patients for whom the author employed this method had undergone a high, the other a low, tracheotomy in the treatment of diphtheria. The tube caused no irritation, it excluded the danger of asphyxia and in a comparatively short time respiration was possible again by the natural channel. The removal of the tube proved impossible because the stenosis persisted, but the patients were not annoyed by it and were able to lead a normal life. The author does not intend to discontinue this treatment. He thinks that, if the action of the tube has widened the stenosis sufficiently, it will be possible to withdraw the tube and to close the tracheostomy.

Rassegna Internazionale di Clinica e Terapia, Naples

15 383 444 (April 15) 1934

*New Treatment of Cerebral Hemorrhage and Its Effects R Colella and G Pizzillo —p 386

Glycemia in Heat Stroke Under Influence of Ergotamine C Ventura —p 394

Sea Bathing in Northern Climates and Its Effect on Organism I B Schulutko —p 398

Thrombo Angitis Obliterans S Silbert —p 405

Treatment of Cerebral Hemorrhage—Colella and Pizzillo studied cases presenting encephalic traumas, hemorrhages and cerebral embolisms at different pathologic stages. They found that the effects of cerebral hemorrhage may be corrected to a marked degree and sometimes totally by intramuscular injections of the blood of the patient. This auto-hemotherapy consists in taking from 25 to 30 cc of blood from a vein of the arm or of the foot and reinjecting it immediately into the gluteal region of the healthy side. Before puncturing the vein, it is advisable to pour several cubic centimeters of a 25 per cent solution of sodium citrate into the syringe in order to prevent premature coagulation of the blood. These injections are hemostatic and are an aid to the treatment of cerebral hemorrhage and its effects in all cases, irrespective of the origin or nature of the hemorrhage, the age of the patient and the time of attack. Cures have been observed in the most acute cases and in severe traumatisms to the head in which the symptoms are due to a genuine cerebral hemorrhage. The results are better and more rapid than those of surgical intervention. Autohemotherapy is beneficial in the treatment of cerebral hemorrhage before, during and after a stroke. It may be administered as a prophylactic in cases of arterial hypertension with hereditary predisposing conditions, vertigo, weakness of the limbs and tremors of the extremities are frequent premonitory signs of stroke in arteriosclerotic patients, and their results are avoided or immediately corrected following the injection which abruptly lowers the intracranial vascular pressure. Injections of blood are valuable in making a differential diagnosis between cerebral hemorrhage and cerebral softening. Although cerebral hemorrhage is more frequent than softening and the symptoms are often the same they may be distinguished by the curative action which is strong in the foci

of cerebral hemorrhage and weak in those of cerebral softening. The authors are at a loss to explain the mechanism by which the intravenous injections act so beneficially on the foci of the cerebral hemorrhage.

Archiv fur Gynakologie, Berlin

156 407 569 (April 20) 1934 Partial Index

- Development and Efficiency of Hysteroscopy C Schroeder—p 407
 *Influence of Hormone of Posterior Hypophysis on Elimination of Water and Chlorides by Pregnant Organism with Consideration of Hormone Theory of Pathogenesis of Eclampsia H Rupp and W Bickenbach—p 420
 Circulation and Basal Metabolism in Pregnancy in Work Experiments G Eismayer and A Pohl—p 428
 Biologic Demonstration of Thyroid Hormone in Blood of Pregnant Women P Thiessen—p 454
 Action of Parathyroid Hormone from Blood of Pregnant Women F Hoffmann and E Rhoden—p 459
 *Testing of Hepatic Functions in Hyperemesis Gravidarum H R Schmidt and L Herold—p 463
 *Significance of Hemogram During Delivery for Prognosis of Puerperal Infections with Especial Consideration of Operative Delivery T Koller and L Bollag—p 497

Hormone of Posterior Hypophysis in Pregnancy—

Rupp and Bickenbach report the reaction of the pregnant organism under the influence of the hormone of the posterior hypophysis. These investigations were made in view of the new theory of the hypophyseal origin of eclampsia. They found that the manner of water elimination under the influence of the hormone of the posterior hypophysis is not changed by the existence of a pregnancy. Observations on the chloride elimination revealed that a sudden action of the hormone of the posterior hypophysis may lead during pregnancy to a temporary increase in the percental quantities of chloride in the urine, but that in case of a continuous water retention under the influence of the hormone of the posterior hypophysis there develops also a chloride retention. The action of the hormone of the posterior hypophysis seems to be masked by the change that takes place in the chloride metabolism during pregnancy. There is no contradiction between the chloride retention during pregnancy and the assumption of an excessive hormone action of the posterior hypophysis in pregnant women.

Hepatic Functions in Hyperemesis Gravidarum—Schmidt and Herold tested the hepatic functions of twenty-one women with hyperemesis. The outcome of the galactose test indicated a disturbance in the carbohydrate metabolism, namely, a reduced assimilation capacity. The xanthoproteic reaction revealed a disturbance in the intermediate protein metabolism characterized by the presence of aromatic amino acids. The course of the direct, and the quantitative values of the indirect, bilirubin determination disclosed an impairment of the hepatobiliary pigment metabolism. Moreover, it seems probable that the increased porphyrin elimination in the urine was the result of a disordered hepatic function. Although the functional tests of the liver were not all simultaneously positive, they frequently ran parallel with the severity of the clinical aspects or even preceded them. The authors think that these tests are valuable in the estimation of the individual case and aid in deciding the interruption of the pregnancy.

Hemogram During Delivery—Koller and Bollag studied in 410 cases the changes in the blood picture during spontaneous and pathologic births. They found that an increase in the staff cells during birth indicates that the woman is in great danger of puerperal infection. In cases in which the staff cells increased to more than 25 per cent, puerperal infections developed in more than half of those in whom a vaginal operation was performed and in 80 per cent of those who had to undergo a cesarean section. A temperature higher than 38 C (100.4 F) during delivery has not the same value in forecasting puerperal infections as has the increase in the staff cells, however, together with the changes in the hemogram and other clinical signs, the temperature nevertheless should be given consideration. The author considers the study of the hemogram, particularly the staff count, indispensable in estimating the efficacy of a new method of surgical delivery. He emphasizes that this material proved again, just as former studies had done, that in deliveries terminated by vaginal operations the infection mortality was much lower than in those completed by abdominal interventions. These differences are especially noticeable in the groups with greatly increased staff count.

Dermatologische Zeitschrift, Berlin

69 65 128 (May) 1934

- *Experimental Transmission of Mycosis Fungoides E Zurhelle—p 65
 New Case of Pellagra H Boas—p 84
 *Scurvy with Pellagroid Cutaneous Manifestations F Sagher—p 86
 Sensitivity and Desensitization in Eczema of Nurslings H Burchard—p 92

Experimental Transmission of Mycosis Fungoides—

Zurhelle points out that in the positive transmissions of mycosis fungoides, which have been reported in the literature thus far, the bacteriologic examination has been neglected. Following a short review of the literature he describes his own transmission experiments on ninety-eight animals (eighty-nine guinea-pigs and nine rabbits). They were inoculated with material from two patients with mycosis fungoides, whose clinical histories the author reports. The difficulties of the bacteriologic investigations and the diversity of their results are revealed especially in the fourth series of tests. In this series one guinea-pig showed considerable changes in the spleen, the bacteriologic examination of these changes gave negative results, while the bacteriologic tests were positive in the guinea pig inoculated with this material. In summarizing his observations the author states that the changes that can be induced in animals by inoculation with pure cultures of paratyphoid B bacillus or of Bacillus pseudotuberculosis rodentium are observable also in the experimental studies on mycosis fungoides.

Scurvy with Pellagroid Cutaneous Manifestations—

Sagher describes a case of scurvy in which, in addition to a hemorrhagic follicular keratosis, cutaneous symptoms were present like those that have been described as pellagroid. Vitamin therapy counteracted the scurvy as well as the pellagroid cutaneous manifestations within a comparatively short time. The author assumes the simultaneous existence of two different manifestations of vitamin deficiency.

Deutsche medizinische Wochenschrift, Leipzig

60 735 774 (May 18) 1934 Partial Index

- Action of Sauerbruch-Herrmannsdorfer Diet S Bommer—p 735
 *Prevention of Postoperative Thrombosis and Embolism W König—p 739
 *Specific Prophylaxis and Treatment of Whooping Cough Edith Krüger—p 741
 Serology and Specific Therapy of Whooping Cough M Gundel—p 744

Prevention of Postoperative Thrombosis—The procedure recommended by König for the prevention of postoperative thrombosis and embolism consists in the oral administration of twenty drops of synephrin tartrate three times a day for seven days or, if this is impossible, in three daily hypodermic injections of 1 cc of synephrin tartrate and in the inhalation of several breaths of concentrated carbon dioxide every hour for from four to six days. Comparative observations on 4,500 cases revealed that this method gives highly satisfactory results. When the entire surgical material was considered, it was found that under the influence of this treatment the incidence of postoperative thrombosis and embolism was reduced from 38 per cent to 1.04 per cent. A consideration of the serious interventions showed an even more striking effect, for here the reduction was from 62 per cent to 0.95 per cent. The pulmonary complications, such as pneumonia and bronchitis, were reduced from 94 to 34 per cent.

Prophylaxis and Treatment of Whooping Cough—

Krüger describes her experiences with a new and improved vaccine prepared by H Langer. This vaccine contains fifty-eight strains from various epidemics. Especial care was taken that the bacteria had retained their requirements for large amounts of blood in the culture mediums, so that in spite of prolonged cultivation they behaved like fresh strains. The endotoxin was removed as far as possible, so that the vaccine consisted of toxin-free bacterial fractions. In this connection the author calls attention to the fact that in the blood of patients with whooping cough the antagonism of toxin and antitoxin is not the decisive factor, as is the case in diphtheria, but that lysins are formed against the whooping cough bacillus. Thus it is the bacterial body rather than the endotoxin that is the stimulus for the antibody formation. The author thinks that the absence of the endotoxin accounts for the fact that the vaccine is so well tolerated. In the course of over 200

injections, she never observed unfavorable local reactions or disturbances in the general condition. She ascribes to the action of the protein the slight fever that developed in some cases. She employed this vaccine in forty-two children. It was administered by intramuscular injections. Four injections were given in the course of eight days. The first dose contained five, the second ten, the third fifteen and the fourth twenty billions of organisms. Good results were obtained during the first and second stages of the whooping cough. In the children in whom the vaccine was given later, failures were frequent. Ten children who were exposed to whooping cough were given prophylactic treatment with the vaccine, and seven of them were protected. The author recommends the prophylactic use particularly for infants, because in this group the mortality of whooping cough is rather high.

Deutsche Zeitschrift für Chirurgie, Berlin

242 689 821 (May 4) 1934 Partial Index

- *Effect of Compound Solution of Iodine on Hyperthyroidism and Dys thyroidism F J Irsigler —p 689
Chemistry of the Formation of a Gastric Ulcer H Tamesue —p 706
Congenital Vertebral Synostosis and Primary Congenital Scoliosis W Lohmüller —p 714
Spontaneous Injury of Two Serous Cavities with Particular Attention to Open Communications Between Chest and Abdomen E Just —p 723
Immediate and Remote Results of Cholecystogastrostomy Cholecysto duodenostomy and Choledochoduodenostomy in One Hundred and Twenty Eight Cases F Bernhard —p 736
Treatment of Thoracic Empyema with Suction Irrigation Drainage M Tiegel —p 757

Influence of Iodine on the Thyroid—Irsigler states that the influence of iodine on the thyroid is due to its effect on the epithelial cells of the follicles. The action in accordance with the general biologic law, is first that of stimulation and later that of paralysis and destruction of the cell and its replacement by regenerative processes. The function of the follicular epithelium expresses itself in two directions. 1 The building up of the specific thyroid secretion, which is either stored in the lumen of the follicle or is directly absorbed from the cell into the blood circulation and is recognizable at the periphery by its biologic effect. 2 The resorption of the stored up secretion after the latter was converted into an absorbable form, to supply increased demand by the organism. The morphologic expression of these processes are to be found in the consistency of the stored up secretion designated by the terms "thick" and "thin" and further by histologic reactions to fixation and coloration as shown in the phenomenon of true vacuolization. The enlargement of the inner surfaces of the thyroid under the influence of iodine in the form of nodosities and papillae can be best explained from this point of view. Both functions of the follicular epithelium may be influenced by the iodine, and there is no way of obtaining at will the desired effect in every case. This constitutes the blind principle in the action of iodine and therefore contains a certain element of danger in the iodine treatment of goiter. The histologic effect of iodine in hyperthyroidism of human beings presents a picture of fairly characteristic alterations in the histologic sections. The histologic effect however, is not proportional to the duration of the exhibition of the compound solution of iodine, nor does it always correspond to the clinical effect.

Klinische Wochenschrift, Berlin

13 649 680 (May 5) 1934

- Significance of Hereditary Research B Patzig —p 649
Significance of Vagus for Parasympathetic Innervation of Abdominal Organs K Kure —p 651
Pathogenesis and Therapy of Anemia in Premature Infants F Thoenes —p 658
*Endemic with Pneumococcus of Type I G Joppich —p 661
Cause of Inhibition of Agglutination in Retroplacental Blood of Pregnancies with Foreign Blood Group G Saker —p 662
Influence of Intermedin and of Thyrotropic Substance of Anterior Lobe of Hypophysis on Epinephrine and Ascorbic Acid in Suprarenals A G Holmquist —p 664
Movements in Cerebrospinal Fluid System Wustmann —p 666

Anemia in Premature Infants—Thoenes shows that medication with iron or liver preparations does not prevent anemia in premature infants and concludes from this that it is not a deficiency disease. He thinks that it is due to the same processes that produce a reduction of the hemoglobin and of the

erythrocytes in full-term infants and occasionally lead here also to a mild anemia. These processes resemble "acclimatization manifestations," that is, they result from the adaptation of the organs to the greater oxygen supply compared to the intra-uterine conditions, for the improved provision with oxygen leads to the disintegration of the elements no longer necessary for oxygen transport. These blood elements decrease because birth terminates the intra-uterine anoxemia that served as a stimulus for their formation. The premature infant must complete the intra-uterine development under conditions to which the developmental stage of its organs are not yet fully adapted. The hematopoietic apparatus particularly, is still adapted to the metabolic processes of the fetus, that is, to a comparatively small oxygen supply, and this anoxemia, which exerts a strong stimulus on the erythropoiesis, is prematurely terminated by a too early delivery. Thus it is understandable why the erythropoietic organs of the premature infants under changed conditions fail to come up to the requirements to which they are equal only under the stimulus of the intra-uterine anoxemia. The author concludes that the physiologic anemia of premature infants is the result of a relative insufficiency of the hematopoiesis which is hardly at all amenable to treatment.

Endemic with Pneumococcus of Type I—Joppich reports an influenza-like endemic, which occurred in a children's home. A boy, aged 2 developed double pneumonia, suppurating pleurisy and suppurating meningitis and died. The cerebrospinal fluid contained pneumococci of type I and the same organism was found in the lungs and in the pleural pus. Histologic examination of the lungs revealed a localized pneumonia. Several days later three other children, aged 9, 11 and 13 developed lobar pneumonia. Type I pneumococcus was also found in these children. An inspection of the home at this time revealed that of twenty-nine children twenty-one were ill, as were also several adults. The respiratory tract was affected (pharyngitis, tracheitis, bronchitis). Some of the patients were feverish for several days, while in others the general condition was only slightly impaired. There was no connection between the severity of the disturbance and the ages of the patients. Nasopharyngeal smears were taken from thirty persons and twenty-three smears yielded pneumococci, fifteen of them belonging to type I. Several observations made in the course of this endemic are significant for the pneumococcus problem. Perhaps the most important observation is that the type I pneumococcus does not always lead to lobar pneumonia but that in most instances it causes only mild catarrhs or a localized pneumonia (first case mentioned). The author thinks that this explains why lobar pneumonia occurs only rarely as an epidemic. He assumes that the resistance plays a part.

Inhibition of Agglutination in Retroplacental Blood—In tests on the intervillous blood and the amniotic fluid of pregnancies with foreign blood groups, Saker was able to determine that the decrease in the agglutinin titer of the retroplacental blood was the result of a specific inhibition by fetal antigen. However, there is no transition of fetal agglutinogens through the placenta into the retroplacental blood. The author thinks that the decrease in the specific agglutinin is due to an admixture of amniotic fluid, which cannot be avoided at the moment of the expulsion of the placenta.

Medizinische Klinik, Berlin

30 597 628 (May 4) 1934 Partial Index

- *Occupational Diseases of Dentists J Löwy —p 601
*Hormonic Treatment of Circular Later Complete Loss of Hair (Alopecia Areata) of Head H Hoeker —p 603
Epilepsy During Childhood K Rupilius —p 604
Tuberculous Etiology of Articular Rheumatism Anne Marie Kuhlmann —p 608
Rare Case of Severe Insular Diabetes with Extra Insular Involvement U Winkler —p 610
Cholecystography in Standing Position and Its Diagnostic Significance E Ungar —p 611
New Indication for Use of Hormone of Anterior Hypophysis H Kopf —p 613
Consistency of Mud and Moor Packs and Baths F Freund —p 613

Occupational Diseases of Dentists—Löwy classifies the occupational diseases of dentists into three groups (1) those caused by unsuitable posture during work (2) infectious diseases and (3) poisonings. Whether the frequent neurasthenia is a disease sui generis he is unable to decide, but he thinks that it

may be due to prolonged confinement in closed rooms. In discussing the disorders caused by unsuitable posture, he mentions first the thoracic changes, which in turn may lead to cardiac and circulatory disorders. Prolonged standing may lead to the development of flatfoot and varicose veins. Removal of tartar from the teeth involves the danger of corneal injuries, and handling of plaster of paris may lead to the formation of rhagades. The infectious diseases that threaten the dentist are particularly those of the upper respiratory tract, such as diphtheria, catarrhs, influenza, tonsillitis, mersles, scarlet fever and tuberculosis. There is also a certain danger of an extragenital syphilitic infection. The frequent use of the roentgen apparatus likewise involves dangers. The use of certain chemicals may lead to eczema. One of the greatest dangers is chronic poisoning by mercury. The author thinks that nervousness, which occurs rather frequently in dentists, is often the result of chronic poisoning. Dentistry as a profession is inadvisable unless the person has a normal nervous system and an intact respiratory apparatus, the nasal breathing, particularly, should be free. There should be no predisposition to curvature of the spine or to the development of flatfoot and varicose veins.

Hormone Treatment of Loss of Hair—Hocker points out that the pathogenesis of alopecia areata is not completely understood. Some assume a parasitic, others a neurogenous and still others ancretory origin. The author recommends caution in the therapeutic evaluation of hormone therapy in alopecia. The therapeutic value of a hormone preparation must be proved in severe cases and its effect must be lasting. He gives the history of a woman who at the age of 19 first observed small hairless areas on the occiput. These areas increased in size and, in spite of quartz lamp irradiations, embrocations with croton oil and other preparations, she finally lost all her hair. The woman had always had menstrual disturbances, her menarche was late and after that she was amenorrheal for a time. She also exhibited symptoms indicating a hyperfunction of the anterior lobe of the hypophysis. Under the influence of oral administration of a follicular hormone preparation, a downy, colorless hair growth appeared and the menstrual flow was normalized. When after three months growth of the hair ceased, the doses of hormone were increased not only were larger oral doses given (450 mouse units daily) but, in addition to this, 200 mouse units was administered by subcutaneous injection. Gradually the hair growth increased again, but after a while the hormone therapy was discontinued and three months later the hair began to fall out again. Renewed daily hormone injections (1,000 mouse units) increased the hair growth again. The observation covered three years but the improvement never became a complete cure. The author believes that hormone therapy alone is not sufficient to reestablish normal hair growth.

Munchener medizinische Wochenschrift, Munich

81 739 776 (May 18) 1934 Partial Index

- Pregnancy and Heart Disease H. Kustner and R. Schoen—p. 739
Sedatives E. Frey—p. 743
*Successes and Failures in Treatment of Female Gonorrhea K. Johnen—p. 746
Conditions of Anxiety Their Psychology and Treatment G. Giehm—p. 749
*First Results of Treatment of Schizophrenia with Placental Blood J. S. Galant—p. 752
*Removal of Tattooing by Method Applicable by Practitioner H. in der Stroth—p. 753

Treatment of Gonorrhea in the Female—In evaluating the therapy Johnen cites the results obtained by different workers with vaccines of killed or of living organisms and with mixed vaccine. While some report favorable results, others experienced serious complications, and for this reason the author dispensed with the vaccine therapy. Of the non-specific therapeutic methods he discusses the active local therapy, fever therapy and conservative therapy. The conservative treatment consists in strict rest in bed, the application of ice bags, poultices, heat in the form of hot pads or diathermy and occasional vaginal irrigations. Thus it is limited to general measures and dispenses with local therapy. At the author's clinic, the patients with signs of a new ascending infection or an acute pelveoperitonitis with high fever were treated conservatively, while those without fever were subjected to local therapy. A comparison of the results reveals that the local treatment is not superior to the conservative

treatment and has the disadvantage that ascending processes are more frequent. The author does not advocate the general employment of conservative treatment in gonorrhea because he realizes that two factors were essential in its efficacy (1) strict clinical supervision and (2) all the patients had high fever, so that they received an involuntary fever therapy. The author states that the results of the local treatment were considerably improved with the introduction of a new acridine preparation that contains arsenic in an organic form. From 1 to 4 cc of a 2 per cent solution of the preparation is introduced by slow injection into the urethra and the cervix. The treatment usually requires eight injections. In cases of rectal gonorrhea from 2 to 4 cc of a 0.25 per cent solution is administered. Of twenty-one women with chronic gonorrhea, eighteen recovered as a result of this treatment. Moreover, this method reduces the duration of the treatment considerably.

Placental Blood in Treatment of Schizophrenia—Galant treated thirty-seven patients presenting various forms of schizophrenia, such as the katatonic, hypochondriac, paranoid and hebephrenic types, with subcutaneous injections of placental blood. The blood is obtained from the placental end after cutting of the umbilical cord. The injections are made either daily or after intervals of from two to three days. During the first treatment 4 cc is given, and during the subsequent injections the amount is increased by 2 cc until a total of 10 cc has been reached. In all, fifteen injections are given. The blood must be fresh, that is, it must be injected on the day of withdrawal, otherwise undesirable complications are likely (increase in temperature, headaches, vomiting). This hemoplacental therapy effects a considerable improvement in the general condition of most schizophrenic patients in that their weight increases. The psychotic condition is influenced in that the stuporous patients become livelier and the agitated ones become calmer. The stuporous patients are improved to such an extent that they can be subjected to work therapy, which was previously impossible. In discussing the action mechanism of the hemoplacental treatment, the author points out that it involves two factors, a biologic action and a psychotherapeutic action. The first of these in turn involves two factors, the protein shock therapy and the hormone action, for the placental blood doubtlessly contains large amounts of hormones. The psychotherapeutic effect is due to emotional shock and to suggestion. At the beginning of the treatment the hemotherapy may lead to hallucinations, but these usually pass off rapidly. If the first series of injections produces no definite results, a second series may be given after six or eight months.

Simple Method for Removing Tattooing—Since none of the commonly used methods for the removal of tattooing proved entirely satisfactory, in der Stroth followed Bruck's suggestion and employed an ointment representing a modification of the pyrogallic ointment that Unna employed in the treatment of lupus. The ointment is freshly prepared from 7 Gm each of pyrogallic acid, salicylic acid and resorcinol, 5 Gm each of glycerin and diluted alcohol and 1 Gm. of tragacanth. The area around the tattooed pattern is protected by covering it thickly with zinc ointment. A piece of impregnated gauze, the size of the tattooed area, is covered with the caustic ointment and is applied to the tattoo in such a manner that the margin of the gauze rests on the zinc paste. The entire application is securely fixed by layers of gauze and by adhesive tape. This bandage is removed after twenty-four hours. At this time the epidermis can be removed. A new caustic ointment bandage is applied in the same manner as the first, but this second one is left in place for forty-eight hours. After this time the area has usually become necrotic, and only in exceptional cases does a third application of the caustic ointment become necessary. As a rule, the area can be cleansed with oil after the second application, and then the necrotic tissues gradually slough off, the process being completed in from five to seven days. Following that, granulation sets in and in the course of three or four weeks a smooth scar has taken the place of the tattoo. The author emphasizes that the method is so simple that the general practitioner can readily employ it. The patient should be told that, during the time the caustic ointment is applied, there is considerable pain, but this can be reduced by the use of sedatives. Other undesirable complications, such as intoxications, were never observed.

Wiener klinische Wochenschrift, Vienna

17 609 640 (May 18) 1934

- Increase in Apoplexia in Young Persons O Potzl—p 609
Biology of Diphtheria Epidemics R Uhlirz—p 615
Operation of Large Umbilical Hernias H Linsmayer—p 617
*Methylene Blue Sugar in Treatment of Poisoning by Suffocating Gases
F Deutsch and E Weiss—p 618
*Histamine Susceptibility S Karady—p 622
Irregular Pulse H Elias—p 625
Pathology of Pelvis and Birth W Weibel—p 625

Methylene Blue-Sugar in Poisoning by Suffocating Gases—Deutsch and Weiss report that a patient, who on account of allergic colitis and hyperthyroid glycosuria was treated with high doses of alkaline substances and with methylene blue (methylthionine chloride) clysters, stated that since he received the alkaline preparation the urine was no longer blue as it had been when he was treated only with methylthionine chloride. This reminded the authors of the sugar test in which methylthionine chloride, by heating with alkaline dextrose solution becomes colorless, but when the mixture cools and is shaken in the air the resorption of oxygen brings back the stain. The oxygen transmission can be repeated by alternating heating and cooling, and this oxidation-reduction process resembles the metabolism of living substances. The authors review studies carried out by Thunberg and by Warburg, and these studies as well as their own observations on the patient with glycosuria induced them to determine whether the reaction of methylthionine chloride with oxygen could be clinically utilized when the oxidation was impaired. In preparing an alkaline methylthionine chloride-sugar solution they found that a solution of from 0.25 to 1 Gm of methylthionine chloride and 10 cc of dextrose in 100 cc was most suitable. They made experiments on animals and also on tissue cultures, and, on the basis of the results obtained in these, they gave intravenous injections of from 20 to 30 cc of the methylthionine chloride-sugar solution in cases of carbon monoxide poisoning and obtained favorable results. Later Geiger's successful use of a 1 per cent solution of methylthionine chloride came to their attention and a review of the literature revealed that Moldenhauer-Brooks had employed methylthionine chloride in poisoning with hydrocyanic acid, and that several other investigators had studied this problem. In discussing the objection made by Haggard and Greenberg that the use of methylthionine chloride could not be supported, the authors point out that the action of methylthionine chloride is not merely the result of the binding of the toxin but also of the stimulation of the oxidation. The addition of sugar increases this action still further, as indicated by Warburg's studies. The authors think that the treatment with methylthionine chloride-sugar solution is indicated in poisoning with the various suffocating gases and suggest its investigation for use in disorders, in which the oxygen carrier is impaired, such as in pernicious anemia, or in which the tissue respiration is threatened by anoxemia.

Histamine Susceptibility—Karady shows that researches of recent years revealed the importance of the antagonism between the "tissue hormone" histamine and the suprarenal hormone epinephrine. This antagonism plays a part also in the regulation of the blood pressure. In former studies histamine was generally administered by subcutaneous injection, but since this method had certain shortcomings, the author resorted to the intravenous injection. He dilutes a 1:1000 histamine preparation at the ratio of 1:100 so that 0.5 cc contains 0.005 mg. The systolic blood pressure is determined before the injection and then every fifteen seconds after the injection. A decrease in blood pressure becomes usually noticeable within fifteen or twenty seconds after the injection, but still within the first minute the decrease is followed by an increase up to the initial level or even beyond it. In some instances the difference between the minimal and maximal pressure is more than 100 mm of mercury. During the increase in pressure tachycardia develops. Two minutes or at the latest three minutes after the injection the blood pressure again decreases to the initial value, and in excitable persons it may maintain a lower level for a longer period. The author made these tests on 200 patients suffering from various disorders. He found that the curves of the pressure fluctuations can be classified in four distinct types. The first type of curve shows a pressure decrease of from 25 to 30 mm of mercury from fifteen

to thirty seconds after the injection. This type was observed in 106 patients presenting various disorders such as gastrointestinal disease, tuberculous changes, bronchial asthma, pernicious anemia, late syphilitic disorders, myxedema, arthritis, various disturbances of the kidney and liver, lead poisoning, poliomyelitis and other disturbances. In the second type of curve a decrease of from 10 to 60 mm of mercury is followed by an increase of from 40 to 120 mm of mercury. This type of curve was noted in fifty-two patients, and the author states that it is often present in persons having hypertension. The third type of curve shows slight fluctuations, a decrease of from 5 to 6 mm of mercury and a return to normal values or slightly above within one minute. This type of curve was found in patients having hyperthyroidism and exophthalmic goiter. The fourth type of curve is characterized by a moderate decrease (10 mm) and then by a moderate increase (10 mm). There are only slight subjective symptoms. This curve was observed in neurasthenic patients, generally with some acute disorder. In the conclusion the author stresses that the peripheral vasodilatation, the pulmonary and hepatic blockage, which play a part in the decrease of the blood pressure following histamine action, are also important in the development of collapse and he assumes that there is a certain similarity between histamine shock and collapse. If further tests will definitely establish this, the method may prove helpful in the detection of a predisposition to collapse and will make its prevention possible.

Zentralblatt für Gynäkologie, Leipzig

58 1089 1152 (May 12) 1934

- Reactivation of Senile Human Ovaries A Westman—p 1090
*Biologic Effects of Hormones in Lutein Cysts in Case of Cystic Moles and Chorio Epithelioma H Siegmund—p 1097
*Form Genesis and Modification of Leukocytosis in the New Born E Ehrenfeld—p 1103
Fundamentals of Gynecology for Gynecologists W Engelmann—p 1106
Cesarean Section and Myoma L Schack—p 1110

Effects of Hormones in Lutein Cysts—Siegmund discusses the explanations that have been given for the development of lutein cysts. It seems that they appear when the hormone equilibrium is disturbed so that there is a pathologic predominance of the gonadotropic hormones, that is, in cases of cystic mole and of chorio epithelioma. They develop from abnormally growing and ripening follicles. As the result of the presence of these lutein cysts, women are kept for weeks in a condition resembling pregnancy. This condition is not due to remnants of chorionic tissue or to increased elimination of hormones of the anterior hypophysis but results from the hormones (folliculin, corpus luteum hormone and gonadotropic principles) contained in the lutein cysts. The assumption that the condition is the result of hormones stored in the cysts is corroborated by the spontaneous disappearance of the cysts and the simultaneous elimination of hormones in the urine, by the rapid cessation of hormone elimination following extirpation of the cysts and by the behavior of the milk glands after extirpation.

Leukocytosis in the New-Born—Ehrenfeld shows that, although the investigators agree on the presence of leukocytosis in the new-born, they disagree on its causes. Some assume an increased activity of the bone marrow, while others maintain that the increase is only apparent and is the result of a loss of fluid. In order to clear up this problem, the author fed tea to one group of newly born infants, beginning with the third hour after delivery. This addition of tea was later continued with every breast meal until the nursing commenced to gain weight. Another group of nurslings was as customary in the author's clinic put to the breast twenty-four hours after delivery and after that every three hours but were given no tea. The number of leukocytes was studied in both groups and the author concludes that the increase in leukocytes in the new-born is not the result of a stimulation of the bone marrow and is not due to influences from the digestive tract but is the manifestation of an anhydremia. The loss of water from the blood plasma may be prevented or at least reduced by feeding with tea. A study of the types of leukocytes reveals that the neutrophils predominate at birth but within a few days this neutrophilia is replaced by the lymphocytosis that is characteristic of the nursing age. F'

percental distribution of the various types of leukocytes was found to be practically the same in the two groups of nurslings. The addition of fluid produces no abnormal conditions and the difference in the leukocyte values corresponds to the concentration of the plasma.

Nederlandsch Tijdschrift voor Geneeskunde, Haarlem

78 1822 1928 (April 28) 1934

- Foreign Bodies in Esophagus and Respiratory Tract C. E. Benjamins and E. Huizinga—p. 1829
Remarks on May Grunwald Stain N. van der Walle—p. 1843
*Treatment of Ulcerous Colitis with Blood Transfusions L. A. Hulst and H. A. P. Hartog—p. 1849
Cowpox Infection in Human Beings J. A. C. Schepel—p. 1855
Lipogranulomatosis S. M. Kropveld—p. 1860

Treatment of Ulcerous Colitis with Blood Transfusions—Hulst and Hartog administered from 400 to 500 cc of citrated blood, comprising from 40 to 50 cc of trisodium citrate at 2.5 per cent, to four patients presenting ulcerous colitis. These transfusions were administered only after dietetic and medical treatment had been tried and found wanting. The authors maintain, however, that even after transfusion the patients should adhere to a strict diet. Transfusions were given three weeks apart. If several transfusions from one donor did not offer appreciable results the blood of another donor was injected. Two patients evinced immediate improvement, while the other two began to improve only after repeated transfusions. A negative result did not occur in any case. The authors found it desirable to repeat the transfusions if the patient did not rapidly respond to treatment. They are at a loss to explain by what mechanism the favorable effect is procured.

Acta Radiologica, Stockholm

15 89 192 (April 15) 1934

- Heat Therapy of Malignant Tumors K. Overgaard—p. 89
Simultaneous Recording of Cardiac Movements and Sounds by Roentgen Ray (Kymphonoroentgenography) I. S. Hirsch and M. Schwarzschild—p. 101
Roentgenkymography by Stumpf Method as Method of Examining the Heart B. Ihre—p. 107
Method for Roentgen Examination of Hypopharynx and Upper Air Passages G. Jonsson—p. 125
Reactions to Radiation in Lymph Nodes Containing Carcinoma Metastases of Squamous Cell Type L. McGregor—p. 129
Axial Torsion of Colon Through So-Called Physiologic Volvulus K. E. Groth—p. 153
Porcelain Gallbladder in Roentgenogram R. Blatter—p. 169
*Roentgenologic Characteristics of Echinococcus Disease in Bones G. Claessen—p. 178

Echinococcus Disease in Bones—Two new cases of echinococcus bone cyst formation and two previously reported cases are described by Claessen. Echinococcus disease of bones constitutes from 1 to 2 per cent of all cases of echinococcus parasitism. It is most frequently localized in the pelvis, but hardly any part of the skeletal system appears to be totally exempt. In one of the cases reported the hum and head of the femur were involved, in another the sacrum, in one the diaphysis of the femur and in one the fibula. The infiltration is usually not sharply limited but seems to have some preference for spongy bone. The differential diagnosis from tuberculosis, osteosarcoma and fibrous cystic osteitis is often difficult, but the absence of regional bone atrophy and of periosteal reaction in echinococcus disease may be of important diagnostic significance. The limits of the echinococcus extension can rarely be determined with certainty from the roentgenograms.

Bibliotek for Læger, Copenhagen

126 137 186 (April) 1934

- *Disseminated Encephalomyelitis (Redlich) and Infectious Funicular Encephalomyelitis C. C. J. Munch-Petersen—p. 137

Disseminated Encephalomyelitis (Redlich) and Infectious Funicular Encephalomyelitis—Munch-Petersen seeks to define more closely a certain clinical form of infection of the central nervous system, assuming that funicular spinal disease is due to a constitutional factor. It seems to him probable that with the increase in neuro-infections in recent years some of these will present a 'funicular' picture. He reports twenty-seven cases, mainly chronic, of a possible neuro-infectious kind, with a clinical picture of more or less marked funicular character, for which the term myelitis or infectious funicular

encephalomyelitis is suggested. He calls attention to the lack of symptoms pathognomonic of multiple sclerosis in the cases regarded as funicular encephalomyelitis. A single etiologic factor is thought probable for multiple sclerosis, but for encephalomyelitis the possibility of several known or unknown kinds of virus must be considered. Clinically, and presumably also anatomopathologically, transition forms between multiple sclerosis and infectious encephalomyelitis are likely.

Hospitalstidende, Copenhagen

77 369 396 (March 27) 1934

- *Attempt at Treatment of Pernicious Anemia with Yeast or Yeast Preparations Incubated with Normal Gastric Juice H. C. A. Lassen and H. K. Lassen—p. 369
Nephrolithiasis—Generalized Osteitis Fibrosa—Hyperparathyroidism H. Strindgaard—p. 383

Treatment of Pernicious Anemia with Yeast Incubated with Normal Gastric Juice—The Lassens treated seven patients with pernicious anemia by this method. Through experiments in animals the various yeast preparations were titrated with regard to their vitamin B₁₂ and B content. One preparation contained no B₁₂ but showed marked activity in vitamin B deficiency in rats. The authors assert that the extrinsic factor described by Castle is not identical with vitamin B₁₂ or with any fraction of the vitamin B complex. Yeast either has no antianemic efficiency or possibly contains minimal quantities of the antianemic factor. No increase in the amount of active principle by the addition of normal gastric juice was definitely established.

77 397 408 (April 3) 1934

- Treatment with Corpus Luteum Hormone Preliminary Report A. Portman—p. 397
*Investigations on Fermentation of Galactose in Bauer's Liver Function Test T. Geil—p. 404

Investigations on Fermentation of Galactose in Bauer's Liver Function Test—In Bauer's galactose test in a number of cases Geil determined the sugar content by fermentation and by polarization. He reports that the agreement in the results obtained confirms that the saccharide eliminated in the liver function test is really galactose and that polarimetric determination after preliminary treatment with acetic acid and animal charcoal gives exact values.

77 409 436 (April 10) 1934

- Congenital Dystrophia Brevicollis H. Nielsen—p. 409
*Fatal Case of Silicosis S. V. Gudjonsson and C. J. Jacobson—p. 423
*Erythrophagia in Circulating Blood Two Cases J. Engelbreth-Holm—p. 431

Silicosis Fatal Case—On microscopic examination of lung tissue and of ash from lung tissue in a typical, uncomplicated case of silicosis in a porcelain turner Gudjonsson and Jacobson found numerous mineral needles resembling kaolin. The results are thought partly to support W. R. Jones's theory that silicosis is due to fibrous minerals and to show that kaolin probably can act like serecit.

Erythrophagia in Circulating Blood—Engelbreth-Holm ascribes erythrophagia in the circulating blood to injured or foreign erythrocytes in the blood stream, infections especially endocarditis lenta, or splenectomy. In his cases of transient erythrophagia in patients with eczema and tuberculous lymphoma respectively no pathologic cause of the erythrophagia could be found and the possibility is suggested that in rare instances erythrophagia may occur normally in the circulating blood.

Ugeskrift for Læger, Copenhagen

96 423 446 (April 19) 1934

- Congenital Dislocation of Hip A. Berntsen—p. 423
*Sinus Arrhythmia with Appearance of Adams-Stokes Syndrome Case V. Thomsen—p. 426
Undulant Fever with Meningism Case O. Raagaard—p. 430
Agranulocytosis in Patient Treated with Amidopyrine Case B. Larsen—p. 430
Amidopyrine Exanthem Without Changes in Blood Case P. Hansen—p. 431

Sinus Arrhythmia and Adams-Stokes Syndrome—Thomsen believes the arrhythmia in his case to be due to a partial disorder of the sinus node. He calls attention to the fact that the Adams-Stokes syndrome is not exclusively connected with atrioventricular block but can also occur with sinoauricular block and with sinus arrhythmia usually regarded as innocent disorders.

